3rd International Conference of Evidence-Based Health Care Teachers & Developers

Building bridges between research and teaching

Taormina (Italy), 2 - 6 November, 2005

Hosted by GIMBE®
in cooperation with Oxford Centre for Evidence-based Medicine, CASP International Network

ABSTRACTS BOOK

Abstracts Book

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International Steering Committee

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Conference Program

Wednesday, 2nd November

10.00 am	**REGISTRATION**
6.30	**INAUGURATION OF CONFERENCE**
	Welcome to Sicily Nino Cartabellotta (IT)
6.45	**OPENING TALKS**
	The Sicily Statement on Curriculum: next steps. Martin Dawes (CA)
7.15	Objectives and structure of the Conference Paul Glasziou (UK)

Thursday, 3rd November - Morning

9.00 am PLENARY SESSION

EBHC Teaching in Europe: experiences in 4 countries
Chairs. James Osborne, Mona Nabulsi

- **Denmark**. Peter Matzen
- **Italy**. Nino Cartabellotta
- **Spain**. Gomez De La Camara Augustin
- **United Kingdom**. Khalid Khan

EBHC Teaching in Asia: experiences in 2 countries

- **Iran**. Sakineh Hajebrahimi
- **Saudi Arabia**. Kurashi Nabil

10.45 POSTERS SESSION & Break

11.30 PARALLEL SESSIONS

Section I. EBHC Teaching 1

Long presentations (15')

- Elbarbary M. A humourous play for introduction of concepts and modify attitude of residents towards EBHC (n° 11).
- Sestini Piersante. Designing problem based-learning to promote and evaluate the assessment and integration of patients preferences and values in clinical scenarios by medical students (n° 31).
- Storey Mark, Irina Ibraghimova. Practice standard review as a teaching method to introduce prinicples of EBP to health care professionals in CEE/NIS countries (n° 36).

Short Presentation (5')

- Aasheim V.. How to provide evidence-based midwifery education (n° 1).
- AlFozan H.. Foundation course, a mandatory nationwide EBM workshop for residents based on Sicily statement (n° 2).
- Elbarbary M. Microteaching an important skill in "Teaching the teachers courses" for EBHC (n° 12).
- Mothabeng J. Pedagogic research for EBHC education (n° 26).
- Ringrose T. Mobile access: the smart way to engage learners with EBM (n° 29).
- Shekarabi R. Critical thinking ability in nursing students and clinical nurses (n° 32).
- Stern P. A student centered journal club enhances skill and behaviors for EBP (n° 34).

Section II. EBHC Methodology

Long presentations (15')

- Andrews J. Evidence cube matrix: advancing the understanding and implementation of EBHC (n° 3).
- Crisp J. A framework for organising the major research concepts clinicians need for understanding research evidence (n° 8).
- Glasziou P. Do we need to find a meta-analysis? (n° 14)

Short presentations (5')

- Andrews J. Operational guide to evidence based journal club (n° 4).
- Kevork H. Do the EBP skills we teach to primary care staff match the expectations of the employing organisations? A Delphi exercise in Suffolk, England (n° 16).
- Johnston L. The "reflective round": a clinical case-based journal club (n° 17).
- Stobart K. Can an EBM intervention be used to teach the rare clinical encounter (n° 35)?
- Tuntland H. Evidence based teaching about reminiscence (n° 39).

1.00 pm Lunch

Thursday, 3rd November - Afternoon

2.30 pm PLENARY SESSION

Can we make appraisal simpler? The GATE tool.
Rod Jackson

3.30 Break

4.00-6.00 PARALLEL SESSIONS

Theme Group 1
Evidence-based practice with real patients in real time.
Martin Dawes (CA)

Theme Group 2
Curriculum Objectives (Sicily II) & Assessment.
Paul Glasziou (UK)

Theme Group 3
EBHC-Teachers & Developers: Developing an Open Access Journal.
Kev Hopayian (UK)

Workshop
Making sense of results: how to demystify numbers when teaching.
Amanda Burls (UK)

Friday, 4th November - Morning

9.00 am PLENARY SESSION

EBHC Teaching in the Pacific Rim: experiences in 5 countries

Chairs. Amit Ghosh (USA)

- **Australia**. Trevena Lyndal
- **Canada**. Janet Martin
- **New Zealand**. Rod Jackson
- **USA**. Madelon Finkel
- **Venezuela**. Ricardo Riera

EBHC Teaching in Africa: experience in one country

- **South Africa**. Joyce Mothabeng

EBHC worldwide teaching

- **The CASP International experience**. José Emparanza

10.45 POSTERS SESSION & Break

11.30 PARALLEL SESSIONS

Section III. EBHC Teaching 2

Long presentations (15')

- Lebec M. Integrating the use of outcome tools into EBP, in an entry level physical therapy doctoral education program (n° 19).
- McMahon G. Impact of a novel curriculum in EBM on the learning of 2nd year medical students (n° 23).
- Nabulsi M. Evaluating the effectiveness of EBHC training: where is the evidence? (n° 27)

Short presentations (5')

- Doshier S. Using evidence to develop a course on EBP (n° 9).
- Drageset S. Improving the anesthesia nursing program by bridging the best of research, theory and clinical expertise (n° 10).
- Graverholt B. Sharing an experience from implementing EBHC (n° 15).
- Lygren H. Bridging the gap between research and practice (n° 21).
- Major S. Evaluation of the first EBHC workshop for medical students at the American University of Beirut (n° 22).
- Schmidt P. Learning EBM in a self-directed veterinary curriculum: a case report (n° 30).
- Smith-Strøm H. Critical appraising of a scientific article (n° 33).

Section IV. EBHC Implementation

Long presentations (15')

- Bridges P. Factors affecting the propensity to adopt EBP among physical therapists (n° 5).
- Ghosh A. Physicians' test ordering tendencies: the non-EBM influences (n° 13).
- Letelier LM. Exploring language barriers to EBM: is it different to read a Cochrane review abstract in English or in Spanish for Chilean post graduate medical students? (n° 20).
- Trevena L. Applying population level evidence with individual patients: an HTR decision aid example (n° 38).

Short presentations (5')

- Conca A. Using a web-based platform on the intranet to support nurses and allied health professionals in implementing evidence in clinical practice (n° 6).
- Conroy-Hiller T. Utilising audit and feedback to evaluate effective implementation of EBHC (n° 7).
- Lebec M. Assessing health care professionals' conceptions of EBP: how do clinicians' understandings of the process compare with recommendations from the literature? (n° 18)
- Meads C. Do systematic review and health technology assessment courses have an impact on the quantity of research synthesis in the public domain? (n° 24)
- Morris J. Teaching EBP skills: do they work in practice? (n° 25)
- Porzsolt F. Effect of patient's preferences on results in clinical trials (n° 28).
- Than M. EBP at the emergency department coalface (n° 37).

1.00 pm Lunch

Friday, 4th November - Afternoon

2.30 pm **PLENARY SESSION**
The epidemiology of ignorance
Paul Glasziou

3.30 **Break**

4.00-6.00 **PARALLEL SESSIONS**

Theme Group 1
Evidence-based practice with real patients in real time.
Martin Dawes

Theme Group 2
Curriculum Objectives (Sicily II) & Assessment.
Paul Glasziou

Theme Group 3
EBHC-Teachers & Developers: Developing an Open Access Journal.
Kev Hopayian

Workshop
How to…teaching EBHC with Team Based Learning.
Dan Mayer

Saturday, 5th November

9.00 am PLENARY SESSIONS

Reports of Theme Groups
Chair. Amanda Burls (UK)

Group 1. Evidence-based practice with real patients in real time
Martin Dawes

Group 2. Curriculum Objectives (Sicily II) & Assessment.
Paul Glasziou

Group 3. EBHC-Teachers & Developers
Kev Hopayian (UK)

10.30 Break

10.45 Organisational issues

- Ratification of the constitution and confirmation of board members
- Consitutional items
- Feedback
- Next conference
- Others

12.45 pm Conclusions

1.00 Lunch

List of oral presentations

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3. Andrews Jeff. Evidence cube matrix: advancing the understanding and implementation of evidence based healthcare.
4. Andrews Jeff. Operational guide to evidence based journal club.
5. Bridges Patricia. Factors affecting the propensity to adopt evidence-based practice among physical therapists.
6. Conca Antoinette. Using a web-based platform on the intranet to support nurses and allied health professionals in implementing evidence in clinical practice.
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14. Glasziou Paul. Do we need to find a meta-analysis?
15. Graverholt Birgitte. Sharing an experince from implementing EBHC.
16. Hopayian Kevork. Do the evidence based practice skills we teach to primary care staff match the expectations of the employing organisations? A Delphi exercise in Suffolk, England.
17. Johnston Linda. The “reflective round”: a clinical case-based journal club.
18. Lebec Michael. Assessing health care professionals’ conceptions of evidence based practice: how do clinicians’ understandings of the process compare with recommendations from the literature?
19. Lebec Michael. Integrating the use of outcome tools into evidence based practice in an entry level physical therapy doctoral education program.
20. Letelier LuzMaria. Exploring language barriers to evidence based medicine: is it different to read a Cochrane review abstract in English or in Spanish for Chilean post graduate medical students?
21. Lygren Hildegunn. Bridging the gap between research and practice.
22. Major Stella. Evaluation of the first EBHC workshop for medical students at the American University of Beirut.
23. McMahon Graham. Impact of a novel curriculum in EBM on the learning of second year medical students.
24. Meads Catherine. Do systematic review and health technology assessment courses have an impact on the quantity of research synthesis in the public domain?
25. Morris Jenny. Teaching evidence-based practice skills: do they work in practice?
26. Mothabeng Joyce. Pedagogic research for evidence based health care education.
27. Nabulsi Mona. Evaluating the effectiveness of evidence based health care training: where is the evidence?
28. Porzsolt Franz, Stengel Dirk. Effect of patient’s preferences on results in clinical trials.
29. Ringrose Tim. Mobile access: the smart way to engage learners with EBM.
30. Schmidt Peggy. Learning evidence-based medicine in a self-directed veterinary curriculum: a case report.
31. Sestini Piersante. Designing problem based-learning to promote and evaluate the assessment and integration of patients preferences and values in clinical scenarios by medical students.
32. Shekarabi Robabeh. Critical thinking ability in nursing students and clinical nurses.
33. Smith-Strøm Hilde. Critical appraising of a scientific article.
34. Stern Perry. A student centered journal club enhances skill and behaviors for evidence based practice.
35. Stobart Kent. Can an evidence based medicine intervention be used to teach the rare clinical encounter?
36. Storey Mark. Practice standard review as a teaching method to introduce prinicples of EBP to health care professionals in CEE/NIS countries.
37. Than Martin. EBHC at the emergency department “coalface”.
38. Trevena Lyndal. Applying population level evidence with individual patients: an HRT decision aid example
39. Tuntland Hanne. Evidence based teaching about reminiscence.

1. HOW TO PROVIDE EVIDENCE-BASED MIDWIFERY EDUCATION

Aasheim V, Dale BM, Hamre B, Nortvedt MN

Bergen University College, Department of Post Graduate Studies, Faculty of Health and Social Sciences

Background: The midwifery degree program in Norway is a 2-year (120 credits) full-time program based on a bachelor degree in nursing. Our program has evidence-based practice as a priority area. We have implemented evidence-based teaching in our program. The curriculum reflects teaching methods in which learning is focused on developing, interpreting and analyzing knowledge rather than disseminating it.

Aims: The main goal is to educate midwifery students in evidence-based practice. An objective is to use evidence-based methods in the program. We also want to contribute to developmental work and research projects together with the clinical institutions where the students have their practical training.

Methods: All the professors have completed a 15-credit qualification program to improve the understanding and skills concerning evidence-based education. We have implemented evidence-based teaching methods, including:

- more lectures based on research;
- interactive education and methods in which the student is active;
- requiring that students' learning portfolios show works based on research; and
- helping students in the clinical studies in reflecting on learning situations and justifying their actions.

We are inviting clinical institutions to collaborate on developmental work and research projects.

Results: The students are using the library resources more than previously and have improved their skills in searching literature. They appear more self-confident in professional discussions. In their written exercises, they choose themes in which they question whether practical procedures are based on the best available evidence, such as high-quality clinical research, patients' preferences, practical knowledge and the actual context.

Conclusions: The midwifery students have become more independent and reflective as midwifery students. We are still facing challenges in building more bridges between teaching and practice.

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2. FOUNDATION COURSE, A MANDATORY NATIONWIDE EBM WORKSHOP FOR RESIDENTS BASED ON SICILY STATEMENT

AlFozan H, ElBarbary M, Ferwana M, AlFayez, AlKnawy B.

National & Gulf Center for Evidence Based Medicine – Riyadh – Saudi Arabia

Background: The Saudi council of Health specialties SCHS decided to request an EBM workshop to be among the mandatory courses and workshops that are required to be attended by all residents nationwide during their 4-years residency programs. For mandatory nationwide courses, standardization is highly required

Aim: Setting the criteria for the EBM courses that will get the accreditation of SCHS will heavily be based on Sicily statement on Evidence Based Practice 2004.
Methods:The scientific committee of the referral center for EBM in Saudi Arabia and Gulf region set a task team to develop a structured course fulfilling these criteria.

Results: A Structured "Foundation Course" for EBM that heavily based on Sicily statement on Evidence Based Practice 2004 was developed. The course is 2 and half days. An additional half day is devoted for evaluation of participants that has computer based OSCE. A complete curriculum development including leaning objectives, requirements, contents (theoritical & practical) and detailed evaluation process were completed.

Conclusion: Standardization of mandatory nationwide EBM courses based on Sicily statement of Evidence Based Practice is recommended

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3. EVIDENCE CUBE MATRIX: ADVANCING THE UNDERSTANDING AND IMPLEMENTATION OF EVIDENCE BASED HEALTHCARE

Andrews JC

Vanderbilt Center for Evidence Based Medicine, Vanderbilt University School of Medicine & Medical Center

Background: In the ideal healthcare delivery, at the point-of-care interaction between patient-provider making a set of clinical decisions, individual evidence and data to support the decision and personal health strategy would be available.
In the current reality, we usually cannot provide evidence and data specific to an individual. We compartmentalize the patient, the interventions, and the outcomes. Recent exponential growth of high quality evidence permits a subdivision into subpopulations, examination of several alternative interventions, and presentation of numerous desirable and adverse outcomes.

Aims: When considering an individual patient exploring a specific clinical decision, we should intersect the refined subpopulation that includes the patient, appropriate interventions, and the critical and important outcomes. The patient's values and preferences and the clinician's expertise can be applied to this substrate of best evidence.

Methods: Presentation and discussion of a visually compelling 3-dimensional cube matrix constructed from numerous cubes that contain valid, relevant, and useful evidence that exist at each point of intersection of subpopulation, intervention, and outcome. The creative design builds on existing principles of EBM, PICO, critical appraisal, guideline recommendations, grading, and point-of-care tools.
A cube matrix can be constructed iteratively, saving developed cubes and adding cubes whenever a new patient scenario arises. A cube matrix can be constructed en masse and provided as a clinical decision support tool. Once constructed, a push method of incorporating relevant new evidence can be utilized to update.

Results: An example of the Evidence Cube Matrix for menopause and osteoporosis issues will be presented. The ideal patient/provider interaction would allow the evidence, options, and patient values to be assessed at the point of care for collaborative, informed, evidence-based decisions.

Conclusions: Attendees will be able to adopt and use this concept in teaching EBM and in developing dynamic evidence for use by providers and patients at the point-of-care.

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4. OPERATIONAL GUIDE TO EVIDENCE BASED JOURNAL CLUB

Andrews JC

Vanderbilt Center for Evidence Based Medicine, Vanderbilt University School of Medicine & Medical Center

Background: A review of the literature and evidence regarding the value of journal club will be presented. A review of the literature and evidence regarding evidence-based components of journal club will be presented.
The author relocated to a new academic medical center (AMC) coincident with a new Chair and they revised and promoted an EB approach for journal club. The author interfaced with other departments and divisions for collaboration and expansion of EB journal club concepts within the AMC. The development of EB journal clubs is one prong of the transformation to an EB culture led by the Vanderbilt Center for Evidence Based Medicine.

Aims: To provide operational guide to permit efficient de novo creation of an EB journal club or to transform an existing journal club to an EB format. To generate effective follow-up after journal club that stimulates implementation of EB practice.

Methods: A literature review of evidence regarding journal club format and components.
A developed set of operational guides for planning, preparing, and facilitating journal clubs. A compilation of useful web-based resources to support the preparation and presentation and discussion of evidence (including worksheets and calculators).
How to prepare a CAT after a journal club. Publishing the results of journal club critical appraisal and systematic review. Supporting the journal club with a website. Driving implementation of EB practice via journal club.

Results: Presentation of experience transforming a perfunctory comatose journal club into a dynamic evidence-based continuous learning experience for house staff and faculty that informs real healthcare practice. Presentation of experience cross-pollinating departments at an AMC.

Conclusions: Understanding of the evidentiary basis for journal club value and utility. Attendees will have a project plan and a set of resources that can be implemented upon return to their organization for successful and effective EB journal club events.

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5. FACTORS AFFECTING THE PROPENSITY TO ADOPT EVIDENCE-BASED PRACTICE AMONG PHYSICAL THERAPISTS

Bridges PH, Bierema L, Cervero R, Ebell M, Valentine T, Watkins K

Background and Aims: Many authors, as well as the American Physical Therapy Association, advocate that physical therapists adopt practice patterns based on research evidence, known as evidence-based practice (EBP). At the same time, physical therapists should should be capable of integrating EPB within the day-to-day practice of physical therapy.
The aim of this study was to determine the extent to which personal characteristics and the characteristics of the social system in the workplace influence the propensity of physical therapists to adopt EBP. Subjects. The sample population consisted of a simple random sample of 1320 physical therapists licensed by the state of Georgia, in the United States of America.

Methods: The study used a 69 item mailed self-completion questionnaire. 939 questionnaires were returned for a response rate of 73%. The questionnaire had four major sections. The first three sections were each drawn from a different theoretical framework and from different authors' work. The first section was modeled on a Psychometric Instrument by Green, Gorenflo, and Wyszewianski. A 6-point Likert scale was used to probe physical therapists attitude toward new information about clinical interventions. The second section evaluated the characteristics of the social system in the workplace by self report of the physical therapists using the shortened Dimensions of the Learning Organization Questionnaire which uses a 6-point Likert scale. The third section measured physical therapists' perception of themselves as self-directed learners using a short form of the Self-directed Learning Readiness Scale for Nurse Education which also uses a 6-point Likert scale. In the fourth section selected demographic variables were reported. Linear regression, a t-test and Spearman Rho were used used to identify the relationship between the propensity to adopt EBP and variables representing personal characteristics and the characteristics of the social system. Stepwise forward selection multiple regression was used to build a unified model.

Results: There was a moderate association between desire for learning ($r = .36$, $r^2 = .13$), highest degree held ($r_s = .29$, $r^2 = .08$), practicality ($r = .27$, $r^2 = .07$) and nonconformity ($r = .24$, $r^2 = .06$) and the propensity to adopt EBP. A negative correlation was found between age, years licensed and percentage of time in direct patient care. The findings demonstrated that the best three variables for predicting the propensity to adopt EBP in physical therapy were: desire for learning, highest degree held, and practicality.

Conclusion: The study confirms there is no single factor to facilitate research evidence into day-to-day practice. Multiple practice change strategies will be needed to facilitate change in practice. Selection of practice change strategies must began with addressing the concerns of the individual physical therapists providing direct patient care.

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6. USING A WEB-BASED PLATFORM ON THE INTRANET TO SUPPORT NURSES AND ALLIED HEALTH PROFESSIONALS IN IMPLEMENTING EVIDENCE IN CLINICAL PRACTICE

Conca A, Barbezat I, Fliedner M, Hirter K, Huerlimann B, Spichiger E, Willener R, Wuethrich E, Hantikainen V

University Hospital of Berne, Switzerland

Background: To implement evidence-based practice (EBP) in nursing and allied health professionals at the University Hospital of Berne, a five-year strategy for continuing clinical practice development and research was developed. Part of this clinically oriented strategy is to improve the infrastructure and to promote access to research resources.

Aims: The overall goal is, to create an environment that facilitates the implementation of EBP at the bedside. In order to support practitioners in using literature, an intranet platform will be ready by 2006.

Methods: A project group set specific goals to assess and improve the infrastructure for EBP in 2005. They defined the content of the intranet platform and determined about useful tools that would simplify the access to relevant knowledge. Then they searched for links and literature and they selected, developed or translated resources based on usability and content criteria.

Results: The topics provided through our intranet platform are the following:

- Updated information about the EBP strategy and clinical research within the hospital
- EBP-steps as a guiding structure
- Tools for self-learning (translated EBN learning program, evidence and recommendation levels for practice, critical appraisal and statistical assistance for review of articles, German articles on EBP, glossary)
- Links to different databases and libraries
- Overview and current information about the ongoing projects and courses
- German translations of relevant articles of the EBN Journal
- Questions to reflect practice like: Which interventions that I am providing now could be without effect and should be changed?
- Chat room
- Contact email for questions

Conclusions: We are building up an infrastructure to allow nurses and allied health professionals within an interdisciplinary context to access literature and databases as near to the point of care as possible and help them to maintain their life-long learning skills.

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7. UTILISING AUDIT AND FEEDBACK TO EVALUATE EFFECTIVE IMPLEMENTATION OF EBHC

Conroy-Hiller T[1], Pearson A[1,2], Florence Z[1]

[1]The Joanna Briggs Institute and The Department of Clinical Nursing-University of Adelaide,
[2]LaTrobe University

Contemporary approaches to the delivery of health care focus on developing and using frameworks that identify "best practice" and facilitate their use through audit, quality management systems and decision support for clinicians and managers, in their quality improvement role. "Best outcomes" for patients and clients are achieved by:

- Health care professionals engaging in a comprehensive, ongoing assessment of a patient/clients needs;
- Constructing and continually evaluating and updating comprehensive plans or strategies based on the needs identified in assessment;
- Delivering care interventions that are justifiable in terms of international evidence of their feasibility, appropriateness, meaningfulness, effectiveness and cost benefit;
- Embedding the concept of "best practice" within the every day culture; and
- Establishing systems that support these approaches and are consistent with a commitment to leadership, evaluation and continuous quality improvement.

The pursuit of quality involves self-assessment by practitioners and organisations of all their activities, interventions and operations, as a basis for planning and implementing strategies for improvement.

Continuous improvement in clinical practice is an ongoing process that aims at achieving Best Practice. Best Practice means engaging in practices that are based on the best available evidence. While implementation of evidence in clinical practice has been viewed as problematic, there is some evidence that audit and feedback is a successful method for facilitating clinical practice change. In response to this evidence, this presentation will describe the development of an online audit and feedback tool, which also incorporates an action research module that enables users to develop a plan for practice change specific to their clinical area

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8. A FRAMEWORK FOR ORGANISING THE MAJOR RESEARCH CONCEPTS CLINICIANS NEED FOR UNDERSTANDING RESEARCH EVIDENCE

Crisp J[1], Foureur M[2]

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[2] Professor of Midwifery, Clinical Effectiveness Unit, Capital & Coast District Health Board & Graduate School of Nursing and Midwifery, Victoria University of Wellington, New Zealand

Background: As teachers of evidence-based health care we needed to develop strategies for equipping nurses and midwives with the knowledge and skills they required to think critically about the role of research evidence in their practice (ebp). The breadth of their research questions – which are beyond the more obvious questions of effectiveness that pervade the teaching ebp literature – presented major challenges.

Aims: The approach outlined in this paper evolved out of our own exposure to the teaching and learning processes now well established within the ebp movement, plus the need to teach ebp to nurses and midwives whose day-to-day practice means that they seek research evidence in relation to diverse clinical questions; and hence need to make sense of a myriad of research approaches and the evidence they provide.

Methods: At the heart of our approach is the use of a framework that captures the links between the nature of the research question, research methodologies that fit within three broad research paradigms, specific research designs, depictions of the phenomena of interest, forms of analysis, decisions about the clinical significance of the findings and their place in the clinical decision-making processes.

Results and Conclusions: Over the past several years the framework has been evaluated positively by peers and students, and subject outcomes indicate that it copes effectively with diverse entry behaviours. Working with the framework involves supporting nurses and midwives as they build their understanding of the different elements of the framework through reading and making sense of research reports in relation to their own practice concerns.

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9. USING EVIDENCE TO DEVELOP A COURSE ON EVIDENCE-BASED PRACTICE

Doshier SB

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Background: Online learning offers educational access to current and future healthcare professionals who have time and/or geographic constraints. This new format for teaching and learning presents challenges to both teachers and learners, but evidence is beginning to accumulate to guide educators in planning both pedagogy and assessment strategies. This evidence has been applied to the teaching of EBHC principles to undergraduate nursing students, and has implications for others seeking to take advantage of online teaching/learning opportunities.

Aims: Review evidence for learning-centered approaches in online learning environment to teach EBHC principles for undergraduate nursing students.

Methods: An undergraduate nursing course in research methods had been revised to incorporate principles and practices of EBHC, including formulation of PICO questions, searching databases, levels of studies, and application of these skills in various assignments. In re-designing the course for new content, the course was also updated as an online course by applying research-based approaches to teaching and learning in online environments and the authentic assessment of learning. Based on research findings, pedagogic choices were made to enhance a learning-centered philosophy. Pedagogic approaches that are utilized in the online learning environment include asynchronous discussion, discovery exercises using databases, group critiques of clinical questions and PICO techniques, application exercises involving searching activities, and research review and application activities to answer clinical questions and plan for utilization in relevant practice settings.

Results: Students have demonstrated competence in beginning skills formulating questions, using databases, and reviewing studies and practice guidelines for application into practice situations.

Conclusions: Incorporation of evidence in the planning and implementing of an online course has guided the educator in revising a traditional research methods course to an EBHC course in a new format and has allowed for the development of EBHC competencies in learners.

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10. IMPROVING THE ANESTHESIA NURSING PROGRAM BY BRIDGING THE BEST OF RESEARCH, THEORY AND CLINICAL EXPERTISE

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Background

- The anesthesia nursing program, consisting of 90 credits, is one of three postgraduate programs that has implemented evidence-based educational methods.
- The anesthesia nursing program has two main foci:
  - providing care to patients about to undergo surgery, who have been injured, suffer from acute and/or chronic illness or experience a deterioration in chronic illness; and
  - supervising, estimating and administering anesthetics to patients.

Aims

- Teaching students systematically and critically searching, evaluating and validating research of current best evidence about the care relevant for use in practice.
- Integrating research evidence as a natural source of knowledge in clinical skills and assessment ability.
- Illuminating the research evidence using the core questions: prevalence, causation, diagnosis, treatment, prognosis, outcome and experience.

Methods

- The teachers in the anesthesia nursing program were educated about evidence-based practice. As part of the program, the teacher had to prepare a teaching plan explicitly implementing the steps of evidence-based practice. The teaching plan resulted in two different lectures: peroperative bleeding and basic cardiac resuscitation.
- In these lectures, students experienced the advances in systematically implementing this method, especially the use of the seven steps and the use of the core questions. Implementing this method resulted in diversity in research results, which is of considerable interest for clinical practice in anesthesia nursing.

Results

- The students have increased skills in systematically searching and using relevant research.
- The students use research results more often in arguing for various nursing interventions.

Conclusion

- Evidence-based education produces more active students.
- The students need to be introduced to the seven steps in evidence-based practice early in the program, especially analyzing articles and how to evaluate the reliability and validity of the research.

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11. A HUMOUROUS PLAY FOR INTRODUCTION OF CONCEPTS AND MODIFY ATTITUDE OF RESIDENTS TOWARDS EBHC

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Background: Introduction of concepts and to modify the attitude towards EBHC to residents consider a challenge to EBHC proponents. Innovative methods need to be used so as to attract young physicians to these new concepts and change their attitude towards EBHC.

Aim: To influence the attitude of residents towards EBHC and introduce them to its basic concepts through innovative enjoyable method

Methods: We produced a humorous play watched by all residents in a tertiary hospital during the resident's day. Four residents played as the actors taking the role of Dr. Evidence, Dr. Arrogance, Dr. Confidence and Dr. Textbook to elaborate the different physicians' attitudes towards EBHC in 2 clinical scenarios. Several sessions to training the actors with a producer were done to achieve a professional artistic play. A fifth person played the role of a patient.. 2 examples of uncertainty in medical knowledge were utilized and the scenario progressed with its main 4 characters to highlight the difference in attitudes among various ranks of health care providers towards EBHC. The play had considerable amount sarcastic and humorous jokes that was carefully written in the scenario.

Results: The play received the highest rank of evaluation among all activities in the resident's day. Resident's enrolled in subsequent EBM courses retained the memory of this play and had a positive attitude towards EBHC in the pre-courses questionnaire. A Video recording of this play is available for viewing.

Conclusion: EBHC teachers and proponents should strive hard to produce enjoyable and effective methods for the introduction of concepts of EBHC to young physicians.

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12. MICROTEACHING AN IMPORTANT SKILL IN "TEACHING THE TEACHERS COURSES" FOR EBHC

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Background: Most of EBM teachers had no formal training in pedagogic techniques that are considered necessary for teachers in other fields. Under these circumstances EBM teachers have variable abilities to teach. This depends largely on one of two modalities of self training; a) observation of other teachers or b) by a process of trial and error while actually teaching in a classroom situation.

Aim: To introduce specific teaching skills for the process of teaching in "Teaching The Teachers" (TTT) courses of EBM.

Methods: We divided the time in of our TTT courses between content and process. In the process part, we covered topics related to Andragogy, adult leaning, problem based learning, self directing learning, experiential learning, role of facilitator in small group learning, setting the educational environment, dealing with slow leaner or destroyers and microteaching techniques. These topics were covered in interactive small discussion groups. The curriculum was done by a highly specialized expert (PhD awarded in medical education) and in same time an EBM proponent. An accompanying CD with multiple resources in adult and medical teaching methods was also distributed.

Results: The course material and content was unique compared to other similar courses conducted elsewhere. It covered several deficiencies in the skills of process of teaching. Those who successfully passed the TTT courses where requested to teach in subsequent basic EBM courses. Difference between them and other facilitators in skills of process of teaching was observed. Microteaching skills in particular was found to be extremely useful. It enables understanding of behaviors in classroom teaching. It increases the confidence of the learner teacher. It is a vehicle of continuous training applicable at all stages even more senior teachers. It enables projection of model instructional skills. It provides expert supervision and a constructive feedback and provides repeated practice without adverse consequences to the teacher or his students.

Conclusion: In Teaching The Teachers (TTT) courses, more time need to be devoted to the process of teaching and its specific skills.

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13. PHYSICIANS' TEST ORDERING TENDENCIES: THE NON-EBM INFLUENCES

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Background: The medical community was introduced to the concept of `Evidence Based Medicine´ (EBM) in 1992. The incorporation of EBM into physicians´ practices has however happened slowly. Test ordering tendencies are still based on variables that are not necessarily evidence based.

Aim: To review the literature to identify the non-EBM determinants of physicians´ test ordering practices.

Methods: Studies of interest were limited to original research on determinants of physicians´ test ordering tendencies. The search strategy included queries in PubMed (1992-2004), EMBASE, PsycINFO and Web of Science; checking of reference lists; hand-searching relevant journals; and personal communication with experts. Two independent reviewers abstracted information on the study design, quality and limitations. Review articles, letters and editorials were excluded from the final analysis.

Results: Ninety-two articles met the inclusion criteria. Fifty-nine studies on PHYSICIAN variables affecting test ordering were identified. Some of the recognizable physician factors included age, gender, degree of specialization, individual belief systems, experience, perceived frequency of lawsuits, financial incentives, awareness of costs of tests ordered, provision of written feedback by peers/ employers, geographic location and practice setting. PATIENT related factors were reported in 24 studies. These included age, race, gender, family history, patient expectations, request/ inquiry for service, awareness, anxiety, education, insurance status and socio-economic status. DISEASE related factors associated with test ordering that were reported in 6 studies included presence of unexplained symptoms, atypical symptoms and diagnostic complexity. EXTRANEOUS factors associated with test ordering included the of use of guidelines that was addressed in 17 studies; 12 studies showed a positive effect of guidelines resulting in fewer tests ordered while 5 showed a negative effect. Availability of clear guidelines decreased test ordering whereas non-specific or unclear guidelines had the opposite effect. Advertisement of test/product by industry increased test ordering. The day of week, seasons and time of the year also affected test ordering. Easier availability of test names on ordering forms was associated with increased test ordering. Presence of a trainee increased the number of tests ordered by an experienced physician who otherwise ordered less tests. Finally, utilization management intervention was reported to reduce the number of tests ordered.

Conclusions: Despite significant advances in our understanding of EBM and its application to patient care, several non-EBM determinants influence physician test ordering characteristics. Ongoing effort is needed to educate both the patients and physicians about the practice of EBM.

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14. DO WE NEED TO FIND A META-ANALYSIS?

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Background: The ideal evidence to answer a question about the effectiveness of treatment is a systematic review. However, for many clinical questions a systematic review will not be available, or may not be up to date. Is there a viable alternative for looking at the trials which potentially answer the question?

Aims: We aimed to assess how often the largest single trial agree with the meta-analysis. We examined agreement in (a) the estimated effect and (b) the p-value.
Methods: For a random sample of 100 completed Cochrane Reviews (January, 2005) we identified a primary outcome and extracted: the number of trials, the weight of the largest trial, the estimate and confidence interval for the highest weighted trial and the meta-analysis. We calculated the p-value for the largest trial and meta-analysis.

Results: Of 100 reviews, only 78 provided meta-analyses. The average number of trials was 5.2, with the largest trial contributing on average 62% of the weight to the overall result. The results of the largest trial and the meta-analysis were similar, with a high correlation (R2 of 0.94) between the results.
The largest trial was statistically significant in 37 of the 78 evaluable reviews, with 34 of the corresponding systematic reviews also being statistically significant. The three discrepant results were not strikingly different with respective RRs (95% CI) of: (i) 1.06 (0.98-1.14) versus 1.13 (1.04-1.24) (ii) 1.0 (0.95-1.06) versus 1.05 (1.01-1.1) and (iii) 0.55 (0.29-1.04) versus 0.35 (0.1-0.97) for the meta-analysis and largest trial respectively. However, among the 41 cases when the largest trial was not statistically significant, there were 13 statistically significant results in the corresponding meta-analyses. If the meta-analysis is taken as the Gold Standard, then the positive predictive value of the largest trial was 92%, but the negative predictive value was only 66%.

Conclusions: The single largest trial is unbiased compared with a meta-analysis, and statistically significant results are generally in agreement. However, "negative" results are less reliable, as may be expected from single underpowered trials. Further work is needed on whether EBM searchers can reliably identify the largest trial.

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15. SHARING AN EXPERINCE FROM IMPLEMENTING EBHC

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Background: There is an increasing awareness of the importance of implementing research into practice in Norway. This led to the establishment of a project group in an intensive care unit, funded by Haraldsplass Hospital's Department of Development to bring Evidence Based Practice into our intensive care unit. This establishment consists of three Intensive Care Nurses.

Aims: The project group had two goals. Using a clinical example, we first and foremost wanted to achieve the knowledge required to make evidence-based recommendations for practice. Secondly, as we thoroughly made our way through the process, we hoped to be able to inform practice based upon what the findings were in the literature.

Method: We chose the Evidence Based Circle as a superior guide to proceed throughout the process. This involves a step-by-step systematic approach to best answer a clinical question. The mneumonic 'PICO' was used to define the major components of our question. Further, we involved a librarian during the literature search.

Results: This project has resulted in an elevated competence level within our unit to utilise research within practice. Also, the general knowledge about the EBHC has risen along with sympathy and interest among nurses and the management of our hospital. Not the least, have we strengthened our clinical practice, as we have located all research relevant to our clinical question and critically reviewed it. Even though this particular project did not result in a change of practice, the need for further research on this particular issue has been identified and emphasised.

Conclusion: A highly relevant clinical problem was addressed through an evidence-based approach. This method has been evaluated as both functional and satisfying for raising clinicians' awareness around research and building bridges between research and practice.

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16. DO THE EVIDENCE BASED PRACTICE SKILLS WE TEACH TO PRIMARY CARE STAFF MATCH THE EXPECTATIONS OF THE EMPLOYING ORGANISATIONS? A DELPHI EXERCISE IN SUFFOLK, ENGLAND.

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Background: Short courses on clinical-effectiveness have become increasingly common. They follow a common pattern: selected practitioners attend an intensive course to acquire high level skills divorced from their workplaces. Some curricula are based on post-graduate degree courses for research oriented or academically inclined practitioners. There is an increasing suspicion that such curricula do not meet the practical needs of health care staff.

Aims: Before planning an alternative curriculum more suited to the competences needed in primary care, the authors set out to find the views of senior managers, public health doctors, and post-graduate training leads in the county.

Methods: A modified Delphi technique was used. The authors have held two expert forums with representatives from local organisations. Discussions were informed by the experiences of the local GP tutor in teaching clinical-effectiveness in varied settings and the Sicily Statement. Consensus has been reached on the aims and objectives of the course.

The consensus points were itemised into 15 questions which were posted out to personnel identified as key people in their organisations and further recruitment was through snowballing.

Results: Sixty nine responses have been received in the first round of consultation. The process was interrupted by a re-organisation of the english health service. The final results will be available at the time of the conference.

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17. THE "REFLECTIVE ROUND": A CLINICAL CASE-BASED JOURNAL CLUB

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Background: An inability to appraise the quality of research and the irrelevance of research studies to practice are two oft-cited barriers to nursing utilisation of research.

Aim: Nurses in the Neonatal Unit at The Royal Children's Hospital (RCH) are trialling an education program designed to promote the relevance of research to clinical practice and develop the critical appraisal skills required for appropriate implementation of research in practice.

Methods: A "reflective round" is held in the Neonatal Unit to generate research questions directly related to nursing clinical management of a patient. Identification of relevant research literature and the appraisal of those studies in the context of a journal club approach is subsequently undertaken. The resulting Critically Appraised Topic (CAT) is transferred to HTML format for uploading on the neonatal nursing research website at the hospital.

Results: This educational approach is designed to: 1. overcome the barriers identified above in relation to utilisation of research findings in nursing practice, 2. provide an evidential base for best practice in neonatal nursing, and 3. disseminate the findings to the broader clinical audience.

Conclusions: Conduct of the "Reflective Round" has led to 1. identification of published best evidence in relation to caring for sick newborns, 2. clinical audit activity to determine local outcomes relative to published evidence, and 3. establishment of a neonatal nursing CAT Bank.

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18. ASSESSING HEALTH CARE PROFESSIONALS' CONCEPTIONS OF EVIDENCE BASED PRACTICE: HOW DO CLINICIANS' UNDERSTANDINGS OF THE PROCESS COMPARE WITH RECOMMENDATIONS FROM THE LITERATURE?

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Background: Knowledge of learners' pre-existing ideas may be used to encourage appropriate understandings during future instruction. It is therefore important for EBP educators to have a clear conception of how practitioners presently understand this process and attempt to implement such principles. Few research efforts have attempted to analyze clinicians' grasp of such concepts. The present study addresses this shortcoming, by comparing clinicians' perceptions of EBHC with the procedural steps identified in the Sicily Position Statement on EBP.

Aims: This investigation describes clinicians' understandings of the EBP process and compares them to themes voiced in the literature. The results give direction for teaching EBHC by highlighting strengths and weaknesses associated with practitioners' conceptions.

Methods: Using the Sicily Statement on EBP, an assessment tool consisting primarily of open-ended items was generated to assess participants' understandings of the procedural steps identified in the model. Subjects included clinicians from a variety of disciplines. Responses were qualitatively analyzed for consistency with the literature, resulting in emergent themes describing accurate conceptions and gaps in subjects' knowledge base. While pilot data were used to form the following preliminary conclusions, comprehensive results from the ongoing project will be presented.

Results: Practitioners associated EBP with knowledge of high quality evidence, citing peer-reviewed journals, experienced clinicians, and continuing education courses as sources. Practitioners gave minimal consideration to the process of searching for such evidence and using online, systematic resources for this purpose. Respondents had difficulties verbalizing how to formulate an answerable question, put evidence into practice, and evaluate their efforts.

Conclusions: Because practitioners seem to possess incomplete knowledge of the EBP process, educators may benefit from identifying effective instructional methods that encourage the formation of appropriate ideas and skills. Knowledge of pre-existing thought processes outlined in this presentation may help instructors focus their efforts in this manner.

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19. INTEGRATING THE USE OF OUTCOME TOOLS INTO EVIDENCE BASED PRACTICE IN AN ENTRY LEVEL PHYSICAL THERAPY DOCTORAL EDUCATION PROGRAM

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Background: A critical component of EBP includes the ability to evaluate performance by verifying patient progress. Standardized outcome tools are an accepted method of measuring clinically relevant changes in a patient's condition. Barriers to implementing these tools include a lack of awareness of the available measures and the evidence substantiating their use. There is therefore, a need to improve awareness of these matters among both clinicians and students.

Aim: The goal of this presentation is to describe a teaching method which engages students in the process of gathering evidence concerning a published outcome measure as well as provide them with exposure to a collection of these tools which they may opt use in their practice.

Methods: Physical therapy students were assigned to perform an evidence-based review on the outcome tool of their choice. Quality projects were burned onto a compact disk to form a comprehensive "tool box". These disks were distributed to the class for use in writing a single case report and oral presentation based on a patient from their first clinical experience.

Results: Student feedback after using the CD toolbox in their case study project was overwhelmingly positive. The majority of students used at least one outcome measure from the CD toolbox in documenting progress of their patients. Many clinical instructors exposed to the CD toolbox requested one for use in their clinical practice.

Conclusions: An important aspect of EBP is the ability to select the best standard for measuring the effectiveness of interventions. It is a necessity for students learning EBP to understand how these measures can be most effectively utilized in their clinical practice. This teaching method has the potential to engage students in the process of gathering evidence concerning these tools, as well build a foundation for their use.

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20. EXPLORING LANGUAGE BARRIERS TO EVIDENCE BASED MEDICINE: IS IT DIFFERENT TO READ A COCHRANE REVIEW ABSTRACT IN ENGLISH OR IN SPANISH FOR CHILEAN POST GRADUATE MEDICAL STUDENTS?

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Background: English is the international language for medical literature; hence for practising EBHC, physicians are expected to understand English. However in non-English speaking countries this assumption might not be true. Although some organisations are devoting efforts to translating evidence into different languages, the magnitude of the problem in Spanish-speaking countries has not been quantified.

Aims: To determine whether reading in English or in Spanish affects physician's understanding of medical information and to measure the time needed to achieve this understanding.

Methods: Physicians starting their Residency at the Pontificia Universidad Catolica of Chile were assigned to read a Cochrane Review Abstract in English or in Spanish by concealed random allocation. They recorded baseline characteristics and answered 5 open questions in Spanish to assess their understanding, while recording individual time to complete the questionnaire. Previously questionnaires were validated by a group of students and medical teachers and a chart of possible correct answers was created. Scores ranged from 0 to 19 points. Two investigators independently and blindly reviewed questionnaires; a third reviewer solved disagreements.

Results: 97 physicians participated. Baseline characteristics were similar except for English experiences. Mean score was 11,2 points (SD=3,4; range 1 to 18). Mean time to read the abstract and complete the questionnaire was 12,2 minutes (SD=2, range = 7,7 to 17,7).
There was a statistically significant difference among the groups for both outcomes.
The group reading in Spanish had a mean score of 11.9 (SD=2.8, range=5 to 18) compared to 10.5 (SD=3.8, range 1 to 17) for the group in English (p=0.04).
The time to complete the questionnaire was 11.8 min (SD=2, range = 7.7 to 17.2) for the group in Spanish and 12.6 min (SD=2, range = 8.8 to 17.7min) for the English group (p=0.047).

Conclusions: Language barrier should be considered when teaching EBHC in non-English speaking countries.

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21. BRIDGING THE GAP BETWEEN RESEARCH AND PRACTICE

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Background: Physiotherapy practice in University Hospitals must be informed by high quality research. Evidence based physiotherapy is still not incorporated in Norwegian hospitals where practice mainly is informed by theory, professional knowledge, trusted colleagues and patients preferences. Authorities and patients expect health care professionals to base their practice on best evidence.

Aims: To implement evidence-based practice in the department of Physiotherapy at a University Hospital.

- Educate physiotherapists to incorporate research into clinical decision making
- Integrate high quality clinical research, professional knowledge and patients preferences in decision making
- Educate physiotherapists to identify information needs and formulate questions to illuminate information an research needs

Methods: The coordinator of research and development at the department of Physiotherapy was educated in evidence-based practice. As a part of the program she gave two lectures to the physiotherapy staff: Presentation of designs and methods used in research and development and Evidence-based practice, bridging the gap between research and practice. Search course and guidance was also administrated.
In these lectures the physiotherapists learned what kind of questions and what kind of designs should be used to give answer to questions concerning prevalence, aetiology, measurements, therapy effectiveness, prognoses and experiences. They learned how to search for literature in relevant databases and they learned how to make research questions.

Results

- The physiotherapists have increased skills in systematically searching
- High quality research is in a better way integrated with professional knowledge and patients preferences in decision making.
- The new knowledge has resulted in research and development projects in the department

Conclusions: The implementation of evidence-based practice seems to have raised the awareness in daily clinical practice. There are still many barriers to break down, and the implementation has to be a continuing process with ongoing guidance, courses and lectures.

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22. EVALUATION OF THE FIRST EVIDENCE-BASED HEALTH CARE (EBHC) WORKSHOP FOR MEDICAL STUDENTS AT THE AMERICAN UNIVERSITY OF BEIRUT (AUB)

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Background: Teaching EBHC in the medical school curriculum provides doctors with skills to become life long learners, and incorporate diagnostic and therapeutic advances into their daily patient centered clinical decision making

Methods: In October 2001, a 2-day workshop in EBHC was organized for 17 medical students in their clinical years of training and was led by four EBHC facilitators and two senior librarians. The objectives were to: introduce the basic steps involved in EBHC, formulate answerable questions, learn to search for relevant medical evidence, learn what systematic reviews are, and be able to critically appraise articles on therapy and systematic reviews.

Evaluation:
1- Pre-workshop questionnaire was administered ten days prior to the workshop, to assess students' familiarity with concepts of EBHC.
2- During the workshop a quiz based on two clinical scenarios was distributed to test participants' ability to ask searchable questions, recognize best study designs, propose literature search strategies, recognize criteria for study validity and be able to determine the significance and magnitude of the study effect.
3-A feedback questionnaire was circulated to evaluate the workshop organization.

Outcomes: Pre-workshop feedback showed students to be highly sensitized to the concept of EBHC. They expected to learn to formulate a question, perform a proper literature search, and critically appraise articles. The Clinical quiz showed almost all to be able to make a focused question, select the best study type, and propose a reasonable search strategy. Half were able to state the criteria for study validity, and less than half felt confident about the statistical tests used to determine magnitude of study effect.
Workshop organization was adequate. Most felt their expectations were met. All agreed to recommend similar workshops to peers, and recommended having longer workshops to tackle different research questions in earlier years and to have an epidemiologist on board.

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23. IMPACT OF A NOVEL CURRICULUM IN EVIDENCE BASED MEDICINE ON THE LEARNING OF SECOND YEAR MEDICAL STUDENTS

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Background: Evidence-based medicine has emerged as the dominant paradigm for medical decision making. Curricula to effectively engage medical students with the medical literature remain poorly developed.

Aim: Investigate the impact of a novel curriculum on student learning

Methods: Three learning modules were constructed to engage students in interactive exploration of selected medical literature using small groups and facilitated large-group discussions. Modules covered the fundamentals of clinical research. Impact was evaluated using comparisons between a baseline survey, and three further surveys after each module, using a five-point Likert agreement scale.

Results: 518 surveys from 142 students were analyzed. Students engaged with the process, with 88% having studied the assignments for a mean total of 5.5 hours. Degree of stimulation and learning varied with each module, but most felt that they had 'learned a great deal' and 64% felt the readings were a useful exercise. The majority (78%) of students reported that they had become clearer about the role of the medical literature, and 88% planned to read more. There were significant increases in the rating students gave to their understanding of the following concepts: peer review process (3.20 before vs. 3.49 after, p=0.005), the difference between clinical and statistical significance (3.11 vs. 3.52, p<0.001), the concept of power in a study (2.94 vs. 3.19, p=0.014), the utility of different study designs (3.31 vs. 3.49, p=0.036) and how research trials are funded (2.94 vs. 3.53, p<0.001). Students cited UpToDate™ and texts and as their primary source for data 45%, 25% the time respectively; only 7% cited the primary literature as their primary source. Students consistently requested earlier implementation of such curricular modules.

Conclusion: Modules with specific learning objectives can be a potent stimulus for learning evidence-based medicine and provide tools necessary for professional competency.

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24. DO SYSTEMATIC REVIEW AND HEALTH TECHNOLOGY ASSESSMENT COURSES HAVE AN IMPACT ON THE QUANTITY OF RESEARCH SYNTHESIS IN THE PUBLIC DOMAIN?

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Background: The West Midlands Health Technology Assessment Collaboration, based at the University of Birmingham, is funded by the NHS to improve evidence use by health-care decision-makers. An important strategy is training health-care professionals in skills required to undertake evidence-based practice. In 1998 we started a free, non-certificated, 6-month part-time course for any NHS workers called 'How to do a Systematic Review', during which participants were taught the theory and helped finish their own systematic reviews. This course ran between 1998 and 2001 and was highly appreciated by participants. Feedback response suggested they would welcome opportunities for more in-depth and wider training so the course was developed into a Masters' Degree in Health Technology Assessment, where students produce a systematic review as their dissertation. However, our fundamental aim is not to produce an elite of highly-trained academics but to raise the general skills level of health service workers and ensure that quality research synthesis reaches the public domain.

Aims: To discover how many course participants had published systematic reviews following course participation and link student course evaluations with course outcomes. All courses are routinely evaluated by anonymous questionnaire and verbal feedback sessions.

Methods: We investigated participant outcomes by searching bibliographic databases and participant survey. Each participant was contacted for information on the impact of the course on their subsequent career, whether they ever finished their systematic review and how its results were disseminated.

Results and conclusions: There have been 59 students to date, with more attending the non-certificated course than MSc. A considerable proportion of systematic reviews were published in peer-reviewed journals, as Regional Evaluation Committee reports or as conference presentations. Many participants still work in public health, technology assessment or evidence-based health care. In our presentation, a summary of the course evaluations and subsequent student outcomes will be given.

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25. TEACHING EVIDENCE-BASED PRACTICE SKILLS: DO THEY WORK IN PRACTICE?

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Background: Evidence based practice (EBP) is an important concept in healthcare. A degree level EBP module is undertaken by students on post-qualifying programmes to develop critical appraisal skills gained at diploma level. Throughout the module, students learn how to identify, classify and evaluate different kinds of evidence and how to use this evidence in their workplace. Despite training in these skills, there is some suggestion that nurses and other health care professionals lack confidence in this area and fail to make the links between evidence and practice. The purpose of this study was to investigate this issue further.

Aims: To identify how the EBP skills developed on the degree level EBP module were utilized in practice, and to identify what local barriers there were in using the skills developed.

Methods: A cross sectional postal questionnaire survey to all students who had completed the module within the past three years (n=393); followed by interviews of a convenience sample to explore further some issues that emerged from the survey (n=5).

Results: 191 completed questionnaires reflecting a response rate of 48.6%. The results showed that the students perceived themselves as 'quite skilled' or 'competent' with regard to the key EBP skills, and that completion of the module had contributed 'greatly' to this skill acquisition. Issues of time were perceived to be the greatest barriers to finding and reviewing evidence, and to implementing changes in practice on the basis of robust evidence. Results from the interviews showed that time and cultural issues were the greatest barriers to developing further and actually using the EBP skills gained on the module.

Conclusions: The value of the taught EBP module was apparent. However, if the skills obtained are to be developed further and actually used appropriately in the work place, cultural changes need to occur.

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26. PEDAGOGIC RESEARCH FOR EVIDENCE BASED HEALTH CARE EDUCATION.

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Background: Evidence based clinical practice is a well known and accepted phenomenon in health care. Evidence based education is however a new concept, which includes both the teaching of evidence based clinical practice and the use of evidence based teaching methods. This paper argues that the use evidence based pedagogic methods is as important to healthcare education, like clinical evidence is to clinical practice. A case of physiotherapy education in South Africa is presented around the argument.

Aims: This paper is presents an analysis of educational articles published by South African physiotherapy educators, with a focus on the content of pedagogic research.

Methods: A content analysis of publications by educators in the SA Journal of Physiotherapy between 1989 and 2003 was conducted to identify and classify the educational articles. ANALYSES: Descriptive statistics in terms of frequencies, means and percentages was used for the analysis.

Results: The results revealed that most of the educators' articles focused on clinical practice. Only 23% of the articles were about education and the majority of those were on clinical education, with few articles on curriculum issues and teaching methods.

Conclusion: South African Physiotherapy educators need to develop their teaching practice through research. Currently, their research focus is on clinical practice, and not on teaching and learning. The importance of linking research, clinical practice and teaching cannot be overemphasized. Pedagogic research is key to this linkage and plays an important role in developing evidence based scholarly educators.

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27. EVALUATING THE EFFECTIVENESS OF EVIDENCE BASED HEALTH CARE TRAINING: WHERE IS THE EVIDENCE?

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Background: Credible evidence for the effectiveness of evidence-based health care training to improve learner, patient and health system outcomes is essential for guiding, assessing, and funding interventions.

Aims: To provide an overview of existing evaluation research on the effectiveness of EBHC training, its limitations, and the knowledge gaps in need of further investigation.

Methods: To answer the question" How do we know that EBHC training makes a difference?" we searched MEDLINE, EMBASE, COCHRANE and CINAHL with relevant MESH terms. Outcomes included knowledge, skill, attitude, practice, judgment, competence, decision-making, patient satisfaction, quality of life, clinical indicators, or cost. Selections limited to systematic reviews, randomized controlled trials and pre/post studies published in any language. Retrieved articles were critically appraised for validity prior to inclusion.

Results: Fifteen studies met our inclusion criteria: 5 systematic reviews, 4 randomized controlled trials and 6 pre/post studies. There is modest evidence from systematic reviews and controlled trials that undergraduate EBHC training improves knowledge but not skills and that clinically-integrated post-graduate teaching improves both knowledge and skills. Two controlled trials reported no impact on attitudes or behavior. One pre/post study found a positive impact on decision making, while another suggested change in learner's behavior and improved patient outcome. We found no studies assessing EBHC training for patient satisfaction, health-related quality of life, cost, or population-level indicators of health.

Conclusion: Most of the literature evaluating the effectiveness of EBHC training has focused on short-term acquisition of knowledge and skills. There is an urgent need for evaluation research that provides solid evidence on the effect of EBHC training on learner's behavior, long-term retention of acquired knowledge and skills, patient satisfaction, health and quality of life, and health system outcomes.

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28. EFFECT OF PATIENT'S PREFERENCES ON RESULTS IN CLINICAL TRIALS.

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Background: Patients (and doctors) usually have treatment preferences, which may conflict with the principle of randomization and contribute to low recruitment rates. Respecting preferences in clinical trials is expected to increase both the recruitment rates and, unfortunately, also the observed treatment effects.

Aims: In a systematic review, we studied possible differences in patient characteristics and outcomes of studies which compared experimental and control treatments in both randomised groups and preference-based cohorts.

Methods: Trial formats incorporating partially-randomized patient preference trials (PRPPT), comprehensive cohort studies, and two-stage trial designs were eligible for this review. Quantitative analysis was restricted to primary endpoints. We calculated event rates and risk differences/differences in means between randomly generated and preference-based experimental and control groups.

Results: 33 studies were included in the analysis. Four trials met the original PRPPT format. In most of the studies, insufficient or imprecise information was provided on the sequence of procedures (randomization and preference). No obvious differences were found in baseline profiles or absolute and relative effects between randomized and preference-based study arms.

Conclusions: Our data confirm the results of a recent meta-analysis (King et al JAMA 2005;293:1089-99) which provided no evidence to support the assumption that patient's preferences influence the results of clinical trials.
Our results further indicate that it is impossible to detect effects of preferences in traditional trial designs. New study designs have to be discussed to quantify confounders, like patients' preferences or information. These may, however, create considerable ethical conflict.

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29. MOBILE ACCESS: THE SMART WAY TO ENGAGE LEARNERS WITH EBM

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Background: One of the major barriers to implementing Evidence-Based Medicine (EBM) in practice is rapid and easy access to the evidence at the very moment that it is required. Habits learned as a medical student are likely to be carried forward into later professional activity.

Aims: We are interested to explore ways of facilitating the integration of EBM into the clinical practice of medical students at an early stage; we would like to induce a "Pavlovian-like" response for EBM each time they encounter a clinical question.

Methods: We conducted a national survey of UK-based medical students to explore students' access to online resources and to identify possible strategies to increase their use of EBM information.

Results: We found that 92.3% of medical students have a computer for their own use, that 85.9% of students have internet access at their term-time place of residence (60.2% have broadband) and that 19.2% use a personal digital assistant to maintain their diary, keep notes and access email. Despite this high level of internet access, usage of online information for personal learning was low: nearly 2/3rds (64%) use online learning tools less than once a day and 13% report using these online tools less than once a week.

To encourage medical students to include EBM in their daily practice we are piloting the use of personal digital assistants (PDAs) with wireless internet access during their clinical attachments. This, we believe, will give them rapid and easy access to the evidence they need to formulate and discuss their management plans with patients. These PDAs will provide students with mobile access to:

- A personal learning plan for their clinical attachment
- Internet access to EBM resources such as Bandolier and Cochrane Library.
- Clinical handbooks and national guidelines

Do students provided with these tools adopt EBM into their daily practice?

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30. LEARNING EVIDENCE-BASED MEDICINE IN A SELF-DIRECTED VETERINARY CURRICULUM: A CASE REPORT.

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Background: The program at Western University College of Veterinary Medicine is a dedicated to the pursuit of student-centered, life-long learning. It is built around a problem-based learning (PBL) curriculum stressing the student's responsibility for their own learning in the absence of a teacher-centered environment. Veterinary students have unlimited access to textbook, journal, internet and faculty resources on the principles and practices of evidence-based medicine (EBM).

Findings: In the absence of a teacher-centered learning environment, veterinary students struggle with a clear understanding and application of the 5-steps of evidence-based clinical practice. Competency in generating focused questions and searching for the appropriate evidence occurs within the first semester of matriculation. Critical appraisal skills of students, however, are lacking in the first two years of the veterinary curriculum. During the clinical years, determination of applicability of the evidence and evaluation clinical outcomes will likely occur. Discussion: Lack of formal assessment of EBM principles may contribute to the lack of emphasis by students in the professional curriculum. Similarly, the collaborative learning environment of PBL fosters an overload of information and displacement of the importance of its critical appraisal. For each case, hundreds of references are distributed between students leading the belief that the best and most valid evidence is being disseminated. Inconsistent application of the PBL tutorial process between facilitators may add to the confusion of EBM principles for students.

Summary: After two classes of students have successfully matriculated in the PBL curriculum, concerns have risen about students' use of EBM principles and practices. More extensive faculty training in EBM principles as well as student assessment tools may be necessary to increase student performance. With the first class of students entering the clinical-based third year, evaluation of students' EBM performance is necessary before teacher-centered EBM learning techniques are applied.

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31. DESIGNING PROBLEM BASED-LEARNING TO PROMOTE AND EVALUATE THE ASSESSMENT AND INTEGRATION OF PATIENTS PREFERENCES AND VALUES IN CLINICAL SCENARIOS BY MEDICAL STUDENTS.

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It was recently suggested that the use of terse medical jargon in clinical scenarios used for problem-based learning, might discourage the interest for patient's views (Med Educ 38:1071, 2004), one of the fundamental elements of Evidence Based Medicine. We investigated whether including explicitly expressed patients views in clinical scenarios could improve their recognition as part of the problem by medical students. As an on-line activity (Moodle www.moodle.org), of a PBL course on EBM for students in the first clinical year, we randomized 142 students to address one of 9 clinical problems. These consisted in variations of three problems each in three different "flavours": one in which the patient was strongly asking for the intervention, one in which he was strongly against it, and one in which no mention was made of patient's preference. The students were addressed to a relevant paper and asked to write a short assay about its validity, results, and application to the specific patient. Two teachers blindly and independently evaluated whether patients preferences or values had been addressed or recognized using a 4 point scale (0-3). The percentage of students reaching a score of at least 2 was was significantly higher with problems where patients views very clearly expressed (33/103, 32%) than in those with "neutral" patients (5/39, 13%, p=0.02), without significant differences between the type of problem or the "direction" of expressed preferences.. There was no correlation between the scores for preferences and values and a separate score for appropriateness of critical appraisal, with the score attained in a multiple choice knowledge test, or with a score of students' satisfaction for the course. So, the number of medical students addressing patients views during problem solving is low, but it is possible to use PBLs to promote and to evaluate their interest toward patients preferences and values.

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32. CRITICAL THINKING ABILITY IN NURSING STUDENTS AND CLINICAL NURSES

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ABSTRACT

Authorities of nursing believe that the ability to think critically by nurses play an important role in providing individual care, solving problems and making complex decisions. Therefore, critical thinking ability is to be established during scientific experiences in nursing students and to be promoted in employed nurses.

Determining and comparing critical thinking abilitys in first and last term baccalaureate nursing students and clinical nurses, a descriptive- comparative study was carried out in which 172 contributors, selected with stratified random sampling method filled up self reporting questionnaires.

Findings revealed that 98.3% of clinical nurses, 94% of last term students and 93% of first term students were weak in critical thinking abilities, besides, there were significantly differences between nursing students and clinical nurses in average scores of inference ($p<0.0001$), interpretation ($p=0.026$), evaluation of arguments ($p<00.01$), and also, total scores of critical thinking abilities. In other words, differentiated aspects of critical thinking ability had higher levels in student nurses. Furthermore, we did not find significant differences between students and clinical nurses from the point of diagnosis of assumption and deduction abilities.

To Conclude, regarding findings, although last term students had been involved in a 4 years nursing education curriculum, they were the same with the first term students from the point of their critical thinking abilities, and also, inspite of 2 years of clinical nursing experiences in nurses, their critical thinking abilities were significantly lower than students. So, revising present educational strategies and applying active learning method, both in theory and practice seems to be critical, and regarding clinical nurses, participating in problem solving and decision making situations is of great importance, and for both groups individual patient care with the basis of nursing process will promoted knowledge, attitude, skills and motivation, which all will promote critical thinking abilities consequently.

Key Words: Critical thinking, Nursing students, Clinical nurses

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33. CRITICAL APPRAISING OF A SCIENTIFIC ARTICLE

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Background: One of the goals for Betanien Deaconal University College, Norway, in year 2004, was to strengthen evidence based nursing (EBN). The background is that nurses use a limited amount of scientific evidence to secure good care. Nurses also have limited knowledge in how to use and understand scientific research.

Aims: The aim is that the students should be able to search, read and critically appraise research.

Methods: This course trains the students in three of the five steps in EBN – formulate a question, search and critically appraise the evidence. In order to teach the students to appraise a scientific article, two articles (quantitative, qualitative) were delivered to the students. The scientific process and a manual in how to appraise an article were used as methods in evaluating the articles. Each part of the scientific process lasted for one day. Every day had the same structure. We started with 2 – 3 hours of lecturing in actual part of the scientific process, then group work and after that interactive plenum discussion. Two days were used to train the students in how to search.
After lecturing in the scientific process the students had a group exam where they should critical appraise a new scientific article.
A structured questionnaire was used to evaluate the course.

Results: Most of the students reported that teaching in steps 1, 2 and 3 in EBN was useful in critical appraising a scientific article. The result from the exam supported this. The manual was an important tool in this process. Participation in the lecture, group work and plenum discussion was high.

Conclusions: Knowledge about scientific methods and use will make the students able to read, appraise and use scientific results in their nursing practise. This can promote evidence based nursing and contribute to quality improvement in the healthcare system.

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34. A STUDENT CENTERED JOURNAL CLUB ENHANCES SKILL AND BEHAVIORS FOR EVIDENCE BASED PRACTICE

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Background: Articles pertaining to Evidence Based Practice have become increasingly visible in health professions' education. However, few describe educational methods that promote students' comprehensive and integrated understanding and skills for Evidence Based Practice.

Aims: The purpose of this presentation is to describe the development, implementation and outcomes of an innovative approach to teaching skills and behaviors for Evidence Based Practice.

Methods: Occupational therapy students in Pittsburgh, Pennsylvania participated in a 9 week journal club experience. Working in four groups of 7, students were provided with an overall framework to develop and conduct weekly professional journal club sessions. Within each group, students determined the focus and direction for their journal club section, decided on the number, type, and focus of research articles that were presented and discussed each week, created methods for evaluating individual and group performance, and determined the effect of the journal club experience on their knowledge and professional behavior. Students submitted a written, descriptive journal entry each week, where they reflected on their experience. Students' pre and post course ratings on a 10 cm. Visual Analog Scale were used to determine changes along several parameters, including their ability to synthesize and communicate research outcomes verbally and in writing, their ability to evaluate the utility of several routinely accepted occupational therapy treatments, and their overall confidence in using research evidence to contribute to clinical decision making.

Results: Results were uniformly positive across all groups, as evidenced by significant differences between pre and post course ratings on 6/6 parameters. In addition, qualitative analysis of the reflexive journals reflected substantive changes in the students' professional development, commitment to evidence based practice, and perceived responsibility to demonstrate leadership in this area.

Conclusions: Professional journal clubs are an interesting, viable, student-centered strategy that promotes a holistic approach to teaching Evidence Based Practice.

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35. CAN AN EVIDENCE BASED MEDICINE INTERVENTION BE USED TO TEACH THE RARE CLINICAL ENCOUNTER?

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Background: The Pediatric Ambulatory Clinic teaching environment can demonstrate how Evidence Based Medicine (EBM) skills can be incorporated into the clinical encounter. Unfortunately, clinical medicine cannot ensure all possible medical encounters in a short rotation.

Aim: To assess if an EBM intervention can teach a learner-centered approach to global child health.

Methods: The pediatric ambulatory clinic rotation is of three weeks duration, occurring in the final year of medical school. The EBM intervention has five student contact hours, in three sessions, to cover the first four of the five EBM steps. The initial 60-minute introductory session will have a small group of 5 medical students review a global child health reading assignment. Each student will be given an individualized clinical scenario. Using the clinical scenario the student creates both a background question as well as a well-built clinical (foreground) question using the “PICOS” template. They then will list possible Medical Subject (MeSH) headings, and indicate electronic databases that could be searched. The second week commences with a medical librarian facilitated computer laboratory on literature searching, with the student searching for the single “best” article that answers their clinical question. Over the following week the student uses the electronic Users’ Guides to the Medical Literature and the University of Alberta EBM Mini-manual to critically appraise the selected health science article. At the end of the third week, each medical student will present a 10-minute “critically appraised topic” (CAT) on the important findings of the article and the “bottom line” in answering their clinical question. The five presentations will be used to trigger discussion relevant to global child health.

Summary: The EBM intervention will be implemented in September 2005. We will report on the first four groups of students completing this new curriculum.

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36. PRACTICE STANDARD REVIEW AS A TEACHING METHOD TO INTRODUCE PRINICPLES OF EBP TO HEALTH CARE PROFESSIONALS IN CEE/NIS COUNTRIES

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American International Health Alliance

Background: Since 1995, the American International Health Alliance (AIHA) has established more than 135 Learning Resource Centers (LRCs) in medical/health care organizations in 21 countries in Eastern Europe and the former Soviet Union. One of the primary objectives of the LRC project is to promote the adoption of evidence-based practices in health care. To support this activity, each LRC has been provided with Internet access, a core package of information resources, and a series of EBP training sessions. The directors of each LRC are required to periodically select an intervention or practice (that may relate to clinical diagnosis or treatment, health promotion, or education), and to perform a review of the evidence available for this procedure. From the results of the review they can draw a conclusion as to whether the chosen practice is shown to be effective or a change in practice is warranted at their institution. The report produced is called a Practice Standard Review (PSR).

Aims: To evaluate how effective the EBP training sessions and PSR tool have been in improving skills in forming clinical questions, searching and appraising evidence, and influencing change in practice.

Methods: Analysis of PSRs submitted by the LRCs.

Results: Out of 330 PSRs conducted –
228 (72%) pose a well formulated question
83 (25%) provide an appropriate search strategy
59 (18%) provide a critical appraisal
53 (16%) provide suggestions for practice change
18 (5%) resulted in a change that was implemented

Conclusions: In combination with access to EBP resources (especially in national languages), and introductory training workshops on EBM basics, Practice Standard Reviews proved to be an effective tool in gaining skills and knowledge, and in many cases can serve as a first step for implementing evidence-based changes in practice.

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37. EVIDENCE BASED HEALTHCARE AT THE EMERGENCY DEPARTMENT 'COALFACE'

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Evidence based medicine (EBM) has been defined as "the integration of the best research evidence with clinical expertise and patient values". Unfortunately it is considered by many to be synonymous with systematic reviews and guidelines produced in 'ivory towers' with questionable local applicability and relevance to the personal circumstances of many a patient.

It could also be defined as a process by which individual clinicians progressively equip themselves with EBM skills (the abilities include finding, accessing, interpreting and applying scientific information) in order to assist in making more immediate and local medical decisions. Such decisions may be whether or not to accept new information. Some examples of this might be research presented at a grand round, data from a pharmaceutical representative, the conclusions of a paper in a journal or a locally developed guideline. Without these skills, one may have to accept information on face value or take a colleague's word for it. More importantly, though, these skills may aid a clinician in determining the management of an individual patient in front of him or her.

The purpose of this presentation is to demonstrate how an individual ED physician can apply EBM skills in day to day working life. The ED is a busy place to work and there is very little time to sit down at a computer screen let alone go to the medical library. If one is going to apply EBM to shop floor practice then it has to be quick and while it may not be perfect it should help the patient in real time.

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38. APPLYING POPULATION LEVEL EVIDENCE WITH INDIVIDUAL PATIENTS: AN HRT DECISION AID EXAMPLE

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Even in a world where the best available evidence has been found and appraised, clinicians and their patients still face the challenge of applying the evidence to their individual context. Decision aids have been proposed as a tool to facilitate this process. Through the development of a decision aid for women considering hormone replacement therapy, the authors have had to overcome similar challenges to those faced by clinicians applying evidence in practice. This paper describes some of the methods and assumptions used in the translation of the Women's Health Initiative (WHI) results into a tool for individual decision-making.

Cancer registry and hospital morbidity databases were used to estimate 5 year cumulative risks for breast cancer, abnormal mammography, strokes and thrombo-embolism for 50 year old women. Menopausal symptom prevalence was estimated from population cohort studies. Hazard ratios from the WHI study were compliance-adjusted and outcomes estimated at 5 years. A paper-based decision aid graphically represented the results with a personal worksheet allowing the assignment of personal values and weighing up the reasons for and against taking HRT.

If 1000 women aged 50 years take HRT over 5 years their risk of developing breast cancer will increase from 11 to 15 in 1000; their risk of abnormal mammography over two screening rounds will increase from 84 to 139 in 1000; their risk of stroke will increase from 4 to 6 in 1000; and their risk of thromboembolic disease will increase from 3 to 8 in 1000. However, after 12 months on HRT only 233 out of 1000 continue to have hot flushes compared with 483 out of 1000 taking a placebo tablet. Individual perceptions of risks and benefits are assigned 'values' using a personalized worksheet.

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39. EVIDENCE BASED TEACHING ABOUT REMINISCENCE

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Background: Bergen University College has evidence-based practice as one of the main targets for education and research. "Teaching shall be based on research" (St.meld 38-1989-99, a Norwegian white paper). I held an evidence-based lecture about reminiscence, a clinical method used in the field of geriatrics. The evidence-based lecture was a part of a larger lecture on this method where theoretical and practical knowledge was emphasized as well. The research question for the evidence-based part of the lecture was: What effect has reminiscence when it comes to improve cognitive functioning or behavior in demented elderly, and reduce depression in a general population of elderly?

Aims: The aim was that the students would learn about evidence-based knowledge when it comes to reminiscence.

Methods: A search for systematic reviews about reminiscence was done. Search strategy: A combination of the words review and reminiscence was used. It was searched in these databases: Cochrane Library, Medline, Cinahl, Academic Search Elite and Dare. Three systematic reviews were found, one of them being a Cochrane review. The other two reviews were submitted to critical appraisal and one of them had to be rejected due to insufficient quality.

Results: There is a stunning difference between the positive effects of reminiscence when it comes to statements from authors of text books on one side and the more realistic and down to earth statements from evidence-based researchers on the other side (Spector et al 2004, Hsiehs et al 2003). This paradox was elaborated in the lecture.

Conclusions: When it comes to evidence: Reminiscence does not improve cognitive functioning nor behavior in demented elderly. There is however some evidence that the method can reduce depression in a general population of elderly.
Student evaluation: The students were really interested in the evidence-based results.
Consequences for the role as a teacher: Preparing a research based lecture takes more time than traditional teaching.

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40. APPLICATION OF 3 NEW TECHNOLOGIES TO ACHIEVE INTERACTIVITY IN TEACHING EBHC

AlFozan H, ElBarbary M, Ferwana M, AlSuwaidan S, AlKnawy B

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Aim
To introduce new technological tools in EBM teaching to overcome the limitations of the classical tools that are currently used.

Methods
3 tools were used 1) ARS (audience response system), 2) PDA (personal digital assistance and 3) Tablet PC. The first one was used exclusively in plenary sessions while the last 2 were used both in plenary sessions as well as in small group teaching.

Results
In plenary sessions, utilizing of ARS with immediate graphical display of audience controversial opinions was impressive. These sessions received the highest evaluation among all plenary sessions in our courses. Tablet Pc allowed more interactivity in plenaries and avoided the previous difficulty to visualize the flip charts by several audiences. PDA connected to a data projector during plenaries was helpful in live demonstration of several concepts and terms of EBM and search strategies.
In small groups, the evaluation of participant/facilitator to the tools was very good. The interactivity was maintained with the avoidance of the limitations of the classical tools. The practice of a participant on his/her own PDA device also helped the use of this device later on for bedside EBHC practice.

Conclusion
EBHC teachers should have open minds to explore new technologies and its usability in EBHC teaching sessions. ARS, PDA and Tablet PC are among these technologies that can enhance EBHC teaching.

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41. USE OF INTERACTIVE EVIDENCE-LINKED ANNOTATED ALGORITHMS AS EVIDENCE-BASED DECISION SUPPORT TOOLS AT THE POINT-OF-CARE FOR IMPLEMENTING EBHC

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Background: Developers of evidence-based content (summarized evidence, evidence-based guidelines) usually present information in text format, supported by tables and graphs. EB care requires useful point-of-care tools to support decision-making. Point-of-care tools need to be robust, portable, quick, and able to be formatted into a small area of view. Text and tables do not translate well to the fast-moving realm of point-of-care decision-making. Many people learn through a combination of styles. A graphic presentation of information in an algorithm format with capacity to drill-down to deeper levels of information and supportive evidence may have great value. Results of a literature search for evidence of value and utility of algorithm presentation of evidence will be presented. Information about end-user preference or aversion will be presented. Evidence for improved data collection, screening, diagnostic testing, clinical decision-making, and improved patterns of resource use, safety, and quality of care will be reviewed.

Aims: Expand understanding and utilization of interactive evidence-linked annotated algorithms for presentation of evidence (guidelines, point-of-care tools, decision support).

Methods: This heuristic algorithm is an evidence-based set of rules intended to increase the probability of solving a problem in a finite number of steps. Interactive evidence-linked annotated algorithms support a robust efficient nonlinear heuristic approach to critical information needed at the major decision points in the clinical process, including ordered sequence of steps of care in a decision tree, recommended observations, decisions to be considered, and actions to be taken.

Results: Techniques are presented for developing evidence-linked diagnostic and therapeutic annotated algorithms with standardized EB format and methodology for the algorithm and annotations. Application of internet-based versions of evidence-linked algorithms, numerous examples discussed.

Conclusions: Development and deployment of evidence-linked algorithms should be promoted for improved teaching, learning, and implementation of clinically-relevant evidence-based healthcare.

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42. BAYESIAN THINKING IN EVIDENCE BASED DRUG THERAPY

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Background The authors of a recent BMJ article state that it is ironic that clinicians apply Bayesian reasoning in framing and revising differential diagnoses without necessarily undergoing, or requiring, any formal training. We suggest the same is the case for therapeutic inferences.

Aims Whereas the use of SSRIs in children has been restricted recently, regulatory agencies recommendations for use in adults have hardly changed. We wanted to locate data refuting the null hypothesis of no increase in suicidal activity in adults on antidepressants.

Methods We had the opportunity to look into mostly un-published, pre-marketing clinical trials for the SSRI paroxetine. In 16 studies in which paroxetine was compared with placebo, we found 7 suicidal attempts in patients on the drug and 1 on placebo. There were no completed suicides among these patients, whereas suicidal ideations were clearly under-reported. There were 190.7 patient years with paroxetine and 73.3 with placebo.
The BMJ article poses the question: what did you expect in advance? To take previous knowledge into account, we chose to calculate with various opinions held in the literature regarding the probability of SSRIs having an effect on the risk of suicides. One author claimed that suicidal activities were probably slightly reduced; another found a slight increase likely; whereas a third author believed that the risk most probably was doubled. We expressed the three opinions numerically and combined them with our new data by using Bayes' formula.

Results We arrived respectively at 79%, 85 % and 90 % probabilities for increased intensity rates of suicidal attempts with the various prior probabilities. These findings were later confirmed and strengthened by other authors using other data (two articles in BMJ February 19th.)

Conclusions Health care students should be introduced to Bayesian theory as a component of their training in evidence based health care.

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43. TEACHING EVIDENCE BASED SKILLS TO POSTGRADUATE DOCTORS

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Background. Italian medical schools offer no training in Evidence Based Medicine, be it during basic medical training or specialization. A postgraduate educational programme, therefore, becomes necessary. An effective learning strategy must be found for busy clinicians working in large hospitals who find it particularly difficult to learn and maintain competence in EBM .

Aims. To evaluate the use of a Journal Club in learning and applying critical appraisal skills to the literature, and then implementing these skills within the setting of the Department of Internal Medicine at a large Roman hospital.

Methods. In 2004, after a basic training programme in critical appraisal, 27 weekly meetings were held, each lasting 90 minutes, for a total of 40.5 hours. The discussions and appraisals at each meeting adhered to a rigorous methodology and were led by two EBM experts from GIMBE (Gruppo Italiano Medicina Basata sulle Evidenze). At the end of the 27 meetings, the 20 participants answered a questionnaire and scored (from 1 to 10) their ability to: look for relevant literature on a database, recognize an article's study design, understand if the results of a study were evaluated with ITT analysis, calculate the NNT, distinguish a systematic review from a narrative one, and understand a metanalysis.

Results. The mean score for all items on the questionnaire ranged from 6.8 to 9.7. It is interesting to note that, after learning these skills and having had an opportunity to practice them within the Journal Club, participants report now searching databases for an average of 25 articles per month in order to answer clinical queries.

Conclusions. A Journal Club is a useful strategy for acquiring and applying critical appraisal skills—a core competency in the practice of EBM—and seems to be a valid instrument for continuing the medical educational of postgraduate doctors.

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44. THE EFFECTED OF DIETARY EDUCATION UPON LEVEL OF BLOOD SUGAR OF PATIENTS WITH NIDDM

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Background: dietary modification is on of the most important in the therapeutic plan of patients withNIDDM

Objective: to evaluate the efficiency of dietary education upon the level of fasting blood sugar of NIDDM patients.

Methods: In a semi experimental clinical trail,74NIDDM patients the randomly classified in tow to groups as experimental (38) and control (36).The experimental group received dietary education by the use of portrait ,lecture and question and answer in three session .The level of fasting blood sugar of both groups was evaluated one week before and after the experiment .

Findings: The findings indicated that the majority of patents were female (74.32%) ,housewives (71.62%) and the age range of 50-59.There was no significant difference in the level of fasting blood sugar of the patients before the experiment (t=1.78)in which the percentage decreased in the experimental group after the experiment($p<0.001$).

Conclusion: Dietary education is a suitable method in decreasing the blood sugar of diabetic patients .

Key words: Diet, NIDDM, education

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45. EBN EDUCATION IN ITALY

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The EBN Study Centre is the major EBN teaching setting in Italy. Since 2000, hundreds of nurses, midwives and physiotherapists have been educated all over Italy. In EBN Study Centre there are 6 senior teachers, 7 junior teachers and other 4 in training. The teaching program is developed in 6 days:

- 1° day – EBN methodology, questions and Medline language;
- 2° day – Randomized Controlled Trials search and critical appraisal;
- 3° day – Observational studies search and critical appraisal;
- 4° day – Systematic reviews search and critical appraisal;
- 5° day – Guidelines search and critical appraisal;
- 6° day – Workgroups on specific topics chosen by learners.

All the educational days, but the last one, include sessions of theory, practice and training.

To understand the quality level of our educational courses, we made a survey by which knowing:
- characteristics of learners;
- motivations and expectations;
- major topics of interest and major difficulties;
- topics to be improved in the future;
- use of EBN and its outcome in clinical practice.

105 questionnaires (70%, 16% of all the trained practitioners) returned back to EBN Study Centre.The poster will show the data analysis of the questionnaires.

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46. PRESSURE ULCERS MEDICATIONS: A CLINICAL AUDIT

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In 2002, Bologna University Hospital produced evidence based practice guideline on pressure ulcers prevention and treatment. All the evidence came from all the best international clinical guidelines about the same subject. In 2003, after reviewing all the medication products, further recommendations were produced. A medication cost analysis, performed among all the wards involved, showed a huge difference in the use of medication products. Therefore, in 2005, we decided to carry out a clinical audit in order to verify the level of adherence to the practice guideline. We performed it in 6 representative wards, where are treated different kind of patients. They were: 1 internal medicine, 1 rehabilitation unit, 1 geriatric unit, 1 intensive care unit, 1 orthopaedic unit, 1 long term unit.

In the sample wards, we selected patients' clinical and nursing records during 3 consecutive months. We used a tool in which ulcer pressure conditions and medication products used in each stage and situation were recorded.

We will show data analysis of the clinical audit and how doctors and nurses were involved in the sample wards.

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47. INTEGRATING EVIDENCE BASED PRACTICE ACROSS CURRICULA AND CONTINUING EDUCATION PROGRAMS

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There is an overwhelming amount of literature available to clinicians. Electronic databases currently index approximately thirty thousand journals published annually and thirteen million papers are cited in Medline. This wealth of information is available to health professionals to assist them in their clinical decision making and has the potential to influence and direct the care they provide. In today's busy clinical environment critical appraisal is of vital importance, however it may seem a daunting task. It is essential that health professionals develop skills in critiquing research with regard to the applicability, relevance and validity of study methods and findings.

Although many health courses teach critical appraisal, there are few practical tools that are readily available to assist students to conduct appraisal in a structured and consistent manner. In response to this need, a self-directed internet based resource has been developed by the Joanna Briggs Institute to assist students to develop and enhance their critical appraisal skills. By using established data collection tools and offering users the possibility of publishing this appraisal in the form of a refereed report, it is envisaged that the program will increase the motivation of students to conduct critical appraisal in a structured manner. This resource has been developed specifically for students of all health care professions and is designed to include processes to appraise and summarise evidence from a wide range of sources including the results of prognostic, risk, interventional, economic, experiential and diagnostic study types, as well as systematic reviews of intervention.

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48. EMBEDDING THE EVIDENCE IN THE MEDICAL CURRICULUM – ONCE IS NOT ENOUGH!

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The inclusion of evidence-based medicine into medical undergraduate courses is not new. But is it enough just to *add in* the principles and practice of evidence based health care (EBHC) to an already crowded curriculum? If we accept that teaching the skills needed to practice EBHC is a good thing, then getting it into the curriculum is just the first step. The second step that needs to follow is that like other clinical skills, adequate practice and competency needs to be achieved. Dedicated time is needed to teach the fundamentals of EBM, but without opportunities to practice these newly acquired skills, they are quickly lost. Additionally, skills not perceived as relevant or a priority by students or teachers in the mainstream curriculum are likewise quickly abandoned. All subjects in a crowded curriculum compete for space and priority. Compelling arguments would ne needed to address the current weighting towards the biological and clinical components in medical education. Conversely, a successful claim for dedicated time to develop EBHC skills will inevitably result in less time for what are presently seen as core clinical skills. However the liklihood of success is mitigated by the weight of influence in the allocation of time and topics which is not often with the proponents of EBHC.

An alternate strategy is proposed to include the principles and practice of EBHC as key elements of the core subjects across all years of the course. The advent of the five-year medical undergraduate course at Monash University in Melbourne Australia, in 2001 has been an opportunity to incorporate EBHC into all years rather than as a single stand-alone topic in any one year. The focus of this paper will explore some of the successes and barriers of integrating EBHC in the medical undergraduate curriculum.

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49. RELATIONSHIP BETWEEN MATERNAL PSYCHOSOCIAL STATUS AND PREGNANCY OUTCOMES

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Pregnant mothers with high anxiety level are likely to produce who are hyperactive and irritable, have sleep disorders and low birth weight newborn. The main objectives of this study were to examine the correlation between psychosocial status of mothers during pregnancy and pregnancy outcomes.The present research is comparative study. In order to collect information questionnaire consisted of individual characteristics and a data record form included pregnancy out-comes (L.B.W, IUGR, preterm labor) were used.The questionnaires were completed at 25-29 weeks of gestation by the participants, and the data record forms were filled out by the researcher after the delivery of participants were completed.Three hundred and sixty subjects including nuliparas and multiparas (Para 0-4) from two population groups (women with appropriate and inappropriate psychosocial status).Who were classified using a psychosocial status questionnaire (Copper 1996) were se-lected through consecutive sampling method (N=180 for each group). Three health cen-ters and the delivery ward of Mobini hospital of Sabzevar, were chosen for the study.Findings indicated that psychosocial status of mothers were associated with L.B.W (P=0/005), IUGR (P=0/028) and preterm labor (P=0/00). Also finding showed that mothers occupational status and montly family income were 2 variables with confounding effect on pregnancy outcome within both groups. Our suggests that women with poor psychosocial status are at increased risk for L.B.W ,IUGR and preterm labor, therefore interventions such as emotional support by family and health care providers should be targeted at these women to relive their emotional distress and also to enhance their self-steem and confidence.
Key words: Pregnant mothers, psychosocial status, Pregnancy outcome.

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50. TEN RULES FOR CAT

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Background: Critical appraisal of topics is one of the cornerstones to practice EBHC. The process can be extensive, exhaustive and time consuming to the extent to be prohibitive for beginners.

Aim: To summarize for beginners a simple 10 rules of thumb to perform CAT in a quick manner with including mnemonics for easy memorization.

Methods: 10 rules of thumb was given to beginners in introductory EBM courses. The **10 rules of CAT** are:
1) Read abstract and choose only interesting articles and find its aim (usually last phrase in abstract) **2)** Do NOT read the introduction, discussion and conclusion **3)** Classify the article and get the CAT worksheet corresponding to its type **4)** Follow the **VAR system**, **V**alidity, **A**pplicability and **R**esults **5)** If Validity fails, you may stop here **6)** Results has to be assessed in ***clinical*** significance by **MP** (**M**agnitude & **P**recision) **7)** Applicability in the **IPP** (**I**ntervention, **P**opulation & **P**references) **8)** Make your own conclusion and compare to study conclusions **9)** Check your CAT against the CAT of a colleague whenever possible **10)** Plot your article in VAS [visual analog scale] between perfect [100%] to useless[0%]

Results: These easily memorizable 10 rules of thumb with its mnemonics were highly perceived by beginners in the introductory EBM courses. The participants managed to apply it within short time in an actual CAT effectively.

Conclusion: Using simple rules, worksheets, mnemonics with ignoring the non-essential parts of articles may give beginners an easy road map to start performing their own CAT

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51. IMPLEMENTING EVIDENCE-BASED PRACTICE IN 45-ECTS CLINICAL POSTGRADUATE EDUCATION IN DIABETES NURSING.

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Background Diabetes is increasingly common throughout the world, and how to best prevent, diagnose and manage the disease is an important health and economic issue. Evidence-based practice is rapidly replacing the traditional paradigm of authority in healthcare decision making, and it is a great challenge for to systematically implement evidence-based practice in diabetes nursing education.

Aim To implement evidence-based practice in postgraduate education in diabetes nursing by 1) teaching students skills for evidence-based health care; 2) educating the students to be able to use current best evidence in clinical decision-making; 3) preparing the students to understand the principles of developmental work and research projects in the clinic.

Method We have developed a systematic 45-ECTC postgraduate program in diabetes nursing including modules teaching the students how to ask the right question, searching the literature, and perform critical appraisal of the findings. During the study the students gain experience of using best available evidence in prevention as well as care, cure and rehabilitation. The students write a paper; literature review, article or project plan and present it in workshops or seminars.

Results We have obtained some experience in how to implement evidence-based practice into the curriculum of postgraduate diabetes nurse education. A systematic evaluation of the process is about to be assessed.

Conclusion Diabetes care is multi-disciplinary, and involves co-operation and collaboration of many practitioners. The program provide the students with skills and an evidence base on which the complex set of decisions of best clinical practice should rest.

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52. LIBRARIANS ROLE IN EVIDENCE BASED PRACTICE

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The nation's health sciences librarians continue to play a significant role in the expert retrieval and evaluation of information in support of knowledge and evidence-based clinical decision making at all health institutions. Librarians also have a responsibility to help train future health sciences practitioners and other end users in the best retrieval methods for knowledge-based practice, research, and lifelong learning and to help them identify which information needs should be addressed by expert searchers.

The presenter will discuss the emerging interest and need in librarians as expert searchers. He will suggest definitions of expert searching and place them in light of today's clinical application. He will ask and answer the questions, how do librarians help prepare students for evidence-based practice? And what is the role of the new medical library? Utilizing examples of evidence based searching in both the hospital setting and how it is being currently integrated within academic curriculums.

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53. HOW DO PHYSICAL THERAPY STUDENTS ANALYZE EVIDENCE ASSOCIATED WITH THEIR CLINCAL EXPERIENCES? IDENTIFYING TRENDS AND AVOIDING PITFALLS.

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Background: While Sackett suggests clinical decision making occur with equal weight given to expertise, patient values, and the best research evidence, literature implies that practitioners often rely heavily on the first two components of the model and place less emphasis on the existing evidence when managing patients. Physical therapy education programs have attempted to bridge this gap by training prospective clinicians in contemporary principles of EBP. Identifying effective methods of teaching these principles represents a challenge, considering that little is known about the outcomes of such attempts.

Aims: This presentation is meant to analyze how students instructed in principles of EBP interpret and put such ideas into action. It will examine a method of engaging students in the evidence based process, assess their approach in this task, and report trends associated with their efforts.

Methods: Second year physical therapy students previously receiving instruction in EBP presented cases studies of patients treated during a five week clerkship. A literature review of the supportive evidence for the management of their patient was a key element of this assignment. Observations of students' conclusions regarding these issues were compiled based on oral and written reports.

Results: Student commentary on the evidence associated with their cases tended to focus on substantiation of the interventions used, while neglecting to report research contradicting such approaches. In addition, presentations and papers included minimal consideration for the strength of the evidence or the quality of the source.

Conclusions: When faced with this type of task, students may default to seeking out supportive evidence without ample consideration for the source or strength of such information. Instructors of EBP should emphasize objectivity and the importance of evaluating the strength of cited evidence. Suggestions for addressing these considerations will also be discussed.

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54. ESTABLISHING BEST-EVIDENCE PRACTICES IN VETERINARY MEDICINE

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Background The evidence used to make decisions in veterinary medicine is generally a diverse collection of research, anecdotal evidence, case studies, and opinions of practitioners. In the majority of veterinary medical issues, randomized clinical trials are virtually nonexistent and the studies that do exist have little standardization. The search for “best evidence” therefore becomes a complicated task of sorting through marginally related information and placing a weighted value on the information as a means to make evidence based decisions.

Aim In order to provide tools for practitioners, an explicit methodology for developing best evidence veterinary practices needs to be established. The aim of this project is to develop a method for evaluating individual components of related, yet dissimilar evidence by ranking the value of the available information. Once established, this methodology can be used to make best evidence veterinary practice decisions.

Methods A matrix was developed containing important factors of each study, test, or other source of evidence. A numerical value was then assigned to each component based on where it stood in the hierarchy of evidence. For example a double blinded randomized clinical trial is the most desirable form of evidence and warrants the highest value. A collection of case studies rates lower on the hierarchy and receives a lower value. Point assignments were made for other components of the studies not routinely addressed in statistical analysis.

Conclusion Best-evidence medicine takes into account research findings, clinical experience, and other sources of information. This project provides a method to rank available research findings by identifying where a particular piece of evidence lies in the hierarchy of evidence and the weight it should be given. It is hoped that the method developed herein will provide practitioners with greater confidence and justification in making medical decisions.

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55. THE EVOLUTION OF EVIDENCE-BASED HEALTH CARE (EBHC) AT THE AMERICAN UNIVERSITY OF BEIRUT MEDICAL CENTER (AUBMC)

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Background The Faculty of Medicine at AUB has existed since 1867.
In 1998, EBHC started at AUBMC by a bottom-up approach. Faculty members from various disciplines who were interested, motivated and trained in EBHC voluntarily created a working group called the Working Group on Medical Education (WGME). Between 1998 -2003, the WGME members worked on an entirely voluntary basis, investing personal time and generating funds from drug companies

Methods In 1999 and 2001, WGME conducted two major faculty-oriented workshops on EBHC. These workshops were led by WGME members with the help of an expert (Dr. V. Moyers) from the US. The workshops were attended by AUBMC faculty members and doctors from Lebanese institutions and other Arab countries.
In 2001, a workshop was also created and dedicated to the medical students in their clinical years. Parallel activities in EBHC were being introduced and developed within the various departments in the faculty of medicine throughout these years.

Challenges
- Faculty enjoyed the workshops but claim they lacked time to implement EBHC.
- Certain senior faculty members resisted change.
- Teaching activities needed justification, as the courses were not officially part of the curriculum.

Achievements In 2003 the WGME gained official recognition by the Dean of the Faculty of Medicine and an Evidence- Based Health Care Committee was established. The committees' goals include: providing on-going training in EBHC decision making, having a trained member in each department to disseminate learned skills and activities and provide support to training peers, and make EBHC mandatory in the medical school curriculum.

Current ongoing EBHC curricular activities include "developing and refining literature searching skills", conducting "journal clubs" and "morning reports" in the departments of Family Medicine, Internal Medicine, Pediatrics, Surgery and the School of Nursing.

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56. PRIMIPARA'S CONCERNS AT FIRST AND SIXTH WEEKS POSTPARTUM

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Background: Birth is a time of physical and emotional transition for the women. For helping them to successfully pass this transitional period, it is necessary to identify their concerns.

Objective: To determine the differences between primipara's concerns at first and sixth week postpartum

Design: It was a comparative study, through consecutive sampling method 300 primapara's mothers were selected, 150 were assigned for the first group (1st week postpartum), and the rest were considered as the second group (6th week postpartum).Data were collected through self-reporting questionnaires. Mother's concerns were defined in three dimensions: related to mother (self-care), related to newborn and related to family in three aspects: worry, interest and confidence.

Results: Findings showed that at 1st week postpartum, mothers were worried about pain on genitalia, sutures, subsequent infection possibilities. Regarding their babies, they were worried about jaundice, diaper rashes, safety, infections, crying and problem of their infant protection during their absence. Mothers also expressed their worries about sexual resumption and another pregnancy. On the other hand, at the 6th week postpartum mothers had lots of interest and confidence. They were still worried about the possibility of newborn infections and another pregnancy. Findings showed significant differences between concerns related to mother appearance ($p<0.001$), as a whole maternal concerns ($p=0.002$), neonatal appearance ($p<0.01$), neonate care ($p<0.01$), neonate behavior ($p<0.01$), as a whole neonatal concerns ($p<0.01$), relatives reactions ($p=0.001$) and family related concerns ($p=0.032$) at 1st and 6th week postpartum.

Conclusion: Being aware of postpartum concerns and its differences during this period may guide health providers to think of appropriate plans and interventions for mothers.

Key Words: postpartum concerns, maternal concerns, neonatal concerns, primipara

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57. APPLICATION OF EVIDENCE BASED MEDICINE PROCESS TO UNDEGRADUATE AND POSTGRADUATE MEDICAL EDUCATION

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Background: EBM as the pragmatic process of using the literature to benefit individual patients is becoming a powerful educational tool and a model for lifelong learning.

Aims: With the rapid expansion of clinically relevant information, medical graduates should be able to gain, assess, apply and integrate new knowledge through their professional lives. Palacký University Faculty of Medicine (Olomouc, Czech R.) has been trying to implement the EBM component as a longitudinal theme of the revised curriculum in cooperation with the Institute for Postgraduate Medical Education (Prague, Czech R.)

Methods: Re-engineering. of medical education.
- E-learning.
- Best evidence medical education (BEME).
- Team building for conducting systematic reviews.

Results: In 2004, new EBM courses were incorporated into the existing undergraduate and postgraduate curricula:
- Elective course for 3rd year undergraduate students. Contents: searching for best evidence. Taught by medical librarians. Organized in 6 blocks over 1 semester
- Compulsory intensive EBM course for 6th year undergraduate students. Contents: Clinical application of biomedical literature, moving from evidence to practice, pediatric clinical scenarios. Taught by: epidemiologists, clinician-teachers, medical librarians. Organized in10 blocks over 1 week.
- Interactive course for postgraduate students "From Medline to the Cochrane Library". Taught by: medical librarians. Duration: 3 hours.

A new team (2 clinician-teachers, 4 undergraduate students, and 1 medical librarian).
was established for systematic reviews development. The team leader got registered as a member of the Cochrane Renal Group to prepare a systematic review on "Diuretics for nephrotic syndrome".
A web-based tutorial with interactive case reports will be launched in December 2005.

Conclusions: Teaching EBM is a great challenge for medical educators. They can make future physicians "addict" to best evidence in their future careers. Institutions offering postgraduate and life-long medical education should help incorporate EBM into clinical practice.

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58. ROLE OF MEDICAL LIBRARIANS IN PROMOTING EVIDENCE BASED HEALTH CARE (EBHC) AT THE AMERICAN UNIVERSITY OF BEIRUT (AUB)

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Aim To introduce the information retrieval skills required to optimize medical education, research and patient care.

Background The Saab Medical Library is both a virtual and a traditional library. It acts as a National Focal Point, for health information, for the WHO/Eastern Mediterranean Region.
Since 1998, the medical librarians have played a major role in providing the resources and training healthcare professionals in information management skills.

Methods The process began with a self learning initiative by the medical librarians. This entailed reviewing EBHC literature, and attending in-house workshops.
Once these skills were acquired the medical librarians provided weekly workshops on searching various databases mainly MEDLINE, then progressing to PubMed, Cochrane, Databases. Initially the attendees were observers, however more recently the workshops include hands –on training. Live sessions were given to in-house members, and also a web-based tutorial was published on the library homepage.
Introductory workshops were offered on the retrieval of EBHC literature to other medical institutions in Lebanon and neighboring countries in the Middle East.

Conclusion Despite initial resistance to change, medical librarians are increasingly being approached by faculty members for assistance and training.
The medical librarians are founding members of the EBHC Committee, and are playing an active role in learning and teaching EBHC.

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59. BUILDING EVIDENCE-BASED TEACHING SKILLS

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Background Public authorities and patients generally expect health care professionals to base their practice on best evidence. This means training health care students to handle this challenge. Evidence-based practice, still a relatively new concept in Norway, poses great challenges for both instructors and students as it is implemented in the curriculum.

Aim Bergen University College gives priority to evidence-based health care. We therefore contribute to evidence-based practice by 1) educating health care workers who can incorporate research into clinical decision-making; 2) participating in developmental work and research projects with practice; and 3) facilitating the accessibility of research by summarizing and communicating research.

To achieve these aims, we are improving professors' skills in teaching evidence-based practice. We started to systematically implement evidence-based teaching in three postgraduate programs: anesthesia, diabetes nursing and midwifery.

Method We introduced staff to a systematic qualification program of 15 credits in the European Credit Transfer System. The How to Teach and Work Evidence-based Program promotes the use of research in the instruction of future health care professionals.

The program introduces evidence-based health care and shows how to teach the steps in evidence-based practice and how to implement research in instruction. The participants write a paper integrating evidence-based teaching methods into education and are evaluated by colleagues from the same program.

Results We have obtained experience in how to teach evidence-based; it has provided us with common understanding and perception of the concept. The experience gained is expected to be valuable in further work.

Conclusion The Faculty of Health and Social Sciences comprises several bachelor's and postgraduate programs. Many professors are participating in this program, enabling us to facilitate and give priority to building bridges between research and teaching.

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60. PROMOTING EVIDENCE-BASED MEDICINE AS A MEANS FOR IMPROVING DOCTOR-PATIENT COMMUNICATION AND QUALITY OF HEALTH CARE IN A CHILDREN'S HOSPITAL

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Better quality health care and a willingness to listen to what patients say depend crucially on continuing education and modalities of doctor-patient communication.

With the aim of implementing critical appraisal of the scientific literature, preventing errors and applying procedures to improve communication, we organized a course for nurses and doctors.

The course took place once a week over a 6-week period and participants were eligible for credits (CME) issued by the Italian Ministry of Health. The course was attended by doctors and nurses from the specialty departments in our Childrens' Hospital. On each day, evidence-based medicine techniques were used to address a specific topic (overview, diagnosis, prognosis, therapy, harm and communication). The standard timetable included plenary sessions to present the topic, the online information sources and a scientific publication; a small group session (5 participants and 1 tutor, equipped with a personal computer) and a 2-hr session when each group presented their work.

An initial 18-item questionnaire, used to elicit information on the knowledge of the doctors and nurses showed 8.8/18 mean of correct answers. A final identical questionnaire had a mean of correct answers 15.56/18 (Physicians /Nurses = p not significant). According to a questionnaire, to assess the satisfaction after the course attended, we had: 92% Satisfied for relevance; 96% Satisfied for the quality of the course; 84 % Satisfied for the efficacy of the items (Physicians/ nurses = p 0.682 n.s.). Moreover, the participants completed a nurse-doctor-patient communication form that allowed them to share an evidence–based communication model.

Evidence–based medicine helps critical appraisal but if doctors and nurses are to improve better quality health care they should never loose sight of their relationship with the patient, promoting evidence based diagnostic and therapeutic pathways and respecting the child's dignity, values and preferences of the family context.

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61. DEVELOPING CLINICAL PRACTICE GUIDELINES FOR PRIMARY CARE IN UZBEKISTAN

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Background: The Evidence Based Medicine Centre (EBMC) was established in April 2004 by the Tashkent Institute of Advanced Medical Education (TIAME) under its department of Organisation, Economics and Management in Healthcare, with assistance from the ZdravPlus Project. The ZdravPlus Project builds on the successes of the five-year USAID-funded ZdravReform Project, also led by Abt Associates. ZdravPlus continues to provide technical assistance and training to improve the quality and efficiency of health care services in Uzbekistan, The mission of the ZdravPlus Project is to contribute to improving the health of Central Asian populations through the development of a health delivery system that is linked to communities that expect, request, and receive accessible, equitable, and high quality health care services.

Aims: The EBMC has set itself the aim of promoting the concept of EBM as a scientific discipline, thus enabling health care providers to deliver service provision and patient care in the most effective, efficient and safe way. Through this aim the work of the EBMC will make a significant contribution to improving the quality of care for patients in Uzbekistan.

Objectives and Methods: The objectives of the EMBC include the following priorities:
The development of clinical practice guidelines (CPG) and protocols for primary health care physicians and other health care facilities. The training of faculty medical institutes, general practitioners, various medical specialists. The development of training curricula and materials in EBM. The development of the national information database of evidence based information, with bibliography and full text search i.e. the EBM Information Library.

Results: EBMC Products:
Clinical practice guideline Development Manual; Clinical Practice Guideline on Screening Prevention and Treatment if Iron-Deficiency Anemia; CPG on Hypertension. Currently EBMC group is working on developing CPG on Management of UTI in Women

Conclusions: By so doing, the quality of health care can be improved substantially.

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62. THE DEVELOPMENT, DISSEMINATION, IMPLEMENTATION AND EVALUATION OF A CRITICAL PATHWAY FOR MYOCARDIAL INFARCTION: THE EXPERIENCE OF A LARGE EUROPEAN TEACHING HOSPITAL

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Background: Critical pathways are "management plans that display goals for patients and provide the corresponding ideal sequence and timing of staff actions necessary to achieve those goals with optimal efficiency". Managers embraced critical pathways as a strategy to reduce unexplained variation in medical practice. Particularly, in the cardiovascular arena a mature guideline process is supporting their development driven by the need of increasing efficiency for high cost high volume procedures.

Aims: The objective of this study was to develop, disseminate and evaluate a multidisciplinary critical pathway for the management of patients with St-elevation acute myocardial infarction (STEMI), in a large European teaching hospital.

Methods: Our study was conducted at the S.Orsola-Malpighi hospital in Bologna. We performed a prospective before and after study design. The care path was implemented in January 2004. The pre-pathway period refers to the year 2003. The care path was developed as an educational tool supported by a computerized flowchart. The following performance measures were taken into consideration: number of PTCA performed over the number of patients with STEMI, crude and adjusted 30-days all causes in hospital mortality.

Results: In 2003 the number of patients who underwent primary percutaneous transluminal angioplasty (PTCA) was 322 (67.8%) while in 2004 it was 238 (77.0%). A statistically significant increase in the number of PTCA was registered in 2004 (Binomial, p-value=0.0026). The 30 days in-hospital mortality rate among STEMI patients was 15.6% in 2003 and 9.39% in 2004. The STEMI cases diagnosed in 2004 had 44% statistically significant decreased odds of 30-days in-hospital death when compared to the cases registered in 2003 (OR=0.56, 95%C.I. 0.35-0.88).
Conclusion: Critical pathways for the management of patients with ST-elevation myocardial infarction, implemented as computerized educational tools, have strong impact in improving the quality of care.

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63. TEACHING EBM IN NON-SUPPORTING ENVIRONMENTS. INTRODUCING EBM AS A COURSE ABOUT MEDICAL SOURCES OF INFORMATION

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Despite evidence of its feasibility (J Gen Intern Med. 17:58, 2002), introduction of clinical problems, and particularly EBHC, during preclinical years is adversed in many medical schools. At the University of Siena, Medical School, which is strongly oriented toward a traditional curriculum, we organized problem-based learning course for students in the first three years, with the aim of promoting critical thinking, team working, and problem-solving skills. The course is named AISMe (Interdisciplinary Learning of Medical Sciences) and consists in 8-10 weekly meetings in groups of 10-12 students in each year. The first year is mostly devoted to basic group learning and problem-solving skills. In the second year, the PBL method is applied to the learning of the sources of scientific information, Pubmed searches, and reading scientific papers (mostly reviews) about topics covered in the semester. The third year is dedicated to problems requiring the search and appraisal of clinical studies and systematic reviews about diagnosis an therapy. Results are comforting. Although students' satisfaction gradually decreases over the years, at the end more than 75% of the students still declare being satisfied of what they learn. The mean score in an 11-item knowledge test was 9.6 ±0.1 and for assessment of validity, results and application of evidence from a scientific paper (each on a 0-3 scale) were respectively 2.0±0.1, 2,4±0.1 and 2.3±0.1. The degree of perceived learning was strongly correlated with the score in the the multiple choice questionnaire ($p<0.0001$), but not with the scores for critical appraisal. Main complaints from the students were articles in English , lack of time, and feeling unprepared to discuss some topics. The most liked aspects were being introduced to scientific papers, to Pubmed, clinical problems and small group discussions.

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64. WHY DO SOME CLINICIANS ACCESS RESEARCH FINDINGS TO INFORM THEIR CLINICAL DECISIONS AND OTHERS DO NOT?

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Background: Evidence-based practice has been a dominant theme within NHS policy for over a decade. The literature suggests that the uptake of research findings into clinical practice continues to be variable. Frequently reported barriers to using research findings in practice have been: lack of time, lack of skills to access and appraise research findings and lack of managerial support.

Aims: The aims of this study were to explore beyond these reported barriers and determine clinicians' reasons for accessing or not accessing research findings to inform their clinical decisions.

Methods: Participants were selected using a questionnaire, but the principal method used to explore clinicians' motivation to access research findings was semi-structured interviews. Focus groups were used to test the validity of the findings. The participants were: district nurses in community clinics and GP practices and physiotherapists in hospital physiotherapy out-patient departments.

Results: The motivators and de-motivators to accessing research findings transcend the barriers reported in the literature. The findings from this study showed that clinicians' purposeful decisions to access research findings appeared to satisfy personal needs for the information, such as following their particular clinical interest, studying for a higher degree or wanting the knowledge for its own sake. Research findings were not used to inform specific clinical decisions. Clinical queries were addressed primarily by accessing knowledgeable colleagues. Casually browsing journals served to enhance background clinical knowledge. Sources of evidence to inform clinical decisions were accessed in a sequence based on clinical usefulness and accessibility. In this sequence, colleagues tended to be accessed first and research findings last.

Conclusions: The findings suggest that Sackett's hierarchy of evidence (Sackett et al 1997) is inverted in the real world of clinical practice. Clinicians accessed sources of evidence for clinical decisions according to an "Inverse Law of Evidence".

(Sackett, D. L., Richardson, W. S., Rosenberg, W. M. C., and Haynes, R. B. (1997) *Evidence-based Medicine: How to practice and teach EBM.* Edinburgh, Churchill Livingstone.)

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65. PROBLEMS WHEN WRITING ABOUT EVIDENCE-BASED ADL

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Background: I am writing a text book about ADL (activities of daily living). One of the chapters in the book deals with evidence-based ADL. The book will be published in the spring 2006.

Aims: To present evidence-based knowledge about effects of ADL interventions and their implications for practice in the text book.

Methods: In order to limit the search and improve the quality of the search, it was only searched for reviews and systematic reviews from 1990 up until today. The search was done in databases such as Cochrane Library, DARE, Medline, Cinahl, Eric, Psyc INFO and Academic Search Elite.

Results: Five systematic reviews from Cochrane Library, two systematic reviews and five reviews were found suitable and analyzed. The articles dealt with ADL-interventions for separated target groups as patients with stroke, rheumatoid arthritis, multiple sclerosis, Parkinson's disease, chronic mental illnesses, children with cerebral palsy etc. Each article presented several ADL-interventions. Examples of interventions were training of different skills such as personal hygiene, feeding, dressing, domestic skills, managing money, providing assisted devices, but also other than ADL-interventions. Especially in one intervention called *comprehensive occupational therapy* that included six other interventions, it was impossible to separate the different interventions from each other.

Conclusions: I found surprisingly many systematic reviews that dealt with the effect of different ADL-interventions, even though many target groups remains to be explored. However, the reviews had only to a small extent implications for practice. Very few reviews had clear conclusions. The explanation is that the included studies had too small numbers of patients or that their methodological quality was low. Almost the only certain conclusion was that more research was needed. For my part, searching in systematic reviews for evidence-based effects of ADL intervention and their implications for practice was of little help.

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