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SECTION I: INTRODUCTION

1. BACKGROUND

What is Evidence-Based Clinical Practice?

The most popular definition characterizes evidence-based clinical practice as the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients.

However one defines EBCP, its practice involves a number of skills. These include:

- Defining clinical questions in a way that allows clear answers (*Ask*)
- Efficient searching for the best information to answer the question (*Acquire*)
- Appraising the evidence to determine its strength (*Appraise*)
- Extracting the clinical message from the information (*Apply*)
- Applying that information to ones' patients, including weighing risks and benefits in the context of patient values and preferences (*Act*)

Clinicians trained in both medicine and in epidemiology and biostatistics have developed strategies to deal with these challenges. Medical students, physician-trainees, and practicing clinicians have become aware that to practice optimally, they need to develop these skills. They look to their teachers, mentors and colleagues for help. Our workshop is designed for those who are, or will be, the role models and teachers of EBCP.

2. OBJECTIVES

An overarching objective of the workshop is to renew and enhance participants' enthusiasm about teaching EBCP, and to kindle their imagination about ways to improve their teaching. After participation in the Evidence-Based Clinical Practice workshop, the learner will develop the knowledge base and/or skill set to:

- Describe an approach for effective teaching of evidence-based clinical practice in different educational settings (on the wards, in out-patient clinics, tutorials, journal clubs, and large group sessions).
- Understand and describe the process of incorporating Evidence-Based Medicine into clinical practice.
- Advance their evidence-based clinical practice skills
- Describe effective and interactive means of teaching small and large groups settings.
- Identify high quality evidence-based resources for the purpose of patient care, teaching, and continuing education through independent learning

3. HOW WE ACHIEVE THESE OBJECTIVES

While the workshop includes a mix of large-group and small-group sessions, the major venue for learning will be in your small group. We encourage participants to consider the settings in which they will do most of their teaching and the challenges they face there. For many members, these settings are mostly on the ward or in the outpatient setting where the teaching opportunities are from 30 seconds to 20 minutes. Other opportunities are more conventional - morning report, journal clubs, noon hour rounds, or medical student tutorials. The groups work together to help one another develop interactive teaching strategies for each of these settings.

4. PROBLEM PACKAGES

The third section of this manual contains a set of teaching modules dealing with evidence-based clinical practice and critical appraisal issues. The clinical problems in these packages are specialty-specific but the overall format and methodologic documents are the same for all workshop participants. Each of these packages contains:

- an outline of the goals and objectives of the package
- a clinical scenario describing a patient problem
- one or more clinical papers pertinent to the problem posed in the scenario
- some worksheets for organizing ideas as readers work through articles

Participants evaluate the clinical papers and complete the worksheet using the relevant section of an evidence-based practice text they receive, *Users' Guides to the Medical Literature*. As we will note again later, we like to view these packages as a fall back - the optimal is for you to teach your own materials.

5. SMALL GROUP SESSIONS

As you will see from the program, we have scheduled eight small group sessions and these will be the primary learning forum of the workshop. Each group will have approximately eight participants, two tutors experienced in teaching evidence-based clinical practice and critical appraisal in the small group environment, a tutor-trainee and a librarian.

Each group will meet on Monday evening, review the members' goals and, building on prior online interaction, begin to set its agenda for the week. As much as possible, participants are grouped according to clinical specialty and level of EBCP expertise. Each group will chart its own course.

The small group sessions are highly interactive, and rely heavily on role-play. Participants define a clinical setting (e.g. on the ward or in an outpatient clinic with house staff, a medical school tutorial, a journal club) in which they will be teaching EBCP (with the exception of didactic lectures or Power Point presentations, which generally do not fit well with the goals of these sessions.) One group member is designated as the instructor, teacher, or facilitator, and other members adopt the roles of medical students, residents, or colleagues interested in learning EBCP. What varies are the settings, who takes the facilitator role, and the content in terms of the type of article and specific clinical problem being addressed. Our expectation is that everyone will present at least once during the tutorial sessions.

The teaching packages are suitable for one type of teaching exercise: a journal club or tutorial in which one has at least 30 minutes, and usually an hour or more, to review an article in some detail. We would encourage you to look over the packages (which you can find online) before the workshop, and decide on the extent to which they interest you.

As with most educational activities, however, you are likely to get the most out of the workshop if you prepare beforehand. You should begin thinking of your first presentation. Ideally you will consider a teaching opportunity you have encountered in the patient care arena, or in a specific teaching setting, and challenges you have faced evidence-based clinical practice in these settings.

You will continue these activities when you arrive in Hamilton. Searching for appropriate articles related to clinical problems appropriate to your own practice setting will require library work. The Health Sciences Library, located within McMaster Health Sciences Centre, is open from 8:00 a.m. to 9:45 p.m. (Tuesday -Thursday), and on Friday morning. A staff member will be available throughout the week to help locate articles. You can conduct free searches on a number of databases. You will have access to a computer lab throughout the week, and can conduct your own searches there with or without the help of a librarian.

The idea of the small group sessions is to use the tutorial sessions as a laboratory for trying out approaches that you would like to use in your home setting. You may elect to have the participants in your tutorial group role-play specific protagonists in your teaching scenario. This will augment the verisimilitude of your teaching experiment and create structure to your session.

6. SEARCHING SKILLS

A key component of EBCP is 'efficient searching for the best information to answer the question'. To help you to enhance participants' skills, most groups, and if we have enough librarians every group, will have its own librarian. The major roles of the librarian are to assist in the construction of well-built questions; the identification of high quality evidence-based resources; the development and enhancement of searching skills.

The librarian's expertise can be used by the group in tutorial sessions, in a scheduled 2-hour computer lab session or by individual students and tutors during study time or drop-in lab sessions. Most groups choose to have one computer laboratory session, typically co-run by a participant and librarian or a participant who had worked out the session's content with the librarian beforehand. How this session might be handled is up to each group, but it is important to remember that you have access to a skilled librarian who was chosen based upon her/his knowledge of EBM, small group teaching and searching. Please plan to take advantage of this opportunity!

SECTION II: SMALL GROUP PROBLEM-BASED LEARNING - MCMASTER HERITAGE

In this workshop, we adopt educational methods that were pioneered at McMaster, particularly in the undergraduate medical program. You may - or may not - be interested in this background. If not, skip to the next section.

1. PROBLEM-BASED LEARNING

Rationale:

A number of influences led to this educational concept:

- The 'founding fathers' of the McMaster medical school recalled their own medical education experiences. In particular, they recalled usually being unable to remember the facts (by which they had passed exams) from the first 2 years of medical school, for application to patients in the clinical years. They also remembered the difficulty of 'integrating' knowledge from a range of disciplines in the management of a single clinical problem.
- There was evidence from the general medical literature that retention is enhanced when facts are learned in a context, which closely approximates real life, e.g., a clinical problem.
- More recent research into how physicians think has clarified the nature of the clinical reasoning process. These insights include the central role of hypotheses which occur early in the clinical encounter and which strongly influence the sequence and range of clinical data obtained. This thinking process can be replicated in an educational setting, which begins with the analysis of a clinical case.

Strategies:

Given this rationale, the following strategies are used:

- All learning begins with the analysis of a clinical problem. There are no 'free standing' educational offerings by separate disciplines.
- Clinical problems are used both to stimulate exploration of issues from a range of disciplines, as well as to synthesize new learning.
- The small tutorial group (n = 5 to 8) is thought to be the best forum for this activity. These are given highest priority. All other events (e.g., overview, lectures, clinical skills sessions, etc.) revolve around the tutorial.
- The faculty tutor's role includes assisting students in problem analysis, stimulating critical thinking, making sure that groups work effectively, in a highly interactive manner, and evaluating student progress. A tutor is not primarily a 'content expert'.
- The criteria on which problems are selected include frequency, prototype value, treatability (where evidence exists that treatment or preventive interventions do more good than harm), and suitability for exploring concepts from several disciplines.

2. SELF-DIRECTED LEARNING

Rationale:

Again, several influences led to the adoption of this idea.

- In general, it seems that health professionals have limited motivation and skills to continue their learning. This becomes more apparent as they get older.

- Medical information becomes obsolete as new knowledge supersedes or contradicts the old. Within a decade of graduation, only a small proportion of the knowledge used by physicians was learned in medical schools.
- Research in education suggests that there is enormous variation in which individuals learn, both in terms of content and 'style'. It is therefore important to allow for flexibility and 'individualization' of the learning arrangement.

Strategies:

This rationale leads to the following specific strategies:

- The faculty tries to 'free up' the schedule so that students have sufficient time for self-study for group-work and for individual elective experiences.
- A delicate balance is struck between excessive structure (faculty guidance) and 'total freedom' (which, while desirable, may not be feasible given certain resources and schedule constraints). This balance is reflected in the way objectives are stated, in how tutors tutor, in how 'large group sessions' are arranged and in the availability of learning resources.

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