



## **EU EBM Unity Course**

### **Training the Trainers across the Healthcare Sector**

#### ***Learner's Handbook***

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## **Project 2 Training the Trainers Project**

Evidence based medicine (EBM) is considered an integral part of medical training, but integration of teaching various EBM steps in everyday clinical practice is uncommon. Complementary to existing programmes for learning EBM through theoretical courses, workshops and e-learning it is necessary to exploit learning opportunities in the clinical setting. However, clinical teachers lack confidence in teaching EBM in workplace. There is a need for continuing professional development (CPD) courses that train clinical trainers to teach EBM through on-the-job training by demonstration of applied EBM. We developed such a course to encourage clinically relevant teaching of EBM in post-graduate education.

E-learning sessions were designed to allow learning in the workplace during short breaks within clinical activities, with the option to interrupt and restart learning flexibly.

This project has developed a European Qualification in Teaching Evidence Based Medicine that will improve transparency across the European healthcare sector through a European training programme specifically for the training of healthcare trainers in EBM. This follows the success of our previous project where a critical

appraisal skills programme was provided for post-graduate doctors, consisting of one-day workshops in teaching the principles of EBM and critical appraisal skills.

The project has developed an EBM Training the Trainers curriculum that is integrated into clinical practice.

**The project includes an integrated course that will**

incorporate teaching of EBM in everyday clinical practice

be relevant to health care professionals across Europe

enhance and standardise the teaching of doctors

improve professional clinical guidelines

improve mobility of doctors

improve the care of patients

improve the efficiency of European medical practice

The project has a core curriculum for teaching EBM in various clinical settings. The curriculum is translated into 5 European languages and includes the innovative use of short video clips of real time clinical practice to demonstrate how EBM can be successfully taught in 6 different clinical settings.



## Overview of the course curriculum

The course consists of 5 modules accesses via the website [www.ebm-unity.org](http://www.ebm-unity.org)

- Module 1:** Ward Rounds
- Module 2:** Evidence-Based Journal Club
- Module 3:** Formal Clinical Assessment
- Module 4:** Outpatients Clinic
- Module 5:** Formal Clinical Meeting
- Module 6:** Clinical Audit Meeting

*Aims & objectives:* incorporate teaching of EBM in everyday clinical practice be able to incorporate teaching of EBM in everyday clinical practice

*Learning outcomes:*

At the end of each module, the trainer will be able to:

- expose knowledge gaps of ebm in the trainees and lead them to the construction of a specific structured clinical question
- 
- seek information from trainees on how they will track the best evidence to answer the question
- demonstrate (and get trainees to demonstrate to you) how clinical judgement is used to determine the extent to which research evidence can be applied for individual patient care

## Learning/teaching methods

An integrated teaching and learning approach is used involving the following:

- Identification of learning opportunities in a clinical setting
- Independent study
- E-learning: Using internet based e-learning tools to learn about the concepts underlying each module
- Innovative use of short video clips of real time clinical practice to demonstrate how EBM can be successfully taught in 6 different clinical settings
- Summative assessment

The course is structured into 6 modules and an introductory module at the beginning. The modules have to be taken in sequence 1 to 6.

Each module consists of:

*a self-directed, e-learning part*

The web-based e-learning tools are structured as short sessions (one or more per module) that each can be completed in 10-15 minutes by the learner. These sessions are aimed to give a basic understanding about the concepts involved in each module.

Learners are assessed at the end by multiple choice questions (MCQs).

The MCQ test is online and learners will be provided with a password when they are ready to take the test.

### **Technical requirements:**

To access the modules, basic computer software and internet access are required.

For the e-learning part, audio facilities need to be in place (i.e. external or integrated speakers)

# Modules



## Module 1 Ward Rounds

### Learning objectives

At the end of the module the trainer should be able to:

- To expose knowledge gaps in the trainees that leads to construction of structured question (issuing educational prescriptions)
- To seek information from trainees on how they will track the best evidence to answer the question
- To demonstrate (and get trainees to demonstrate to you) how clinical judgement is used to determine the extent to which research evidence can be applied for individual patient care

The aim of this module is to familiarise you (trainers) with the learning opportunities that arise during ward rounds to teach application of EBM in clinical practice. It will enable you to identify knowledge gaps and allocate questions in the form of educational prescriptions to trainees during ward rounds. It helps you to guide them in obtaining the relevant evidence and appraising them. Where evidence is obtained or known, it demonstrates how trainees are taught to demonstrate applicability of it to the individual patient.

### Learning opportunities

Trainers can teach trainees how to integrate research evidence with clinical practice through relevant trials and systematic reviews during their day-to-day clinical work. Learning opportunities can be created during ward rounds, outpatient clinics, formal assessment of trainees, journal clubs, case discussions, morbidity/mortality meetings to engage trainees in communal EBM activity. This module focuses on how integration of EBM in clinical management can be taught in ward rounds.

### Learning opportunities to apply EBM steps in clinical practice

Each clinical setting offers varying opportunities to teach application of the 5 EBM steps as discussed in the introductory module of this course. Ward rounds are optimally suited to help trainees identify their knowledge gaps and lead them to actively seek answers. They provide the opportunity for the teacher to help the trainee construct an answerable question and guide them towards obtaining the evidence by using relevant search terms in appropriate databases. Where feasible (e.g. the clinical librarian is present in the rounds), evidence is obtained at the end of the rounds and appraised for its validity and interpretation of results. In situations where there is prior knowledge of good quality evidence, it offers the opportunity to help the trainee assess the applicability of it to the care of the individual patient.

### **Evidence based ward round in delivery suite**

Ward rounds are an inevitable part of clinical practice. Every ward round in varying specialities is different, but ward rounds share some common features. They are usually attended by senior medical staff, trainees, midwives/nurses and the clinical librarian (in the case of evidence based rounds). It usually has a preliminary handover session where the previous team updates the next team on the current clinical status of the patients and plans for further management. The preliminary session is followed by the ward round where the teacher leads the team in the clinical assessment of patients and makes decisions regarding further investigations and treatment based on clinical findings and laboratory parameters. In evidence based ward rounds, there is a concluding session, where the evidence obtained is appraised and its applicability to the individual patient is discussed.

If your setting is not similar to the setting described here, you can use the link to see some tips on how to adjust it to your situation.

### **Case discussed**

The clinical question for discussion in this instance addresses the issue if the use of corticosteroids in pregnant women in preterm labour, at 28 weeks of gestation, to help reduce the risk of respiratory distress syndrome in newborns, and is the effect the same for women in preterm labour at 34 weeks of gestation? The base line risk for respiratory distress syndrome in newborns is much higher after 28 weeks than after 34 weeks, which is a good educational opportunity to explain the impact of baseline prevalence of disease on the numbers needed to treat. We suggest prevalence at 28 weeks of 50%, at 34 weeks at 10%, and a relative risk from corticosteroids of 2. The number of women needed to treat at 28 weeks to prevent one case of RDS is 4, as compared to 20 at 34 weeks.

### **Preliminary hand over session**

Let us discuss what can happen in the preliminary hand over session, based on the video example we just saw. You, as a trainer, are aware of the existence of good evidence on the use of corticosteroids in pregnant women in preterm labour, at 28 weeks of pregnancy and its relation in reducing the risk of respiratory distress syndrome in newborns. You expose knowledge gaps in the trainee by asking “what are the interventions available for preterm labour and their effectiveness with regards to outcome of the newborn?”

If he is unsure, you can help him frame a focussed question using the PICO format to compare the effectiveness of corticosteroids.

This structure can be used as an educational prescription which can be quickly handed over to a trainee for them to follow it up when an opportunity arises in their busy schedule. You set a time frame (taking into account the urgency of the clinical problem) and specify who is responsible for answering it.

A sample of educational prescription is available at [www.cebm.utoronto.ca/doc/edupres](http://www.cebm.utoronto.ca/doc/edupres) . You help the trainee to identify the search terms using PICO to search in relevant databases. The librarian can search immediately using a computer in the hand over room or leave for the library at the end of ward rounds to obtain the evidence.

### **Ward rounds**

One or two patients are selected by the teacher to enable the trainee to demonstrate, if clinical guidelines or available evidence can be applied to the individual patient. The

trainee is probed to compare the characteristics of the specific patient, and their baseline risks with the inclusion and exclusion criteria of the particular study or review that was undertaken. The appropriateness of using corticosteroids on the patient, the preferences of the patient and the need for assessing the outcome measures are then discussed.

The trainer should be able to assess the urgency with which the patient needs to be managed. In cases of emergency he will need to teach the learner that the most commonly used management, as per local guidelines or experience, should be undertaken.

### **Concluding session**

The concluding session offers the opportunity for the trainer and trainee to assess the quality of evidence retrieved earlier in detail at the conclusion of ward rounds. Here, the librarian has done a quick research and identified the appropriate evidence. The trainee is encouraged to evaluate current practice in the light of this new evidence. If no evidence is found on this occasion, a more detailed search can be done at a later occasion and the findings presented by the trainees in journal clubs or clinical meeting. It is likely that many evidences will be found to be valid and applicable but not all of them will need to be implemented. In many cases new evidence will confirm the appropriateness of existing practice. In this case it is important to find ways of maintaining the current practice. However, when new evidence suggests a correction in existing practice, changes will be required at an organisational level. Trainees should be actively encouraged to find out potential areas for change within the organisation after taking local issues into consideration.

### **Summary**

In summary, during this module, we have learned:

How to provide educational prescription to the trainees

That Evidence can be retrieved real time for discussion at the end of ward rounds or at a later time for discussion in journal clubs and clinical meetings

That Appraisal of evidence and its integration to practice can be done during the concluding session



## **Module 2 Evidence-Based Journal Club**

### **Learning Objectives**

At the end of this module the Trainer should be able to:

- Effectively use the Journal club as a learning opportunity to teach critical appraisal of literature
- Help trainees develop confidence in number crunching for interpreting the results
- Demonstrate (and get trainees to demonstrate to you) how appraised research evidence can be applied in individual patient care

The aim of this module is to familiarise you, the trainers, with the learning opportunities that arise during journal club to teach the application of EBM in clinical practice. It will enable you to teach the trainees to acquire the skill of critical appraisal of the research evidence. By aiding and assisting interpretation of the results you are elevating the trainee's confidence in analyzing numbers and figures. It helps you to guide them in obtaining the relevant evidence and assessing the quality of it. Where evidence is obtained or known, it demonstrates how trainees are taught to demonstrate applicability of it to the individual patient or scenario.

### **Learning opportunities**

Trainers can teach trainees how to integrate research evidence with clinical practice through relevant trials and systematic reviews during their day-to-day clinical work. Learning opportunities can be created during ward rounds, outpatient clinics, formal assessment of trainees, journal clubs, case discussions, morbidity/mortality meetings to engage trainees in communal EBM activity. This module focuses on how integration of EBM in clinical management can be taught during journal club.

### **Learning opportunities to apply EBM steps in clinical practice**

Each clinical setting offers varying opportunities to teach application of the 5 EBM steps as discussed in the introductory module. Journal club is an important forum for teaching research methodology, clinical epidemiology and statistics, as well as providing opportunities for training in clinical decision making and gaining critical appraisal skills. It can be used to facilitate an evidence based approach to problem solving, as a tool for informing guideline development and to enable an exchange of insights regarding clinical problems. The Journal club is optimally suited to help trainees search the literature to identify relevant articles to the clinical problem identified. It provides the opportunity for the teacher to assist the trainee to ensure that the process is structured and conducted using keywords and search filters. The teacher can also refer to various information specialists (i.e. the clinical librarian), that can help guide this process to enable the potentially relevant articles to be retrieved. Once completed, structured critical appraisal can be done by the trainee. The

appraisal should be reviewed by a teacher with experience in critical appraisal. Presentation and discussion of the findings enable the trainee to have the chance to reflect and receive peer appraisal. In situations where there is prior knowledge of good quality evidence, it offers the opportunity to help the trainee assess the applicability of it to the care of the individual patient.

### **Evidence based Journal Club**

The journal club is a common educational tool and its role in medical education for postgraduates is considerable. Every journal club in varying specialities is different, but journal club sessions share some common features. They are usually attended by senior medical staff, trainees, midwives/nurses and clinical librarian. Journal Club is held on a regular basis usually weekly, fortnightly or monthly. It involves the junior doctor (trainee) appraising the paper that is selected based on a clinical question encountered by him or another trainee. The appropriate databases are searched prior to the journal club, with the help of a clinical librarian. The trainer can provide input in the preparation of the presentation, selecting the appropriate paper and critically appraising it with CATmaker (Critically Appraised Topics) and PowerPoint software to administer the whole process. The output from the journal club is achieved in the form of a completed Critically Appraised Topic (CAT) that can be uploaded onto the intranet and internet. Paper version of the summary can be circulated in person or through the internet to other trainees.

### **Teaching EBM in Journal Club**

Trainees need to be encouraged to deposit their clinical questions for which they are unable to find relevant answers in the question bank. This will encourage other trainees to identify clinical questions if they do not have any to be appraised and presented in the journal club. As a trainer you can help the trainees organise their presentation and ensure they have covered the relevant areas in the presentation by preparing a template of the presentation. Trainees need to be supported adequately during their preparation to be motivated in presenting at Journal club. A journal club handbook, with guidance on various steps of EBM, including critical appraisal and use of CATmaker, will achieve that objective. Effective organisation is needed to ensure the smooth running of the journal club. A rota with allocation of trainees specific times to present in Journal club will ensure that everyone gets a regular opportunity to present. A nominated chair / trainer, who is skilled in EBM, can provide the trainees with much needed support before and during the journal club. The chair / trainer will also be able to structure the journal club meeting by providing an introduction, encouraging participation from the audience, ensuring that the relevant questions are addressed and bringing closure by summarising the findings from the presentation and its direct relevance to clinical practice.

### **Case discussed**

The clinical question for appraisal in this instance has been identified at another clinical setting during ward rounds. It addresses the issue if the use of corticosteroids in pregnant women in preterm labour, at 28 weeks of gestation helps reduce the risk of respiratory distress syndrome in newborns, and is the effect the same for women with twin pregnancy?

### **Teaching trainees to assess validity of the systematic review (SR)**

It would be beneficial to arrange a meeting prior to the journal club to help the trainee

prepare for the presentation. You are aware of the existence of good evidence on the use of corticosteroids in pregnant women in preterm labour, at 28 weeks of pregnancy, and its relation in reducing the risk of respiratory distress syndrome in newborns. Help the trainee frame a focussed question using the PICO format to compare the effectiveness of corticosteroids. You or the librarian can help the trainee to identify the paper by searching in relevant databases. Where feasible, the librarian can obtain the evidence in the clinical setting where the question arose or use the library facilities to do a detailed search. To start with, the trainees should be encouraged to look for systematic reviews. If no systematic review exists, individual studies should be searched for. Three broad issues need to be considered when appraising a research article:

1) Are the results of the study valid? 2) What are the results? 3) Will the results help locally?

Encourage the trainee to look into the characteristics of the study population and if they are similar to the one in his clinical question. The importance of the reproducibility of the review findings should be highlighted along with the significance of assessing the quality of primary studies included in the review.

### **Teaching interpretation of results**

There is a perceived misconception that critical appraisal is too mathematical and remote from clinical practice. In fact one of the main challenges of teaching EBM is the fact that it involves basic principles of epidemiology and statistics, both repellent to many doctors. But it need not necessarily be the case. The facilitator should always be aware of this attitude; at the first sign of it, trainees should be encouraged to get rid of their inhibition towards numbers and figures. They should be guided to grasp the following basic principles in a stepwise manner.

The forest plot allows readers to see the information from the individual studies that went into the meta-analysis at a glance. It provides a simple visual representation of the amount of variation between the results of the studies, as well as an estimate of the overall result of all the studies together. Use of the CATmaker software ensures that the trainees are able to derive clinically useful effectiveness measures like Number Needed to Treat.

### **Teaching the application of review findings to clinical practice**

The trainee will need to be guided to assess the applicability of the findings to his individual patient. If the inclusion criteria differ from the characteristics of his patient, encourage him to look into the relevant subgroups. The trainee can calculate the Number Needed to Treat for his patient from the baseline risk using the CATmaker.

A study may be of good quality and the results may also be significant, but are they really relevant to our patient/population to be clinically useful? Could the population sample or the practice covered by the review be different from local population or practice? The trainer should always ask the trainees this question to evaluate applicability of the research finding to the clinical care of an individual patient or to the local population. Show them that the clinical importance is based on the severity of adverse event to be prevented, risk of adverse event if not treated, absolute benefit to patient and potential harm due to treatment.

### **Bringing about change**

The concluding session offers the opportunity for the trainer and trainee to assess the quality of evidence retrieved earlier in detail at the conclusion of the journal club. The trainee is encouraged to evaluate current practice in the light of this new evidence. It is likely that many evidences will be found to be valid and applicable but not all of them will need to be implemented. In many cases new evidence will confirm the appropriateness of existing practice. In this case it is important to find ways of maintaining the current practice. However, when new evidence suggests a correction in existing practice, changes will be required at an organisational level. Trainees should be actively encouraged to find out potential areas for change within the organisation after taking local issues into consideration.

It is important that people see that their work is acknowledged after they have appraised a topic. It is important to file the CATs that have been completed in an accessible archive, in order to prevent duplication in the future. Moreover, one could consider classifying the evidence, and deciding whether evidence that has been appraised should lead to an adjustment of the protocol.

We propose to classify appraised evidence as (A) immediate adjustment of the local protocol

(B) Send the CAT to the person responsible for the local protocol, and ask to consider an adjustment or

(C) File the CAT in an accessible archive, but it will not lead to adjustments of the local protocol.

Evidence can only be classified as (A) if persons responsible for the protocol are present at the meeting.

In doubt, classify the CAT as (B) and send it to the person responsible for the protocol with the question whether to adjust it.

When CATs are classified as C, stress that is positive that the evidence on this subject has been appraised.

### **Summary**

In Summary, through the journal club trainees can be taught critical appraisal skills and use of statistical software like CATmaker. It helps to reduce inhibition in numbers and also can be relevant to maximise their Continued Professional Development (CPD). The application of the findings to the individual patient is demonstrated. It provides an opportunity to identify areas of future research, audit and organisational change



## **Module 3 Formal Clinical Assessment**

### **Learning Objectives**

At the end of this module the trainer should:

- Be aware and make trainees aware of importance of assessment and feedback
- Know how to use assessment tools and feedback to improve EBM by trainee
- Be familiar with criteria for evaluating use of EBM
- Be able to provide useful feedback

In this module we will help you to learn how to make trainees aware of the importance of assessment and feedback. You will learn how to use assessment tools and feedback to improve the use of EBM by trainees, become familiar with criteria for evaluation and be able to provide useful feedback.

### **Learning opportunities**

Trainers can teach trainees how to integrate research evidence with clinical practice through relevant trials and systematic reviews during their day-to-day clinical work. Learning opportunities can be created during ward rounds, outpatient clinics, formal assessment of trainees, journal clubs, case discussions, and morbidity/mortality meetings to engage trainees in communal EBM activity. This module focuses on how integration of EBM in clinical management can be taught during clinical teaching and assessment.

Learning opportunities to apply EBM steps in clinical practice

Each clinical setting offers varying opportunities to teach application of the 5 EBM steps, as discussed previously in the introductory module. Formal clinical assessment of the trainee provides the opportunity for the trainer to assess the EBM knowledge and its application by the trainee in clinical case management.

The trainer can use various assessment tools to identify knowledge gaps and provide appropriate guidance to the trainee by teaching incorporation of various EBM steps in clinical management.

### **Importance of assessment and feedback**

Why is assessment and feedback important?

First of all, assessing doctors in an honest and objective manner is a fundamental part of Good Medical Practice.

Moreover assessment not only determines how students study, but also influences how teachers teach: workplace based assessment offer the opportunity for regular contact between trainee and trainer in daily practice. This provides opportunity for meaningful and timely feedback to trainees.

On-the-job assessment has another important advantage:

Assessment and feedback should be workplace based, as what doctors do in the

controlled representations of practice does not reliably predict what doctors do in real life.

After assessment it is important to provide feedback for improving clinical skills and professional practice. Although most clinicians are familiar with the principles of feedback, many clinicians probably do not recognize opportunities presented to them for using feedback as a teaching tool;

this module demonstrates tools for teaching EBM.

Trainees usually appreciate feedback.

### **Formal assessment and feedback setting**

In the formal assessment and feedback setting the following exist: direct observation, assessment and feedback by trainer on trainee's performance in real clinical situations in the form on-the-job training.

Various assessment forms in various clinical settings can be used. Both assessment and feedback can be used to improve EBM.

### **Various assessment tools**

Various assessment tools are available in varying clinical specialisms and used in different countries.

Each department should select a mix of evaluation tools that are feasible to implement, applicable to their situation, reflective of the learning objectives being taught and capable of providing meaningful information.

### **Validated assessment tools**

On the links available in the presentation slide we show how to incorporate assessment of EBM in widely used assessment tools, such as the mini-CEX, short for mini-clinical examination, the DOPS, direct observation of procedural skills, the Cbd, case based discussion and the MSF, multi-source feedback or 360 degrees feedback.

If you are not familiar with this tools, you should try to apply these examples to similar tools used in your setting, or adapt the tools used in the example for use in your setting.

### **How to use assessment tools to reinforce EBM?**

The use of EBM can be enforced by paying attention to EBM steps during routine clinical assessment and feedback. The EBM steps to be focussed on depend on the assessment form, the specialism and the clinical situation. Questions based on criteria for assessment on the use of EBM can help the trainee to focus on the correct use of evidence. These criteria are shown on the next presentation slide.

### **Criteria for assessment EBM use by trainee**

1. Did the trainee formulate relevant, structured questions?
2. Did the trainee find current best evidence?
3. Did the trainee critically appraise the evidence?
4. Did the trainee judge if the evidence is applicable to the patient?
5. Did the trainee implement evidence into practice?

### **Example**

More specific questions can be formulated, specified on different steps of clinical

management: prevention, diagnosis, therapy and prognosis.

If we use the example of low dose aspirin and the prevention of pre-eclampsia, we can ask different questions:

Diagnosis: is evidence about the use of aspirin valid? Does this (valid) evidence show that it can accurately distinguish patients who do and do not have pre-eclampsia?

Prognosis: is the evidence about the prognosis of pre-eclampsia valid?

Prevention: does evidence exist on the statement that administration of low dose aspirin reduces the likelihood of developing pre-eclampsia? Is this evidence valid? How many patients need to be treated to prevent one case?

Therapy: is there evidence about optimal treatment of pre-eclampsia? Is our patient so different from those in the study that its results cannot apply?

To integrate EBM in daily clinical practice these questions should be incorporated in frequently used clinical assessment forms.

### **How to provide feedback?**

After assessment it is important to preserve some time to provide feedback to the trainee. Although most of you will be familiar with providing feedback, we give some tips into improving the quality of the feedback and also its final results.

Agree a time and place: this gives the trainee the feeling he is taken seriously. Give feedback as soon after the event as possible: it's still fresh in the memory of both trainer and trainee and you don't bring up old matters. Be clear about what you want to say. Be specific: avoid general comments. Emphasize the positive, if possible start and end with something positive.

Confine negative feedback to behaviour that can be changed, not to personality. When you give negative feedback, suggest alternatives. Be descriptive – of behavior, not evaluative – of motives. Ask yourself 'why am I giving this feedback?', does it really help the person concerned?

Finally: remember that feedback says a lot about its provider as well as its receiver.

### **Case-based discussion**

The video example is based on a case presented by the trainee of a 29 year old caucasian lady in her second pregnancy at 13 weeks gestation expecting twins. In her previous pregnancy she had pre-eclampsia, and has subsequently presented in this pregnancy with raised blood pressure. The trainer bases his assessment around the clinical management of the case, with the clinical question being is the effectiveness of low dose aspirin in multiple pregnancy at risk of pre-eclampsia useful in the prevention of pre-eclampsia.

### **Feedback on applying EBM**

Provide clear and succinct feedback highlighting the appropriate application of various steps of EBM as part of their assessment. Provide the opportunity for the trainee to identify the EBM steps he can confidently apply. Add further input on what you perceive to be good practice of EBM. Prompt the trainee to identify the areas of EBM that they consider to need improvement. Advise and direct the trainee on how to address and improve his performance on that issue.

### **Summary**

In summary, we have identified

The need to make trainees aware of the importance of assessment and feedback.  
How to use assessment tools for reinforcing the trainee to work in an evidence-based manner.

The need to provide constructive feedback.

### **How to use assessment tools to improve teaching of EBM?**

How can the assessment forms be used to improve the teaching of EBM?

We use the four examples we mentioned in the previous slide as an example. These assessment tools are used in the Foundation Programme, a two year planned programme for training and assessment for all doctors graduating from medical school in the UK.

1. The mini-CEX, short for mini-clinical evaluation, is a generic tool designed to test varied competencies. It can be used to assess whether the trainee is able to incorporate EBM in clinical examination, diagnosis and clinical management. It is suitable for the ward round, outpatient clinic and the formal clinical meeting.
2. The DOPS, short for direct observation of procedural skills is designed to provide feedback on practical skills. As each procedure involves the trainees to address the patient and take consent in an informed manner, it can involve discussing all risks and benefits of the procedure according to the best available evidence. It is suitable for (operations) during ward round and outpatient clinic.
3. The CbD, or Case Based Discussion, is designed to assess knowledge, application of that knowledge on patients and clinical reasoning and decision making. You can utilise the CbD to focus on proper use of step 4 of EBM: integration of the information with clinical expertise and unique patient needs. It is suitable for ward rounds, the outpatients clinic and formal clinical meetings.
4. The Multi-Source Feedback or 360 degrees feedback is designed to collate views of peer, trainers, patients and others. It can be used to invite views of trainers and/or clinical librarians to examine a trainee's learning and use of EBM. As this tool is designed to merge assessment from views of all kind of professional groups it is suitable for all locations.

### **What is mini-CEX?**

Mini-CEX is short for mini-clinical evaluation exercise. It is developed, piloted and evaluated in the USA. It is a widely used, reliable and valid method to assess doctors. It is designed to provide feedback on skills essential to the provision of good clinical care, for example history taking, clinical examination, communication, diagnosis and clinical management by direct observation by trainer of trainee's performance in real clinical situations. It takes about 15-20 minutes.

It can and should be repeated on multiple occasions: not all elements need to be assessed on each occasion.

### **What is DOPS?**

DOPS is a direct observation of procedural skills. The trainee performs a specific practical procedure directly observed and scored by the trainer using the standard form. The assessment of each procedure should focus on the whole event, not simply, for example, the successful insertion of cannula, the location of epidural space or

central venous access, such in the assessors' judgment the trainee is competent to perform the individual procedure without direct supervision. It is likely to be more valid and reliable than previous log-book based systems. Feedback and discussion at the end of the session is mandatory.

**What is Cbd?**

This tool is used to enable the documenting of conversations about and presentations of cases by doctors. It is designed to assess clinical reasoning and decision-making and the application or use of medical knowledge in relation to patient care for which the doctor has been directly responsible. It also enables to discussion of the ethical and legal framework of practice and allows doctors to discuss why they acted as they did.

**What is Multi Source Feedback?**

Multi Source Feedback, or 360 degrees feedback, collates views from a range of trainees coworkers, for example peers, trainers, nurses, patients, librarians, receptionists and eventual others. The trainer and trainee agree strengths and key areas for development for the collated feedback.



## Module 4 Outpatients Clinic

### Learning objectives:

At the end of the module the trainer should be able:

- To expose knowledge gaps in the trainees that leads to construction of structured questions and issuing educational prescriptions.
- To guide trainees to assess the urgency of the clinical situation.
- To guide trainees on how they will track the best evidence to answer the question.
- To demonstrate trainees how to critically appraise literature and stimulate them to use this.
- To demonstrate (and get trainees to demonstrate to you) how to determine the extent to which research evidence can be applied for individual patient care.
- using number-needed-to-treat (NNT) instead of relative risk reduction when making judgements about the absolute benefit of the intervention
- Explain the need to review in- and exclusion criteria in order to make a judgement about applicability of the results to the patient.
- Demonstrate that benefit of a treatment requires looking at benefit and harm

### Learning opportunities

Trainers can teach trainees how to integrate research evidence with clinical practice through relevant trials and systematic reviews during their day-to-day clinical work. Learning opportunities can be created during ward rounds, outpatient clinics, formal assessment of trainees, journal clubs, case discussions, morbidity/mortality meetings to engage trainees in communal EBM activity. This module focuses on how integration of EBM in clinical management can be taught during outpatient clinics.

### Learning opportunities to apply EBM steps

The aim of this module is to familiarise you (trainers) with the learning opportunities that arise during outpatient clinic to teach application of EBM in clinical practice. Each clinical setting offers particular opportunities for teaching different steps of EBM: the outpatient clinic is particularly suitable for formulating questions, critical appraisal of literature and integrating evidence with clinical scenario.

### Outpatient setting

The following generic setting usually exists in outpatient clinics: the trainee independently sees the patient, and there is indirect supervision by the trainer. During the outpatient clinic there is a discussion between the trainee and the trainer on a case-by-case basis as needed, initiated by the trainee. At the end of the clinic there is a discussion between the trainer and the trainee regarding patient management.

Internet access may be available at the clinic.

### **Case discussed**

We use the the following case for discussion as an outpatient encounter:

‘Should antenatal corticosteroids be administered to accelerate fetal lung maturation for a 29+6 weeks pregnant caucasian woman at risk of preterm birth because of a pregnancy related hypertension syndrome?’

The example video presented is a case based of a Caucasian woman in her 32<sup>nd</sup> week of her first pregnancy expecting twins. Her haemoglobin levels have dropped from 12g/dl at booking to 10.6g/dl. The clinical discussion is based on women with multiple pregnancies and what is the effect of prophylactic iron and folate supplementation to reduce anaemia later in pregnancy.

### **Case-by-case discussion**

When the trainee lacks information and questions arise during outpatient clinics, as a more experienced trainer you should assess the urgency of the clinical situation and help the trainee to prioritise

If immediate management is needed, lacking evidence can be completed by the trainer or if the question cannot be answered by the trainer, synopsis resources can be consulted immediately.

If patients can wait for the retrieval of recent evidence, a question can be formulated during end of clinic discussion and thereafter investigated.

### **End of clinic discussion**

Good questions are important for both practicing and teaching EBM. A challenge for teachers is to identify questions that are both patient-based and learner-centered.

To motivate your trainee you need to listen, be enthusiastic and willing to develop their full potential.

Help to formulate structured and focused questions to identify knowledge gaps in the trainee. This can be done by using the PICO format. Hand over an educational prescription and set a time frame.

You have seen an educational prescription in the video. The next slide explains an educational prescription in more detail.

### **Educational prescription**

An educational prescription is a prescription-like paper based form used for recording an educational question, and is usually filled in by both the trainer and trainee. The name of the trainee responsible for answering the questions as well as the name of the patient have to be filled in.

The core of the educational prescription is divided in 3 parts, in which the clinical question according to the PICO format should be recorded: box 1: target disorder and population, box 2: intervention and eventual comparison, box 3: outcome. Finally the date and place when the educational prescription should be completed should be recorded.

Why should we use educational prescriptions?

1. It specifies the clinical problem that generated the questions: it helps you keep the problem in mind.
2. It states the question in all of its key elements, which forces you to think of all elements important of answering questions.
3. It specifies who is responsible for answering it and when it should be

answered.

4. It reminds everyone of the steps of searching, critically appraising and relating the answer back to the patient.

### **End of clinic discussion**

Guide the trainee to search for evidence:

If evidence is feasible to be identified in clinic, it should then be available in local protocols and guidelines

If it is not feasible to identify evidence in the outpatient clinic, the trainee should be encouraged to determine appropriate search terms and use relevant databases to search for it. If necessary the trainee can eventually ask for assistance of a clinical librarian.

Trainers should make trainees aware of the different levels of evidence at different types of databases.

Finally as a trainer,

Encourage the trainees to appraise evidence found and if necessary demonstrate them how.

Provide tips to trainees on how to decide if and to which extent existing guidelines and evidence apply to the management of the individual patient.

Let the trainee summarise the search and results in one page, using a standard format (e.g. CAT). This can be discussed between trainer and trainee or can be presented to other colleagues for example during a (weekly) outpatient clinic concluding session.

### **Concluding session**

The concluding session should be held in a tutorial room, regularly (e.g. weekly)

A summary of search and results can be presented using a standard format. This could include the following elements:

1. Title
2. Clinical question
3. Search strategy
4. Search results
5. Validity of the evidence
6. The importance of this valid evidence
7. Can this valid, important evidence be applied to your patient
8. Evaluation of this process

Any discrepancy from current practice and the possibility of changing it at organisational level can be discussed.

### **What did you learn?**

In summary, during this module you have learned how to:

- provide educational prescriptions to trainees
- help the trainee to assess the urgency of the clinical situation.
- help the trainee to summarise research findings for discussion in clinical meetings or for storage to a permanent record
- help the trainee to appraise evidence in regular outpatient clinic meetings.



## **Module 5 Formal Clinical Meeting**

### **Learning objectives:**

At the end of the module the trainer should be able:

- To teach application of EBM during presentations and discussion in formal clinical meeting
- To be confident in using the clinical meeting to teach EBM
- To identify knowledge gaps during the meeting and demonstrate how to combine the research evidence with clinical expertise in the care of individual patients

This module demonstrates how to effectively teach the application of EBM during formal clinical meetings. It is based on the approach of problem-based learning linked to real clinical cases that are discussed at formal clinical meetings. This training model provides you (trainers) with teaching tips on how to identify knowledge gaps of trainees and make them :

- identify problems and formulate focused questions related to individual patient cases,
- retrieve the best research evidence answering that question,
- assess the selected evidence, and more importantly,
- integrate it with clinical expertise in managing individual patients.

By the end of the module, you will be able to teach application of EBM steps in the course of presentation and discussion in a formal clinical meeting. You will be able to identify and use the learning and teaching opportunity offered at these meetings. You will acquire the skill to identify knowledge gaps in the trainee and be able to demonstrate how to combine the research evidence with clinical expertise in the care of individual patient.

### **Learning opportunities**

Trainers can teach trainees how to integrate research evidence with clinical practice through relevant trials and systematic reviews during their day-to-day clinical work. Learning opportunities can be created during ward rounds, outpatient clinics, formal assessment of trainees, journal clubs, case discussions and morbidity/mortality meetings to engage trainees in communal EBM activity. This module focuses on how integration of EBM in clinical management can be taught in formal clinical meetings.

### **Learning opportunities to apply EBM steps in clinical practice**

Each clinical setting offers varying opportunities to teach application of the 5 EBM steps, as discussed in the introductory module. Formal clinical meetings are optimally

suites to help trainees identify their knowledge gaps and lead them to actively seek answers. They provide the opportunity for the teacher to help the trainee construct an answerable question and guide them towards obtaining the evidence by using relevant search terms in appropriate databases. In situations where there is prior knowledge of good quality evidence, it offers the opportunity to help the trainee assess the applicability of it to the care of the individual patient.

### **Formal Clinical Meeting setting**

The format of clinical meetings may vary across countries or health care settings, but in most cases it involves a consultation of various health professionals involved in the care of the patient. Meetings could be run by one professional group or can also be multidisciplinary (e.g. oncology, pre-operative, mortality and morbidity meetings). They are usually attended by senior doctors, junior trainees, nurses and/or clinical librarians.

Topics covered by these meetings usually include the presentation and discussion of individual cases.

Such meetings usually have the following pattern:

- Initial preparation of case to be presented (mostly by the trainee)
- Presentation of the case with its clinical features and management with an introduction and a short review of the current status of the patient, or the current principles and practice of managing a condition or a group of patients
- This is followed by discussion among the healthcare professionals present, while
- the final part leads to drawing some conclusions.

### **Example**

The clinical question for discussion in this instance addresses the issue if the use of corticosteroids in pregnant women in preterm labour, at 28 weeks of gestation, helps reduce the risk of respiratory distress syndrome in newborns, and is the effect the same for women in preterm labour at 34 weeks of gestation?

The question will be answered as part of a Perinatal mortality meeting discussing a case of death of a preterm baby and the role of steroids in reducing mortality and morbidity.

### **Teaching tips**

A system (rota) to allocate trainees to present cases in the meeting will ensure that trainees are better prepared beforehand. Preparation phase before the meeting offers the opportunity to identify knowledge gaps in the trainee and assist them in getting ready for the meeting. As trainers, try to meet the trainees prior to the meeting and assist them in formulating structured questions, identifying a search strategy, discovering and appraising relevant evidence regarding the clinical features or management in question. Make necessary arrangements beforehand according to the facilities available in your unit for effective presentation and discussion in the

meeting. Ensure that he/she will provide your audience with appropriate information relating to the individual case to aid in decision making. If there is evidence available for questions commonly or previously posed, provide copies of the relevant evidence in the meeting to help the group appraise it.

Sometimes the clinical meeting setting may be the first point of interaction between the trainer and trainee. Make sure that the trainee is able to present the case with all relevant details needed to make decisions on management by asking appropriate questions. This will also identify knowledge gaps in the trainee. Help them formulate structured clinical questions using the PICO format. Make them aware that answers to most questions can be obtained by searching in appropriate databases.

Where existing evidence is well known or you are able to provide details of relevant evidence, formal clinical meeting offers an opportunity to teach appraisal of literature and help trainees overcome their inhibition with numbers. Trainees are able to understand better and apply the results when encouraged to present them as clinically useful measures like Number Needed to Treat. Encourage the trainee and the group in deciding if the evidence is appropriate to the management of the case discussed. If evidence confirms existing practice, guide the trainee to audit adherence. If existing practice differs from evidence, show the trainee how to suggest changes in practice. If the evidence is not known or not available, allocate the question to a trainee or add it to the question bank for presentation and appraisal in Journal Club at a later time. The final part of the meeting should provide the opportunity to stimulate constructive discussion between the specialists present, on the evidence based outcome measure. You should ask them to consider all the important consequences of the option available and not to ignore outcomes involving patient choice.

## **Conclusion**

At the end of this module you should now be able to identify the opportunities to teach and learn EBM in a setting like a Formal clinical meeting. You should now be familiar on how to utilise the meeting involving professionals with varying knowledge of EBM to demonstrate incorporation of relevant evidence in clinical practice.



## **Module 6 Clinical Audit Meeting**

### **Learning objectives:**

At the end of the module the trainer should be able:

- enable trainees to express a clinical audit topic as a PICO question
- 
- ensure trainees understand the EBM components of an audit
- facilitate trainees in assessing the evidence behind an audit standard
- help trainees to reach a conclusion about quality of the standard
- enable trainees to prepare audit presentations showing the five EBM steps
- ensure trainees recognise that audit is an activity for change management and to ultimately improve patient care

### **Learning opportunities to apply EBM steps in clinical practice**

Each clinical setting offers varying opportunities to teach application of the 5 EBM steps as discussed in the introductory module of this course. Audits are optimally suited to help trainees formulate questions, critically appraise the evidence and bring change to practice. They provide the opportunity for the teacher to help the trainee construct an answerable question and guide them towards obtaining the evidence by using relevant search terms in appropriate databases, as well as looking to clinical practice to help obtain the answers.

### **Clinical Audit - teaching and learning opportunities**

Why is clinical audit an opportunity for the trainee to learn about EBM?

This module is about a clinical audit where the standard has already been defined and not about developing a standard as part of the audit. Trainees can have an active role. The situation differs from the clinical situations in the other modules as we deal here with groups rather than individual patients.

In this module the following learning opportunities arise:

- standards or quality indicators within audit provide the trainee with the opportunity to learn about the best practice. A standard can be defined as an achievable level of performance. Ideally, one should use standards that already exist locally, but if non are available, one should think about developing their own standards.
- During the audit process;

The trainee learns about a clinical standard and its link to evidence

The trainee learns to phrase the clinical audit topic in a PICO-format and search for the evidence

The trainee has the opportunity to critically appraise the evidence and its validity for a standard

The module links evidence-based medicine to quality improvement activities. This module offers learning opportunities on how to integrate evidence-based medicine in clinical care on the organisational level. The trainee has the opportunity to learn about the potential of different interventions to bring change. Audit being the one with the most consistent effect on change, even if the effect is moderate to small. The trainee will learn about various barriers to change, and it is important to emphasise that limited time and resources are amongst the most commonly mentioned reasons for failures to change on an organisational level. The gap between evidence and practice may also relate to the limitations of our individual capacity to acquire new knowledge and skills, or change existing attitudes and beliefs of others. It can often be said that changing practice can sometimes be perceived as a threatening process that generates uncertainty.

### **Clinical Audit – characteristics**

What are the main characteristics of clinical audit?

It is Initiated by a decision maker, we chose this term to make the point that in most cases it is not the trainer who will initiate the audit.

An open invitation can be sent to the clinical team / hospital staff to attend the clinical audit presentation.

Audit is a process lasting a period of time with a planning phase and an implementation period

It potentially results in interventions that stimulate change and in a re-evaluation of improved compliance with the standard

Access to medical literature databases, patient databases and various other resources such the audit manager and the best practice in clinical audit handbook are important facilities required for the appropriate implementation of audit

You can refer to the Principles for best practice in clinical audit (NICE 2002) for the stages of a clinical audit, including checklists to be used as an aid to planning an audit, available at <http://www.nice.org.uk/media/796/23/BestPracticeClinicalAudit.pdf>

What is the role of trainees?

- They Support staff to prepare the audit
- They Support staff and observers during the audit itself

### **Audit and EBM**

In the presentation slide we show you the link between the various steps involved in the audit and those involved in bringing about change in practice. The latter, shown on the left hand side were described in detail in module five of the first project (EBM –unity), for which a link has been provided

Audit pertains to the implementation and confirmation steps in bringing about change. Through the process of audit and re-audit one can evaluate the level to which evidence has been incorporated into practice and sustain evidence based practice.

It is important to remember that when commencing an audit, one would need to frame questions, search literature, appraise the evidence and reach a decision whether findings should be implemented in practice; hence your trainees who undertake an audit will have an opportunity to learn virtually all the steps of EBM.

### **Audit cycle**

The audit cycle involves the following steps:

Stage one: preparing for audit

Good preparation is the success of a clinical audit. The preparation includes project management, including topic selection, planning, resources and communication. In addition, a good project methodology is essential, that includes design, data issues, feasibility of implementation, stakeholder involvement, and the provision of support for local improvement.

Stage two: selecting criteria

Criteria are used to assess the quality of care provided by an individual, a team or an organisation. These criteria are explicit statements that define what is being measured, and represent elements of care that can be measured objectively.

Stage three: measuring performance

What is to be audited must be established from the start, for example, the patient group to be included, the healthcare team involved in the patient care, the time period over which the criteria apply.

Stage four: making improvements

The improvements should be clearly defined, based on best evidence and presented in a way that staff can easily understand. A plan for delivery and monitoring of the improvement should be developed, and the plan should be carried out and evaluated. The barriers to change should be identified.

Stage five: sustaining improvement

Any change of practice should include plans to monitor and evaluate the change, and to maintain and reinforce the change.

### **Teaching Tips (audit planning)**

Select an audit topic where good evidence exists and change is possible, ensure that the institution has a management structure that enables change.

The trainee should convert the audit topic into a PICO clinical question [link to module 1]

The trainee should be able to identify relevant databases and demonstrate efficient searching skills in order to identify evidence for the standard. The search strategy and results should be saved to discuss with the tutor. The tutor ensures that the trainee attempted to find a systematic review rather than an individual study.

The trainee should perform a formal critical appraisal of the key evidence, ideally a systematic review.

The trainee should make a judgement of the

- a) overall quality of the evidence,
- b) hierarchy of the outcomes, statistical significance versus clinical importance

- c) importance of outcomes - balancing benefit and harm

Encourage the trainee to include the strengths and weaknesses of the evidence that is used as a standard in audit presentation.

### **Teaching Tips (audit implementation)**

The trainee should divide the whole audit into the five stages of the audit cycle

Show the trainee the importance of having reached all three steps in the planning phase prior to proceeding with the audit itself. Ensure the trainee understands the importance of the planning phase (awareness, acceptance, decision) prior to proceeding to the audit

The trainee should participate in the review of the patient data and the comparison of the standard vs. its clinical implementation: here, the trainee can get an overview of clinical decision (away from an individual patient case to a more global level) which can be a sobering experience for trainees.

The trainee should identify key persons in the hospital who are able to lead the change management process and give reasons why these persons could initiate change

The trainee should be guided to liaise with senior persons to bring about organisational change based on best evidence

The trainee should identify barriers (organisational, personal, opinions, ...) that hinder implementation of the standard.

### **Additional Tips**

Prior to completing an audit, adequate planning should be undertaken, involving an initial discussion with the trainee about the link between evidence and standard.

The structure for specific questions is required, which involves delineating four components: Patient's condition or problem, Intervention, Comparison and Outcome. These components are the basis of the acronym PICO. You can encourage your trainee to write down the questions you raise by using this structure. This approach is key to identify the appropriate evidence. Once the PICO question is formulated the trainee should be encouraged to critically appraise the standard to which they will audit.

You can then encourage the trainee to perform the audit by contrasting evidence and performance against the standard within your unit that best describes the problem. If change is indicated, discuss with the trainee how to identify key persons within your organisation who will be able to assist and promote this change. It is also important to hold a discussion about the potential reasons for non-compliance (if present) and how to overcome these barriers.

Finally, if applicable, a discussion about additional strategies that can be undertaken to improve compliance should be held with the trainee. This will enable them to not only successfully complete an audit, but to possess the knowledge and skills to make any changes to the standard if required.

### **Summary**

What did we learn during this module, as trainers?

To identify the teaching opportunities available during preparation and presentation of audit

How to guide our trainees through the various steps of EBM during clinical audit

To show our trainees the importance of appraising the validity of the standard

How to demonstrate the relevance of audit as a tool for change in management and optimising patient care.

## Assessment

Welcome to the assessment component of the module. In order for us to assess the success of the course, we ask you to fill out a pre-course assessment, and a post-course assessment (the same questionnaire). The assessment is composed of a multiple-choice test. For each question, you are expected to select one or more than one appropriate choice among a set of options, where they may be more than one correct option.

### Definitions

#### Ward Round

Ward rounds activities are usually undertaken by a senior clinician, junior doctors, midwives / nurses, medical student and if available a clinical librarian. The setting could be an in-patient ward, casualty ward or a labour ward.

#### Clinical Audit Meeting

A formal meeting held in a hospital where current clinical practice is compared with predetermined standards of care / management.

#### Educational Prescription

An educational prescription is used for saving educational questions. It should be filled in together by trainer and trainee.

#### Evidence-Based Journal Club

Evidence Based Journal Club is a regular educational activity where the trainee critically appraises a published piece of evidence that is obtained by undertaking a systematic search of the literature for a clinical question.

#### Formal Clinical Meeting

Any meeting that is attended by a trainer and trainees from one or more disciplines / specialties when the management of a clinical case(s) is discussed. For example morbidity and mortality meetings and multidisciplinary team meetings.

#### Outpatients Clinic

The outpatient department is a setting where patients are managed on an outpatient basis. It opens opportunities for trainer and trainee to discuss

management of individual clinical cases.

### **Formal Clinical Assessment**

Formal clinical assessment is usually a one-to-one meeting between a trainer and trainee. The trainer may use validated assessment tools (e.g. OSATS, Case Based Discussion, CEX) to assess the clinical knowledge and skills of the trainee.

### **Case Based Discussion (CBD)**

A structured interview designed to explore professional judgments exercised in clinical cases that have been selected and presented by the trainee.

### **CEX**

Clinical Evaluation Exercise is an evaluation, of doctor/patient interaction. It is designed to assess the clinical skills attitudes and behaviors of trainees.

## Questions

### **Question 1**

**Your trainee has come across a high quality reliable systematic review recently published that shows one of the several approaches to management of a condition in your practice to be more effective than others. They are interested to implement this approach in practice so that all patients receive the most effective treatment. As practice varies considerably amongst your colleagues, you can:**

- a) Disregard the evidence as the change required is not likely to be popular with colleagues
- (b) Critically appraise the paper in a journal club or a clinical meeting to raise awareness amongst colleagues
- (c) Initiate an audit to assess current practice against a quality standard based on the new evidence
- (d) Initiate an audit to assess current practice against a quality standard that is likely to be agreeable to your most senior colleagues
- (e) Identify and involve influential colleagues to assist in change management

### **Question 2**

**When providing feedback, which of the following is an appropriate sequence:**

- (a) 1. What went well?  
2. What did not go well?  
3. What could be done better and how?
- (b) 1. What did not go well?  
2. What could be done better and how?  
3. What went well?

- (c) 1. What could be done better?
- 2. How it could be done better
- 3. Agree on a programme to redo it

### Question 3

**During the ward round you have asked the trainee a question concerning a patient and you have noticed from their response and body language that they do not know the answer. How do you respond?**

- (a) Make the trainee more uncomfortable by continuing questioning
- (b) Probe further as to why the trainee did not learn this earlier in their training
- (c) Give the trainee the answer
- (d) Give the trainee an educational prescription

### Question 4

**For an evidence-based Journal Club there is the option to collect questions in a question bank that trainees are unable to answer during clinical practice. What is the purpose of such a question bank?**

- (a) A question bank is a selection of uncertainties or knowledge gaps related to clinical practice that can be used to initiate the process of learning EBM for trainees
- (b) A question bank is resource that contains clinical questions currently unanswerable with existing research to initiate the process of learning EBM for trainees
- (c) A question bank is where a trainer will deposit questions to ask trainees about their understanding of the evidence presented on a journal club

### Question 5

**In an outpatient clinical encounter with a trainee, which of the following offers a good teaching opportunity to teach all 5 steps of EBM to a new trainee?**

- (a) A complex case where the learner has to disentangle at least three concurrent co morbidities
- (b) A patient with a chronic condition where the management decision can be postponed to the next visit
- (c) A situation where you as a trainer is reasonably certain that there is no existing evidence available

### Question 6

**A Formal clinical meeting offers the best opportunity to teach the following steps of EBM in the following order:**

- a) Formulating a structured clinical question / integrating evidence with the clinical

scenario / critical appraisal

(b) Formulating a structured clinical question / searching for the evidence / critical appraisal

(c) Bringing change to practice / integrating evidence with the clinical scenario / critical appraisal

(d) Formulating structured clinical question / critical appraisal/ integrating evidence with clinical scenario

### **Question 7**

**You supervise a diabetic outpatient clinic, where each consultation room has access to the hospital's intranet. The local information sources include Up-To-Date (an electronic evidence-based textbook with recommendations), the National Guideline Clearing House (a US database for guidelines), local management protocols, Cochrane Library; and PubMed with access to free journals.**

**A test result of a trainee's patient has returned repeatedly as abnormal, and the trainee is uncertain about the best management decision.**

**What would you (as trainer) do with your trainee in the wrap-up session after the clinic?**

1. You will do a quick search for a guideline from the American Diabetes Association, a leading organisation for diabetes care, and ask him to look up the relevant sections and come back to you with what he thinks is the answer.
2. You review the strengths of the information sources of the intranet reg. their likelihood for finding a quick answer, ask him to explore the sources and to come back to you with what he thinks is the answer (*and how he got there*).
3. To do what he did last time in a similar situation to help reflective thinking and practice by the trainee

### **Question 8**

**In an audit, one selects criteria or quality standards against which clinical performance is judged. For a trainee of yours who is undertaking an audit, you should instruct them to set the criteria through:**

a) Generating consensus amongst clinicians about their best practice to ensure that the trainee gets criteria based on local clinical practice

(b) Formulating a structured question, searching the literature, appraising the evidence, and using high quality evidence for determining best practice

### **Question 9**

**Which of the following identifies the correct sequence to teach the trainee to obtain the best evidence during a ward round**

- (a) Identify knowledge gaps, frame clinical question; Issue an educational prescription, guide the trainee with search strategies
- (b) Issue an educational prescription, frame clinical question; guide the trainee with search strategies, Identify knowledge gaps
- (c) Identify knowledge gaps, guide the trainee with search strategies, frame clinical question; Issue an educational prescription
- (d) Identify knowledge gaps, Issue an educational prescription, frame clinical question; guide the trainee with search strategies

### **Question 10**

**Your trainee is discussing the management of a case in a formal clinical meeting. You are aware of recent good quality evidence that differs from what is presented by the trainee. In this situation, the best way to teach awareness and application of EBM to the trainee is by:**

- a) Guiding the trainee to formulate a structured question related to the management of the case discussed and shows him strategies to obtain relevant evidence
- (b) Providing details to the trainee about relevant evidence if he does not already know the evidence
- (c) Disagreeing with the management of the case and asking the trainee to learn about appropriate management during the next available opportunity

### **Question 11**

**As a trainer, you are required to formally assess the competence of the trainee in their clinical training. The assessment form (Case Based Discussion – See Appendix One) is provided. You would use this opportunity,**

- (a) To assess their knowledge of applicability of known evidence to patient management
- (b) To identify knowledge gaps in the trainee and initiate the process of EBM with question formulation
- (c) To assess their performance in a journal club

### **Question 12**

**During the discussion in a clinical meeting concerning the management of a case, the team (audience) is unsure of the best clinical management. As a senior clinician / trainer**

**in this situation, the best option will be:**

- a) To provide guidance to the team based upon your personal experience to demonstrate the successful outcome of your management
- (b) To explore knowledge gaps and initiate the EBM process by asking the trainee to frame the structured clinical question
- (c) To ask the trainee to apply any evidence (publication or information) that he / she can obtain
- (d) To allocate the trainee to appraise the paper in the next journal club or a specified meeting

### **Question 13**

**You may prepare a manual or handbook to guide your trainees about the preparation required for their presentation in an evidence-based Journal Club. What is the purpose of such a handbook?**

- (a) To use it as a diary of dates the journal club takes place to inform trainees
- (b) To contain a collection of clinical research questions to be discussed during a Journal Club that initiates EBM learning in trainees
- (c) To provide evidence summaries from other clinical manuals and teaching texts as a quick reference point in management of cases
- (d) To contain guidance for trainees on critical appraisal skills and information on the use of appropriate software that can support critical appraisal (e.g. CATmaker)

### **Question 14**

**Your trainee has recently attended a conference on EBM. You would like to assess his ability to apply EBM steps in clinical practice by:**

- (a) Arranging a meeting with her in your office and quiz him about various EBM steps
- (b) Undertake formal clinical assessment to assess her EBM skills knowledge based on his rationale for management of the individual case
- (c) Ask him to complete the existing validated questionnaire that will assess his EBM knowledge

### **Question 15**

**Both, you and your junior trainee are aware of appraised existing good quality evidence for a common medical problem. During the ward round you want to teach the trainee about applicability of this evidence. The best way to do this is ...**

- (a) To choose a hypothetical scenario with relevant risk factors and discuss it as an initial step towards applicability
- (b) To select a patient in the ward to whom the evidence might apply and encourage the trainee to evaluate the patients risk status as an initial step towards assessment of applicability
- (c) To select a patient in the ward to whom the evidence might apply and demonstrate the risk factors to the trainee as an initial step towards assessment of applicability
- (d) By applying the available evidence to any patient on the ward to demonstrate the limitation of evidence

### **Question 16**

**The following statement is correct:**

- a) Use of the formal clinical meeting setting may not provide appropriate opportunity for EBM teaching to the trainee
- (b) A trainer can confidently use the clinical meeting at every opportunity to show the trainee how to formulate a question by identifying knowledge gaps
- (c)The trainee will need prior basic knowledge of EBM steps for you to help critically appraise evidence during a clinical meeting

### **Question 17**

**In a well performed audit, your trainee has discovered that clinical performance fell short of pre-set quality standards. As a trainer you should:**

- a) Ask them to disregard the finding as this will upset your colleagues
- (b) Support the trainee in presenting the findings in a meeting inviting all personnel involved
- (c) Help them to develop a plan for bringing about improvements
- (d) Encourage them to re-audit performance after an improvement plan has been implemented
- (e)Get them to re-audit to double check their finding as they are too inexperienced to challenge established practice

### **Question 18**

**During the ward rounds your trainee does not know the management of a case. After identifying the knowledge gap, you would,**

- (a) Leave the trainee to learn on their own
- (b) Recall the trainee to give you feedback on their findings whenever possible
- (c) Refer them to another colleagues
- (d) Refer them to the Clinical Librarian

### **Question 19**

**Questions generated during a busy clinical ward round that cannot be addressed immediately should:**

- (a) Not to be pursued further because they are not relevant for immediate clinical decision
- (b) Be used to provide an educational prescription
- (c) Be used to identify relevant papers for critical appraisal in a Journal Club

### **Question 20**

**Which of the following strategies to individualise evidence for patient care would you recommend to your trainee?**

- (a) Identify the key features of the patient that influence the his baseline risk for the outcome of his / her disease and apply the evidence accordingly
- (b) Ask the patient about his health insurance and apply the evidence accordingly
- (c) To apply the evidence that is available in national (or) international guidelines

### **Question 21**

**See the attached Case Based Discussion Proforma (Appendix One) concerning a trainee whose knowledge about evidence for the management of the case is borderline. When providing feedback the following represents good practice:**

- (a) Emphasize good history taking skills of the trainee
- (b) Explore knowledge gaps on treatment and use this to identify a learning opportunity providing suggestions on how to gain knowledge
- (c) Explore knowledge gaps and explore trainees' personality features that may contribute to borderline knowledge
- (d) Evaluate motives behind borderline performance of the trainee
- (e) Continue your feedback highlighting the need for involvement by the trainee

### **Question 22**

**You have identified a knowledge gap in your trainee during a ward round. He is unsure (or) reluctant to identify appropriate search terms that relate to the clinical question for which evidence has to be obtained. You would:**

- (a) Ask the trainee to try harder
- (b) Ask the trainee to identify search terms with the free form question format
- (c) Encourage the trainee to identify search terms using a textbook
- (d) Guide the trainee to identify search terms, with the structured question format

### **Question 23**

**The following can be assessed using the Cased Based Discussion tool with a trainee in the clinical / ward setting:**

- (a) Appropriate use of EBM by the trainee in the clinical management of a case
- (b) Motivation level of the trainee in his / her clinical duties
- (c) Summative assessment to allow the trainee to progress to the next level in his / her training based on a score

### **Question 24**

**You are interested in running an evidence based clinical meeting where trainees are taught the application of various EBM steps. In order to achieve that:**

- a) You can wait for an opportunity when a case where good quality evidence exists that most trainees are aware of
- (b) You can wait until a case is presented where there is no known evidence to demonstrate EBM teaching
- (c) You can use every meeting where good quality evidence is known (or) not known to exist to teach EBM

### **Question 25**

**The following procedure will help to optimally teach EBM during clinical meetings:**

- (b) If possible, try to meet the trainee prior to the meeting to help him prepare the presentation. This will enable you to teach the application of EBM steps based on the knowledge gaps of the trainee
- (c) Select the trainee who has a better understanding of EBM to present in the clinical meeting

- (d) Select the trainee who has the least understanding of EBM to present in the clinical meeting. This will enable you to demonstrate to the trainee the need to improve his EBM knowledge

### **Question 26**

**Teaching critical appraisal of the medical literature is a key step of evidence-based practice. Several clinical settings offer opportunities to teach EBM. The most optimal sequence of opportunities to teach critical appraisal are (from best to least optimal opportunity) as follows**

- (a) Journal club/ clinical audit / Ward rounds
- (b) Clinical audit / journal club / ward rounds
- (c) Ward rounds / journal club / clinical audit
- (d) Journal club / ward round / clinical audit