**Evidence-Based Medicine (EBM)**

# Aims, objectives, and curriculum details

The goal of this course is to introduce the key concepts of EBM to medical students. Specific educational objectives are:

1. Describe the place of evidence-based medicine (EBM) in clinical practice.
2. Explain the basic principles of evidence-based medicine.
3. Formulate well-constructed clinical questions.
4. Critically appraise the most common types of articles in the medical literature.
5. Demonstrate competence in applying EBM to their clinical practice.

# Theory instructions

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| **Week Title** | **Methods** |
| 1. Course objective and learning needs | The course program and objectives will be presented and students will be asked for their learning needs |
| 1. Introduction to EBM | Presentation |
| 1. Introduction to epidemiological terminology | Presentation |
| 1. Asking answerable clinical questions | Presentation |
| 1. Acquiring the evidence | Presentation |
| 1. Tour of EBM article types | Presentation |
| 1. Acquiring the evidence: PubMed | Presentation |
| 1. Acquiring the evidence: Guidelines | Presentation |
| 1. Appraising the evidence | Presentation |
| 1. Evidence of therapy | Presentation |
| 1. Evidence of diagnosis and screening | Presentation |
| 1. Evidence of prognosis | Presentation |
| 1. Evidence of harm | Presentation |
| 1. Bias and confounding | Presentation |
| 1. Evaluation | Presentation |
| 1. Reinforcement | Questions and answers. |

# Practical sessions

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| **Week Title** | **Objectives** |
| 1. Own learning needs assessment test | Students will self-administer an MCQ test on EBM. Areas of weaknesses will be discussed. |
| 1. Assignment: What is EBM | Each student will write a one-page essay with the title “What is EBM?” |
| 1. Large group work: Find and discuss articles mentioning epidemiological terminology | In small groups students will search for scientific articles using epidemiological terminology mentioned during the instruction (20 minutes). Some of the articles will be discussed in the large group (20 min). |
| 1. Large group work: Formulate answerable clinical questions for clinical practice | Each student will formulate at least two answerable clinical question (20 min.). Students will submit their questions to the large group. A group discussion will be held (20 min) |
| 1. Large group work: Find and discuss different evidence types | Students will work in small groups and find different evidence types (20 min). Large group discussion will be conducted (20 min). |
| 1. Large group work: Find examples for article types and discuss with peers | Students will work in small groups and find article types (20 min). Large group discussion will be conducted (20 min). |
| 1. Assignment: Search the PubMed | The facilitator will give instructions to make advanced PubMed search (20 min.). Students will demonstrate their search to the large group (20 min). |
| 1. Assignment: Find local clinical practice guidelines and discuss with peers | Individual students will find clinical practice guidelines for their countries of origin (20 min) and discuss them in the large group (20 min). |
| 1. Small group work: Use the GATE tools to appraising evidence | Students will work in small groups and discuss the GATE tools to appraise evidence. |
| 1. Group work: Find and discuss an article on therapy | Students will work in small groups and find articles on therapy (20 min). Large group discussion will be conducted (20 min). |
| 1. Group work: Find and discuss an article on diagnosis and screening | Students will work in small groups and find articles on diagnosis (20 min). Large group discussion will be conducted (20 min). |
| 1. Group work: Find and discuss an article on prognosis | Students will work in small groups and find articles on prognosis (20 min). Large group discussion will be conducted (20 min). |
| 1. Group work: Find and discuss an article on harm | Students will work in small groups and find articles on harm (20 min). Large group discussion will be conducted (20 min). |
| 1. Biostatistics as source of evidence Bias, validity, and confounding | Students will work in small groups and find articles mentioning bias, validity, and confounding (20 min). Large group discussion will be conducted (20 min). |
| 1. Self-Evaluation. | Students will prepare their own learning evaluation method. |
| 1. Group work: Solve the EBM test and discuss individual weaknesses and strengths | The EBM test from the previous session will be solved and discussed in the large group. |

# Assessment

Student assessment will be done by 3 interim exams and a final exam. Theory exams will be in the form of MCQs. Practical part of the learning will be assessed via assignments, formative evaluation and participation in the class.

A student feedback form (<https://docs.google.com/forms/d/e/1FAIpQLSd6g6Ar_pp_3kAEQ-s776qd3AkwIY55XRq6adVkC0JpWTbOxw/viewform>) will be used as a part of the program evaluation.

# Further reading and reference

Straus, Sharon E., et al. Evidence-Based Medicine E-Book: How to Practice and Teach EBM. Elsevier Health Sciences, 2018.