Evidence Based Medicine – the clinical decision making

ANETTA UNDAS, MD, PHD | mmundas@cyf-kr.edu.pl | COURSE COORDINATOR

Evidence-based medicine has been described as an approach to practicing medicine in which a clinician is aware of the evidence supporting his or her clinical practice and the quality of that evidence. The most recognized "definition" of EBM names it as "the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients".

Medical students, physician-trainees, and practicing clinicians are increasingly aware that optimal evidence-based clinical practice requires developing a number of skills:

- Ability to ask clinical questions in a way that allows clear and unambiguous answers
- Familiarity with the language describing magnitudes of health effects and the quality of that information
- Ability to search efficiently for the best information to answer those question
- Appraising the evidence to determine its quality (the extent to which one can trust the evidence)
- Making sense of that information and determining its clinical applicability
- Applying the information in care for individual patients: weighing benefits vs. risks in the context of patient's values and preferences

Course objective

Understanding concepts and familiarity with the language of evidence-based medicine that are necessary to effectively communicate and take part in discussions on the wards in most European and North American health care environments.

Tutors

Clinical Decision Unit, 2nd Department of Internal Medicine

Wiktoria Leśniak, MD, PhD, <u>lesniak@mp.pl</u> (WL)
Filip Mejza, MD, PhD, <u>filipmejza@hotmail.com</u> (FM)
Małgorzata Bała, MD, PhD, (MB)
Magdalena Koperny, MSc (MK)
Miłosz Jankowski (MJ)
Monika Piwowar, PhD, <u>mpiwowar@cm-uj.krakow.pl</u> (MP)

GROUP II

Schedule

Part 1

October 1st 8.15-10.15

FΜ

Conference room (1st floor) Skawińska 8

Part 2

October 4th 8-10.15

FΜ

Conference room (1st floor) Skawińska 8

Part 3

October 8th 8-10.15

мт

Conference room (1st floor) Skawińska 8

Part 4

October 11th, 8-10.15

WI

Conference room (1st floor) Skawińska 8

Part 5

October 15th 8-10.15

MK

Conference room (1st floor) Skawińska 8

Part 6

October 22nd 8-10.15

WI

Conference room (1st floor) Skawińska 8

Part 7

October 29th 8-10.15

FΜ

Aula

Skawińska 8

Part 8

November 5th 8–10.15

MJ

Aula

Skawińska 8

Part 9

November 12th 8-10.15

MB

Aula

Skawińska 8

GROUP IIA

Part 10

November 19th 8–10.15 Kopernika 7e 1st floor

MP

Part 11

November 26th 8–10.15 Kopernika 7e 1st floor

MP

Part 12

December 3rd 8–10.15 Kopernika 7e 1st floor MP

Part 13

December 10th 8–10.15 Kopernika 7e 1st floor

MP

GROUP IIB

Part 10

January 7th 8–10.15 Kopernika 7e 1st floor MP

Part 11

January 14th 8–10.15 Kopernika 7e 1st floor MP

Part 12

January 21th 8-10.15

MP

Part 13

January 28th 8-10.15

MP

GROUP I

Schedule

Part 1

February 18th 8-10.15

WL

Aula

Skawińska 8

Part 2

February 25th 8-10.15

FΜ

Aula

Skawińska 8

Part 3

March 4th 8-10.15

ΜJ

Aula

Skawińska 8

Part 4

March 11th 8-10.15

FΜ

Aula

Skawińska 8

Part 5

March 18th 8-10.15

MK

Aula

Skawińska 8

Part 6

March 25th 8-10.15

WL

Aula

Skawińska 8

Part 7

April 1st 8-10.15

FM

Aula

Skawińska 8

Part 8

April 8th 8-10.15

ΜJ

Aula

Skawińska 8

Part 9

April 15th 8-10.15

MB

Aula

Skawińska 8

Group IA Part 10

May 6th 8-10.15

MP

Part 11

May 8th 8-10.15

MP

Part 12

May 13th 8-10.15

MP

Part 13

May 15th 8-10.15

MP

Group IB

Part 10

May 20th 8-10.15

MP

Part 11

May 22nd 8-10.15

MP

Part 12

May 27th 8-10.15

MP

Part 13

May 29th 8-10.15

MP

Venue

Dress code

casual; no white coat or other special dress required

Student evaluation

Credit requirements:

- attendance of at least 10 of 13 sessions
- active participation in discussions
- passing test

Course format & outline

Seminars (40h)

1.

- 1.1 Philosophy of EBM
- 1.2. Asking clinical questions
- background and foreground questions
- elements of a specific clinical question (PICO): patients/population, intervention (drug, diagnostic test, exposure), outcomes (how the health consequences of the intervention are measured)
- 1.3. Studies about therapy and prevention how to assess their quality
- types of clinical studies used in efficacy assessment
- randomization, concealment of allocation
- intention-to-treat analysis
- completeness of follow-up
- blinding
- clinically important and surrogate outcomes
- 3 hrs
- 2. and 3
- 1. Practical critical appraisal of the articles about therapy and prevention

- 2. Presentation of the study results and their interpretation
- EBM glossary: risk, RR, RRR, ARR, RB, RBI, ABI, RRI, ARI, OR, HR, NNT, NNH etc.
- statistical significance and clinical relevance: p-values and confidence intervals
- 3. Critical appraisal of the articles about therapy and prevention (continued) and their interpretation and use in clinical practice 6 hrs

4.

- 1. Critical appraisal of the articles about therapy and prevention (continued) and their interpretation and use in clinical practice
- 2. Systematic reviews and metaanalyses how to assess their quality and use them in practice
- 3. Cochrane reviews
- 4. Network metaanalyses, individual patient
- 5. Practical critical appraisal of integrative studies (systematic reviews and meta-analyses)

3 hrs

5.

- 1. Practical critical appraisal of integrative studies cont.
- 2. Sources of evidence
- pre-appraised sources of up-to-date knowledge (UpToDate, Cochrane Library, ACP Journal Club, etc.)
- principles of searching and using medical databases (Medline, Embase, Cochrane Library)
- 3. Building simple search strategy
- 4. Software for searching and managing references

3 hrs

6. Clinical practice guidelines and recommendations and how to assess their quality and use them in practice

AGREE Instrument, GRADE

Practical – critical appraisal of practice guidelines

Misleading claims in medical research (most common traps and mistakes and how to avoid them) 3 hrs

- 7. Diagnostic studies
- 3 hrs
- 8. Observational studies methodology, critical appraisal of studies on prognosis, reporting of observational studies (STROBE)

3 hrs

9. Clinical studies – basic information and examples, phases of clinical studies, good clinical practice

3 hrs

10. Basic statistics

descriptive statistics (measures of central tendency and measures of dispersion), graphs (histogram, box-plot graph), confidence interval, theory of hypothesis testing, normal distribution, testing normality of distribution (Shapiro-Wilk test / Kolomogorov-Smirnoff test) 3 hrs

11. Comparison of two or more populations

t test, paired t-test, one-way analysis of variance (ANOVA)

3 hrs

12. Relationship between two quantitative/ qualitative measures correlation, simple linear regression, chi-squre test 3 hrs

13. Biostatistics and summary and feedback

TEST

3 hrs

EBM:

15 multiple-choice questions with one correct answer (out of 5: answers A-E), 15 min, 15 points Biostatistics:

7 multiple-choice questions with one correct answer (out of 5: answers A-E), 10 min, 7 points 2 practical exercises (using software: SAS), 30 min, 8 points

Total score: 30sc

Minimum number of points to pass the course: 16 (minimum 8 in EBM part and minimum 8 in Biostatistics part)

score	grade
16 - 18.5	3.0
19 - 21.5	3.5
22 - 24.5	4.0
25 - 27.5	4.5
28 - 30	5.0

Suggested readings

- 1. Users' Guides to the Medical Literature: A Manual for Evidence-Based Clinical Practice. Guyatt G, Rennie D, Medea M, Cook D (editors). 3rd Edition, McGraw-Hill Professional, 2015
- 2. http://ktclearinghouse.ca/cebm/intro