JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE

Evidence-Based Medicine

Educational subject description sheet

Basic information

Department Faculty of Medicine	**Didactic cycle** 2016/17
Field of study Medical Program	**Realization year** 2019/20
Study level long-cycle master's degree program	**Lecture languages** English
Study form full-time	**Block** obligatory for passing in the course of studies
Education profile general academic	**Mandatory** obligatory
Disciplines Medical science	**Examination** examination
Subject related to scientific research Yes	**Standard group** D. Behavioral and social sciences with elements of professionalism

Subject coordinator	Anetta Undas, Wiktoria Leśniak
Lecturer	Filip Mejza, Miłosz Jankowski, Małgorzata Bała, Wiktoria Leśniak, Monika Piwowar, Joanna Żuk

Periods Semester 7, Semester 8	**Examination** examination **Activities and hours** practical classes: 40	**Number of ECTS points** 2.0

Goals

C1	To teach students about concepts and the language of evidence-based medicine that are necessary to effectively communicate with health care professionals and patients
C2	To explain how to critically appraise evidence (primary studies, systematic reviews and clinical practice guidelines) on treatment, diagnosis and prognosis
C3	To teach the basics of statistics
C4	To encourage students to be critical while analyzing evidence and to gain skills necessary to learn and practice EBM
C5	To make students aware of the problems related to misinterpretation of study results

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	basics of evidence-based medicine	D.W23	written examination
W2	methods of conducting scientific research	O.W5	written examination
Skills – Student can:			
U1	critically analyse medical literature, including in English, and draw conclusions	D.U17	written examination, project
U2	critically evaluate the results of scientific research and adequately justify the position	O.U9	project
Social competences – Student is ready to:			
K1	use objective sources of information	O.K7	project

Calculation of ECTS points

Activity form	Activity hours*
seminar	27
classes	9
preparation of a paper	5
preparation for examination	10
information collection	7
preparation for classes	2

Student workload	**Hours** 60
Workload involving teacher	**Hours** 40

Practical workload	Hours 40

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes	Activities
1.	Philosophy of EBM, asking clinical questions, types of clinical studies used in efficacy assessment, concepts related to methodology of clinical studies (randomization, concealment of allocation, intention-to-treat analysis, completeness of follow-up, blinding), types of study design (parallel, cross-over, factorial design), clinically important and surrogate outcomes	W1	seminar
2.	Presentation of the study results and their interpretation (risk, RR, RRR, RRI, ARR, OR, HR, NNT, NNH), statistical significance and clinical relevance, p-values and confidence intervals	W1, U1	seminar
3.	Practical - critical appraisal of the articles about therapy and prevention	W1, U1, U2, K1	seminar
4.	Critical appraisal of diagnostic studies	W1, U1, U2, K1	seminar
5.	Systematic reviews, metaanalysis - glossary and critical appraisal	W1, U1, U2, K1	seminar
6.	Cochrane reviews, network metaanalysis. Reporting of clinical studies - randomized controlled trials (CONSORT), observational studies (STROBE) and diagnostic studies (STARD)	W1, W2, U1, U2, K1	seminar
7.	Misleading claims in medical research - analysis of examples of most common traps and mistakes. Clinical practice guidelines - glossary, critical appraisal (AGREE II Instrument), methodology used to develop valid guidelines (GRADE)	W1, U1, K1	seminar
8.	Valid sources of evidence, principles of searching and using medical databases	K1	seminar
9.	Basic statistics – descriptive statistics, comparison of two or more populations, relationship between two quantitative/qualitative measures, analysis of the example data	W2	classes
10.	Comparison of two or more populations: t test, paired t-test, one-way analysis of variance (ANOVA)	W2	classes
11.	Relationship between two quantitative/ qualitative measures: correlation, simple linear regression, chi-squre test	W2	classes
12.	Project presentation (asking the clinical question, searching for evidence, critical appraisal of the identified study and interpretation of its results)	U1, U2	seminar

Course advanced

Teaching methods:

case study, textual analysis, computer classes, discussion, group work, assignments solving, seminar, lecture with multimedia presentation

Activities	Examination methods	Credit conditions
seminar	written examination	receiving at least 60% points
classes	project	preparing and presenting the project

Entry requirements

knowledge of types of epidemiological studies; knowledge of pathophysiology and propedeutics of medicine; basic knowledge on the use of medicines; good English skills

Literature

Obligatory

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

Optional

1. The GRADE Working Group: Grading quality of evidence and strength of recommendations. BMJ. 2004; 328: 1490
2. Brignardello-Petersen R., Rochwerg B., Guyatt G.H.: What is a network meta-analysis and how can we use it to inform clinical practice? Pol Arch Med Wewn, 2014; 124 (12): 659–660

Standard effects

Code	Content
D.U17	critically analyse medical literature, including in English, and draw conclusions
D.W23	basics of evidence-based medicine
O.K7	use objective sources of information
O.U9	critically evaluate the results of scientific research and adequately justify the position
O.W5	methods of conducting scientific research