



## LITHUANIAN UNIVERSITY OF HEALTH SCIENCES

Approved by the Senate of  
The Lithuanian University of Health  
Sciences  
Resolution no. x

### ESSENTIALS OF THE EVIDENCE BASED MEDICINE

#### DOCTORAL COURSE PROGRAM

Coordinator of the program:

Department of Surgery Prof. Dr. Zilvinas Dambrauskas

signature

Departments involved in the program:

1. Department of Surgery, Prof. Dr. A. Tamelis

signature

2. Department of Gynaecology/Obstetrics, Prof. Dr. R. J. Nadisauskiene

signature

3. Department of Orthopaedics, Prof. Dr. A. Smailys

signature

4. Institute for Research of Digestive System, Prof. Dr. Habil. L. Kupcinkas

signature

Kaunas, 2016

### Information about the Doctoral Course

Area	Biomedical sciences
Field (code)	Medicine – 06B, Odontology – 07B, Nursing – 10B
Title of the subject	<b>Essentials of the Evidence Based Medicine</b>
Duration of the program	160 h (6 ECTS)
Lectures	50 h
Seminars	30 h
Self studying	80 h

### Program Development Group

No.	Academic title, first and last name	Tenure	Phone	E-mail
1	Prof. Zilvinas Dambrauskas	Professor, Department of Surgery	32 66 82	zilvinas.dambrauskas@gmail.com
2	Prof. Antanas Gulbinas	Professor, Department of Surgery	32 67 51	gulbanta@gmail.com

#### Annotation of the programme:

##### Introduction and justification

Evidence-Based Practice (EBP) in Medicine is “the conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patient. It means integrating individual clinical expertise with the best available external clinical evidence from systematic research” (Sackett D, 1996).

Currently there is a significant need to educate the young doctors, residents and doctoral students in Evidence Based Medicine (EBM) and EBP in Lithuania. Development and introduction of new drugs and/or technologies in clinical practice is closely associated with the basic and translational research, development of new evidence based treatment guidelines and algorithms, and evidence-based practice.

Internet based poll of LUHS’ students (423 participants) showed that 84,1% (361) of students felt that they have insufficient knowledge about the EBM and tools needed for the daily EBP. Furthermore, 91,4% (392) of students stated that various concepts of EBM should be more readily integrated into the curriculum.

This study demonstrates the need for EBM studies at undergraduate and postgraduate level and different context with the aim to further integrate research, education and patient care.

##### The aim of the program

Familiarize doctoral students with the principals of EBM and the role of EBP in clinical practice and research, and to teach them how to use the EBM tools in patient care and/or scientific, educational activities.

##### Tasks

1. To familiarize the students with the EBM concept and the levels of evidence.
2. To familiarize the students with the design of biomedical studies.
3. To teach the students how to critically appraise the published scientific evidence.
4. To familiarize the students with the practical approach to the statistics in biomedical research .

5. To teach the students how to use EBM tools in planning and implementation of the research project.
6. To familiarize the students with the development and implementation of the clinical guidelines, concepts of the quality indicators and quality assurance in medicine.

### Structure and content of the programme, teaching methods

Overall duration of the programme - 160 h (6 ECTS). Interactive lectures - 50 h, seminars - 30 h, self-studying - 80 h.

**Lecturers:** see Annex 2.

**Literature and learning resources:** see Annex 1.

**Assessment:** Overall mark/score - 100% (10 points): 30% - presentation on the relevance of the planned study; 20% - writing the abstract on the methodology and first obtained results; 50% - writing and presentation of the research plan and substantiation (methodology, working packages, calendar plan, resources).

## Content of the programme

### LECTURES

No.	Lecture	Hours	Lecturers
1.	Introduction to the EBM and EBP	2	Prof. R. J. Nadisauskiene
2.	Levels of Evidence in Medicine	3	Prof. R. J. Nadisauskiene
3.	Design of Therapeutic Studies	3	Prof. Z. Dambrauskas
4.	Systematic Review, Meta-analysis: Methodology and Critical Appraisal	3	Prof. Z. Dambrauskas
5.	Planning of the Fundamental/Basic Research Projects: Evidence at the Transcriptional and Translational Levels	3	Dr. A. Jasukaitiene
6.	The Link Between the Basic and Clinical Research (From bench to bedside)	3	Dr. A. Jasukaitiene
7.	Formulating a Relevant Clinical/Research Question – PICO	3	Dr. A. Jasukaitiene
8.	Literature Search	3	Dr. A. Jasukaitiene
9.	Critical Appraisal of Therapeutic Study	3	Prof. Z. Dambrauskas
10.	Critical Appraisal of Systematic Review	2	Prof. Z. Dambrauskas
11.	Design of Diagnostic Studies	2	Prof. A. Gulbinas
12.	Statistics in Medical Literature	3	Prof. A. Gulbinas
13.	Critical Appraisal of Diagnostic Studies	3	Prof. A. Gulbinas
14.	Evidence Based Treatment Standards and Quality Assurance	3	Prof. R. J. Nadisauskiene
15.	Assessment of the intervention efficacy (NNT-number needed to treat)	3	Prof. Z. Dambrauskas
16.	Sensitivity, Specificity, Likelihood Ratio	2	Prof. A. Gulbinas
17.	Presentation of the Research Project and Data	3	Prof. S. Tarasevicius
18.	Writing the Scientific Paper	3	Prof. S. Tarasevicius

### SEMINARS

No.	Lecture	Hours	Lecturers
1.	The Link Between the Basic and Clinical Research (From bench to bedside)	2	Dr. A. Jasukaitiene

2.	Formulating a Relevant Clinical/Research Question – PICO	2	Dr. A. Jasukaitiene
3.	Literature Search	2	Dr. A. Jasukaitiene
4.	Critical Appraisal of Therapeutic Study	2	Prof. Z. Dambrauskas
5.	Critical Appraisal of Systematic Review	2	Prof. Z. Dambrauskas
6.	Statistics in Medical Literature	4	Prof. A. Gulbinas
7.	Critical Appraisal of Diagnostic Studies	4	Prof. A. Gulbinas
8.	Evidence Based Treatment Standards and Quality Assurance	4	Prof. R. J. Nadisauskiene
9.	Assessment of the intervention efficacy (NNT-number needed to treat)	2	Prof. Z. Dambrauskas
10.	Sensitivity, Specificity, Likelihood Ratio	2	Prof. A. Gulbinas
11.	Presentation of the Research Project and Data	2	Prof. S. Tarasevicius
12.	Writing the Scientific Paper	2	Prof. S. Tarasevicius

### SELF-STDYING

No.	Lecture	Hours	Lecturers
1.	Formulating a Relevant Clinical/Research Question – PICO	6	Dr. A. Jasukaitiene
2.	Literature Search	6	Dr. A. Jasukaitiene
3.	Critical Appraisal of Therapeutic Study	6	Prof. Z. Dambrauskas
4.	Critical Appraisal of Systematic Review	6	Prof. Z. Dambrauskas
5.	Statistics in Medical Literature	6	Prof. A. Gulbinas
6.	Critical Appraisal of Diagnostic Studies	6	Prof. A. Gulbinas
7.	Assessment of the intervention efficacy (NNT-number needed to treat)	6	Prof. Z. Dambrauskas
8.	Presentation of the Research Project and Data	14	Prof. R. J. Nadisauskiene
9.	Final Practical Assignment (writing the working plan based on the EBM principals)	24	Prof. S. Tarasevicius

### Outcomes and the Competences of the Programme:

Outcomes	Competences	Learning/teaching methods
Students will get acquainted with the concepts of EBM	Students will understand the impact of scientific evidence for the clinical practice as well as the planning and implementation of research projects. They will be able to analyse and formulate clinical	Interactive lectures, seminars and practical assignments.

	guidelines and identify quality indicators for the provided care.	
Students will be able to formulate a relevant clinical/scientific question and look for the solution	Students will be able to formulate a relevant clinical question in different medical context (PICO). They will be able to use search engines and databases (Cochrane, Uptodate, PubMed ir kitomis) in order to obtain an objective and meaningful evidence based answer.	Interactive lectures, seminars and practical assignments.
Students will be able to critically appraise the results of scientific studies and assess their significance	Students will be able to evaluate the study design, it's scientific value, methodological benefits and drawbacks, and compare several studies on the same topic. They will know how to assess and translate into the practice the studies presenting data about diagnostic markers, effects of treatments (RCT, cohort study, case control, systematic review and meta-analysis). Students will be able to critically appraise the results of various studies, assess the validity and applicability of the presented results and draw the objective conclusions. They will be able to assess and justify the need of further research.	Interactive lectures, seminars and practical assignments.
Students will be able to use the EBM tools in their clinical work and research projects	Students will be able to use EBM in their clinical practice and select the best available diagnostic and/or therapeutic methods. They will be able to justify their clinical decision based on the EBM principals. Students will also be able to plan and implement the research projects and to soundly present the obtained data.	Interactive lectures, seminars and practical assignments.

## Annex 1

**Literature**

No.	Title	Authors	Publishers
1	Evidence-Based Medicine: How to Practice and Teach It, 4e	Sharon E. Straus MD, Paul Glasziou MB BS PhD FRACGP, W. Scott Richardson MD, R. Brian Haynes MD	Churchill Livingstone 2010, ISBN 978-0702031274
2	Practical Statistics for Medical Research	Douglas G. Altman	Chapman and Hall/CRC - ISBN 9780412276309
3	Sveikatos mokslinių tyrimų pradžiamokslis: universiteto vadovėlis	sudarytojos: Rūta Jolanta Nadišauskienė, Skirmantė Sauliūnė	Kaunas : Krizių tyrimo centras, 2014. ISBN 9789955153511.

## Annex 2

**List of lecturers:****1. Professors or senior researchers:**

Prof. Z. Dambrauskas  
 Prof. R. J. Nadisauskiene  
 Prof. A. Gulbinas  
 Prof. S. Tarasevicius

**2. Associated professors:**

-

**3. Other lecturers:**

Dr. A. Jasukaitiene