



Univerza v Mariboru

Medicinska fakulteta

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Ime predmeta:	Farmakoepidemiologija in farmakoekonomika
Course title:	Pharmacoepidemiology and Pharmacoeconomics

Študijski program in stopnja Study programme and cycle	Študijska smer Study option	Letnik Year of study	Semester Semester
Biomedicinska tehnologija/3. stopnja		2	3 ali 4
Biomedical Technology/3rd Degree			

Vrsta predmeta (obvezni ali izbirni) /
Course type (compulsory or elective)

Izbirni

Elective

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje Clinical training	Druge oblike študija Other forms of study	Samost. delo Individual work	ECTS
15	30	AV LV RV			135	6

Nosilec predmeta / Course
coordinator:Doc. dr. Matej Štuhec
Doc. dr. Eva Turk

Jeziki /Languages:

Predavanja / Lectures:

Slovenski, Angleščina/Slovene, English

Vaje / Tutorial:

Pogoji za vključitev v delo oz. za opravljanje študijskih
obveznosti:Prerequisites for enrolling in the course or for
performing study obligations:

Vsebina (kratak pregled učnega načrta):

Content (syllabus outline):

Primerjava zdravstvenega sistema v SLO in EU.
Politike financiranja zdravja v Sloveniji in Evropi
Koncepti farmakoepidemioloških in farmakoekonomskih
raziskav.
Ocenjevanje terapevtskih (kliničnih, humanističnih in
ekonomskih) izidov pri zdravljenju z zdravili.
Kritičen pregled raziskav
Baze podatkov za farmakoepidemiološko in
farmakoekonomsko ocenjevanje ter vrste
farmakoepidemioloških in farmakoekonomskih študij.
Farmakoepidemiološke analize (poročilo primerov,
raziskava serije primerov, raziskava primer-kontrola,
raziskava izpostavljeni-neizpostavljeni (kohortna
študija).
Farmakoekonomske analize (analiza zmanjševanja
stroškov, analiza stroškovne učinkovitosti, analiza
stroškovne koristnosti, analiza stroškovne uporabnosti).
Farmakovigilanca: regulatorni, terapevtski in vedenjski
vidiki.
Modeliranje v farmakoepidemiologiji in
farmakoekonomiki.

Comparison of the Slovenian and EU Healthcare systems.
Medicines reimbursement policies in Slovenia and
Europe
Concepts of pharmacoepidemiologic and
pharmacoeconomic research.
Assessment of therapeutic (clinic, humanistic and
economic) outcomes in pharmacotherapy.
Critical appraisal of studies
Data sources for pharmacoepidemiologic and
pharmacoeconomic assessment and types of
pharmacoepidemiologic and pharmacoeconomic studies.
Pharmacoepidemiologic analysis (case reports, case
series studies, case-control studies, cohort studies).
Pharmacoeconomic analysis (cost minimization analysis,
cost effectiveness analysis, cost benefit analysis, cost
utility analysis).
Pharmacovigilance: regulatory, therapeutic and
behavioural aspects.
Modelling in pharmacoepidemiology and
pharmacoeconomics.
The role of epidemiologic, pharmacoepidemiologic and
economic data and data on efficacy and safety of drugs

<p>Pomen epidemioloških, farmakoepidemioloških in ekonomskih podatkov ter podatkov o učinkovitosti in varnosti zdravil za racionalizacijo njihove uporabe v rutinski klinični praksi. Na dokazih podprta klinična praksa</p>	<p>on rationalization of their usage in routine clinical practice. Evidence based clinical practice</p>
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Temeljni literatura in viri / Reading materials:

Drummond, Michael F., Mark J. Sculpher, Karl Claxton, Greg L. Stoddart, and George W. Torrance. Methods for the economic evaluation of health care programmes. Oxford university press, 2015.

Eddy, David. "Health technology assessment and evidence-based medicine: what are we talking about?." value in health 12 (2009): S6-S7.

Rupel-Prevolnik V, Simčič B, Turk E. Dictionary of Terminology in the Health Care System. Ljubljana: Ministrstvo za zdravje Republike Slovenije; 2014. (Slovenian)

B. L. Strom, Pharmacoepidemiology, John Wiley&Sons, Chichester, Second edition, 1994

Tekoča periodika: Pharmacoepidemiology and Drug Safety

J. L. Bootman, R. J. Townsend, W. F. McGhan, Principles of Pharmacoeconomics, Harvey Whitney Books Company, Cincinnati, Second edition, 1996.

M. F. Drummond, B O Brian, G. L. Stoddart, G. W. Torrance, Methods for the Economic Evaluation of Health Care Programs, Oxford University Press, Oxford, 1997.

L. E. Baskin, Practical Pharmacoeconomics (how to design, perform and analyze outcomes research), Advanstar Communications, Inc., Cleveland, 1998.

Ozcan, Y.A. Health care benchmarking and performance evaluation: an assessment using data envelopment analysis (DEA). New York: Springer, 2008

McIntosh, E. et al. Applied methods of cost-benefit analysis in health care. Oxford [etc.]: Oxford University Press, 2011

Gray, A. Applied methods of cost-effectiveness analysis in health care. Oxford [etc.]: Oxford University Press, 2011

Tekoča periodika: PharmacoEconomics

Pravilnik o razvrščanju zdravil na listo v Republiki Sloveniji (Uradni list RS, št. 35/13)

Cilji in kompetence:

Umestitev zdravila v sistem zdravstvenega varstva, njegov pomen za populacijo in ciljne skupine ter njegov pomen za posameznika bio-psiho-socialno-ekonomskem smislu.

Spoznati osnove farmakoepidemiologije, ki jo definiramo kot aplikacijo epidemiološkega utemeljevanja, metod ter znanja za študij uporabe zdravil ter njihovih učinkov na človeški populaciji.

Spoznati osnove farmakoeconomike, ki na osnovi ekonomskih, kliničnih in epidemioloških metod omogoča racionalizacijo zdravljenja z zdravili in je hkrati orodje, ki omogoča racionalizacijo sredstev v sistemu zdravstvenega varstva.

Predvideni študijski rezultati:

Znanje in razumevanje:

Študent osvoji znanje in razumevanje materije, potrebne za racionalno uporabo zdravil.

Prenosljive/ključne spretnosti in drugi atributi:

Študent pridobi sposobnost izvajanja farmakoepidemioloških in farmakoeconomskih raziskav.

Metode poučevanja in učenja:

Predavanja
Seminarji

Objectives and competences:

Positioning a medicine in the health care system and its importance for the population and target groups as well as its importance for the individual bio-psycho-social-economic means.

Basic knowledge of pharmacoepidemiology, which is defined as the application of epidemiologic reasoning, methods, and knowledge for the study of the use of drugs and their effects on the human population.

Learning the basics of pharmacoeconomics that relies on the economic, clinical and epidemiological methods to rationalize drug treatment and is a tool that allows for efficient resource allocation in the health care system.

Intended learning outcomes:

Knowledge and understanding:

Student wins knowledge and understanding of subject-matter, needed for rational usage of drugs.

Transferable/key competences and other abilities:

Student becomes master of performing pharmacoepidemiologic and pharmacoeconomic research.

Learning and teaching methods:

Lectures
Seminars

Samostojno delo	Individual work
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Načini ocenjevanja:

**Delež (v %) /
Share (in %)**

Assessment methods:

Način (pisni izpit, ustno izpraševanje, naloge, projekt)		Method (written or oral exam, coursework, project):
pisni izpit, seminarska naloga (pisna in predstavitev)	60 % 40 %	written examination, seminars (written and presented)

Reference nosilca / Course coordinator's references:

ŠTUHEC MATEJ:

ŠTUHEC, Matej, GORENC, Katja, ZELKO, Erika. Evaluation of a collaborative care approach between general practitioners and clinical pharmacists in primary care community settings in elderly patients on polypharmacy in Slovenia: a cohort retrospective study reveals positive evidence for implementation. *BMC health services research*, ISSN 1472-6963, 2019, vol. 19, art. no. 118, str. 1-9, graf. prikazi, doi: 10.1186/s12913-019-3942-3. [COBISS.SI-ID 17054259], [JCR, SNIP, WoS do 9. 8. 2021: št. citatov (TC): 11, čistih citatov (CI): 8, čistih citatov na avtorja (CIAu): 2.67, Scopus do 8. 8. 2021: št. citatov (TC): 12, čistih citatov (CI): 10, čistih citatov na avtorja (CIAu): 3.33] kategorija: 1A3 (Z); uvrstitev: SCI, Scopus, MBP; tip dela je verificiral OSICN točke: 24.83, št. avtorjev: 3

ŠTUHEC, Matej, TEMENT, Valentina. Positive evidence for clinical pharmacist interventions during interdisciplinary rounding at a psychiatric hospital. *Scientific reports*, ISSN 2045-2322, 2021, vol. 11, 13641, 1-8 str. <https://www.nature.com/articles/s41598-021-92909-2#citeas>, doi: 10.1038/s41598-021-92909-2. [COBISS.SI-ID 73302275], [JCR, SNIP] financir: ARRS, Program, P3-0036, SI, Bio-psiho-socialni model kvalitete življenja kategorija: 1A1 (Z, A¹, A1/2); uvrstitev: SCI, Scopus, MBP; tip dela še ni verificiran točke: 51.83, št. avtorjev: 2

ŠTUHEC, Matej, BRATOVIČ, Nika, MRHAR, Aleš. Impact of clinical pharmacist's interventions on pharmacotherapy management in elderly patients on polypharmacy with mental health problems including quality of life : a prospective non-randomized study. *Scientific reports*, ISSN 2045-2322, 2019, art. 16856, vol. 9, str. 1-8, ilustr. <https://www.nature.com/articles/s41598-019-53057-w.pdf>, doi: 10.1038/s41598-019-53057-w. [COBISS.SI-ID 4850289], [JCR, SNIP, WoS do 9. 8. 2021: št. citatov (TC): 11, čistih citatov (CI): 10, čistih citatov na avtorja (CIAu): 3.33, Scopus do 16. 8. 2021: št. citatov (TC): 12, čistih citatov (CI): 12, čistih citatov na avtorja (CIAu): 4.00] kategorija: 1A1 (Z, A¹, A1/2); uvrstitev: SCI, Scopus, MBP; tip dela je verificiral OSICN točke: 34.55, št. avtorjev: 3

TURK EVA:

TURK, Eva, MIČETIČ-TURK, Dušanka, ŠIKIĆ POGAČAR, Maja, TAPAJNER, Alojz, VLAISAVLJEVIĆ, Veljko, PREVOLNIK RUPEL, Valentina. Health related QoL in celiac disease patients in Slovenia. *Health and quality of life outcomes*, ISSN 1477-7525, 2020, vol. 18, art. no. 356, 6 str., tabele. <https://hqlq.biomedcentral.com/articles/10.1186/s12955-020-01612-9>, doi: 10.1186/s12955-020-01612-9. [COBISS.SI-ID 36055811], [JCR, SNIP, WoS do 2. 12. 2020: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 21. 11. 2020: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0] kategorija: 1A2 (Z, A¹, A1/2); uvrstitev: SSCI, SCI, Scopus, MBP; tip dela je verificiral OSICM točke: 15.99, št. avtorjev: 6

TURK, Eva, HABJANIČ, Ana. Slovenia. V: RAFFERTY, Anne Marie (ur.). Strengthening health systems through nursing : Evidence from 14 European countries, (Health Policy Series, no. 52). Copenhagen: World Health Organization, European Observatory on Health Systems and Policies. cop. 2019, str. [121]-131. <https://apps.who.int/iris/bitstream/handle/10665/326183/9789289051743-eng.pdf?sequence=1&isAllowed=y>. [COBISS.SI-ID 512917560] kategorija: 3C (Z); tip dela je verificiral OSICM točke: 10, št. avtorjev: 2

TURK, Eva, DURRANCE-BAGALE, Anna, HAN, Emeline, BELL, Sadie, RAJAN, Selina, LOTA, Maria Margarita M, OCHU, Chinwe, LAZO PORRAS, Maria, MISHRA, Pallavi, FRUMENCE, Gasto, MCKEE, Martin, LEGIDO-QUIGLEY, Helena. International experiences with co-production and people centredness offer lessons for covid-19 responses. *BMJ*, ISSN 1756-1833, 2021, vol. 372, str. 1-4. <https://www.bmj.com/content/372/bmj.m4752.long>, doi: 10.1136/bmj.m4752. [COBISS.SI-ID 53988355], [JCR, SNIP, WoS do 31. 3. 2021: št. citatov (TC): 1, čistih citatov (CI): 1, čistih citatov na avtorja (CIAu): 0.09, Scopus do 6. 6. 2021: št. citatov (TC): 4, čistih citatov (CI): 4, čistih citatov na avtorja (CIAu): 0.37]



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kategorija: 1A1 (Z, A'', A', A1/2); uvrstitev: SCI, Scopus, MBP; tip dela je verificiral OSICM
točke: 26.39, št. avtorjev: 12