EPIDEMIOLOGY

CU characterization:

    CU name:

Epidemiology

    Scientific area acronym:

MIS

    Duration:

Semiannual

    Working hours:

140

    Contact hours:

40

    ECTS:

5

    Observations:

N/A

Teacher in charge and respective teaching load in the CU:

Inês Fronteira – 52.5 hours

Other teachers and respective teaching load in the CU:

N/A

Intended learning outcomes (knowledge, skills and competences to be developed by the students):

After this unit, students should be able to:

1. Define epidemiology.
2. Describe the assumptions of the epidemiological method.
3. Identify the three components of the epidemiological triad.
4. List at least three domains of the health sciences were epidemiology can be applied.
5. Describe two of the main design characteristics of clinical trials, community trials and field trials.

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Intended learning outcomes (knowledge, skills and competences to be developed by the students): (continuation)

6. Identify at least one advantage and one disadvantage of clinical, community and field trials.
7. Discuss at least one bias of clinical, community and field trial.
8. Describe the main characteristics of ecological, cross-sectional, case-control and cohort studies.
9. Identify at least one advantage and one disadvantage of ecological, cross-sectional, case-control and cohort studies.
10. Discuss at least one bias of ecological, cross-sectional, case-control and cohort studies.
11. Compute, interpret and apply measures of prevalence and incidence.
12. Compute, interpret and apply measures of association.
13. Analyze the value of each study design e their results in relation to the causal epidemiological thinking.

Syllabus:

I.   **Introduction to epidemiology**: definition, historical evolution, epidemiological method and applications of epidemiology.
II. **Epidemiological studies**: taxonomy of epidemiological studies, experimental studies (Clinical, community and field trials); observational studies (ecological, cross-sectional, case-control and cohort), main sources of bias of the different types of studies, advantages and disadvantages of each type of study.
III. **Measures of prevalence and incidence:** definition, computation and interpretation of person-time incidence, cumulative incidence and prevalence.
IV. **Measures of association:** definition, computation and interpretation of relative risk, risk ratio, odds ratio and attributable fraction. Difference between risk ratio, relative risk and odds ratio.
V.   **Causality in epidemiology:** causal thinking and its evolution throughout the times, Bradford Hill guidelines, necessary, sufficient and component cause, study design and its value as evidence

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Teaching methodologies (including assessment):

Expositions, based in lectures are going to be used to presente definitions and theoretical aspects of epidemiology. The active method will be used to discuss practical exercises and cases.

Evaluation will consist of a final written exam with multiple choice questions, short answer questions and true and false questions. The exam will correspond to a total of 100% of the final grade. The final grade will be given in a scale from 0 to 20. The student will be considered approved with a grade of 10 or more.

References for consultation / mandatory existence:

- Fronteira, I. Manual de Epidemiologia. Almedina, 2018.
- Gordis L. Epidemiology. 4th ed. Saunders Elsevier; 2009.
- Porta M, Greenland S, Last J. A dictionary of Epidemiology. 5th ed. New York: Oxford University Press; 2008.
- Rothman K, Greenland S. Modern Epidemiology. 2nd ed. Lippincott Williams & Wilkins; 1998.
- Rothman K. Epidemiology: an introduction. 2nd ed. Oxford University Press; 2012.