Faculty: Elio Riboli, Saverio Stranges, Franca Barbic, Elena Vanni

Guest lecturers on Occupational Medicine: Giovanni Ferri (Università degli Studi di Bari) and Pierluigi Cocco (Imperial College London).

Course Coordinator: Elio Riboli

Credits: 12

This course covers several topics that are highly relevant to the area of public and global health, disease.

Epidemiology and prevention. It aims at providing the conceptual bases of population public health and the bases to understand the design and methods of epidemiological investigations. In particular it covers the area of occupational and environmental medicine, addressing the epidemiology of specific occupational diseases as well as primary prevention in the worksite and the living environment. The course includes an introduction to health economics.

:

   Epidemiology, Leon Gordis, 6th Edition, Elsevier, 2018

   Current Topics in Occupational Epidemiology, Katherine M. Venables, 1st Edition, 2013, Oxford University Press

Targeted readings and relevant background references will be distributed during the course.

1. Describe Definition, basic concepts, and objectives of Epidemiology particularly with reference to:

1.1. Clinical Medicine versus Epidemiology & Public Health

1.2. Health-related phenomena,

1.3. Natural history of diseases,

1.4. Prognosis/prediction at the population and patient level

1.5. Causes and risk factors for diseases,

1.6. Interventions both preventive and therapeutic,

1.7. Providing the foundations for public health policy

2. The modern epidemiology

   Describe the interactions between external causes, living environment with internal/metabolic and

genetic factors.

6.3. Hierarchy of Evidence from different epidemiological (observational and experimental) studies

7. Sensitivity and specificity.

Present and discuss the type of measurement error and misclassification in exposure and clinical assessments.

Define false positive, false negative, true positive and true negative.

7.1. The diagnostic test metrics.

7.2. Sensitivity and specificity.

7.3. Positive predictive values and negative predictive values and their relationship to disease prevalence and exposure prevalence
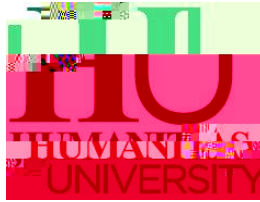
7.4. Receiver Operator Characteristics (ROC) curve and its interpretation

8. Confounding.

The student should be able to:

8.1. Define confounding in medical research.

8.2. Present the conditions for an external vs.23 Tm 0 g 0 G [(ex)-3a6 o8f 113 Tm 0 g 0 G [(co)-6(n/F1 11.04

9.6. Strategies for prevention. High Risk subgroup strategies and population wide strategies. Advantages and disadvantages. The

10. Epidemiology of chronic diseases.

Ageing and multimorbidity

Discuss the ageing phenomenon, as well as major determinants of age-related diseases, including the occurrence of multiple chronic diseases, also known as multimorbidity.

Cancer

Present the major characteristics of the incidence of different cancers around the world, with reference to cancer of the lung, breast, colon and rectum, stomach, liver, cervix uteri, nasopharynx.

Present and discuss the Major time trends of different cancers over the past 50 years.

Neurodegenerative diseases

Discuss the Epidemiology of neurodegenerative diseases, with special reference to Cognitive decline,

Dementia and Parkinson disease

Cardiovascular and metabolic diseases

Discuss the Epidemiology of cardiovascular diseases, including coronary heart disease, cerebrovascular disease, hypertension and type 2 diabetes.

Mental disorders

Discuss the concept of mental health continuum, as well as the epidemiology of major mental disorders, including depression and anxiety.

Chronic kidney diseases

Discuss the Epidemiology of major chronic kidney disease, as well as their interplay with other chronic conditions.

COVID pandemic world epidemiology

Global Epidemiology of COVID 19 and worldwide variations in Public Health responses.

11. Systematic reviews and meta-analyses

Discuss the need for conducting systematic review and meta-analyses.

Define and explain the use of systematic reviews and meta-analysis.

Discuss practical problems and limitations of systematic reviews and meta-analyses

Interpret the findings presented in

Limitation of a single study

Characteristics of a systematic review: design, protocol, study selection criteria, data analyses methods.

Assessing biases in each study

Attrition bias. Definition.

Publication bias. Definition.

Selection bias.

11.1. Data synthesis

11.2. Forest plot (interpretation)

11.3. Heterogeneity in meta-analyses

Overview:

1. Frontal lectures

2. Clinical Case discussion

3. Video reproducing and interactive discussion

4. Multidisciplinary lessons with other specialists and experts

5. Working in groups activities with short presentations by the students during the course

1.   LaDou, Joseph; Harrison, Robert.
                        . McGraw Hill LLC. Edizione del Kindle. Lange Medical book, 6th Edition, 2021

ISBN 978-1-26-0143447

http://www.langetextbooks.com/0071808159.php?c=home

2. Fitness for Work Edited by John Hobson, a Julia Smedley; Publisher: Oxford University Press 2019, English.

EAN: 9780198808657

TOPICS

2.1 The comprehensive way of thinking and acting that addresses-work-related physical and psychosocial risks, promotion and support of healthy behaviors, broader social and environmental determinants.

4.6 The Hierarchy of Occupational Exposure Assessment

5.1 Measure the exposure to assess the level of risk and/or relationship to any symptoms.

5.2 Environmental monitoring

5.3 Biological monitoring

6.1 The ═ criteria used for recognition and compensation of occupational diseases.

6.2 How to demonstrate a causal association.

6.3 Research methods on Occupational Medicine

8.1 Human to Human (blood-borne viruses HBV, HCV, HIV)

8.2 Human to Human (Tuberculosis)

8.2 Occupational Infection by SarsCov2 and COVID19. This topic will be addressed by a multidisciplinary approach with the contribution of Microbiologist and Infectious disease specialist.

8.3 Occupational Infection Animals to Human (Zoonosis) This topic will be addressed by a multidisciplinary approach with the contribution of Microbiologist and Infectious disease specialist.

8.4 Travel associated Infectious diseases.

9.1 Presentation of Cement plant production cycle

9.2 Video recordings of some working tasks in Cement Plant, analysis of the videos by the students and discussion with the teacher.

9.2.1 Noise, auditory and extra-auditory effects

9.2.2 Vibrations. Total body and hand-arm.

9.2.3 Microclimate

9.2.4 Physical stress.

9.2.7 Gas, vapors, and powder exposure including quartz.

9.2.8 Shift work with night work.

9.2.9 Manual handling

9.2.10 Video-terminal activity

9.2.11 Hazardous jobs

: multidisciplinary lesson with pathologist and infection disease teachers.

11.1. Upper respiratory tract disorders, COPD and occupational asthma.

11.2. Occupational lung diseases: lung fibrosis due to hard metal exposure, silicosis and silico tuberculosis, asbestosis.

11.3.

The aim of the course is to give you the basics to understand the life of a company. :

Startinga company