UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Epidemiology and Public Health

2627-4-H4101D263-H4101D083M

Aims

The aim of the course is to provide students with principles, concepts and methods of epidemiology and its application in public health, along with the tools aimed to design a proper epidemiological study.

Contents

The course will focus on the classic activities of hygiene and public health, i.e. analysis of needs, risk and events associated with health (Epidemiology), organization and management of health facilities and definition of priorities, (Planning), design and implementation of projects of prevention, protection and health promotion (Prevention), program Evaluation.
The objectives of epidemiological studies (descriptive, etiological, diagnostic, prognostic epidemiology) and their specific application to answer public health questions will be presented and discussed.

Detailed program

INTRODUCTION TO HYGIENE (Definitions, Concept of health in public health, Hygiene and Public Health activities, the NHS, prevention)
Elements of Epidemiological Methodology (Introduction to epidemiology, outline of epidemiological studies, applications)
DESCRIPTIVE STUDIES AND INDICATORS (Objectives, Frequency measures, Demographic indicators, standardization, public health performance evaluation methods, LEA, PNE)
ANALYTICAL STUDIES (Cohort studies: definitions and characteristics, applications, Registries vs. cohort studies, Case control studies: definitions and characteristics, introduction to bias and confounding, impact measures)
CROSS-SECTIONAL STUDIES AND ECOLOGICAL STUDIES (Cross-sectional studies: definitions and

characteristics, sampling techniques, questionnaires and validity, the Multipurpose survey, ecological studies: definitions and characteristics)
EXPERIMENTAL STUDIES (RCT: Design, characteristics and biases; cluster trials and quasi-experimental studies; efficacy vs. efficiency, limitations of clinical trials, systematic reviews and meta-analyses)
BIAS AND CONFOUNDING (Association vs. Causality (Bradford-Hill), Systematic Errors, Errors Due to Chance, Misclassification, Confounding, Effect Modifiers, Bias Mitigation Strategies)
GUIDELINES AND DIAGNOSTIC-THERAPEUTIC PATHWAYS (Principles and application, systematic reviews and meta-analysis, guidelines diagnostic therapeutic pathways)

Prerequisites

knowledge of medical statistics

Teaching form

LESSONS, PRACTICE AND SELF-ASSESSMENT TEST

Textbook and teaching resource

Digital learning material

Signorelli C (editor). Igiene e Sanità Pubblica. SEU, Roma, 2017
Pontello M, Auxilia F. Igiene, Medicina Preventiva e salute globale. Piccin 2022
Santos Silva I. IARC, Lyon. Cancer Epidemiology: Principles and Methods, 1999

Semester

Second semester

Assessment method

see the general Syllabus of the course

Office hours

By appointment, write to giampiero.mazzaglia@unimib.it

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION