

**Working group - Training and education for public health
epidemiology in Europe**

During the EUPHA Public Health Epidemiology Section annual meeting in Montreux, a proposal was made by Giuseppe La Torre in order to plan and develop a new book.

A preliminary title is "**Applied Epidemiology and Biostatistics**". This new book proposal, in a preliminary thought, will have as a possible target Public Health practitioners, Clinicians, and Health Managers.

The main idea is to describe not only theory, but above all how to use the available software for epidemiologic and statistical data analysis.

In other words, each Author is requested to write a chapter/paragraph describing the issue included in the list of contents, using as example his/her published literature, and giving the instructions for replicating the analysis through the use of free available software.

In special cases the possibility of using commercial software (i.e., Stata, SPSS) will be discussed.

The Authors must require all the following criteria:

- be the owner of the database to be used in the analysis
- give the written permission of using the database
- having already published the results of the research related to the database
- give the electronic format (pdf file) of the paper.

Possible list of contents

EPIDEMIOLOGY

Introduction to epidemiology

Causality in Epi

Measures of occurrence and associations

Stratification and standardisation (SMR)

Type of studies

- experimental
- quasi-experimental
- case-control
- cohort
- cross-sectional
- ecological
- surveillance
- economic evaluation

Bias in epidemiology: selection bias, information bias and confounding

Effect modification

The concept of biological interaction

Genetic and molecular epidemiology

Seasonal variation, temporal trend analysis

Quality of life measurement

How to structure a questionnaire and a dataset with EpiInfo

The use of questionnaire in Epidemiology

Literature systematic review

Meta-analysis

Packages for epidemiologic data analysis

- EpiSheet
- Excel
- Simcalc

- Statcalc
- RevMan
- EpiInfo
- Stata
- Epibiostat
- SPSS

BIOSTATISTICS

Introduction to Biostatistics

Sample size

Measure of central tendency and of dispersion

Frequency distribution, graphical presentation

Hypotesis testing

Parametric tests

Non-parametric tests (Wilcoxon; Mann-Whitney;Kruskal Wallis; chi-square)

Estimate and confidence intervals

Sensibility, specificity, ROC- curve

The estimate of concordance

Bland-Altman test

Use of statistical tables)

The Analysis of variance (ANOVA)

The correlation models

The regression models (logistic; Cox; Poisson)

Packages for statistical analysis

- EpiInfo
- Simcalc
- Statcalc
- Stata
- SPSS
- Epibiostat