



*Università degli Studi
di Torino*

Master of Epidemiology 2021-2022
University of Turin
XIII Edition

MODULE: TOPICS IN EPIDEMIOLOGY II

Torino, Arsenale della Pace, Piazza Borgo Dora 61
3-7 October 2022

Faculty: Annibale Biggeri (AB), Dolores Catelan (DC), Alessandro Colombo (AC), Pirous Fatehmoghadam (PF), Francesco Forastiere (FF), Elena Isaevska (EI), Franco Merletti (FM), Giovenale Moirano (GM), Rodolfo Saracci (RS), Kurt Straif (KS), Francesco Sera (FS), Benedetto Terracini (BT)

NOTA per gli studenti italiani. Portare un breve aggiornamento del lavoro di preparazione tesi delle ultime 3 settimane da discutere lunedì con i coordinatori.

Materials to read in advance:

Catelan D, Biggeri A Multiple testing in disease mapping and descriptive epidemiology. *Geospatial Health* 2010; 4: 219-29

Clayton D, Kaldor J. Empirical Bayes Estimates of Age-Standardized Relative Risks for Use in Disease Mapping *Biometrics* 1987;43:671-

Hill AB (1965). The environment and disease: association or causation?
Proc Royal Soc Med 1965;58:295–300.

Colombo S, Checchi F. Decision-making in humanitarian crises: politics, and not only evidence, is the problem. *Epidemiol Prev* 2018;42:214-25.

Monday October 3. Spatial and spatial-temporal study designs and analysis (Annibale Biggeri, Elena Isaevska, Franco Merletti, Giovenale Moirano, Francesco Sera)

09:00-9:45 Time Series Analysis in Environmental Epidemiology (FS)

9:45-11:00 Tutorial with R (FS)

11:00-11:30 Coffee break

11:30-12:00 Modelling complex temporal relationships (FS)

12:00-13:00 Tutorial with R (FS, GM, EI)

13:00-14:00 Lunch

14:00-14:45 Time, Person, Place (FM)

14:45-15:30 Introduction to Spatial Epidemiology (GM)

15:30-16:15 Introduction to Spatial Statistics (AB)

16:15- 16:45 Coffee break

16:45-18:30 Practical: reading and discussion of a paper (AB, GM, EI)

Tuesday October 4. Spatial and spatial-temporal study designs and analysis (Annibale Biggeri, Dolores Catelan, Elena Isaevska, Giovenale Moirano)

09:00-10:00 Principles of disease mapping and analyses of areal data (AB)

10:00-11:00 Empirical Bayes estimates (AB)

11:00-11:30 Coffee break

1130-13.00 Hierarchical Bayesian models (DC)

13:00-14:00 Lunch

14:00-15:00 Spatial exploratory Analysis (AB, DC, GM,)

15:00-16:00 Generalized geostatistical models (AB, DC, GM)

16:00-16:30 Coffee break

16:30-18:30 Tutorial on geostatistical models (AB, DC, GM, EI)

Wednesday October 5. Evidence synthesis and causal inference (Kurt Straif, Benedetto Terracini)

9;00-11:00 History of causal inference in biomedicine and evolution of the Preamble of the IARC Monographs Programme over 50 years (KS)

Bradford Hill viewpoints illustrated with examples from the IARC Monographs (KS)

11:00-11:30 Coffee break

11:30-13:00 Mechanistic up and downgrades (KS)

Evolution of specific evaluations over time (KS)

Tools for Evidence synthesis used by IARC Monographs (KS)

13:00-14:00 Lunch

14:00-15:00 Interaction of epidemiology and experimental chemical carcinogens: aromatic amines, early lessons from the past (BT)

15-00-16:00 Broader context of the Monographs: Advisory Groups and Workshops related to the evolution of the programme and prioritisation of future evaluations I (KS)

16:00-16:30 Coffee break

16:30-17:30 Broader context of the Monographs: Advisory Groups and Workshops related to the evolution of the programme and prioritisation of future evaluations II (KS)

17:30-18:30. Impact of IARC Monographs (Policy, Precautionary Principle, Risk Assessment) (KS)

Recent evolution in causal inference Concepts, tools and study design (KS)

Thursday October 6. Evidence synthesis and causal inference (Francesco Forastiere, Elena Isaevska, Rodolfo Saracci, Kurt Straif , Benedetto Terracini)

9;00-11:00 Selected current issues in causal inference, Discussion of recent and prominent examples (KS)

11:00-11:30 Coffee break

11:30-13:00 Evidence Synthesis in environmental epidemiology (FF)

13:00-14:00 Lunch

14;00-16:00 Practical: Evidence Synthesis in environmental epidemiology (FF, EI)

16:00-16:30 Coffee break

16:30-17:30 Conflict of interest management in evidence synthesis (RS)

17:30-18:30 Panel: Lessons learned, the current debate and perspectives in evidence to decision frameworks (FF, RS, KS, BT)

20:15 Social Dinner at Società di Mutuo Soccorso Decoratori e Imbianchini Via Lanfranchi 28.

Friday October 7. Epidemiology in armed conflicts: just counting the bodies? (Alessandro Colombo, Pirous Fatehmoghadam, Rodolfo Saracci)

9;00-9:45 Red Cross epidemiology (RS)

9:45-11:00 What is the role of epidemiology in armed conflicts? (AC)

- Introduction on the context:
- History of epidemiological methods in humanitarian crises
- Epidemiology in humanitarian crises: goals, limitations, and challenges

Effects of armed conflicts on the health status and health system

11:00-11:30 Coffee break

11:30-12:15 Ethics, epidemiology and prevention of armed conflicts (PF)

12:15-13:00 Estimating mortality and malnutrition in emergencies (AC)

Methods, limitations and challenges, with case-studies (Darfur, Somalia)

13:00-14:00 Lunch

14;00-15:00 Estimating mortality and malnutrition in emergencies (AC)

Methods, limitations and challenges, with case-studies (Darfur, Somalia)

15:00-16:00 Other epidemiological methods in emergencies: an overview (AC)

16:00-17:00 Panel, Q&A (AC, PF, RS)

17:00 Coffee and greetings

Faculty

Annibale Biggeri, University of Padua

Dolores Catelan, University of Padua

Alessandro Colombo, World Health Organization, Geneva

Pirous Fatehmoghadam, Dept, of Public Health, NHS, Trento

Francesco Forastiere, National Research Council, Palermo and Imperial College, London

Elena Isaevska, University of Turin

Franco Merletti, University of Turin

Giovenale Moirano, University of Turin

Rodolfo Saracci , Former Director Epidemiology Unit, IARC, Lyon

Kurt Straif, Boston College, Boston,

Francesco Sera, University of Florence

Benedetto Terracini, University of Turin