WINTER SCHOOL

Causal Inference in Epidemiology 2026

14-16|12|2026

Aula Marotta,
Istituto Superiore di Sanità

ROME | ITALY



SCIENTIFIC COORDINATORS

Giovanni Capelli
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SCIENTIFIC SECRETARIAT

Luigi Palla
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Daniela Zugna
SISMEC; Department of Medical Sciences, University of Turin

Rationale

This training event addresses the need to strengthen the methodological skills of epidemiologists, statisticians, and data scientists in the field of causal inference. It provides an introduction to key concepts and methods for evaluating cause-and-effect relationships within biomedical/healthcare observational data.

Aim and objectives

The course aims to promote a more informed and rigorous use of quantitative causal inference methods in the design and conduct of epidemiological studies, data analysis, and the interpretation of research findings, with the goal of improving the quality and reliability of evidence supporting healthcare and public health decisions.

Specific objectives

By the end of the course, participants will be able to:

1. Draw and make explicit causal relationships using directed acyclic graphs (DAGs), through qualitative analysis of the relationships between variables.
2. Understand and articulate counterfactual reasoning to define and interpret causal effects.
3. Apply the quantitative causal inference methods introduced during the course.
4. Identify and discuss the key assumptions and conditions required for the application and correct interpretation of causal inference methods.

Teaching method

Lectures with presentations, and group sessions.
The course will be delivered in English.

FACULTY

Rino Bellocco, *University of Milano-Bicocca; Karolinska Institute*

Alessandra Macciotta, *Department of Medical Sciences, University of Turin*

Luigi Palla, *Sapienza University of Rome; King's College London*

Michele Santacatterina, *NYU Grossman School of Medicine*

Mats J. Stensrud, *Institute of Mathematics, EPFL*

Daniela Zugna, *Department of Medical Sciences, University of Turin*

PROGRAMME

Monday December 14th

08:30 Registration

Foundations of causal inference

09:00 Why causal inference? Road map to causal inference
Michele Santacatterina

10.00 Directed acyclic graphs (DAGs), D-separation, Backdoor criterion
Michele Santacatterina

11.00 Coffee break

11.30 Practical: drawing DAGs and identifying adjustment sets
All teachers

13.00 Lunch

14.00 Structural causal models, counterfactuals and causal parameters, identification assumptions
Michele Santacatterina

16.00 Coffee break

16.30 Identification of the average treatment effect/ Identification of other estimands
Michele Santacatterina

Tuesday December 15th

Estimation of causal effects

09.00 Estimation of causal parameters, outcome regression, inverse probability weighting
Michele Santacatterina

11.00 Coffee break

11.30 Practical implementation in R/Stata
All teachers

13.00 Lunch

14.00 Doubly robust estimation
Michele Santacatterina

15.30 Coffee break

16.00 Practical implementation in R/Stata
All teachers

17.00 Lecture: Applications of causal inference in data science
Mats J. Stensrud

Wednesday December 16th

Advanced topics

09.00 Instrumental variables
Luigi Palla

10.30 Coffee break

11.00 Practical implementation in R/Stata
All teachers

12.00 Causal mediation analysis
Daniela Zugna

13.00 Lunch

14.00 Causal mediation analysis/practical implementation in R/Stata
Daniela Zugna

15.30 Coffee break

16.00 Target Trial Emulation
Alessandra Macciotta

17:30 Final test

GENERAL INFORMATION

VENUE
Istituto Superiore di Sanità, Aula Marotta
Viale del Castro Laurenziano, 10 - **Rome**

ATTENDANCE
The course is primarily intended for health care professionals and researchers who are interested in acquiring a basic knowledge of causal inference. Maximum **30** attendees.

REGISTRATION
To register, please complete and submit by December 13th the form available at the following link:
https://registration.infocongress.it/Login.asp?IDcommessa=2026IVDJ010&Lang=IT
Participation is subject to payment of a registration fee, to be settled as follows:

SISMEC Member (older than 35 years)	**€ 250,00**
Non-SISMEC Member (older than 35 years)	**€ 350,00**
Young SISMEC Member (max 35 years old)	**€ 220,00**
Young Non-SISMEC Member (max 35 years old)	**€ 310,00**

SELECTION
If the number of applications exceeds the number of places available, participants will be selected in chronological order of registration.

LEARNING ASSESSMENT
Learning outcomes will be assessed through a final test, an online multiple-choice questionnaire, which is compulsory for all participants to obtain the certificate of attendance. Besides that, all participants should complete a quality assessment survey.

CERTIFICATION
Certificates of attendance indicating the number of training hours will be issued to participants who complete at least 80% of the course and achieve a minimum score of 75% on the final test.
Actual attendance at the event will be tracked by recording entry and exit times in the attendance register.

This event does not provide any CME credits.
For any further information, please contact the Organizational Secretariat.

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Organised by:

ITALIAN NATIONAL INSTITUTE OF HEALTH
National Centre for Disease Prevention and Health Promotion

and

ITALIAN SOCIETY OF MEDICAL STATISTICS AND CLINICAL EPIDEMIOLOGY (SISMEC)

ORGANIZING SECRETARIAT

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