

5TH REAL WORLD EPIDEMIOLOGY –

OXFORD SUMMER SCHOOL

Lady Margaret Hall, Oxford

22/06/2020 – 26/06/2020

CONFIRMED SPEAKERS

D Prieto-Alhambra (Centre for Statistics in Medicine (CSM), University of Oxford, United Kingdom)

A Pedersen (Clinical Epidemiology, Aarhus, Denmark)

I Douglas (LSHTM, United Kingdom)

I Petersen (University College London, United Kingdom)

S Perez-Gutthann (RTI Health Solutions, Barcelona, Spain)

V Strauss (CSM, University of Oxford, United Kingdom)

S Hawley (CSM, University of Oxford, United Kingdom)

S Khalid (CSM, University of Oxford, United Kingdom)

A Delmestri (CSM, University of Oxford, United Kingdom)

PR Rijnbeek (Erasmus University Medical Center, Netherlands)

A Rekkas (Erasmus University Medical Center, Netherlands)

E Molero (SYNAPSE Research Management Partners, Spain)

R Pinedo-Villanueva (CSM, University of Oxford, United Kingdom)

N Hughes (IMI-EHDEN and Janssen Research and Development, Belgium)

Course Directors:

Prof D Prieto-Alhambra, Professor of Pharmaco- and Device Epidemiology; Theme Lead for Observational Research, Centre for Statistics in Medicine; Chair of the Big Health Data User Group, NDORMS, University of Oxford

Dr V Strauss, Senior Medical Statistician; Senior Research Associate in Pharmaco- and Device Epidemiology, Centre for Statistics in Medicine, NDORMS, University of Oxford

Course administrator:

Ms Paloma O'Dogherty (paloma.odogherty@ndorms.ox.ac.uk)

Target audience: Pharmacists, clinicians, academics (including statisticians, epidemiologists, and related MSc/PhD students); Industry (pharmacy or device) or Regulatory staff with an interest in the use of routinely collected data for research.

Learning Goals: By the end of the course, delegates will:

1. *DATA DISCOVERY AND CHARACTERIZATION*: Gain an understanding of the existing sources of routinely collected data for epidemiological research, and on how to characterize whether they are fit for purpose to answer your research question/s
2. *EPIDEMIOLOGICAL STUDY DESIGN/S*: Be able to discuss common and advanced study designs and their implementation using real world data.
3. *PHARMACO- AND DEVICE EPIDEMIOLOGY*: Be aware of the applications of real world data in both pharmaco and device epidemiology, including drug/device utilisation, comparative effectiveness, and post-marketing safety research.
4. *PREDICTION MODELLING*: Learn basic concepts on the design and evaluation of prognostic/prediction models developed using real world data; and the use of such methods for treatment heterogeneity/personalised medicine research.
5. *HEALTH DATA SCIENCES and BIG DATA*: Be familiar with the basics of big data methods, including a) machine learning, b) principles of common data models for multi-database studies, and c) digital epidemiology/patient data collection

6. **“REAL WORLD” SOLUTIONS:** Understand relevant issues and learn potential solutions applied to the use of ‘real world’ epidemiology: a) data management, information governance, b) missing information and multiple imputation, and c) interaction with industry and regulators

Dates: 22nd to 26th of June 2020

Venue: Talbott Hall, Lady Margaret Hall, Oxford (www.lmh.ox.ac.uk)

To book a place, please follow this link. Registration will be on a ‘first arrived first served’ basis.

Fees are as follows:

	Non-for-profit organization		For-profit organization	
	Residential*	Non-residential ⁰	Residential*	Non-residential ⁰
Early Bird (before 26/04/2020)	£ 1,350	£ 900	£ 1,600	£ 1,200
Regular Fee (from 27/04/2020)	£ 1,550	£ 1,200	£ 1,850	£ 1,500

⁰ **‘Non-residential’ fees** cover course registration and materials, refreshments, lunch for five days, and 1 social dinner in college on Monday the 22nd

* **‘Residential’ fees** cover additional bed & breakfast accommodation and dinner for five days at Lady Margaret Hall.

For more information about the registration process, please contact the course administrator (paloma.odogherty@ndorms.ox.ac.uk).

PROGRAMME

DAY 1 (22/06/2020)

MORNING SESSION – INTRODUCTION AND DATA DISCOVERY

- 08.30-09.00h: Registration, Housekeeping, Introductions [D Prieto-Alhambra, Oxford]
- 09.00-9.30h: 'Real world' data: strengths and limitations [D Prieto-Alhambra, Oxford]
- 9.30-11.00h: Real world data sources. Chair: Daniel Prieto-Alhambra, Oxford.
 - Primary Care records databases: a few examples [D Prieto-Alhambra] 45’;
 - Device Registry/ies [D Prieto-Alhambra] 15’;
 - Hospital data: HES [D Prieto-Alhambra, Oxford], 5’;
 - Nation-wide Nordic Registries [A Pedersen, Aarhus], 20’
 - QUESTIONS 5’

COFFEE BREAK: 11.00-11.30h

- 11.30-12.30h: INTERACTIVE SESSION 1: conduct a ‘live’ Drug Utilisation Study Using Aggregated Drug Utilisation Data [D Prieto-Alhambra, Oxford]

LUNCH: 12.30h-13.30h

AFTERNOON SESSION – STUDY DESIGNS USING REAL WORLD DATA 1

- 13.30-14.30h: Study Designs in RWD Epidemiology 1: Case-control and Cohort studies [I Douglas, LSHTM]

TEA BREAK: 14.30-15.00h

- 15.00-16.00h: INTERACTIVE SESSION 2 (in groups): design a RWD study [D Prieto-Alhambra, Oxford; I Douglas, LSHTM]

DAY 2 (23/06/2020)

MORNING SESSION – STUDY DESIGNS (2)

- 08.30h-09.00h – REGISTRATION
- 09.00h to 10.00h - Study Designs in RWD Epidemiology 2: Case only designs [I Douglas, LSHTM]
- 10.00h to 11.00h – Data characterization and validation studies [A Pedersen, Aarhus]

COFFEE BREAK: 11.00-11.30h

- 11.30h to 12.30h - INTERACTIVE SESSION 3 (in groups): design a case only / a validation study [I Douglas, LSHTM]

LUNCH: 12.30h-13.30h

AFTERNOON SESSION – HANDLING MISSING DATA

- 13.30-14.00h: Introduction and group discussion: What are your experiences of dealing with missing data [I Petersen, UCL]
- 14:00 – 14:45: Lecture A and group discussion: Missing data and missing data mechanisms [I Petersen, UCL]
- 14:45 – 16:00: Lecture B and discussion: Ad-hoc methods to deal with missing data and Multiple Imputation [I Petersen, UCL]

DAY 3 (24/06/2020):

MORNING SESSION – PHARMACO-EPIDEMIOLOGY

Chair: V Strauss, Oxford.

- 08.30h-09.00h – REGISTRATION
- 09.00-10.00h – Introduction to pharmaco-epidemiology: Drug Utilisation, Drug Safety, and RMM Effectiveness [S Perez-Gutthann, RTI-HS]
- 10.00-11.00h - Advanced Methods in Pharmaco-epidemiology [TBC]

COFFEE BREAK: 11.00-11.30h

- 11.30-12.30h – INTERACTIVE SESSION (5): designing a pharmaco-epi study [TBC; D Prieto-Alhambra, Oxford]

LUNCH: 12.30h-13.30h

AFTERNOON SESSION – TIME SERIES AND PREDICTION MODELLING

- 13.30h to 15.00h - Time series and longitudinal analyses [V Strauss; S Hawley, Oxford]

TEA BREAK: 15.00-15.30

- 15.30h to 16.30h - Introduction to Prediction Modelling [TBC]

DAY 4 (25/06/2020)

MORNING SESSION – DATA MODELS, PREDICTION MODELLING & BIG DATA

- 08.30-09.00h – REGISTRATION
- 09.00-9.45h – Data models for real world data [A Delmestri, Oxford]
- 9.45-10.30h – Big Data Methods for Real World Epidemiology [S Khalid, Oxford]

COFFEE BREAK: 10.30-11.00h

- 11.00-12.00h – INTERACTIVE SESSION (6): choosing a good and feasible research question [P Rijnbeek, Erasmus; R Williams, Erasmus; TBC]

LUNCH: 12.00h-13.00h

AFTERNOON SESSION –COMMON DATA MODELS, AND CDM TOOLS

- 13.00-13.30h – The OMOP Common Data Model: application/s to multinational, multi-database RWE studies [TBC]
- 13.30-14.15h – Introduction to the OHDSI community & tools [TBC]
- 14.15-14.45h – OHDSI and EH DEN for multi-database prediction and treatment heterogeneity studies [P Rijnbeek and A Rekkas, Erasmus]

TEA BREAK: 14.45h - 15.15h

- 15.15-16.30h – INTERACTIVE SESSION (7): Hands on! [P Rijnbeek, Erasmus; R Williams, Erasmus; TBC]

DAY 5 (26/06/2020)

MORNING SESSION – INFORMATION GOVERNANCE & HEALTH ECONOMICS

- 08.30-09.00 – REGISTRATION
- 09.00-09.30h – Information Governance in RWD Epidemiology [TBC]
- 09.30-10.00h –Project Management in Real World Epidemiology [E Molero, SYNAPSE Managers]
- 10.00-11.00h – Introduction to RW Health Economics [R Pinedo-Villanueva, Oxford]

COFFEE BREAK: 11.00 – 11.30 h

- 11.30-12.30h – INTERACTIVE SESSION (8): Real World Health Economics [R Pinedo-Villanueva, Oxford]

LUNCH: 12.30h-13.30h

AFTERNOON SESSION – REAL WORLD EPIDEMIOLOGY: WORKING WITH INDUSTRY AND REGULATORS. INFORMATION GOVERNANCE

Chair: D Prieto-Alhambra, Oxford

- 13.30-14.30h - The regulators' perspective [TBC]
- 14.30-15.00h - The industry's perspective – public-private partnership/s [N Hughes, IMI-EHDEN and Janssen Research and Development]
- 15.00h - Conclusions, Closure, and Departure [D Prieto-Alhambra, Oxford]