OXFORD SUMMER SCHOOL: RWE USING THE OMOP CDM

SCHEDULE

Venue: Lady Margaret Hall (Norham Gardens, Oxford, OX2 6QA)

17-21 June 2024

General items / Considerations

Morning sessions will be based on lectures covering different aspects of the process of RWE generation, from data discovery to causal inference and target trial emulation. The afternoon sessions will be hands-on, where we will put in practice (some of) the content covered during the morning. Lunch will be provided in college for all participants, as well as refreshments and hot beverages during a morning and an afternoon break. Please make sure you notify if you have any dietary requirements if you have not done so already.

Practical sessions will be divided in two groups/tracks, as to make them useful and interactive based on your daily (current or future) activities. A common theme or analysis will be proposed at the beginning of the course, for everyone to follow during the week.

Before the course you will have chosen if you want to join the a) Epidemiologist/RWE Lead (*Epi*); or b) Data Analyst/Health Data Scientist (*HDS*) track. During the practical sessions, group a) will receive brief lectures on how to use software to conduct studies, followed by group sessions on each of the steps involved in the conducting of a study. In parallel, group b) will receive similar (but somewhat longer) lectures on how to conduct data analyses using the same/similar software using R. Then, they will do individual work to write code and run analyses using OMOP-mapped synthetic data.

All students need to bring their own laptop for the practical sessions. Their laptop should have ability to connect to the local Wi-Fi. We will provide details separately.

DAILY SCHEDULE

Monday (17th June 2024) – Data discovery and the OMOP CDM
Morning Sessions

- 9.00h - Welcome to RWE: why do we care?
- 9.30-10.30h - Real World Data: Primary care, Hospital EHR, Claims data
    - *(coffee break)*
- 11.00-11.45h - The OMOP CDM
- 11.45-12.15h - Large OMOP initiatives: OHDSI, EHDEN, DARWIN EU®
- 12.15-12.30h - Theme for the week

12.30-13.30h - Lunch and networking

Afternoon Sessions [13.30-16.30h]

a) Epi track : Data landscaping and Feasibility using EHDEN portal and OMOPSketch results

b) HDS track : Connecting to a database, using R on an OMOPped database, database characterisation using OMOPSketch

<u>Social Event</u>: College dinner at Lady Margaret Hall (LMH) at 18:30

Tuesday (18th June 2024)

<u>Morning Sessions</u>

- 9.15-10.00h - Study designs: cohorts and case-controls
- 10.00-10.30h - Study designs: self-controlled analyses
  - o *(coffee break)*
- 11.00-11.30h - Phenotyping step by step
- 11.30-12.00h - Phenotyping condition-based cohorts in OMOP
- 12.00-12.30h - Phenotyping drug-based cohorts in OMOP

12.30-13.30h - Lunch and networking

<u>Afternoon Sessions [13.30-16.30h]</u>

a) Epi track : Phenotyping (1): from clinical descriptions to code list generation and review using Athena and CodeListGenerator
b) HDS track : generating code lists systematically using CodeListGenerator; validating phenotypes built from OMOPped data using PhenotypeR

Wednesday (19th June 2024)

<u>Morning Sessions</u>

- 9.00-9.45h - Introduction to Machine Learning
- 9.45-10.30h - Introduction to Cluster Analyses
  - o *(coffee break)*
- 11.00-11.45h - Descriptive epidemiology: incidence and prevalence
- 11.45-12.30h - Introduction to survival analysis

12.30-13.30h - Lunch and networking

<u>Afternoon Sessions [13.30-16.30h]</u>

a) Epi track :
  a. Design options in IncidencePrevalence and functionalities in Patient Profiles
  b. Phenotyping (2): reviewing and interpreting PhenotypeR findings
b) HDS track : estimating descriptive epi using IncidencePrevalence; large-scale characterisation of OMOP-based cohorts using PatientProfiles

Thursday (20th June 2024)

<u>Morning Sessions</u>

- 9.15-9.45h- Drug utilisation research: the very basics
- 9.45-10.30h- New (drug) user cohorts
- *(coffee break)*
- 11.00-11.15h- Confounding by indication
- 11.15-12.00h- Propensity scores, disease risk scores
- 12.00-12.30h- Negative control outcomes

12.30-13.30h - Lunch and networking

<u>Afternoon Sessions [13.30-16.30h]</u>

c) Epi track :
   a. Design options and functionalities in Drug Utilisation and CohortSurvival
   b. Phenotyping (3): reviewing Drug exposure Diagnostics, and exploring the results from a DUS
d) HDS track : performing drug utilisation research in OMOP using DrugUtilisation; new user cohort designs and CohortSurvival

<u>Social Event</u>: Group Dinner at The White House Tap Social, from 05:00 PM to 10:00 PM. (38 Abingdon Road, Oxford, OX1 4PD)

Friday (21st June 2024)

<u>Final Sessions</u>

- 9.30-10.30h- Crash intro to Health Economics
   o *(coffee break)*
- 11.00-11.45h- Target trial emulation [external speaker, Prof Shirley Wang]
- 11.45-12.30h- Results from DUPLICATE [external speaker, Prof Shirley Wang]

12.30-13.30h- Lunch, pics, and departure