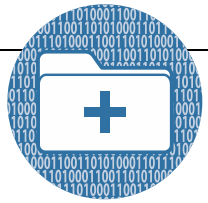

MANCHESTER 1824
The University of Manchester
Manchester Digital Epidemiology
NOT Summer School
A 3-day course that explores opportunities, challenges and methods for capturing and using a range of digital health data types to support high-quality population health research
25 - 27 November 2020 • Manchester, UK
To register and for more information, please visit www.confercare.manchester.ac.uk/events/mdess2020/
Level of knee pain
CENTRE FOR EPIDEMIOLOGY VERSUS ARTHRITIS

The Studio, Lever Street, Manchester, M1 1FN

Course goal: To explore and understand the opportunities, challenges and methods for capturing and using digital data to support high-quality epidemiological research



Day 1: Electronic health records

Lectures & small groups/ workshops & practicals

0900-0930 **Welcome, introductions and course overview** Will Dixon, UoM

0930-1000 **Flipchart introduction to Day 1: EHR** Will Dixon

- + Show and tell: delegates' experiences of EHR and linkage projects

0945-1030 **Analysing EHR data: entry point/ state of the art**

- Exposures and outcomes and confounders — Ian Douglas, LSHTM

Coffee

1100-1230 **Data preparation Lazy Susan (choose 2 x 45 min workshops)**

Non-sedentary activity in between

1. Descriptive statistics (& R markdown) — David Selby
2. Drug exposure — Meghna Jani
3. Missing data — Jamie Sergeant

Lunch (including 1-2-1 Meet the Faculty)

1330-1415 **Federated analyses**

- OHDSI and EHDEN — Dani Prieto-Alhambra, UoOxford

1415-1615 **Analysis methods Lazy Susan (choose 2 x 45 min workshops)**

1. Propensity scores — Emily Granger
2. Outcome and handling misclassification — Jenny Humphreys & Belay Yimer
3. Text-mining of EHR data — Goran Nenadic

(incl Coffee 1500-1530)

Non-sedentary activity

1620-1700 **Analysing EHR data: machine learning**

- Machine learning and EHRs — John Rigg, IQVIA

Day 2: Patient-generated data using smartphones

0900-0930 **Flipchart introduction to Day 2: Digital patient-generated data**
John McBeth

- Show and tell: delegates' experience of patient-generated data projects

Day 2 non-sedentary activity

0930-1030 **Lessons learned from *Cloudy with a Chance of Pain***
Will Dixon

Coffee break

1100-1300 **Public involvement and designing systems for collecting patient-generated data**

- Co-design, patient and public involvement — Caroline Sanders (tbc)
  With patient partners — Karen Staniland, Carolyn Gamble, Joyce Fox & Simon Stones
- Test your public involvement and engagement design

Lunch (including 1-2-1 Meet the Faculty)

1400-1530 **Technology Lazy Susan (choose 2 x 45 min workshops)**

Maybe… start by designing your own study (on your own, our question, fill out some sections), then move to the stations:

- User interface design — Alan Davies & Julia Mueller
- Validity of digital health measurement tools — Sabine van der Veer & Mustafa Ali
- Develop a spec for the provider — Pavinder Passi, uMotif
- Research governance — Elaine Mackay

Coffee break

1545-1630 **Using smartphones to collect medication side effects**

- I look like a beetroot (ICD L53.9): amplifying the patient voice through vernacular coding
  Nabarun Dasgupta, UNC

Non-sedentary activity

1630-1715 **Keynote: Smart phone-based digital phenotyping** — JP Onnela, Harvard

Day 3: Sensor data and other passively collected data

0900-0925 **Flipchart introduction to Day 3: Epidemiology using passively collected data**
Sabine van der Veer

Show and tell: delegate's experiences of passively collected data

Day 3 non-sedentary activity

0930-1025 **Data from wrist-worn accelerometers**

- Evaluating physical activity in epidemiology studies — Tessa Strain, UoCambridge

Coffee

1055-1225 **GPS data from smartphones: lecture and practical**

- Using GPS data in mental health research — Niels Peek, UoM
- Practical: Delegates will collect GPS data themselves on Day 1 and 2 of the summer school, which they will then analyse using Jupyter notebooks installed with R and bespoke GPS anaysis code.

Non-sedentary activity

1230-1315 **Future prospects for data-driven innovation in safety of medicines**
Andrew Bate, GSK

Lunch (including 1-2-1 Meet the Faculty)

1415-1500 **Smartwatches for health research** — Justin Phillips, Google Fit

Non-sedentary activity

1505-1635 **Data processing Lazy Susan (choose 2 x 45 min workshops)**

- Social media — Lamiece Hassan, UoM & [tbc]
- Wrist-worn accelerometry — David Wong, UoM
- Smartphone sensors — Anna Beukenhorst, Harvard

Coffee in middle

1635-1700 **Closing**