Martijn Schuemie

Observational Health Data Analytics - Johnson & Johnson
Biostatistics - UCLA
Benefit of standardizing the data

- Federated research networks
- Shared software tools
Federated Research Network

• Multiple sites with data
  – Hospital EHRs
  – Administrative Claims
• Patient-level data cannot be shared
Federated Research Network

• Any site can lead a study
Federated Research Network

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- Analysis code is developed locally
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- Any site can lead a study
- Analysis code is developed locally
- Code is distributed to study participants
- Results are generated (aggregated statistics)
- Results are send back to site
Shared software tools

Patient-level data in CDM

Write code
- Custom

Apply R packages
- HADES
  - Custom
  - Standard

Use interactive analysis platform
- ATLAS
  - Standard

Reliable evidence
What is HADES?

- A set of 26 R packages (and counting)
  - PatientLevelPrediction
  - CohortMethod
  - Cyclops
  - SqlRender
  - ...

- Implementing analytics based on the CDM

- Meeting some minimum quality requirements
  - Continuous integration (including unit testing)
  - Validated
  - Documented
  - Cross-database-platform

- Used in pretty much all OHDSI studies
Standardization of analytics

• Key building blocks are cohorts.
  – Same cohorts can be used in different analyses.

• Each analysis has a ‘template’ of cohorts:
  – Prediction: target and outcome cohort
  – Comparative cohort study: target, comparator, and outcome cohorts

• Each analysis has predefined set of options,
  – Menu of covariates to include in prediction and propensity models
  – Definition of time-at-risk

• Each analysis has predefined set of diagnostics,
  – Calibration for prediction models
  – Covariate balance for comparative cohort studies

Instead of starting a study design from scratch, we can now choose from a menu.

This helps
- Promote best practices
- Increases transparency
- Increases efficiency
Visit the HADES website

https://ohdsi.github.io/Hades