Open Science

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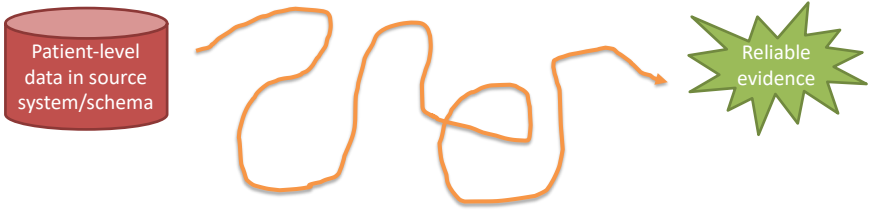
OHDSI is an open science community



Different observational data types:

- Populations, care settings, capture process, health system

Types of evidence desired:

- Cohort identification, clinical characterization, population-level effects, patient-level prediction

OHDSI's mission

- To improve health, by empowering a community to collaboratively generate the evidence that promotes better health decisions and better care

Open science movement

Open science aims

- To make scientific research (including publications, data, samples and software) and its dissemination accessible to all levels of an inquiring society

Addresses a number of perceived problems within current scientific practice, namely

- Inclusivity of participants
- Publication bias, *p*-hacking
- Challenges in **reproducibility** / **reliability**

All important to “empower a community” . . . “better health decisions”

Four principles of open science

- Open standards
- Open source
- Open data
- Open discourse

Open standards examples

- OMOP common data model – scoped to capture observational healthcare data and now a world-wide standard (PCORnet, AllOfUs . . . just subsets)
- Standardized vocabularies to map the hundreds of medical coding systems used world-wide

Example

ATHENA – `https://athena.ohdsi.org` (“Ozempic” $\rightarrow$ “semaglutide”)

Open source examples

- ATLAS to define reproducible patient cohorts
- Health analytics data-to-evidence suite (HADES) of `R` packages to perform standardized analyses

Example

CohortMethod – `https://github.com/OHDSI/CohortMethod` (read a vignette)

Open data examples

- All population-level summarizes are publicly accessible!

Example

LEGEND-T2DM

`https://data.ohdsi.org/LegendT2dmClassEvidenceExplorer/`

(DDP4I vs GLP1RA for MACE)

NB: Patient-privacy and ethics preclude sharing individual-level information

Open discourse examples

- Anyone interested in promoting OHDSI's mission can join
- Anyone can lead (former undergraduate workgroup chair)
- Public forums, weekly community class, 20+ workgroups

How to join

`https://www.ohdsi.org`