Future directions of OHDSI

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OHDSI's mission

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

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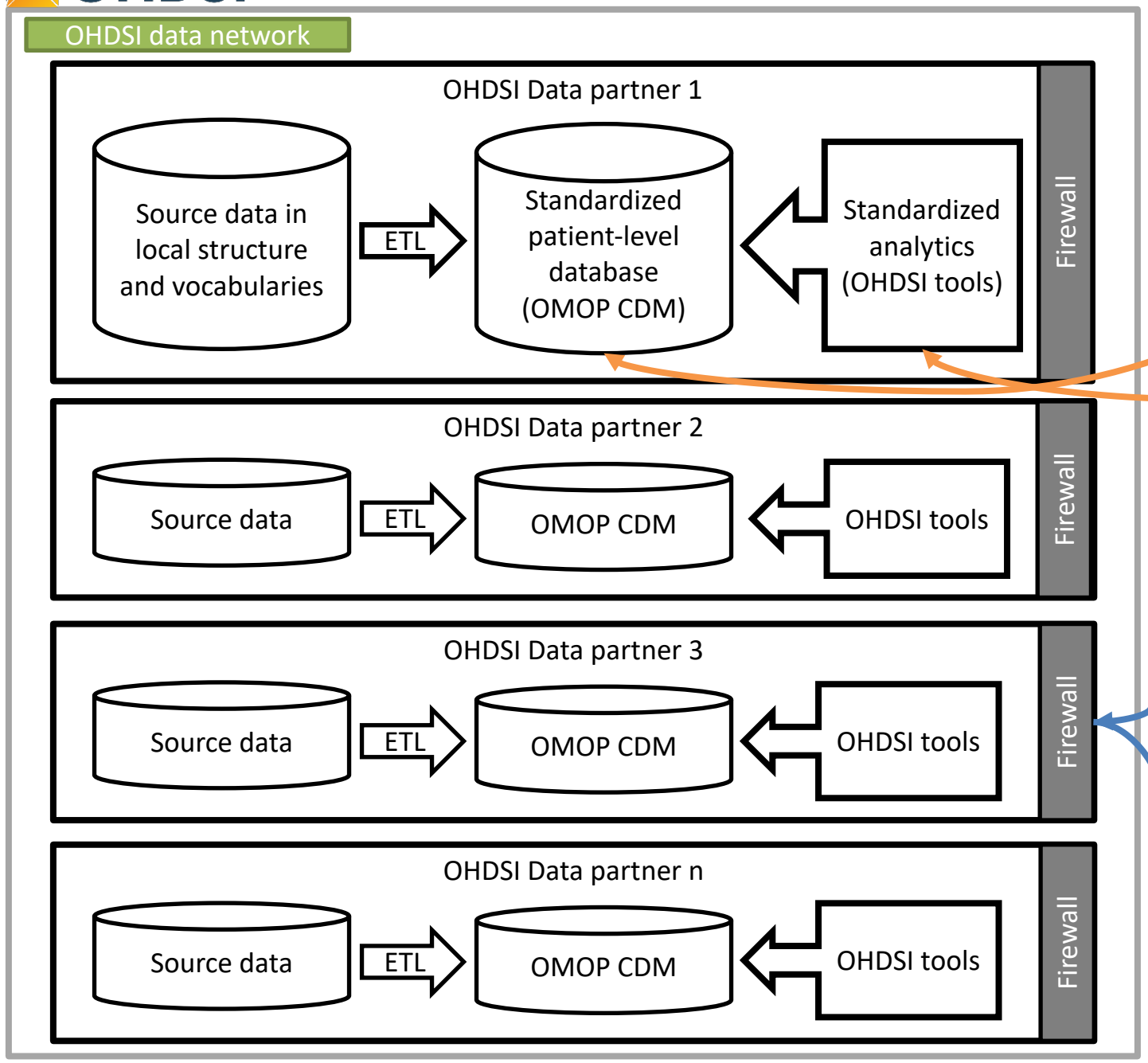
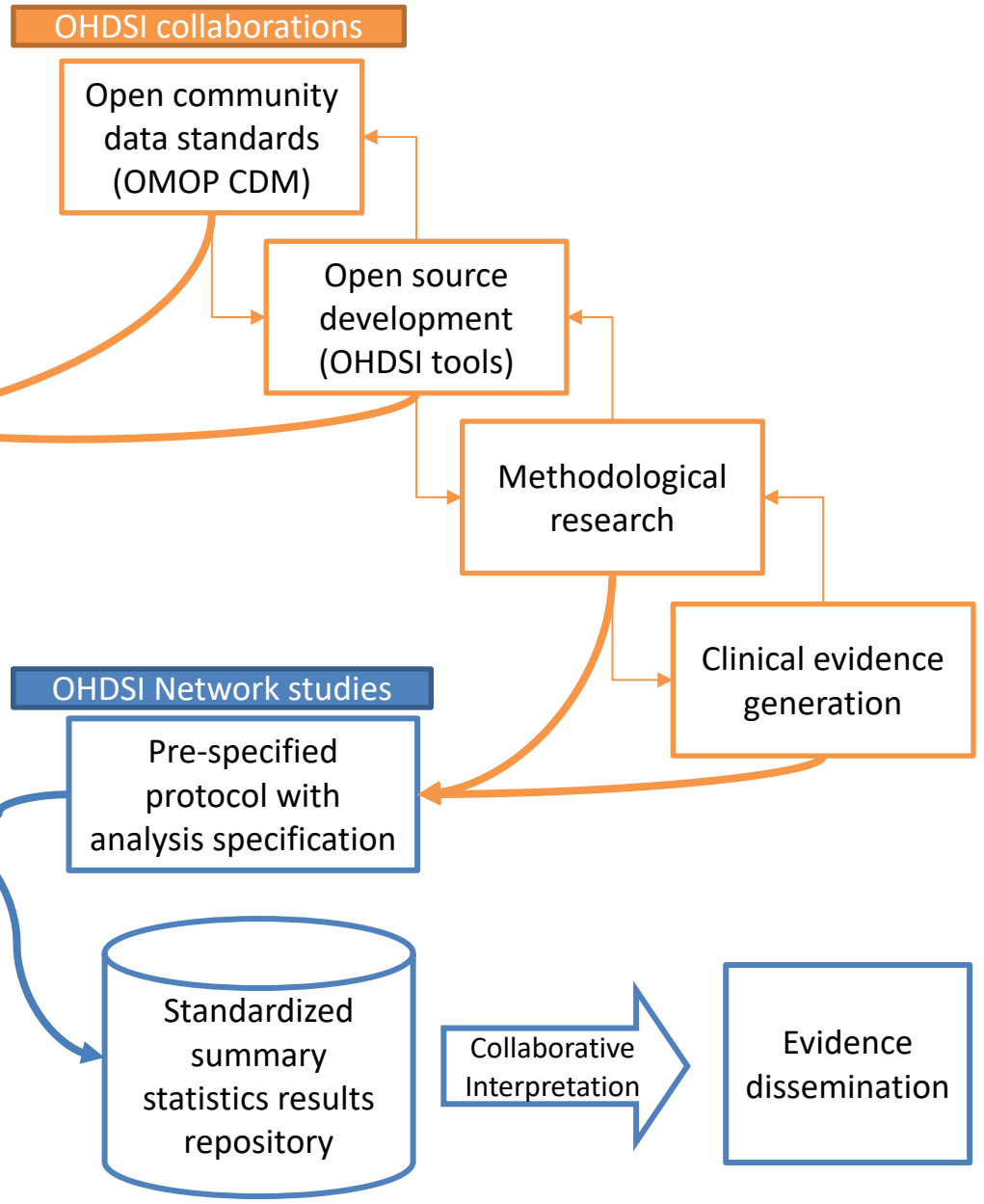
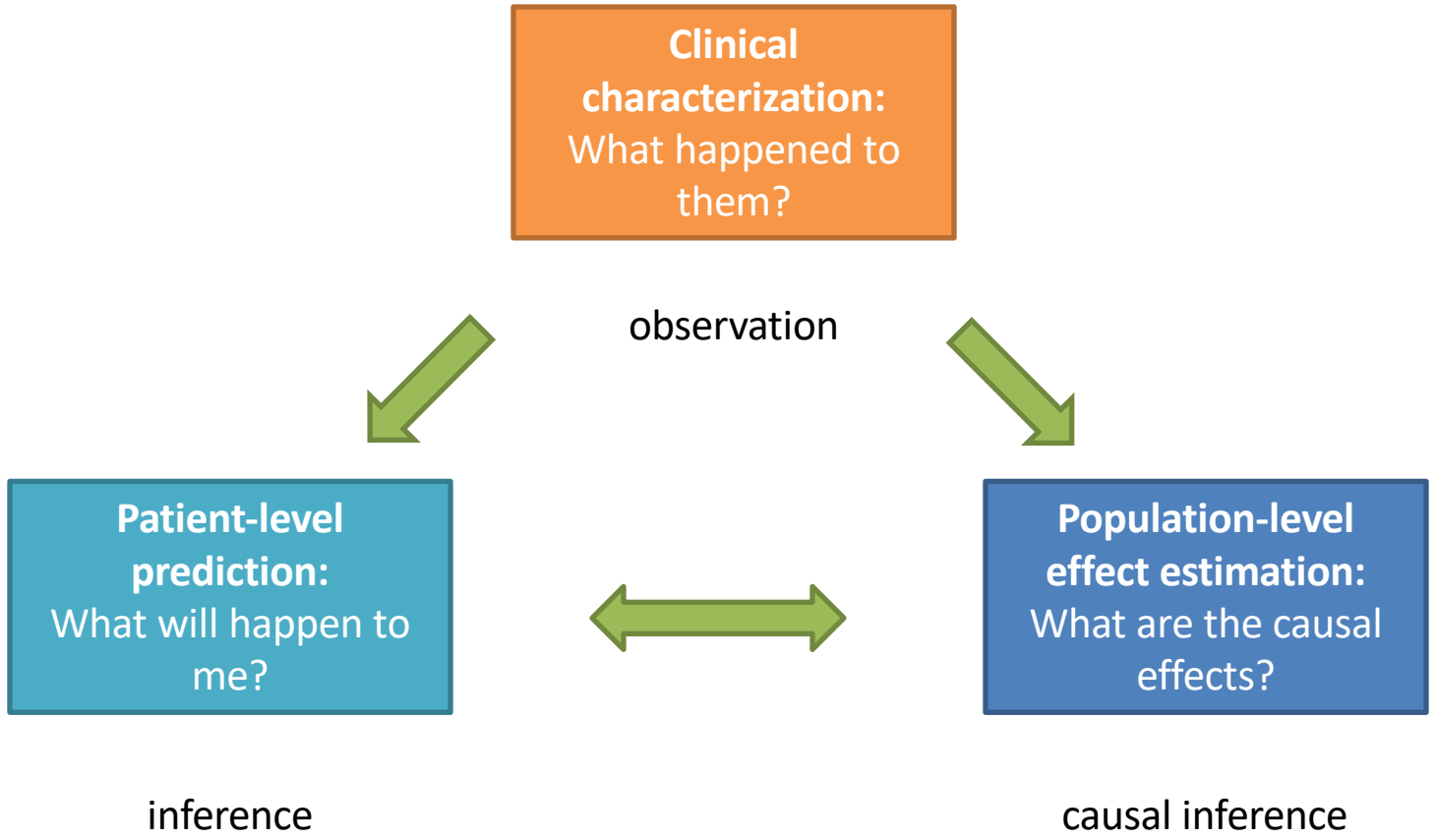
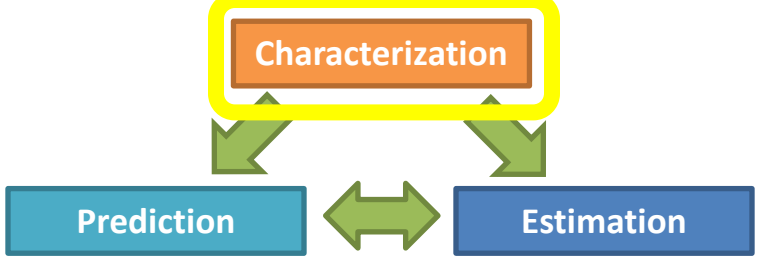




Complementary evidence to inform the patient journey

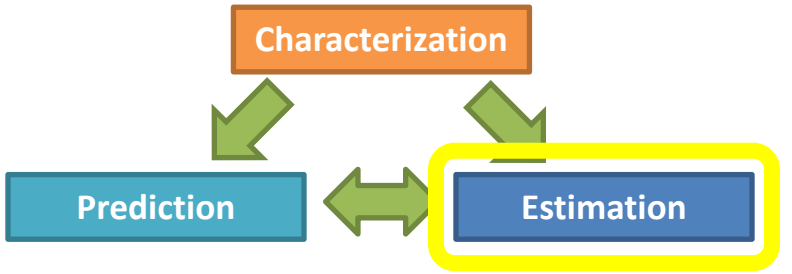


Idea #1: HowOften.org



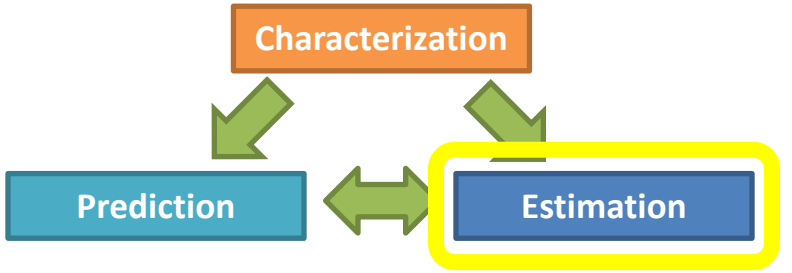
- Opportunity: Provide evidence to understand the absolute risk of adverse events
- Solution: Large-scale characterization of incidence of outcomes following drug exposure
  - Targets: New users of ingredient, for all ingredients
  - Outcomes: Event starts, for all adverse events
  - Time-at-risk: 30-day, on-treatment, intent-to-treat?
  - Results: Incidence proportion and rates, per database and prediction interval via meta-analysis
  - Dissemination: Interactive dashboard to allow user to search for drug and outcome
- Open questions:
  - Targets: Nested within indications?
  - Outcomes: 1st occurrence vs. all occurrence of outcomes? Phenotypes vs. codes?
  - Results: Stratify by age/sex/year?
  - Dissemination: How to show failures from objective database/cohort diagnostics?

Idea #2: Safety of Interventions Real-world Evidence Network (SIREN)



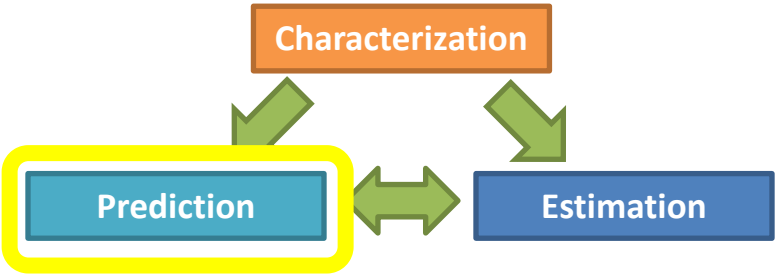
- Opportunity: Provide evidence to support international pharmacovigilance activities to identify and evaluate the relative risk of adverse events associated with drug exposure
- Solution: Large-scale estimation of outcomes following drug exposure
  - Apply LEGEND principles to compare treatments within same indication
  - Methods: Comparative cohort, Self-controlled case series
  - Time-at-risk: 30-day, on-treatment
  - Results: Discovery: Multiplicity-adjusted hypothesis testing; Estimation: Calibrated confidence intervals for all analyses that pass objective diagnostics
  - Dissemination: Interactive dashboard to allow user to search for drug and outcome, or explore all drugs/all outcomes
- Open questions:
  - Targets: Which indications?
  - Outcomes: Which outcomes?
  - Dissemination: How to show failures from objective database/cohort/study diagnostics?

Idea #3: Heterogeneity of treatment effects in comparative effectiveness



- Opportunity: Provide evidence to estimate effects within subpopulations of interest
- Solution: Large-scale estimation of outcomes following drug exposure
  - Apply LEGEND principles to compare treatments within same indication
  - Methods: Comparative cohort
  - Time-at-risk: on-treatment
  - Results: Estimation: Calibrated confidence intervals for all analyses that pass objective diagnostics
  - Dissemination: Interactive dashboard to allow user to search for drug and outcome, or explore all drugs/all outcomes
- Open questions:
  - Targets: Which indications? T2DM, then what?
  - Outcomes: Which outcomes for each indication?
  - Subgroups: which subpopulations: pre-defined (age: , sex, race, hepatic/renal impaired) or empirically derived?

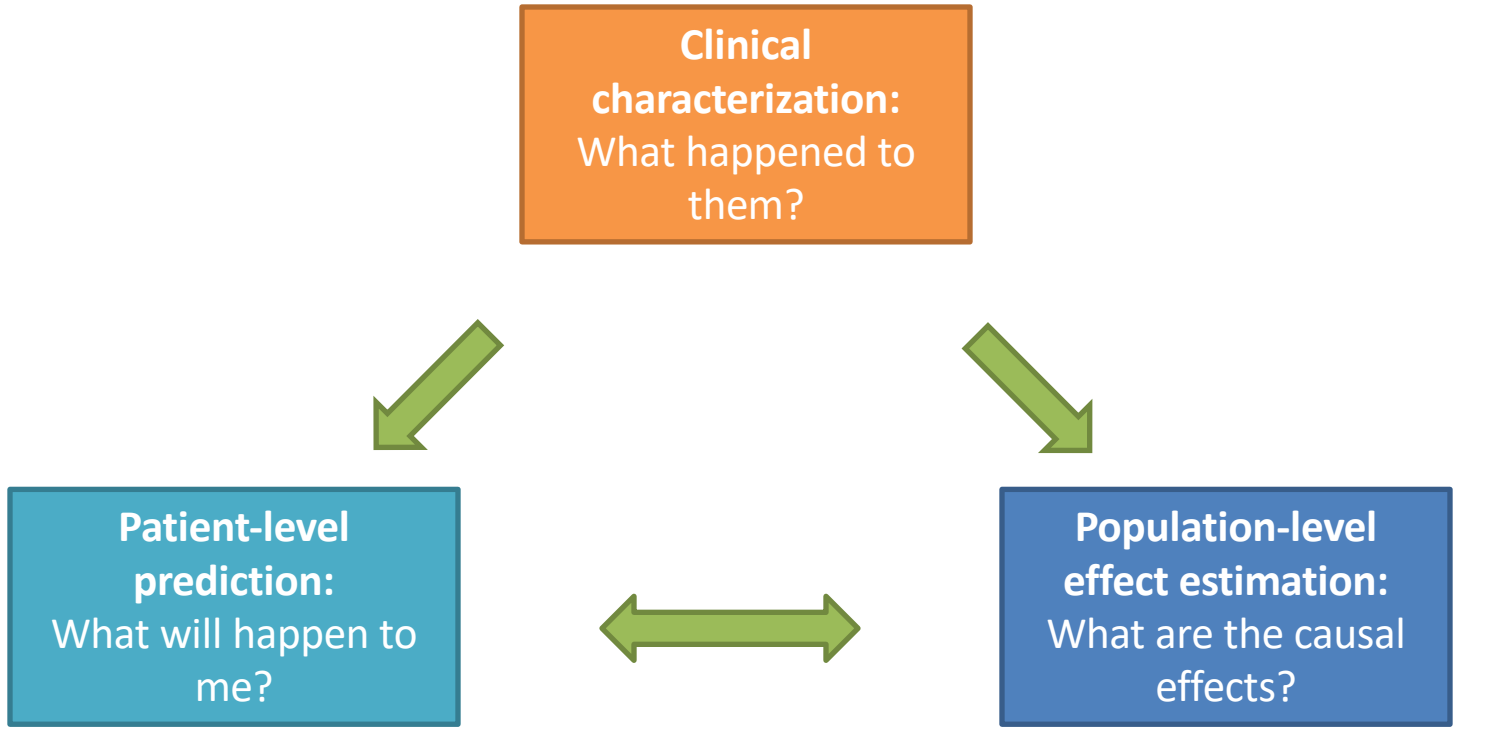
Idea #4: Whatllhappentome.org



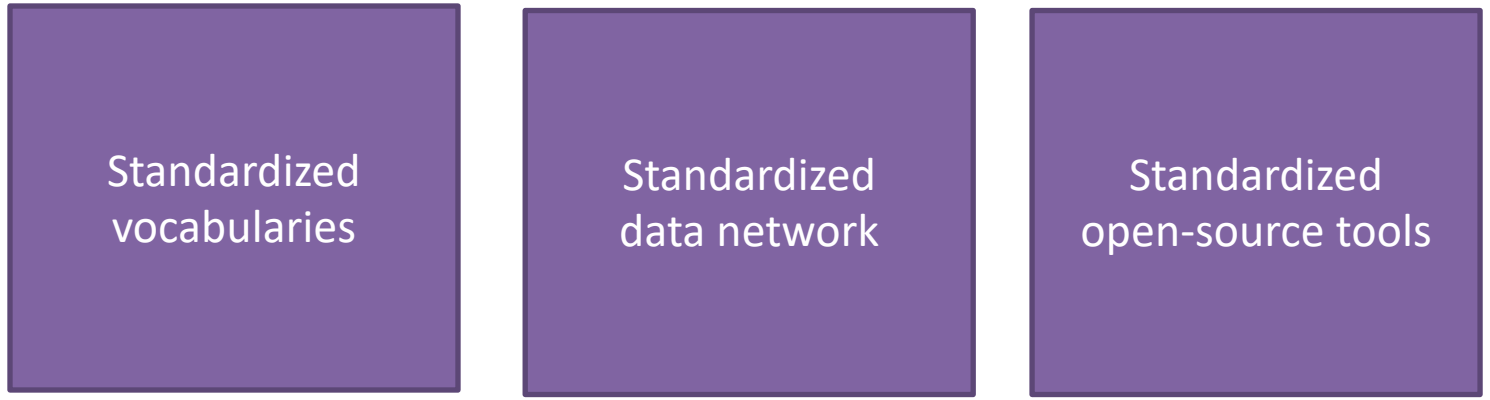
- Opportunity: Provide evidence to personalize risk of outcomes following treatment initiation
- Solution: Large-scale prediction of outcomes following drug exposure
  - Targets: New users of ingredient, for all ingredients
  - Outcomes: Event starts, for all adverse events
  - Time-at-risk: 30-day, 1-year post-exposure
  - Results: Model performance (discrimination, calibration)
  - Dissemination: Interactive dashboard to allow user to enter baseline characteristics and see personalized risk of outcome post-exposure
- Open questions:
  - How to use prediction results: absolute risk vs. counterfactual prediction?

Foundational elements to enable reliable evidence generation

Evidence use cases:



Foundational pillars:



Pillar #1: Standardized vocabularies

- Opportunity: Increase transparency and maturity with vocabulary development and evaluation process
- Proposed solutions:
  - Conduct landscape assessment to understand community needs
  - Develop code of conduct and developer guidelines
  - Disseminate vocabulary process and end-user documentation and roadmap
  - Establish centralized development infrastructure
  - Create standardized test development
  - Build vocabulary version release distribution service

Pillar #2: Standardized data network

- Opportunity: Increase transparency and maturity of OHDSI data network
- Proposed solutions:
  - Create OHDSI data network catalog to encourage network studies across interested partners and promote data quality practices
  - Generate OHDSI network concept prevalence data and make accessible for ATLAS users to enable more generalizable phenotype development
  - Promote database diagnostics by having data partners share limited subset of ACHILLES to allow for users to identify databases that satisfy study criteria

Pillar #3: Standardized open-source tools

- Opportunity: Increase adoption and ease-of-use of HADES packages and other OHDSI open-source analytic tools
- Proposed solutions:
  - Create central infrastructure to enable testing of all OHDSI tools against each of the supporting database platforms
  - Establish referent benchmark study that all organizations can execute to demonstrate that OHDSI toolstack is operational
  - Improve documentation and educational materials to promote adoption of OHDSI tools
  - Encourage greater community support of open-source development activities: we need more help to maintain our solutions!

When poll is active, respond at **PollEv.com/patrickryan800**

What are your reactions/comments/questions to the proposed directions for OHDSI?

Top

No responses received yet. They will appear here...

When poll is active, respond at **PollEv.com/patrickryan800**

Text **PATRICKRYAN800** to **22333** once to join

Which direction are you most excited about?

Characterization idea: HowOften.org

Estimation idea: SIREN for pharmacovigilance

Estimation idea: Heterogeneity of treatment effects in comparative effectiveness

Prediction idea: Whatllhappentome.org

Pillar: Standardized vocabularies

Pillar: Standardized data network

Pillar: Standardized open-source tools