
OBSERVATIONAL
MEDICAL
OUTCOMES
PARTNERSHIP

FOUNDATION
FOR THE
National Institutes of Health



OMOP Common Data Model

November 12, 2009

Marc Overhage

PARTNERS FOR INNOVATION, DISCOVERY, LIFE



Agenda

CDM Overview

J. Marc Overhage, MD PhD

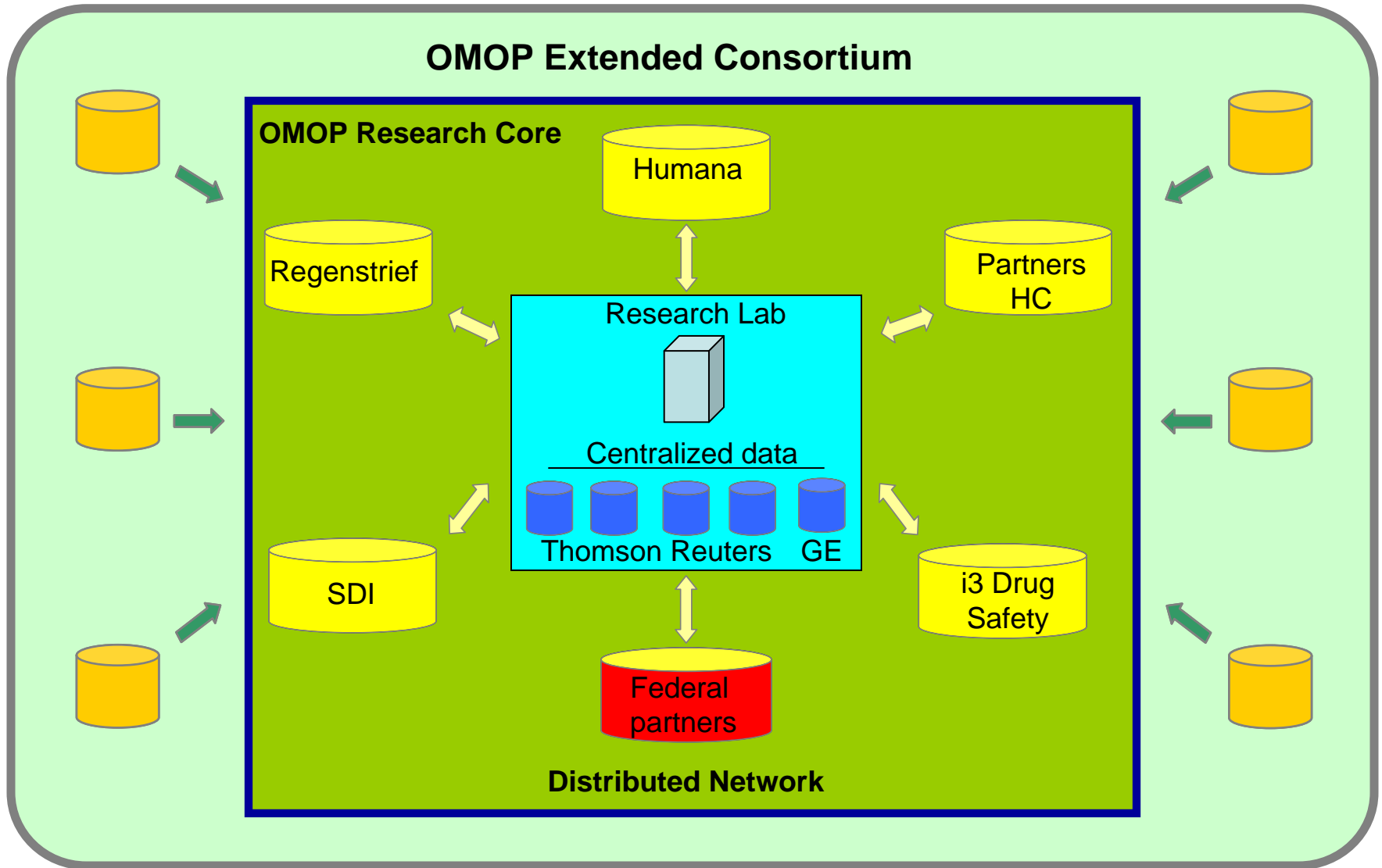
Distributed Partner perspectives

- Shawn Murphy, MD PhD
- Greg Hess, MD MBA MSc
- Arnold Chan, MD ScD

Q&A

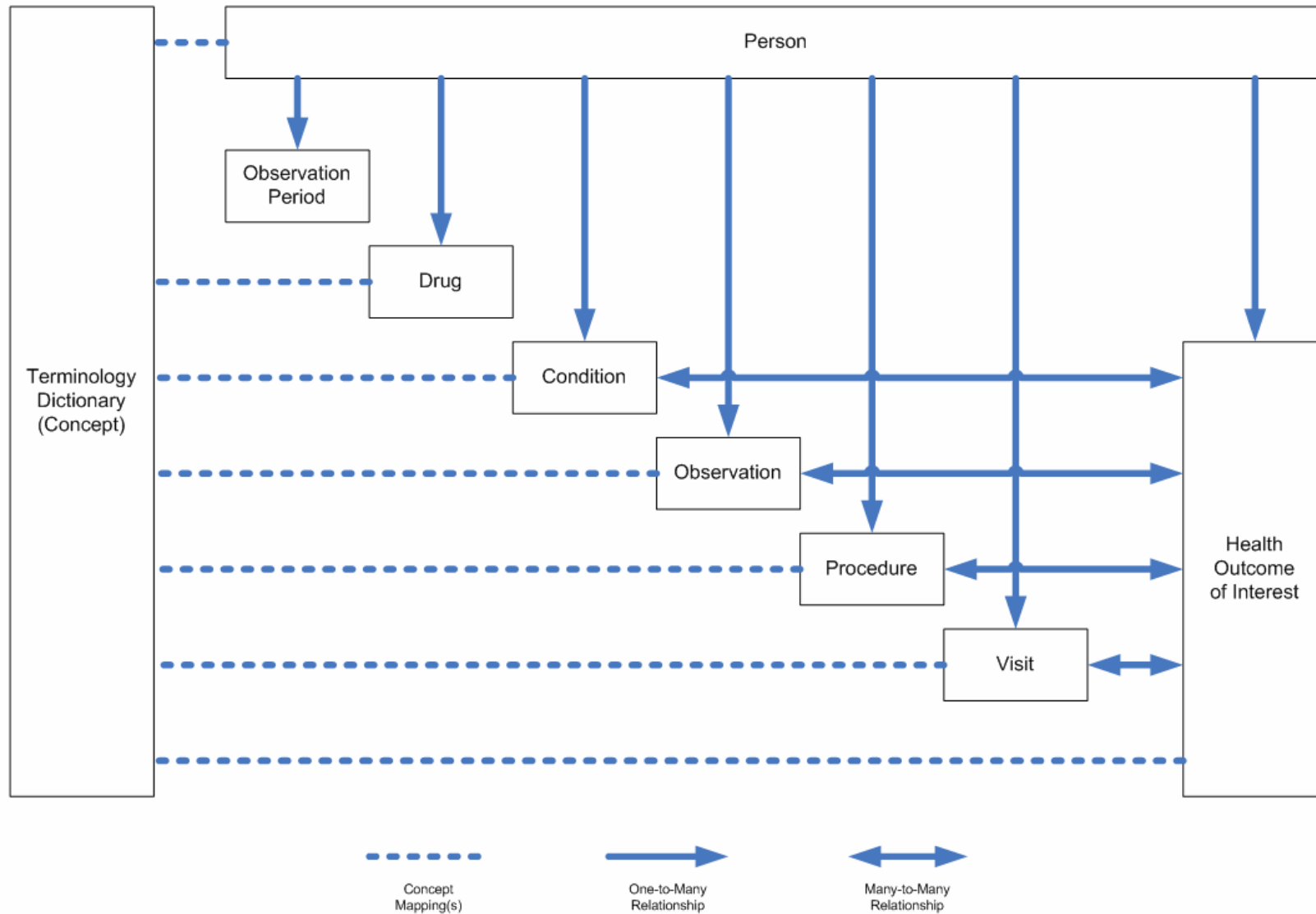


Testing data models: OMOP data community



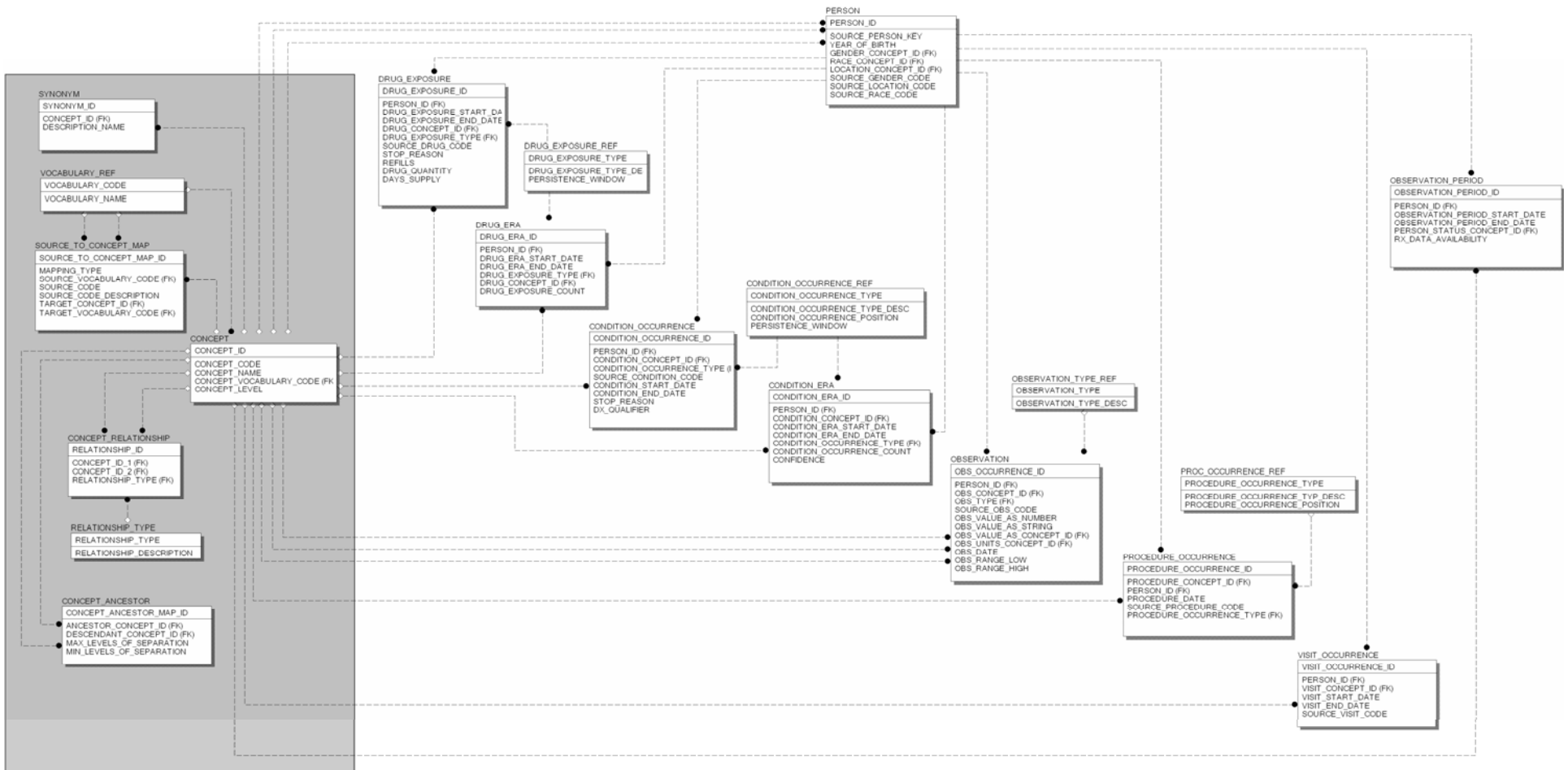


Conceptual schematic of OMOP common data model





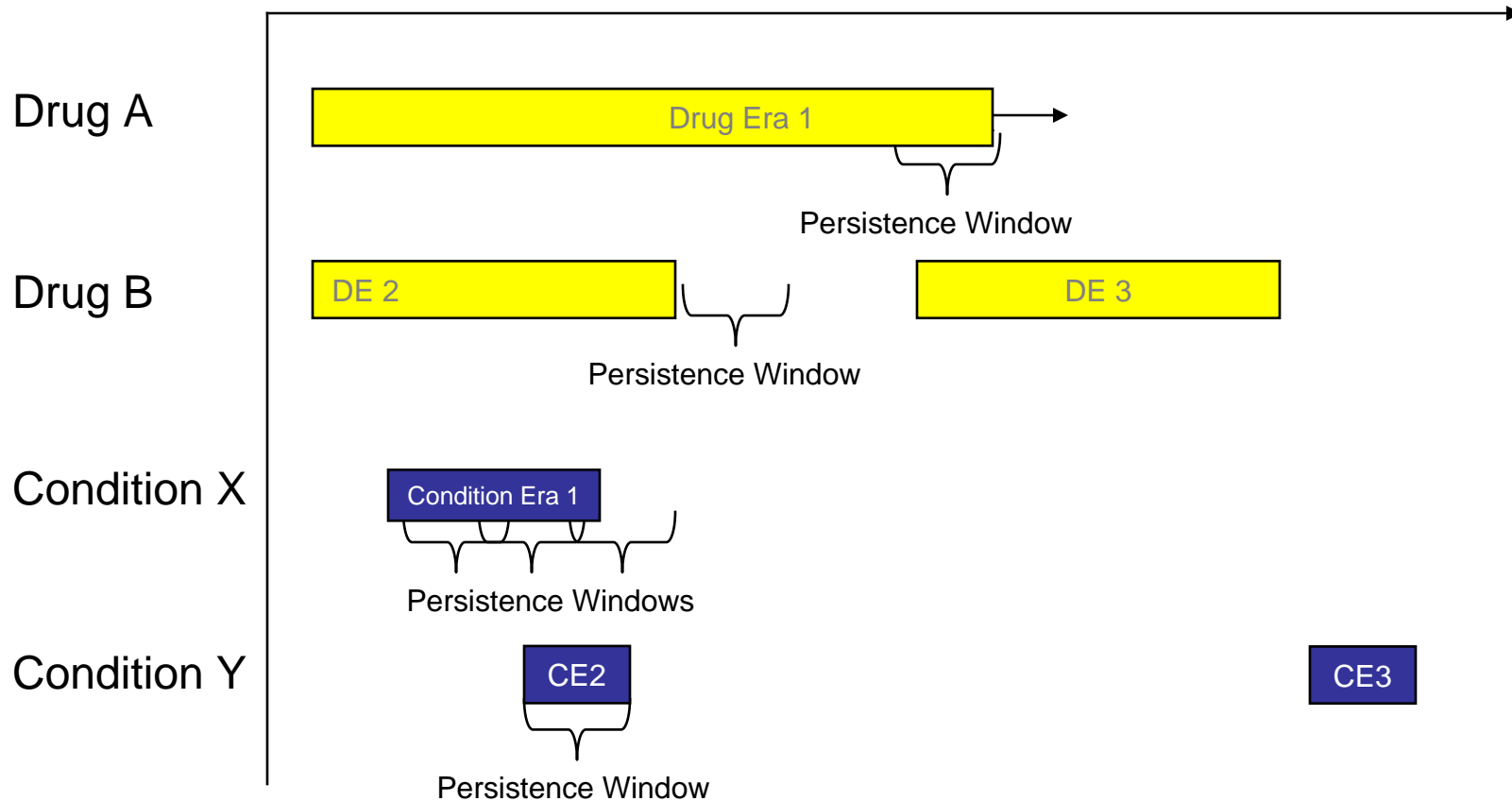
OMOP common data model schema





Constructing drug and condition eras

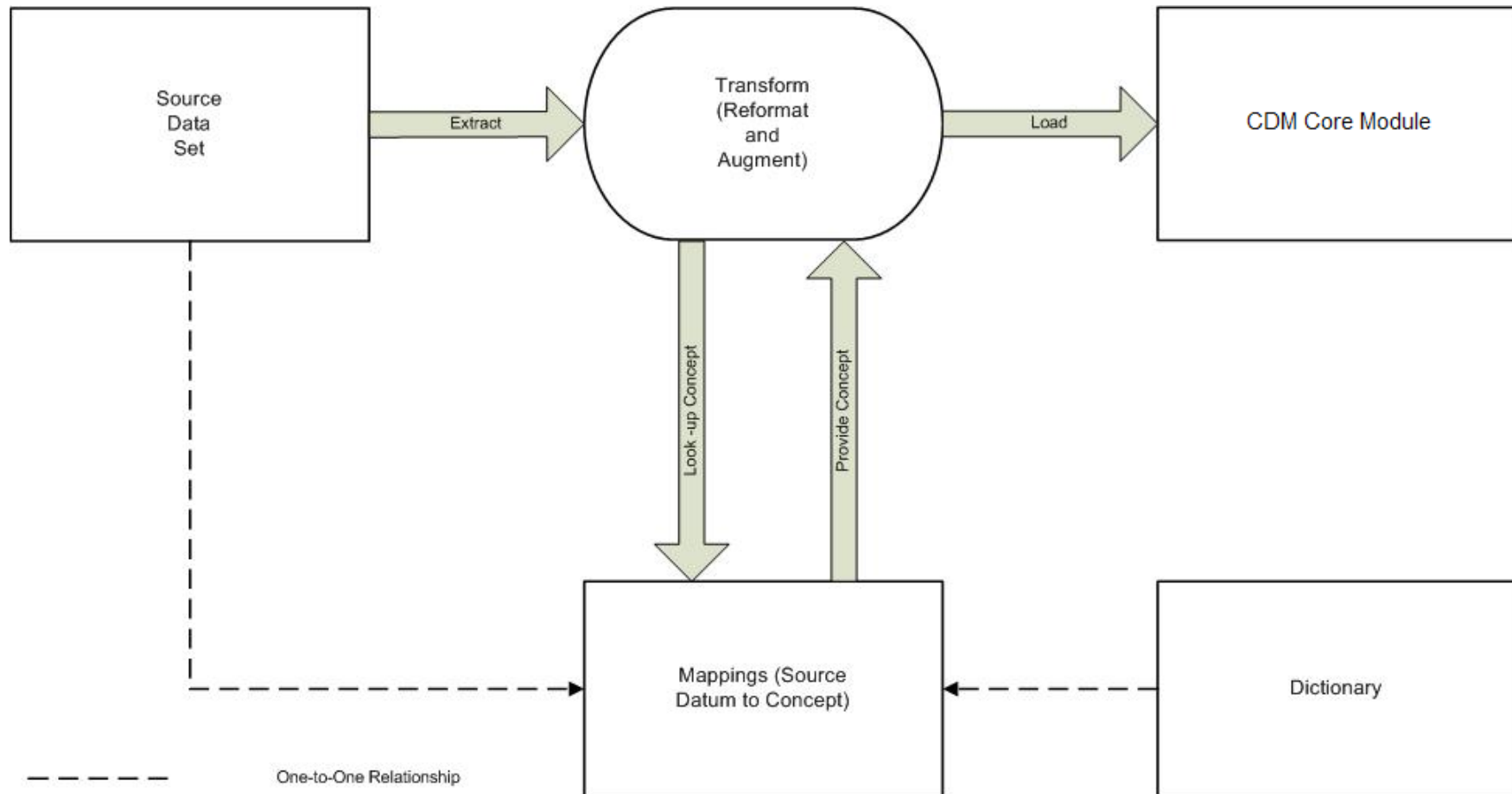
Using Observational Data: A single patient example Person Timeline



▲ → Prescription ● Diagnosis

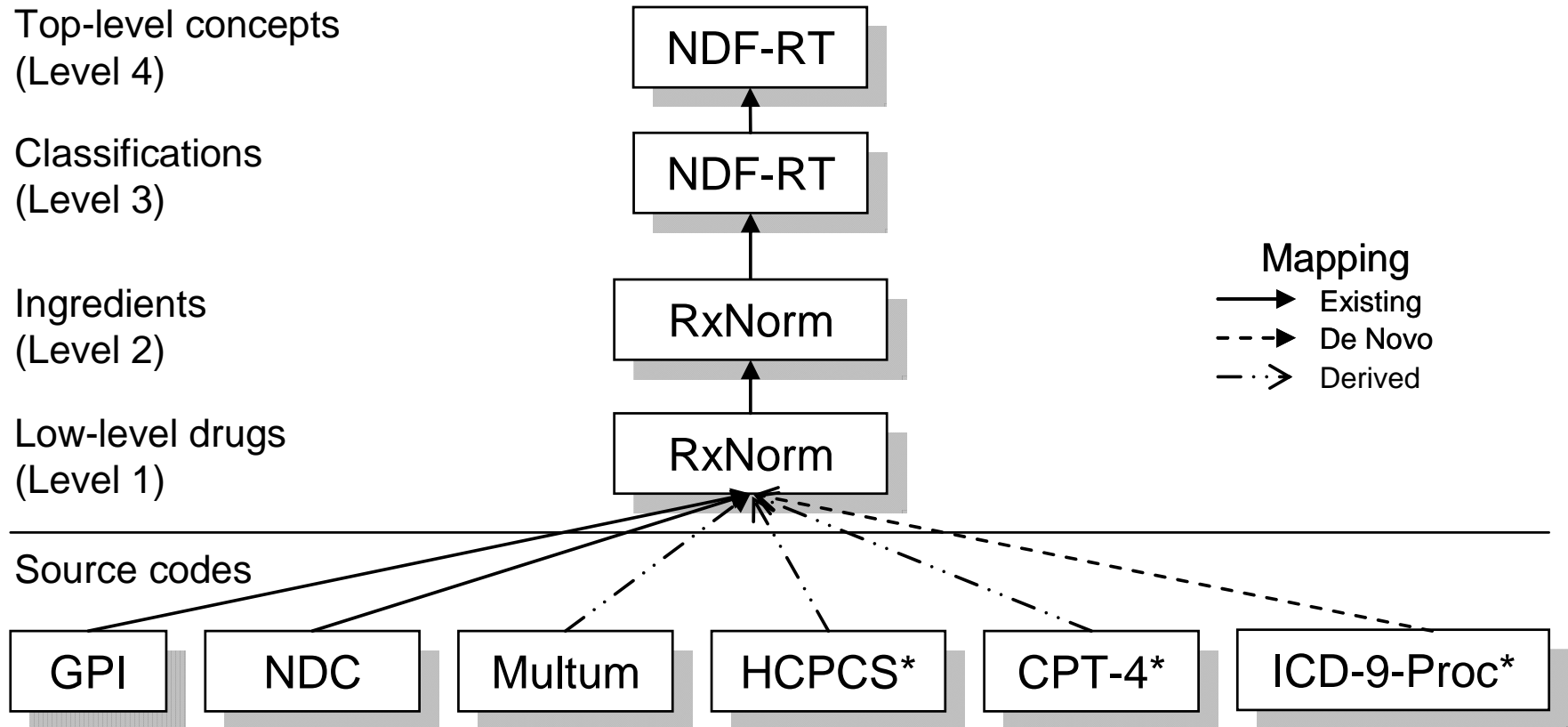


CDM transformation process



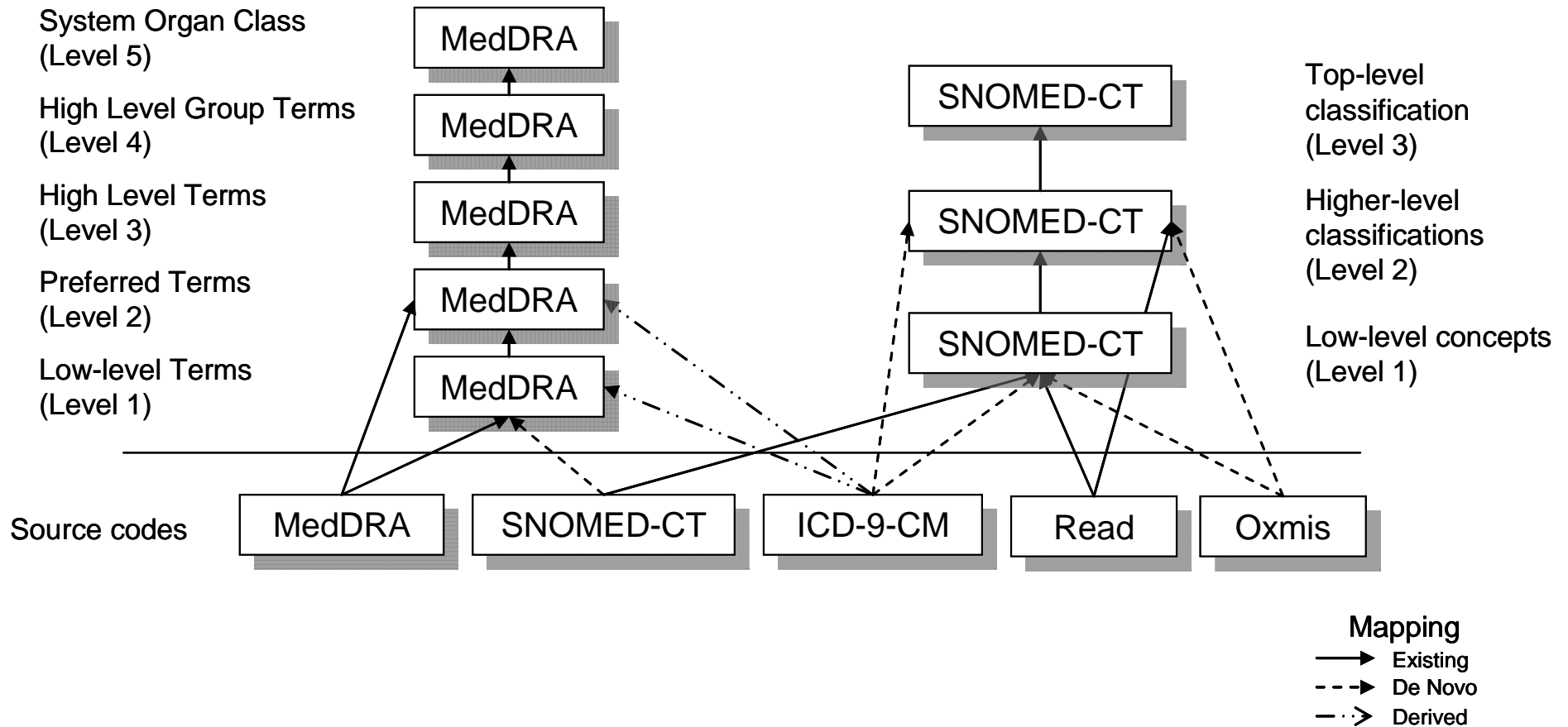


Standardizing terminologies for drugs



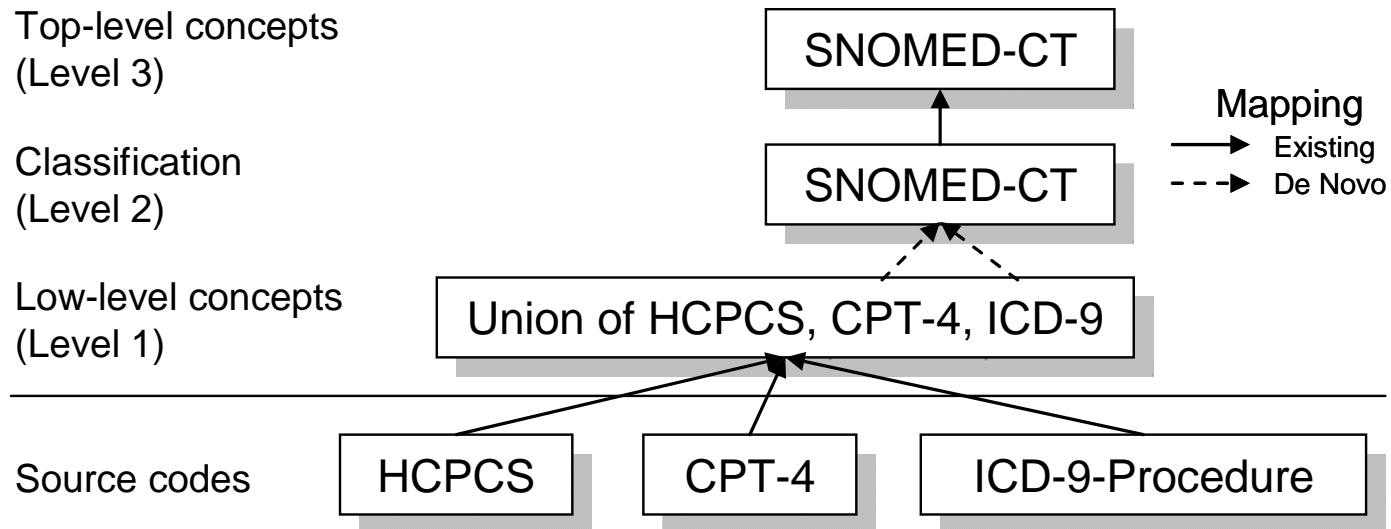


Standardizing terminologies for conditions





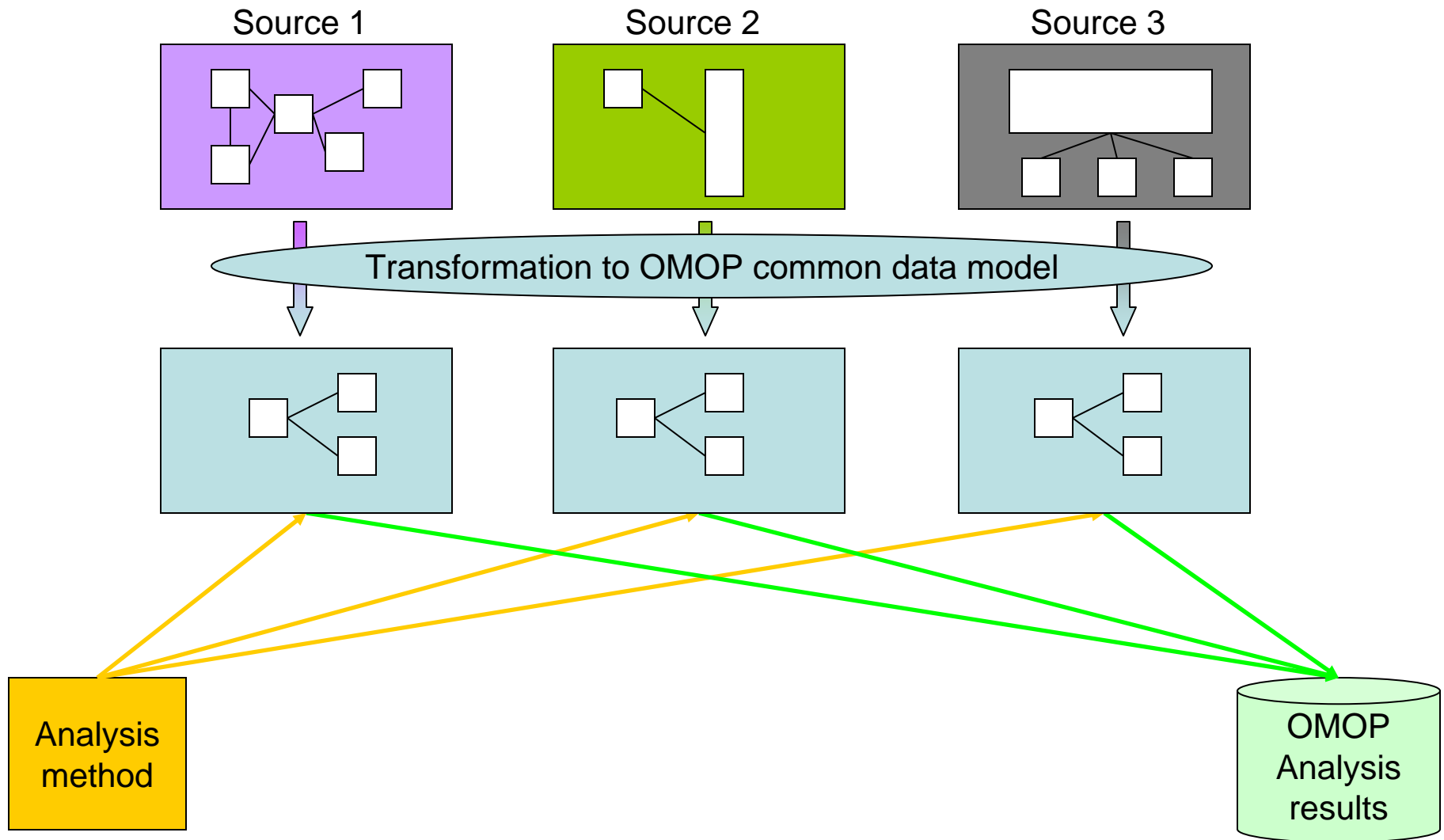
Standardizing terminologies for procedures





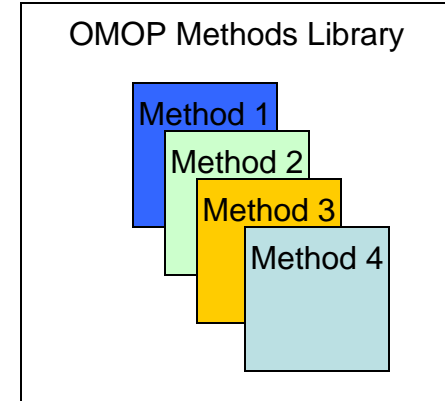
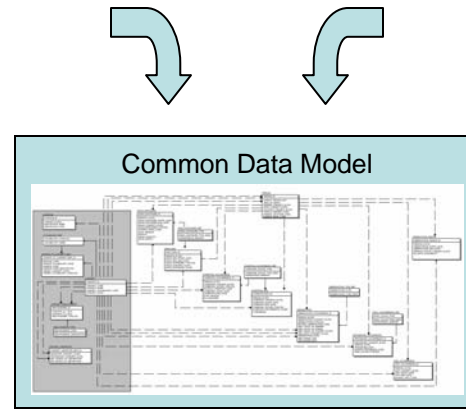
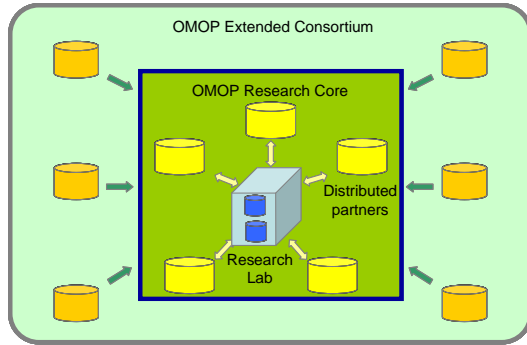
Role of common data model in OMOP

Analysis process



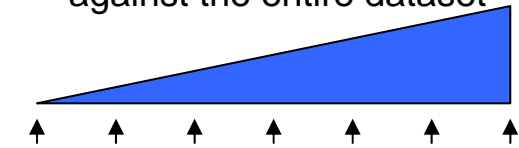
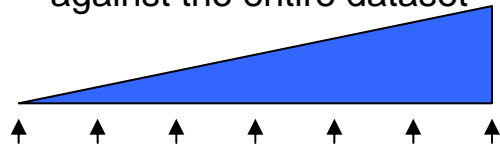


OMOP research workflow



Testing in each source:
-accumulating over time
-against the entire dataset

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-accumulating over time
-against the entire dataset



- Health Outcomes of Interest**
1. Angioedema
 2. Aplastic Anemia
 3. Acute Liver Injury
 4. Bleeding
 5. GI Ulcer Hospitalization
 6. Hip Fracture
 7. Hospitalization
 8. Myocardial Infarction
 9. Mortality after MI
 10. Renal Failure

- Drugs**
1. ACE Inhibitors
 2. Amphotericin B
 3. Antibiotics
 4. Antiepileptics
 5. Benzodiazapines
 6. Beta blockers
 7. Bisphosphonates
 8. Tricyclic antidepressants
 9. Typical antipsychotics
 10. Warfarin

- Non-specified conditions**
- All outcomes in condition terminology
 - 'Labeled events' as reference
 - Warning
 - Precautions
 - Adverse Reactions
 - Postmarketing Experience



Questions?

- For more information, go to <http://omop.fnih.org/CDMandTerminologies>
 - OMOP Common Data Model Specification v2.0
 - OMOP Standard Vocabulary Specification v2.0