IDR Research Data Services

Intro to OMOP and ATLAS

UF Clinical and Translational Science Institute
Integrated Data Repository Research Services
UNIVERSITY *of* FLORIDA

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UF Health

Objectives

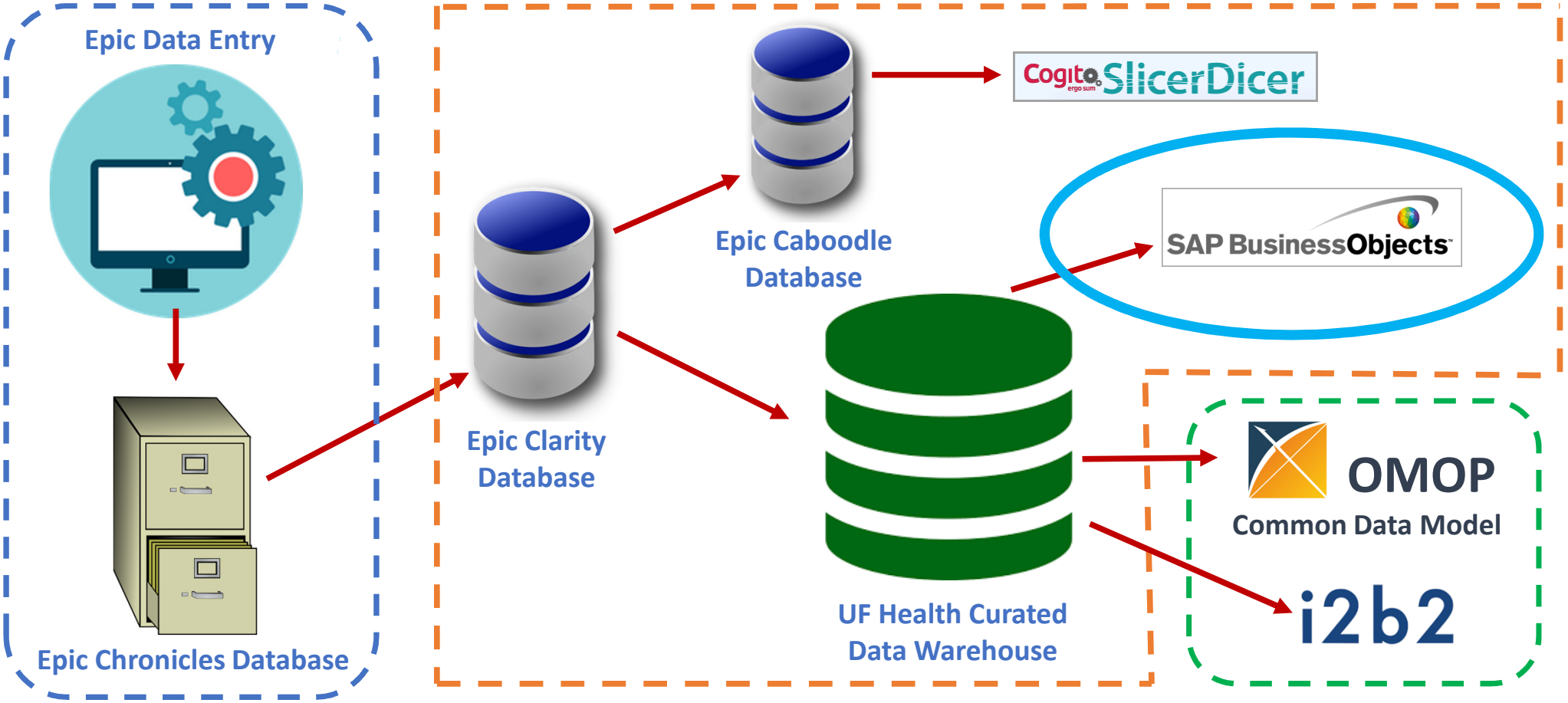
- Review the roles and services of Integrated Data Repository (IDR) research data services
- Define types of data delivery with a focus on self-service tools
- Introduction to the OHDSI community and OMOP common data model
- Demonstrate use of ATLAS to query OMOP data

UF Clinical Data Warehouse

- Large-scale clinical data warehouse (CDW)
- UF Health data
  - ~2.5 million patients
- Developed over decades by Shands and UF Health decision support services/IT analytics, and CTSI.
- Supports both Epic-generated and non-Epic generated data
- Supports clinical, operational, and research missions

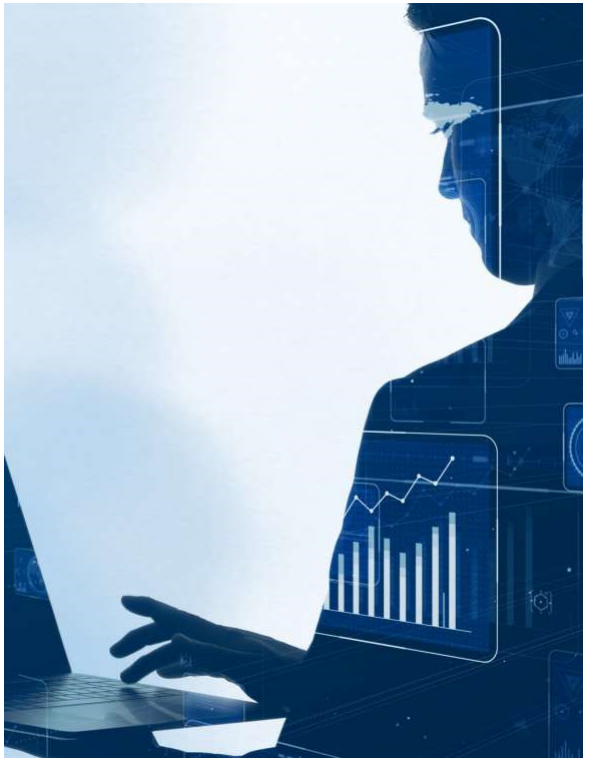
Data lineage

- Instant data load
- Overnight data load
- Quarterly data load

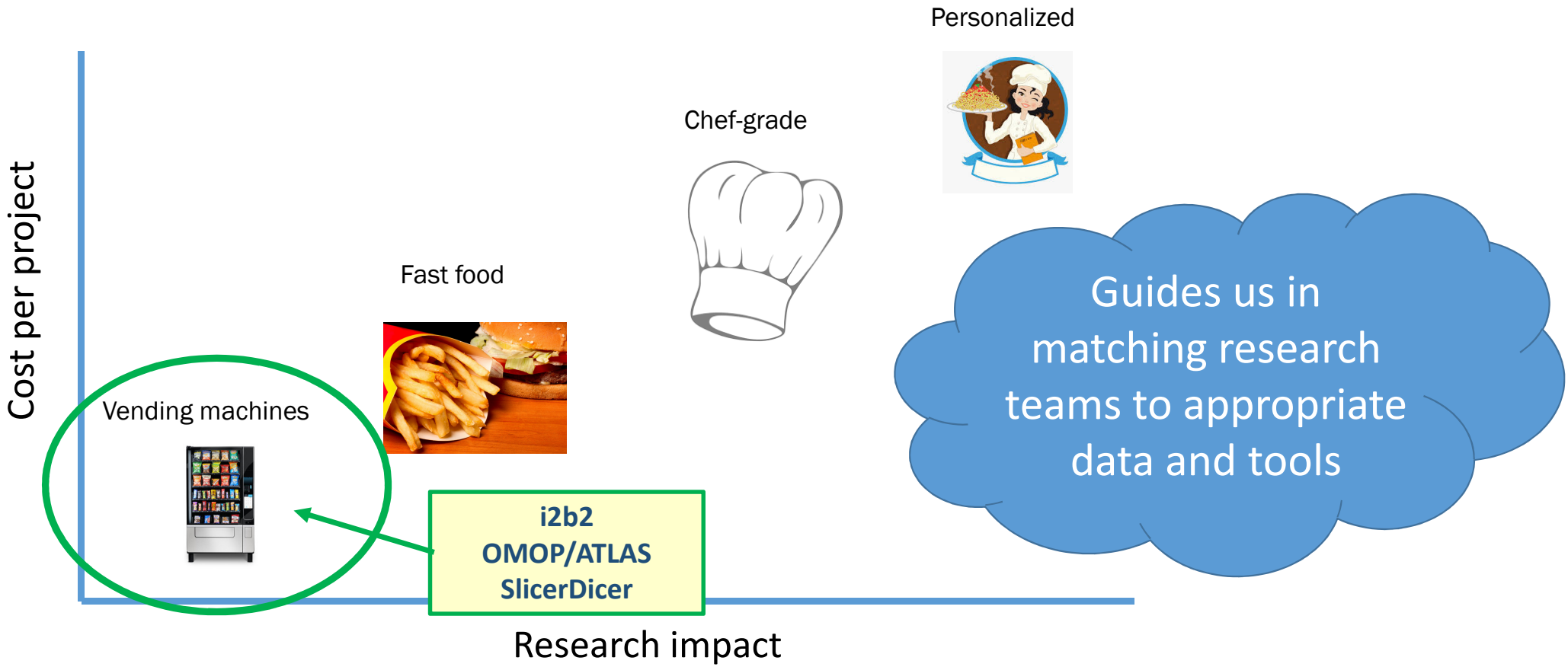


IDR Research Data Services

1. Consultation
2. Feasibility and Cohort discovery
3. Recruitment Support (C2S)
4. Research data
5. OMOP/ATLAS support



The Process: Levels of Service



Building a research data community

- Observational Medical Outcomes Partnership (OMOP)
- Global community of interdisciplinary data users
- Transforming data into
  - Common format (i.e., data model)
  - Common representation (i.e., terminologies, vocabularies, codes)
- Enhances sharing and collaboration

OHDSI
OBSERVATIONAL HEALTH DATA SCIENCES AND INFORMATICS

Map of collaborators

OHDSI By The Numbers

- 3,758 collaborators
- 83 countries
- 21 time zones
- 6 continents
- 1 community

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What is OMOP?

OHDSI
OBSERVATIONAL HEALTH DATA SCIENCES AND INFORMATICS

OMOP

Observational Medical Outcomes Partnership

OMOP
Common Data Model (CDM)

Analytical tools

ATLAS

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OMOP Common Data Model

What?

- A standardized way to represent data structure (CDM) and content (terminologies, vocabularies, coding scheme)
- One model to accommodate data coming from disparate data sources

Why?

- Enable standardization of structure and content
- Support collaborative research

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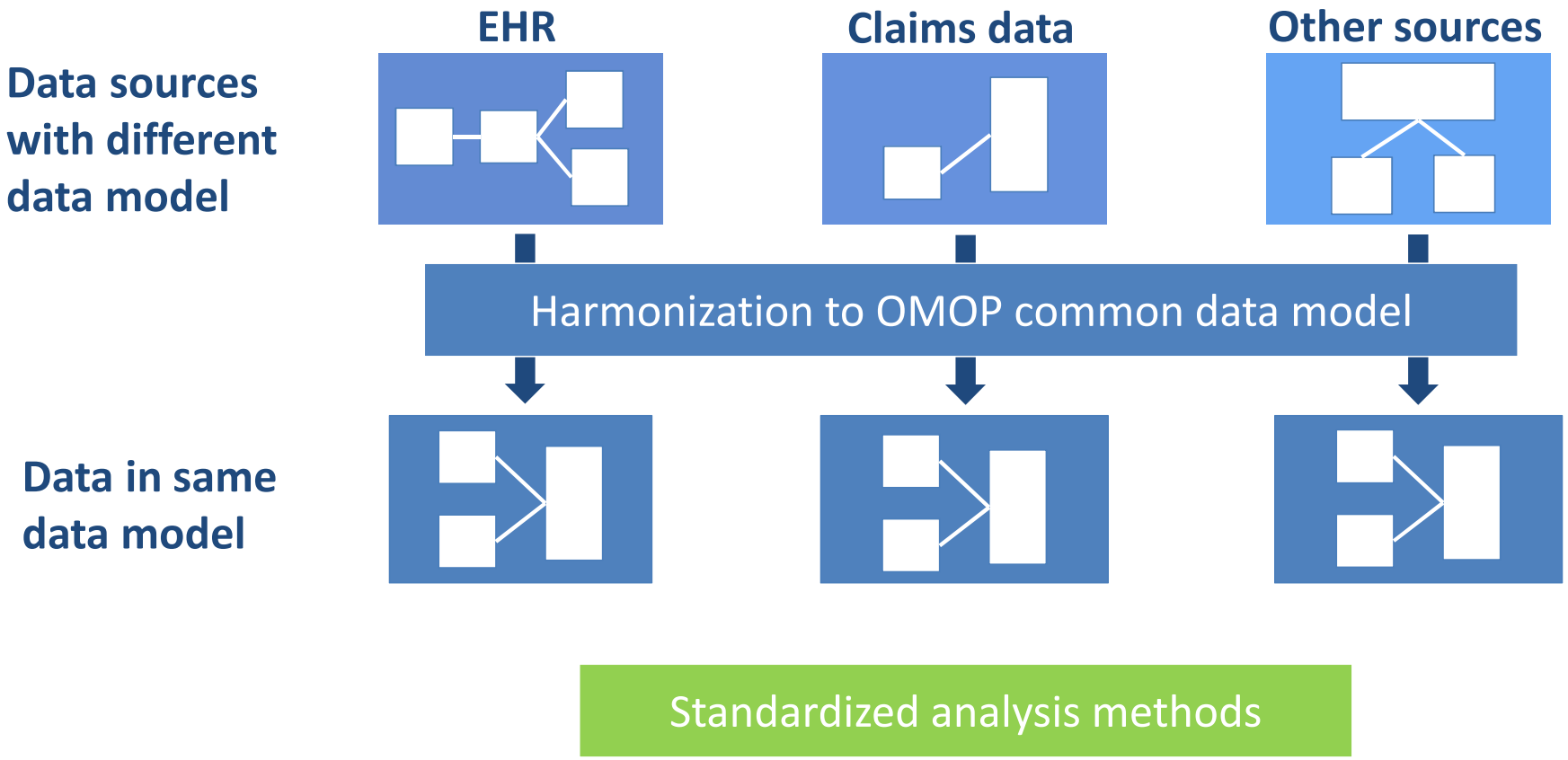
OMOP Common Data Model



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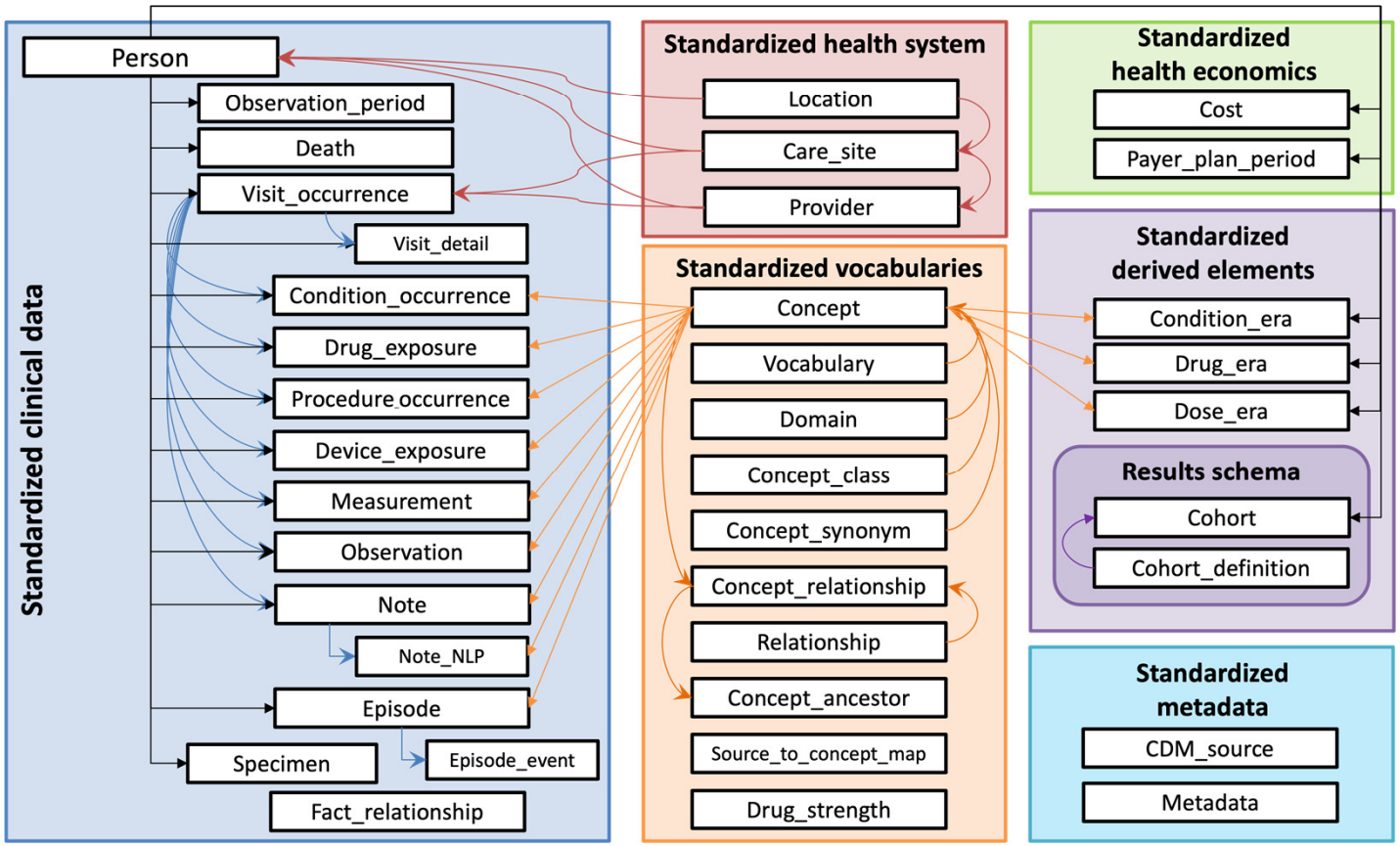
OMOP Common Data Model



Data

- Inclusion:
  - UF Health patient with at least one encounter in GNV or JAX since 1/1/2012
-  2.5million+
- 

3 billion+
-  Iterative approach

- Data elements:

  past and present medical history since 1/1/2012

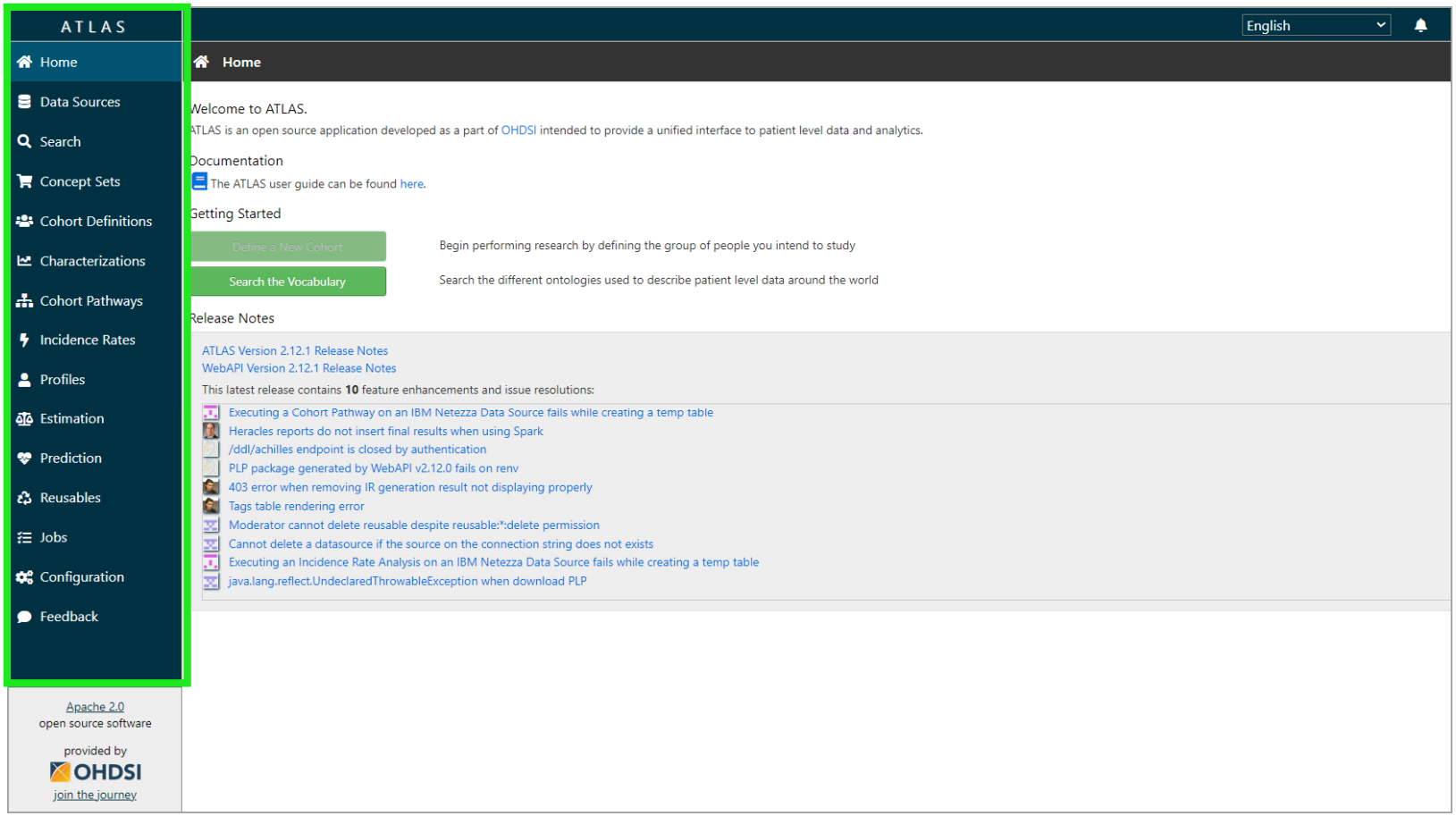
Demographics
Vitals
Vital status
Labs
Conditions
Assessment Scales
Procedures
Social Hx
Medications
Encounters

What is ATLAS?

- ATLAS is a web-based tool that facilitates design and execution of analyses on standardized, patient-level, observational data in OMOP CDM format

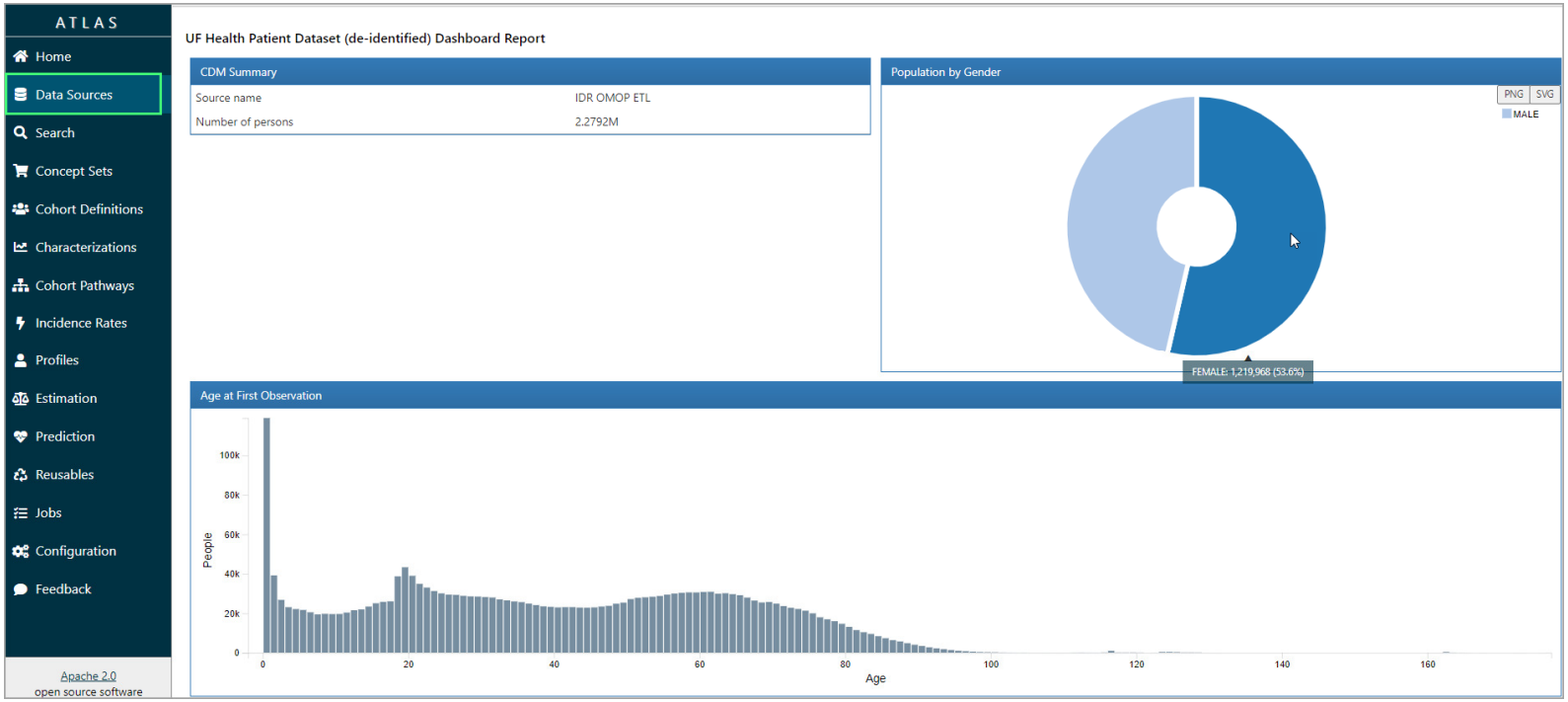
- ATLAS is a free, publicly available web-based, open-source software application developed by the OHDSI community to support the design and execution of observational analyses to generate real world evidence from patient level observational data.

ATLAS Analytic Options

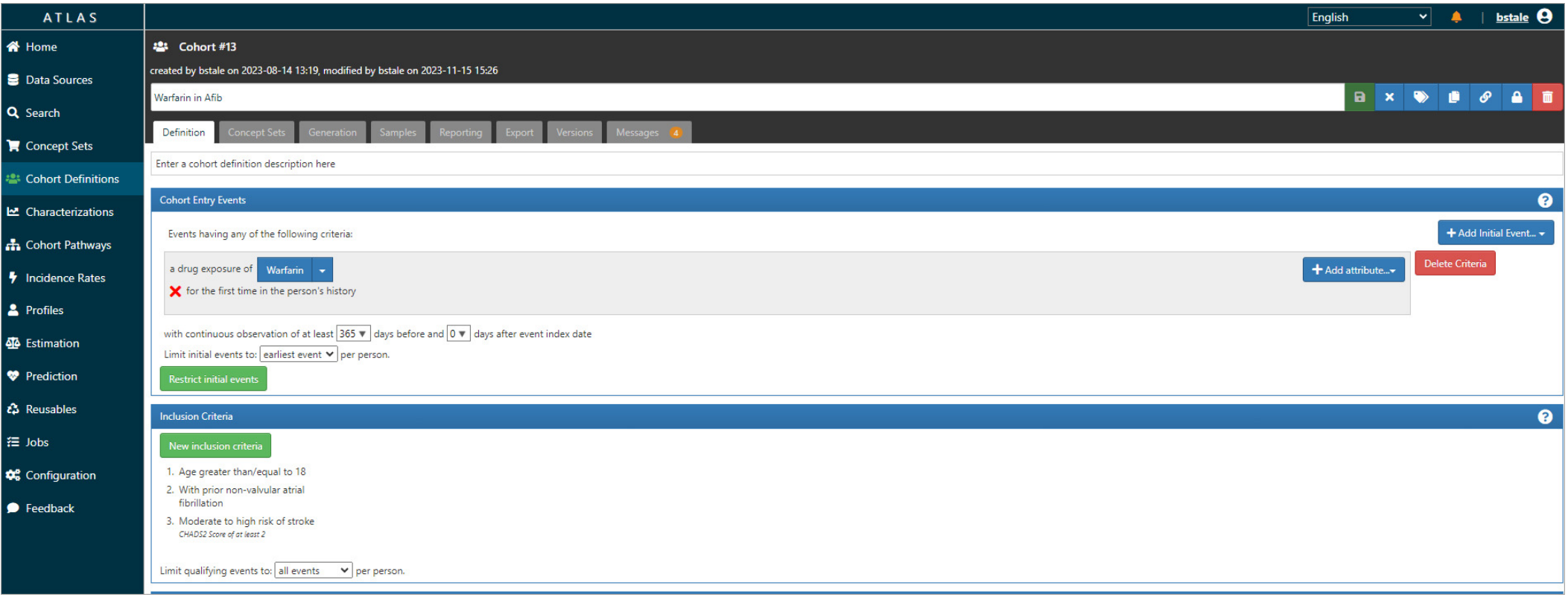


Data Sources & Dashboard Report

- High level overview of the characteristics of database
- Provides insight into distributions within the data model
- Hover over chart/table elements for details



ATLAS Cohort Discovery (demo)



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OMOP & ATLAS Availability

OMOP

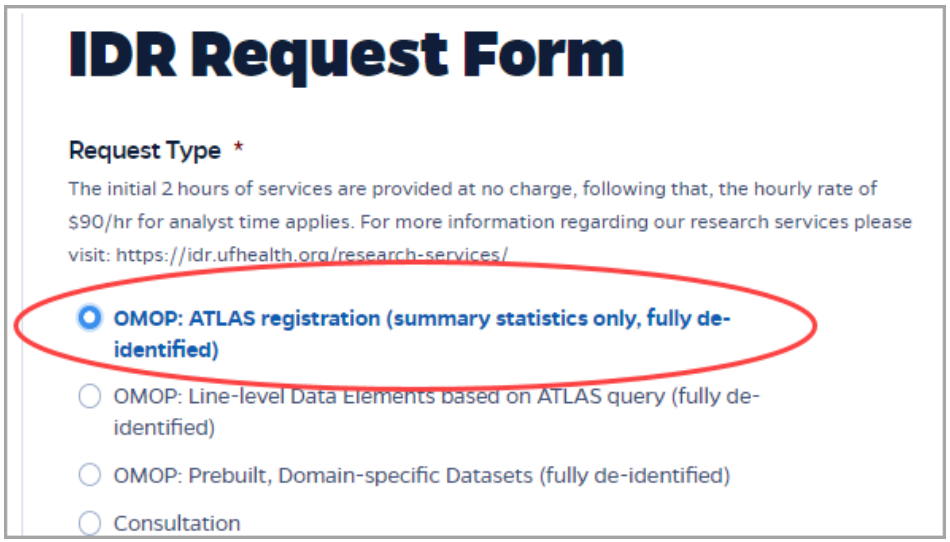
ATLAS

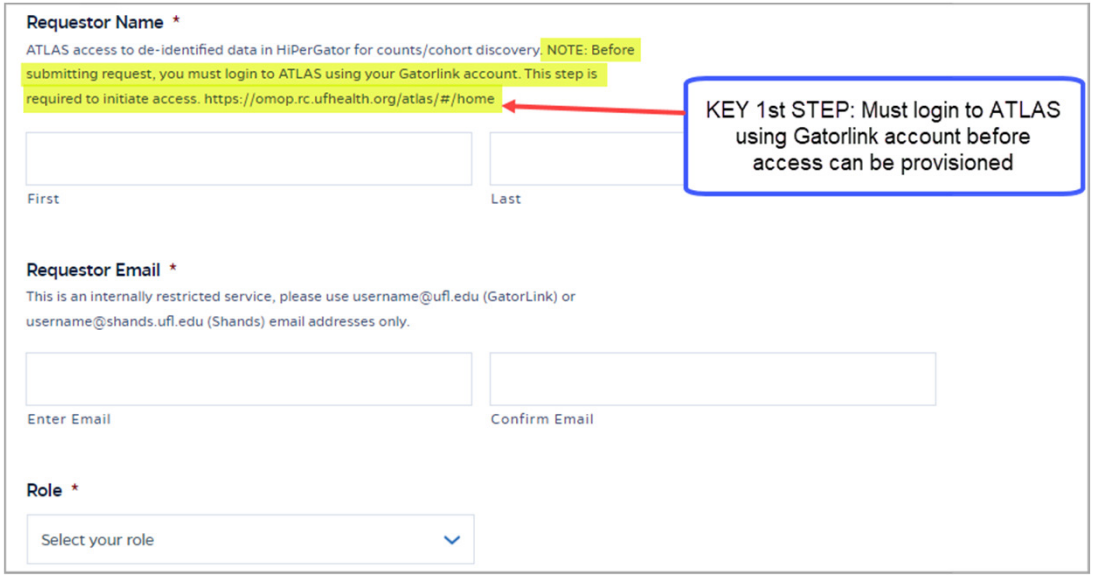
HiPerGator 3.0
The University of Florida Supercomputer for Research

- **OMOP Database is ready!**
- **OMOP/ATLAS instance has been setup**
- **Research Use: Available broadly to research investigators in the HiPerGator environment**

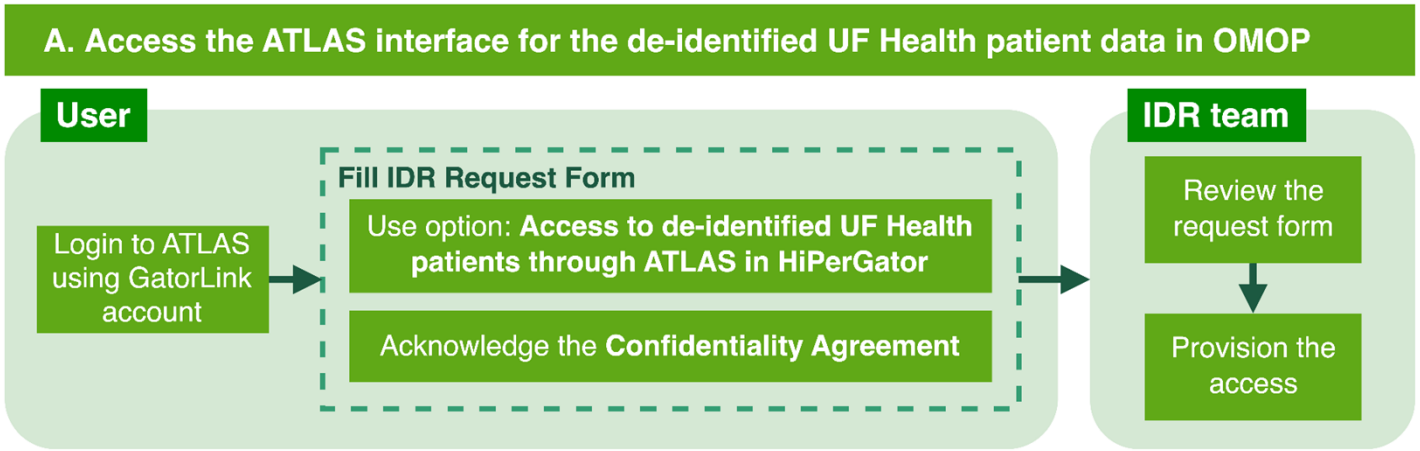
How to access ATLAS

https://idr.ufhealth.org/research-services/data-request-form/





Research Use – Cohort Discovery



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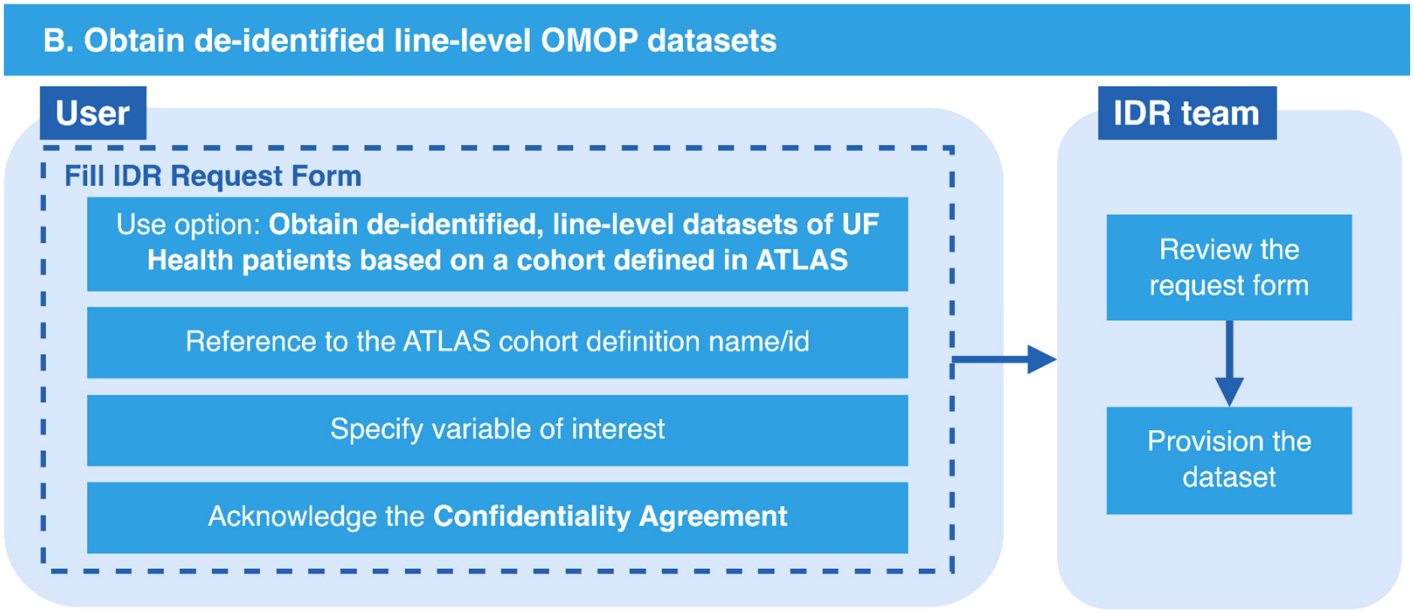
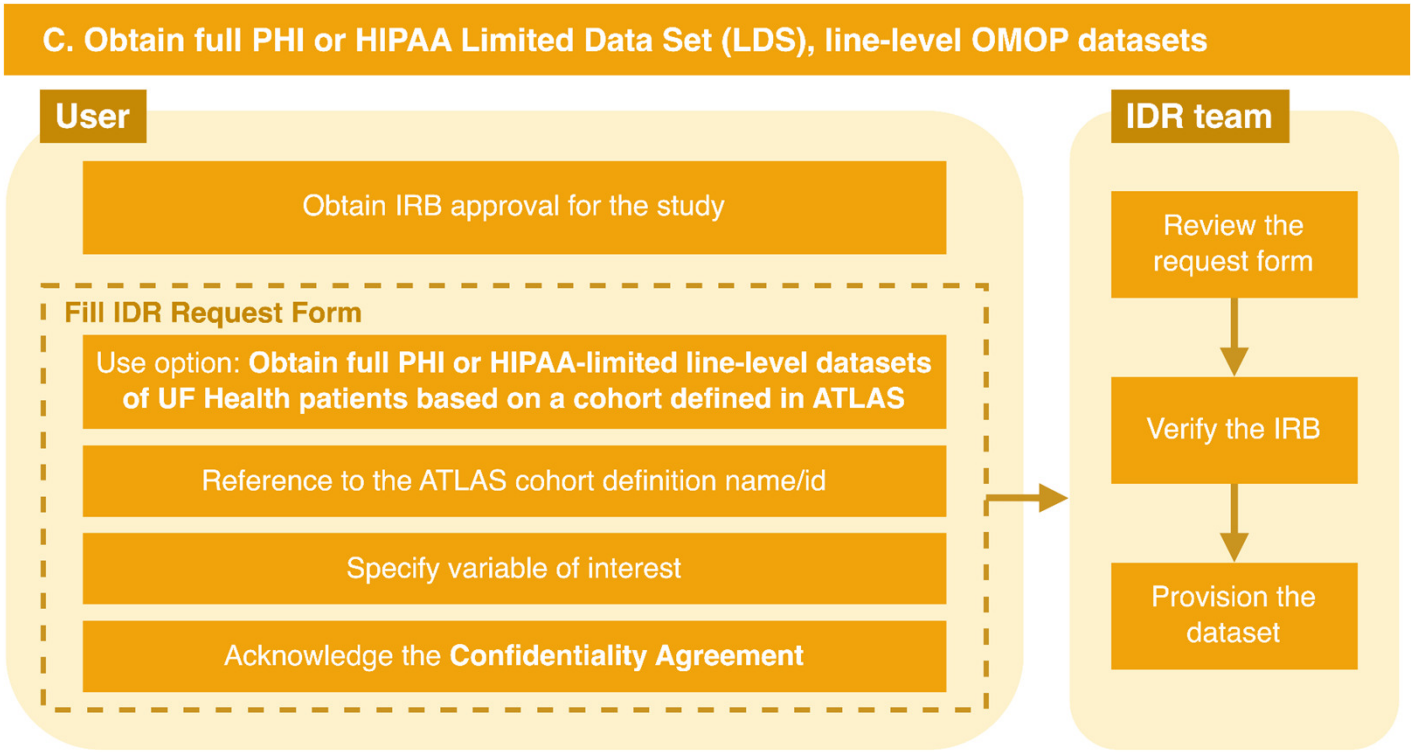
Research Use – Deidentified Dataset



Research Use – Line-level PHI or LDS

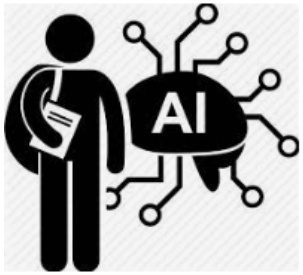


Ongoing Work

BUILD OMOP COMMUNITY WITHIN UF/UF HEALTH

- Collaboration with researchers

- Training and education



- Combining data with analytics tools

Current OMOP work at OneFlorida

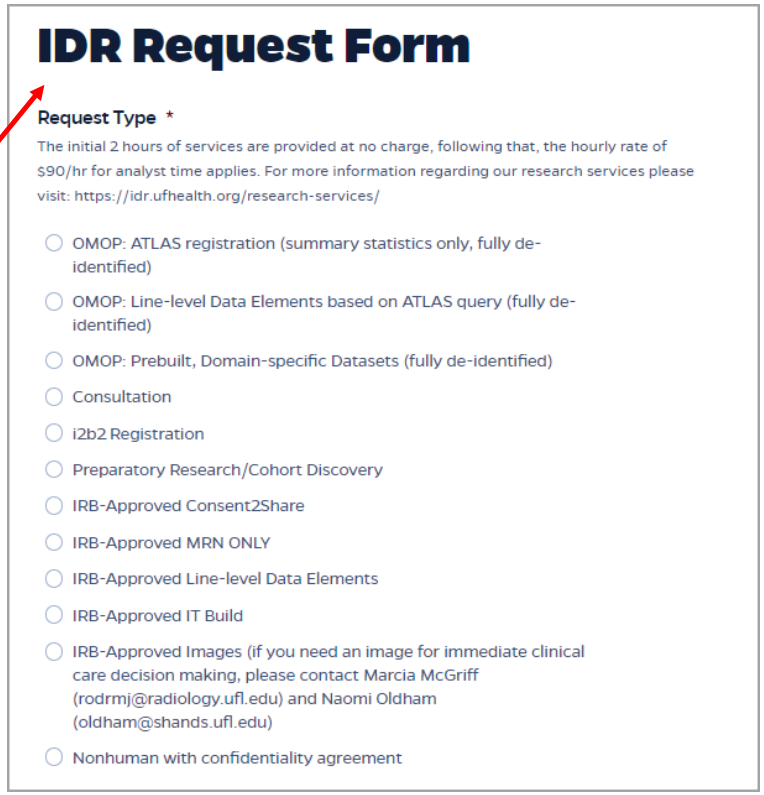
How to get help from the IDR:

- Team email:

  IRBDataRequest@ahc.ufl.edu

- IDR Research Data Request online form:

  https://idr.ufhealth.org/research-services/data-request-form/



IDR Request Form

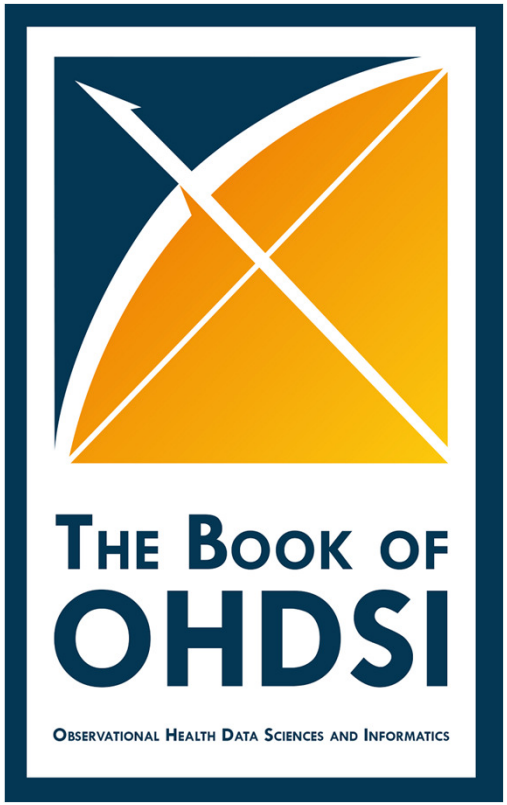
Request Type *

The initial 2 hours of services are provided at no charge, following that, the hourly rate of $90/hr for analyst time applies. For more information regarding our research services please visit: https://idr.ufhealth.org/research-services/

- ○ OMOP: ATLAS registration (summary statistics only, fully de-identified)
- ○ OMOP: Line-level Data Elements based on ATLAS query (fully de-identified)
- ○ OMOP: Prebuilt, Domain-specific Datasets (fully de-identified)
- ○ Consultation
- ○ i2b2 Registration
- ○ Preparatory Research/Cohort Discovery
- ○ IRB-Approved Consent2Share
- ○ IRB-Approved MRN ONLY
- ○ IRB-Approved Line-level Data Elements
- ○ IRB-Approved IT Build
- ○ IRB-Approved Images (if you need an image for immediate clinical care decision making, please contact Marcia McGriff (rodrmj@radiology.ufl.edu) and Naomi Oldham (oldham@shands.ufl.edu)
- ○ Nonhuman with confidentiality agreement

Resources

- Hopkins YouTube Video
  - https://www.youtube.com/watch?v=bGUPje0LAiA&t=597s
- OHDSI.org
  - https://ohdsi.org
- The Book of OHDSI
  - https://ohdsi.github.io/TheBookOfOhdsi/
- Atlas Tutorial
  - https://www.ohdsi.org/resources/tutorials/
- EHDEN Academy
  - https://academy.ehden.eu
- OHDSI YouTube Channel
  - https://www.youtube.com/c/OHDSI



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QUESTIONS/DISCUSSION

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