

# Introduction to the Integrated Data Repository (IDR)

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Integrated Data Repository (IDR)

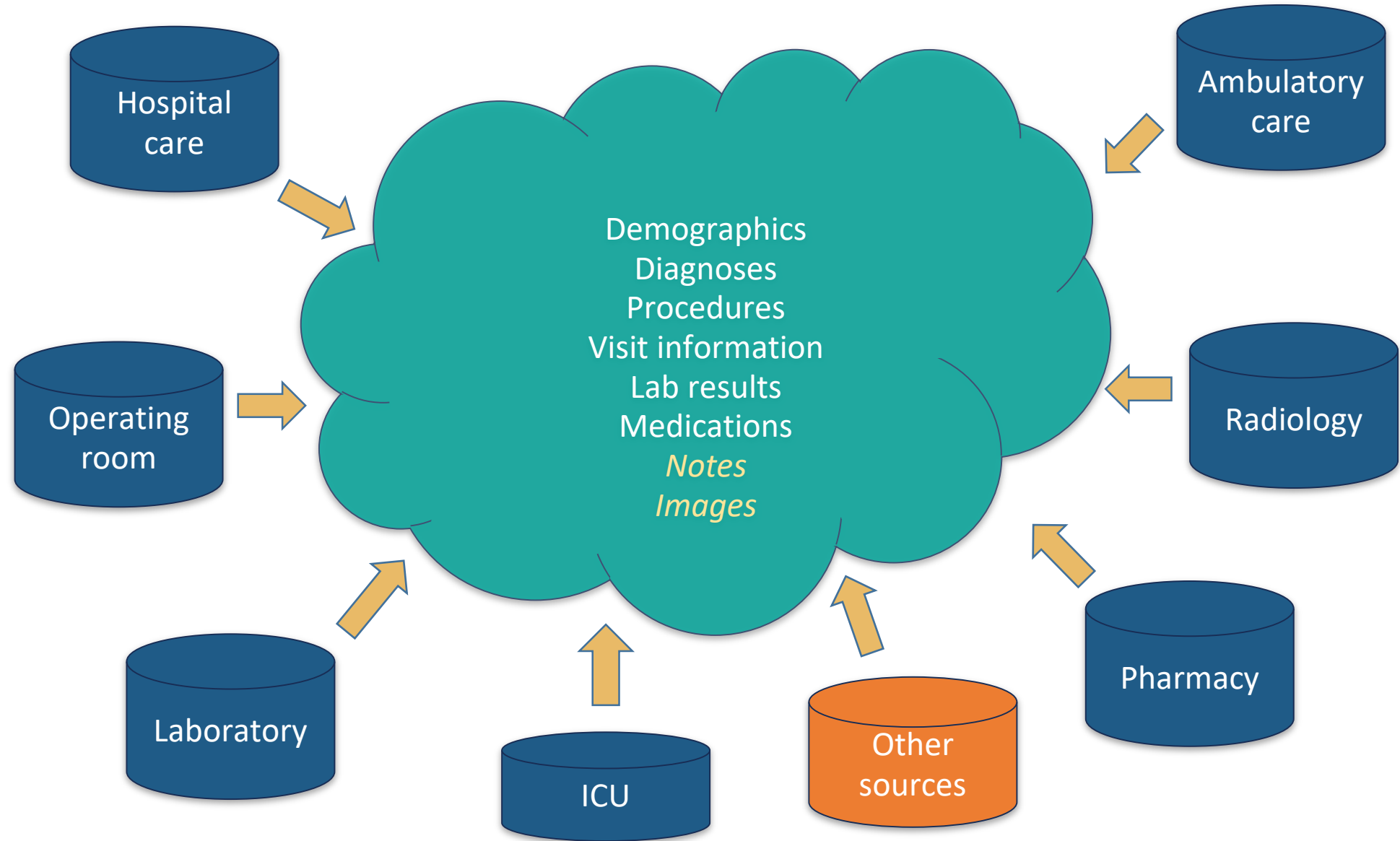
# What is the IDR Research Services?

- Situated in the Clinical and Translational Science Institute as a service center under the College of Medicine
- Access a large-scale clinical data warehouse (CDW)
- People with expertise in clinical operations, research services, and data wrangling
- Supports clinical, educational, and research missions

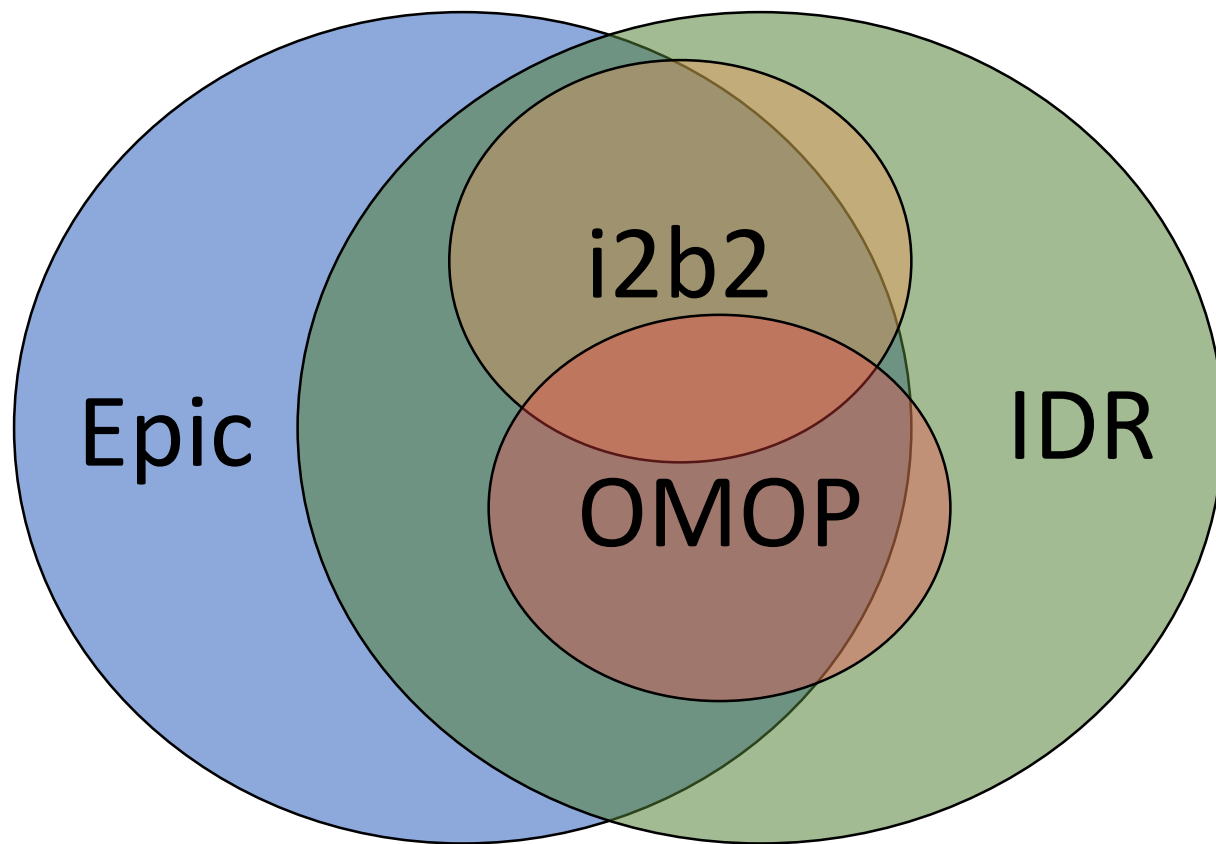


## Why the IDR?

IDR analysts navigate the CDW using their knowledge to run the appropriate queries and provide researchers with the data needed for their studies.



# UF Health Data



**Inside IDR**  
~2.5 million patients  
billions of facts



# Services offered by IDR

1. Self-service datasets
2. Consultations
3. Research Data
4. Recruitment



# 1. Self Service Datasets

## Already IRB-Approved

### Informatics for Integrating Biology & the Bedside (i2b2)

- a. A NIH-funded data exploration and cohort discovery tool
- b. Provides HIPAA-compliant, de-identified data queried via a web application
- c. Returns an obfuscated number of unique patients that meets query criteria
- d. National, state, and local level data, with two instances for UF Health

### OMOP (COVID19 and Cancer)

- a. Reusable Datasets of UF Health patients
- b. De-identified data (contains no HIPAA identifiers)
- c. Uses OMOP common data format
- d. Atlas web application coming soon to build queries and provide basic analysis



## 2. Consultation

- If you plan on using the IDR to retrieve retrospective research data or patient recruitment data, schedule a consultation to discuss...
  - Study feasibility
  - timeline and process to receive data
  - cost estimates

# 3. Research Data

- IRB Approval Required
- Reliable, secure, and protects patient privacy
- OMOP
  - Quicker than custom line-level data pull for data already in OMOP data guide



| patientID | date       | diag_code | diag_int_type | diag_desc                   |
|-----------|------------|-----------|---------------|-----------------------------|
| P1        | 12/7/2009  | 784       | ICD9          | HEADACHE                    |
| P1        | 11/12/2012 | V34.7     | ICD9          | He vaccine allergy          |
| P1        | 11/28/2012 | 805.1     | ICD9          | Tobacco-use disorder        |
| P2        | 4/12/2011  | V76.51    | ICD9          | COLON CA SCREENING          |
| P6        | 5/7/2014   | 345.9     | ICD9          | Epilep NOS w/o intr epil    |
| P17       | 3/15/2006  | 401.9     | ICD9          | HYPERTENSION NOS            |
| P9        | 12/14/2006 | 434.9     | ICD9          | CEREB ART OCCL S INFRACT    |
| P2        | 7/25/2008  | 599       | ICD9          | URINARY TRACT INF NOS       |
| P1        | 5/15/2008  | 401.1     | ICD9          | BENIGN HYPERTENSION         |
| P45       | 7/8/2013   | V58.65    | ICD9          | Urg use antiplate/thrombctc |
| P1        | 11/9/2014  | V76.13    | ICD9          | SCREPN MAMMARY GLAND BY TUC |

| PatientID | hospital    | encounter_date | sex    | race  | ethnicity    |
|-----------|-------------|----------------|--------|-------|--------------|
| P1        | UFHP CLINIC | 9/11/2018      | MALE   | WHITE | HISPANIC     |
| P5        | UFHP CLINIC | 9/11/2018      | FEMALE | WHITE | NOT HISPANIC |
| P17       | UFHP CLINIC | 9/13/2018      | FEMALE | BLACK | NOT HISPANIC |
| P3        | UF          | 9/13/2018      | MALE   | WHITE | NOT HISPANIC |
| P4        | UFHP CLINIC | 9/13/2018      | FEMALE | WHITE | HISPANIC     |
| P6        | UFHP CLINIC | 9/18/2018      | MALE   | ASIAN | NOT HISPANIC |
| P23       | UF          | 9/19/2018      | FEMALE | BLACK | NOT HISPANIC |
| P2        | UFHP CLINIC | 9/19/2018      | FEMALE | WHITE | NOT HISPANIC |
| P6        | UFHP CLINIC | 9/19/2018      | MALE   | ASIAN | NOT HISPANIC |

| PatientID | lab_result    | lab_unit | normal_low | normal_high | lab_date        | lab_name                                       |
|-----------|---------------|----------|------------|-------------|-----------------|--|
| P1        | 0.02          | x10E3/uL | 0.03       | 0.46        | 9/19/2018 10:22 | EOSINOPHILS ABSOLUTE COUNT                     |
| P1        | 11            | ng/mL    |            |             | 9/19/2018 10:22 | DELTA-9-THC-CARBOXYLIC ACID URINE CONFIRMATION |
| P2        | 3.3           | mmol/L   | 3.3        | 5.1         | 9/19/2018 10:22 | POTASSIUM                                      |
| P3        | None Detected |          |            |             | 9/19/2018 10:22 | BENZODIAZEPINE SCREEN, URINE                   |
| P4        | 0.5           | %        | 0          | 2           | 9/19/2018 10:22 | BASOS  |
| P17       | 0.61          | x10E3/uL | 0.2        | 0.7         | 9/19/2018 10:22 | MONOCYTES ABSOLUTE COUNT                       |
| P23       | 10            | IU/L     | 0          | 35          | 9/19/2018 10:22 | ALT (SGPT)                                     |
| P3        | 11            | mmol/L   | 8          | 16          | 9/19/2018 10:22 | ANION GAP                                      |
| P12       | 3.07          | x10E6/uL | 4          | 5.2         | 9/19/2018 10:22 | RED BLOOD COUNT                                |
| P1        | 34            | seconds  | 25         | 38          | 9/19/2018 10:22 | PARTIAL THROMBOPLASTIN TIME                    |



# 4. Recruitment

- IRB Approval required
- Identify cohorts for recruitment when clinical relationship already exists
- Consent2Share
  - Mail, Email, Telephone, or Epic MyChart recruitment

The image shows a screenshot of an informed consent form. At the top center is the logo for the University of Florida Institutional Review Board, with the text "UF Institutional Review Board UNIVERSITY of FLORIDA". Below the logo are two "Bar Code" labels. Underneath are fields for "MRN:", "Patient Name:", and "Visit Date:". The main body of the form is enclosed in a large rectangular box. On the left side of this box is a smaller box containing the text: "INFORMED CONSENT FORM to Participate in Research, and AUTHORIZATION to Collect, Use, and Disclose Protected Health Information (PHI)". To the right of this smaller box is a large empty rectangular area. Below the main box, there is a paragraph of text: "Under the name 'Consent2Share', the University of Florida and Shands Teaching Hospital & Clinics Inc. (UF Health) are asking for your permission to include you in this Research Contact Registry. If you sign this document, you will agree to:". This is followed by two numbered items: "a) Periodic review of your medical information to see if you might qualify for a future research study, and if so," and "b) Be contacted sometime in the future about being part of new research studies at UF Health."

# How to request our services?

- One IDR Request Form for all of our service options
- Select the request type that best fits your needs
- <https://idr.ufhealth.org/services/analyst-data-support-services/idr-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/>

- COVID19 Dataset (DeIdentified)
- Cancer Patients Dataset (DeIdentified)
- 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](mailto:rodrmj@radiology.ufl.edu)) and Naomi Oldham ([oldham@shands.ufl.edu](mailto:oldham@shands.ufl.edu)))



# CDS Partnership

- The IDR now handles all of research data requests for the Jacksonville campus through a partnership with the Center for Data Solutions.
- Given the need to triage all the project requests, we use a priority system based on grant funding status. Grant funded projects are worked on first, and then all other non-funded projects are worked on as time allows.
- This is the exact same triage system as the Center for Data Solutions' analysts use. If you have any question about this system, please contact CDS Director Jennifer Fishe ([Jennifer.Fishe@jax.ufl.edu](mailto:Jennifer.Fishe@jax.ufl.edu)).



# **INTRO TO i2b2**

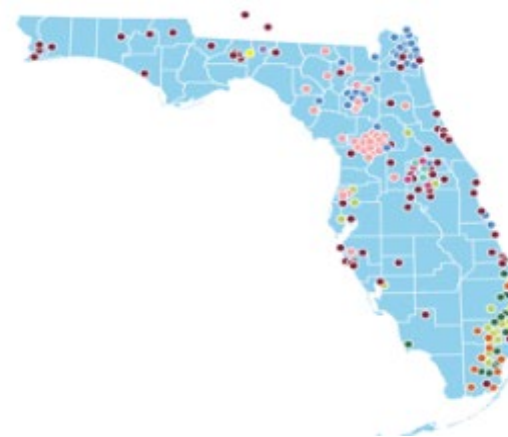
**<https://i2b2.idr.ufhealth.org>**



# What typical questions can i2b2 answer?

- How many men with hypertension diagnoses had at least one inpatient encounter between January and December 2018?
- How many children were diagnosed with diabetes and had Hemoglobin A1c greater than 7% in the same financial encounter?
- How many women ages 45-65 had successful breast cancer surgery?

# i2b2 instances available at UF



| i2b2 instance | Geography                    |
|---------------|------------------------------|
| UFHealth      | Gainesville,<br>Jacksonville |
| OneFlorida    | Florida                      |
| ACT Network   | Nationwide                   |



# Data availability in i2b2

- Diagnoses, demographics, labs, medications, etc.
- Data updated quarterly on an ongoing basis
  - Gainesville data: 6/1/2011 – 9/30/2022
  - Jacksonville data: 3/1/2013 – 9/30/2022
- Data is represented as closely as possible to the original source



# Access i2b2

- Request access by visiting the IDR's website
  - <https://idr.ufhealth.org/research-services/data-request-form/>
  - Select 'i2b2 Registration'
- Training materials are available there as well
  - <https://idr.ufhealth.org/research-services/feasibility-cohort-discovery/uf-health-i2b2-training-tools/>
- i2b2 itself can be found here
  - <https://i2b2.idr.ufhealth.org/>





# I2b2 Examples

- How many children were diagnosed with diabetes?
- How many children were diagnosed with diabetes and had Hemoglobin A1c greater than 7% in the same financial encounter in 2021?

<https://i2b2.idr.ufhealth.org/>

THANK YOU!

<https://idr.ufhealth.org>

**IRBDataRequest@ahc.ufl.edu**