

Leaf and Atlas Query Tools

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Sinai**

Objectives:

1. Scientific Computing FAIR Principles of Data
2. Data Sources and MSDW2 Ecosystem
3. Clinical query tools - Leaf and ATLAS
4. How to build a query using Leaf and ATLAS tools
5. When and how to request a custom dataset

Scientific Computing FAIR Principles for Data

Findable

Accessible

Interoperable

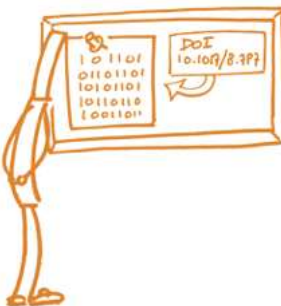
Reusable /
Reproducible

FAIR DATA PRINCIPLES

AH!



FINDABLE



ACCESSIBLE

HOW DO YOU
OPEN A .XZQ FILE?



INTEROPERABLE




REUSABLE

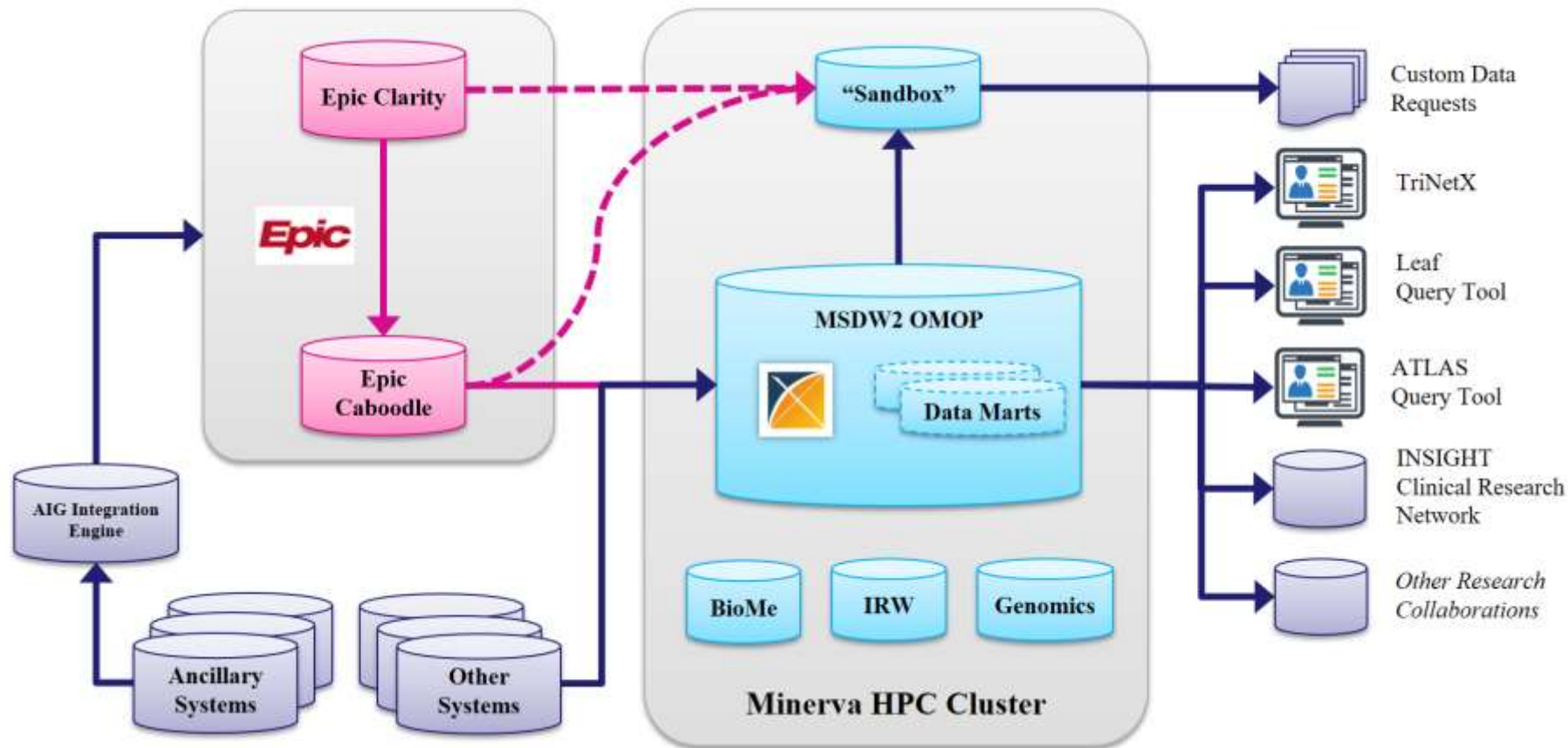
Source: NIH's Big Data to Knowledge (BD2K) Initiative (<https://commonfund.nih.gov/bd2k>)

Image Source: <https://book.fosteropenscience.eu/>

Scientific Computing FAIR Principles for Data

 THE FAIR PRINCIPLES			
Findability: F1. (meta)data are assigned a globally unique and persistent identifier ; F2. data are described with rich metadata ; F3. metadata clearly and explicitly include the identifier of the data it describes; F4. (meta)data are registered or indexed in a searchable resource;	Accessibility: A1. (meta)data are retrievable by their identifier using a standardized communication protocol ; A1.1. the protocol is open , free, and universally implementable; A1.2. the protocol allows for an authentication and authorization procedure, where necessary; A2. metadata are accessible, even when the data are no longer available;	Interoperability: I1. (meta)data use a formal , accessible, shared, and broadly applicable language for knowledge representation . I2. (meta)data use vocabularies that follow FAIR principles; I3. (meta)data include qualified references to other (meta)data;	Reusability: R1. meta(data) are richly described with a plurality of accurate and relevant attributes ; R1.1. (meta)data are released with a clear and accessible data usage license ; R1.2. (meta)data are associated with detailed provenance ; R1.3. (meta)data meet domain-relevant community standards ;

MSDW2 Ecosystem



Leaf Query Tool

- Open-source, model-agnostic and data-driven web application for cohort discovery
- Lightweight self-service web application for querying data from different sources.
- Simple drag-and-drop user interface
- Research, Clinical Quality improvement
- Generate and test hypotheses
- Cohort size estimates before submitting Institutional Review Board (IRB) requests
- Access and Analyze clinical data after IRB approval as well
- De-Identified data

De-Identified Data Elements

- Name
- Street Address, city, county, zip code (the first three digits of the zip code may be used if there are more than 20,000 people in the zip code)
- All element of dates (except year), including dates of birth, admission, discharge or death
- All ages over 89
- All telephone numbers
- Fax number
- E-mail addresses
- Social Security Number (SSN)
- Medical Record Number (MRN)
- Health plan beneficiary number
- Account numbers
- Certificate/License number
- Vehicle identifiers, including license plate numbers
- Device identification and/or serial number
- Uniform Resource Locator (URL)
- Internet Protocol (IP) address
- Biometric identifiers, including finger and voiceprints
- Full face photographic images and other comparable images
- Any other unique identifying number, characteristic, or code

HIPAA Safe Harbor

Hripcsak's Shift-and-Truncate (SANT) Method

"Elapsed Days" Approach

Leaf Data Types

1. Conditions: coded and descriptive diagnoses – ICD10
2. Procedures: procedure, service and events - CPT
3. Demographics: Age, Ethnicity, Gender, Race, and Vital Status
4. Encounters: ER visit, Inpatient, Outpatient, Telehealth
5. Vitals: Height, weight, BMI, O2 Sat, pulse, RR, Body Temp
6. Lab Results: clinical, laboratory, and survey measurements - LOINC
7. Medications: Medications prescribed and administered - ATC

LOINC - Logical Observation Identifiers Names and Codes

ICD-10 - International Classification of Diseases

ATC - In the Anatomical Therapeutic Chemical (ATC) classification system, the active substances are divided into different groups according to the organ or system on which they act and their therapeutic, pharmacological and chemical properties.

CPT – Current Procedural Terminology

Leaf – Patient Cohorts

Patient Cohorts on Leaf	Description	Number of patients
BioMe Biobank	Patients who submitted tissue samples to Mount Sinai's BioMe Biobank	61, 541
BioMe Biobank Global Diversity Array - Sem4	Patients who submitted tissue samples to Mount Sinai's BioMe Biobank and have had their DNA analyzed with Illumina's Global Diversity Array by Sema4	20,521
BioMe Biobank Global Screening Array – Regeneron	Patients who submitted tissue samples to Mount Sinai's BioMe Biobank and have had their DNA analyzed with Illumina's Infinium Global Screening Array by Regeneron	31,304
BioMe Biobank whole Exome Sequencing – Regeneron	Patients who submitted tissue samples to Mount Sinai's BioMe Biobank with whole exome sequence (WES) data generated by Regeneron	30,656
Cancer Institute Biorepository		14,831
Cancer Patient Cohort	Patients who have been diagnosed with cancer, refreshed on a monthly basis around the 15th of every month	254,041
Imaging Research Warehouse 1.0	Patients who have image data in version 1.0 of the Imaging Research Warehouse (IRW)	528,865

Leaf Query Examples

1. Patients 18 years and older with diagnosis of IVD or MI – Aspirin or Antiplatelet Agent.
2. Patients diagnosed with Diabetes Mellitus and HBA1c greater than 8 and less than equal to 9.
3. Female Patients between age 50-74 and screened for mammogram
4. Patients diagnosed with COVID-19 and were intubated
5. Patients diagnosed with Essential hypertension and most recent blood pressure was adequately controlled (less than 140/90)

- Conditions (ICD-10-CM)
 - Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99) (ICD10CM:R00.0-R99)
 - Symptoms and signs involving the circulatory and respiratory systems (R00-R09) (ICD10CM:R00.0-R09.89)
 - Pain in throat and chest (ICD10CM:R07.0-R07.9)
 - Chest pain on breathing (ICD10CM:R07.1)
 - Chest pain, unspecified (ICD10CM:R07.9)
 - Other chest pain (ICD10CM:R07.81-R07.89)
 - Other chest pain (ICD10CM:R07.89) 95.002
- Lab Results (LOINC)
 - LOINCCLASSTYPES (LNC:10154-3-MTHU854759)
 - Clinical Class (LNC:10154-3-MTHU854759)
 - PhenX (LNC:56057-3-67789-8)
 - In the past Mo, have you had chest pain when you were not doing physical activity (LNC:66235-3)
 - Pain in the chest, left arm or shoulder or jaw within 72H of death (LNC:58326-0)
 - Pain included chest (LNC:58327-8)
 - Surveys (LNC:28079-2-95414-9)
 - General Healthy survey (LNC:70301-7-95400-8)
 - How many times have you had chest pain, chest tightness or angina on average over the past 4W (LNC:88476-7)
 - How many times have you had to take nitroglycerin (nitroglycerin)

- Searches on keywords in concept descriptions
- Shows nodes in the hierarchy that satisfy the query

Leaf Query – Lab Results

Unsaved Query

85,986 patients

+ New Query

Find Patients

Visualize

Patient List

Lab Results (LNC:40988-syncytial)

Lab Results (LOINC)

LOINCPARTS (LNC:10000-8-LP419290-4)

Lab (LNC:1000-9-LP419290-4)

Microbiology and Antimicrobial susceptibility (LNC:100-8-LP419290-4)

MICRO (LNC:10347-3-LP419290-4)

Microorganism (LNC:10347-3-LP419164-1)

Virus (LNC:10350-7-LP419164-1)

Respiratory syncytial virus (LNC:14129-1-9574-5)

Respiratory syncytial virus RNA (LNC:40987-0-92957-0)

Respiratory syncytial virus RNA | XXX | Microbiology (LNC:40987-0-40988-8)

Respiratory syncytial virus RNA (LNC:40988-8)

Limit to

Patients Who

Anytime

At Least 1x

Had Respiratory syncytial virus RNA (LNC:40988-8) measurement

In the Same Encounter

And

Anytime

At Least 1x

Save Query

Leaf Query – Medications

Unsaved Query

3,641 patients ⓘ

Medications (... warfarin systemic X

Medications (ATC)

BLOOD AND BLOOD FORMING ORGANS

ANTITHROMBOTIC AGENTS

ANTITHROMBOTIC AGENTS

Vitamin K antagonists

Warfarin; systemic

Learn More

Limit to ▾

Patients Who ▾

In Past 12 Months ▾

At Least 1x ▾

Treated with Warfarin; systemic

In the Same Encounter

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Leaf Query - Diagnosis

Unsaved Query

8,088 patients

Conditions (ICD-10-CM) depression icd10cm

Conditions (ICD-10-CM)

Certain conditions originating in the perinatal period (P00-P96)
(ICD10CM:P00.0-P96.9)

Other disorders originating in the perinatal period (P90-P96)
(ICD10CM:P90.0-P96.9)

Other disturbances of cerebral status of newborn (ICD10CM:P91.0-P91.9)

Neonatal cerebral depression (ICD10CM:P91.4)

Factors influencing health status and contact with health services (Z00-Z99)
(ICD10CM:Z00.00-Z99.89)

Persons encountering health services for examinations (Z00-Z13)
(ICD10CM:Z00.00-Z13.9)

Encounter for screening for other diseases and disorders
(ICD10CM:Z13.0-Z13.9)

Encounter for screening examination for mental health and behavioral disorders (ICD10CM:Z13.30-Z13.39)

Encounter for screening for depression (ICD10CM:Z13.31)

Encounter for screening for maternal depression (ICD10CM:Z13.32)

Mental, Behavioral and Neurodevelopmental disorders (F01-F99)
(ICD10CM:F01.50-F99)

Behavioral syndromes associated with physiological disturbances and physical factors (F50-F59) (ICD10CM:F50.00-F59)

Mental and behavioral disorders associated with the puerperium, not elsewhere classified (ICD10CM:F53.0-F53.1)

Postpartum depression (ICD10CM:F53.0)

Limit to

Patients Who

In Past 12 Months

At Least 1x

Had diagnosis of Encounter for screening for depression (ICD10CM:Z13.31)

In the Same Encounter

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Leaf Query - Patients diagnosed with COVID-19 and Intubated

COVID-19

15,463 patients ⓘ

All Concepts ▾

31500 intubation

×

▾ ⓘ Procedures (CPT4)

▾ ⓘ Surgery (CPT:10004-69990)

▾ ⓘ Surgical Procedures on the Respiratory System (CPT:1005879-32999)

▾ ⓘ Surgical Procedures on the Larynx (CPT:1005879-31599)

▾ ⓘ Introduction Procedures on the Larynx (CPT:31500-31502)

▾ ⓘ Intubation, endotracheal, emergency procedure (CPT:31500) ↑ 34

▸ ⓘ My Saved Cohorts

Limit to ▾

Patients Who ▾

Anytime ▾

At Least 1x ▾

Had diagnosis of Codes for special purposes (U00-U85) (ICD10CM:U07.0-U07.1)

And ▾

In the Same Encounter ▾

At Least 1x ▾

Had Intubation, endotracheal, emergency procedure (CPT:31500) procedure



☆ Save Query

Limit to ▾

Patients Who ▾

Anytime ▾

At Least 1x ▾

Are between 50 and 74 years old

In the Same Encounter

And ▾

Anytime ▾

At Least 1x ▾

Identify as FEMALE

In the Same Encounter

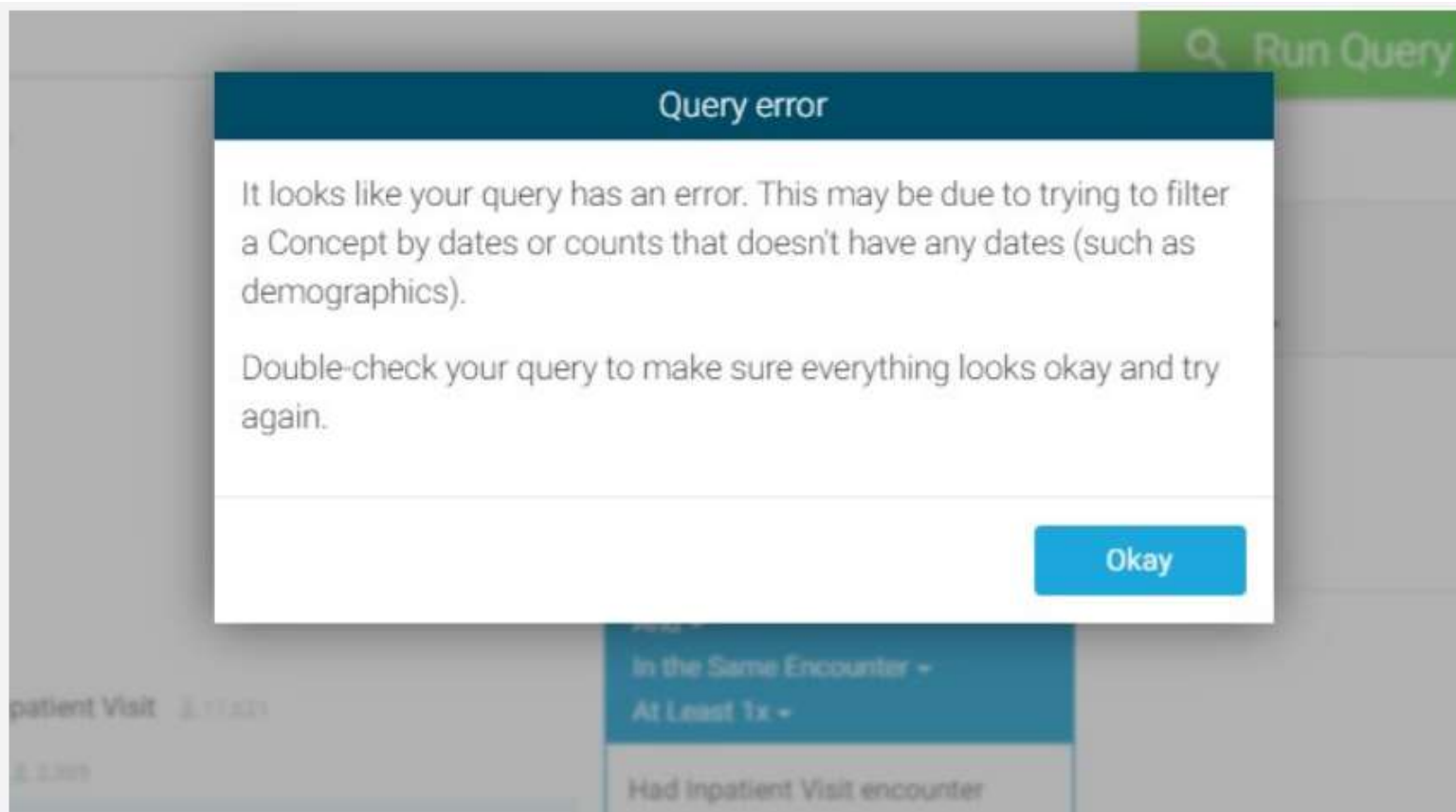
And ▾

In Past 2 Years ▾

At Least 1x ▾

Had diagnosis of Encounter for screening mammogram for malignant neoplasm of breast (ICD10CM:Z12.31)

In the Same Encounter



Age, Race, Gender, and Ethnicity: these are considered immutable patient characteristics. Immutable patient characteristics are denoted by an orange human icon: 🧑. These characteristics cannot be combined with Encounter concepts in one query box. Doing so produces a search error.

Leaf Application Status and Roadmap

Status

Quality improvement and research users can use Leaf to conveniently query the Mount Sinai Data Warehouse. Leaf only accesses de-identified data. [Documentation](#) and [user service](#) are available.

Leaf supports these query domains:

- Conditions (diagnoses) using ICD-10-CM
- Visit (encounter) locations
- Lab results using LOINC
- Medications using ATC
- Procedures using CPT4
- Demographics, such as current age, ethnicity, gender, race and vital status
- Vitals
- Patient cohorts in Sinai repositories, starting with BioMe, BioBank, the Imaging Research Warehouse 1.0, the Cancer Institute Biorepository, and Cancer Patients

Leaf contains these known bugs:

- Patient List temporarily disabled
- Queries that last longer than 1 minute terminate

Roadmap

These improvements to Leaf are ongoing for the first half of 2022:

- Fix high-priority known bugs
- Enhance the Leaf development and configuration process to make it easier to support Leaf's users
- In addition, Leaf will access all improvements that are made to MSDW2.

ATLAS

- Open source web-based application developed by OHDSI - Observational Health Data Sciences and Informatics Community
- Generate real world evidence from patient level clinical data
- Data Sources, Concepts, Cohorts
- **Common Data Model** - A convention for representing healthcare data that allows portability of analysis
- **Concept** - A term (with a code) defined in a medical terminology, all clinical events in the OMOP CDM are expressed as concepts
- **Concept set** is an expression representing a list of concepts that can be used as a reusable component in various analyses
- **Cohort** is a set of persons who satisfy one or more inclusion criteria for a duration of time



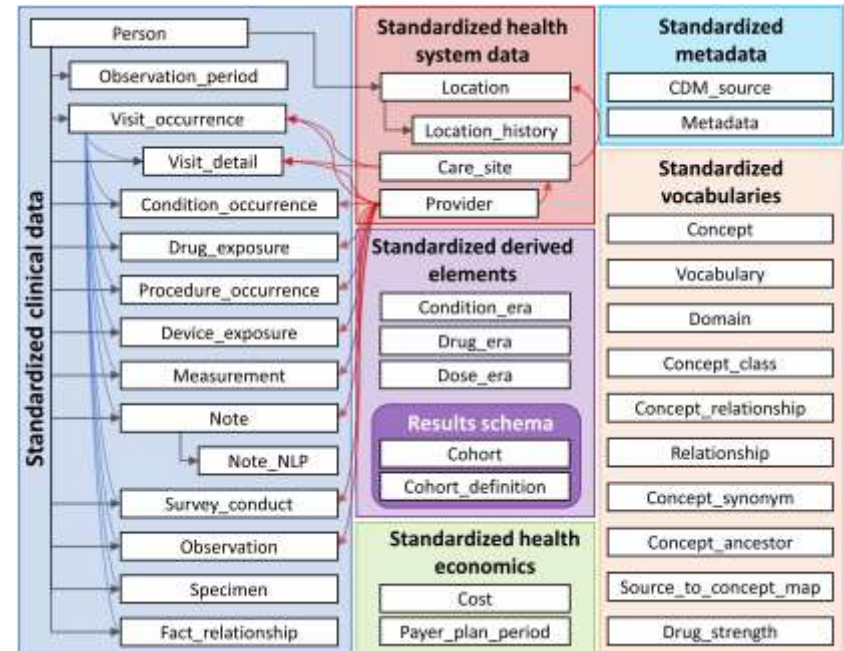
OMOP Common Data Model

► Observational Medical Outcomes Partnership (OMOP)

- Clinical Data
- Health System Data
- Standardized derived elements
- Standardized Metadata
- Standardized Vocabularies
- Standardized Health Economics data

► Common Data Model

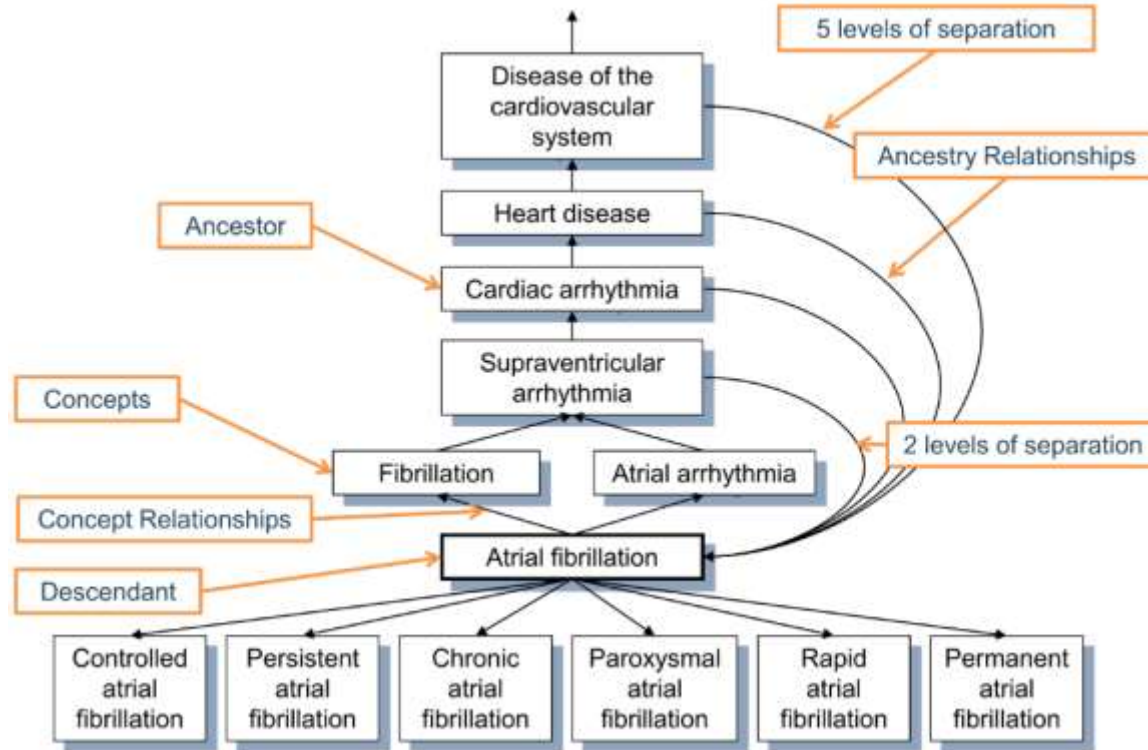
- Standardizes both structure & content for interoperability
- Produce meaningfully comparable and reproducible results



Concepts


CONCEPT_ID	313217	Primary key
CONCEPT_NAME	Atrial fibrillation	English description
DOMAIN_ID	Condition	Domain
VOCABULARY_ID	SNOMED	Vocabulary
CONCEPT_CLASS_ID	Clinical Finding	Class in vocabulary
STANDARD_CONCEPT	S	Standard, Source of Classification
CONCEPT_CODE	49436004	Code in vocabulary
VALID_START_DATE	01-Jan-1970	Valid during time interval
VALID_END_DATE	31-Dec-2099	
INVALID_REASON		

Disease Hierarchy (SNOMED)



ATLAS Data Sources – Person

- One unique ID for each Person
- Person table includes all the demographics - year of birth, gender, race, and ethnicity
- Overview of demographic distribution and observe any potential data outliers.
- Foreign key to the LOCATION, PROVIDER, and CARE_SITE table that contains one record

Person	
	person_id
	gender_concept_id
	year_of_birth
	month_of_birth
	day_of_birth
	birth_datetime
	race_concept_id
	ethnicity_concept_id
	location_id
	provider_id
	care_site_id
	person_source_value
	gender_source_value
	gender_source_concept_id
	race_source_value
	race_source_concept_id
	ethnicity_source_value
	ethnicity_source_concept_id


Visit Occurrence

- Visits are Encounters
- Span of times for Medical Services
- Visit Types
 - Emergency room
 - Inpatient
 - Inpatient/Emergency
 - Outpatient
 - Long-term care

Visit_Occurrence	
	visit_occurrence_id
	person_id
	visit_concept_id
	visit_start_date
	visit_start_datetime
	visit_end_date
	visit_end_datetime
	visit_type_concept_id
	provider_id
	care_site_id
	visit_source_value
	visit_source_concept_id
	admitting_source_concept_id
	admitting_source_value
	discharge_to_concept_id
	discharge_to_source_value
	preceding_visit_occurrence_id

Condition Occurrence

- Diagnoses, signs, or symptoms of a condition either observed by a Provider or reported by the patient
- Condition Concept prevalence over time, age information within the population, and frequency of diagnosis
- Examples:
 - Billing Diagnosis
 - Problem List

Condition_Occurrence	
	condition_occurrence_id
	person_id
	condition_concept_id
	condition_start_date
	condition_start_datetime
	condition_end_date
	condition_end_datetime
	condition_type_concept_id
	stop_reason
	provider_id
	visit_occurrence_id
	condition_source_value
	condition_source_concept_id
	condition_status_source_value
	condition_status_concept_id


Drug Exposure

- Records about the intent or actual introduction of a drug into the body of the patient.
- Prescription and over-the-counter medicines, vaccines, and large-molecule biologic therapies.
- Clinical events associated with orders, prescriptions written, pharmacy dispensing, procedural administrations, patient-reported information.

Drug_Exposure	
🔑	drug_exposure_id
	person_id
	drug_concept_id
	drug_exposure_start_date
	drug_exposure_start_datetime
	drug_exposure_end_date
	drug_exposure_end_datetime
	verbatim_end_date
	drug_type_concept_id
	stop_reason
	refills
	quantity
	days_supply
	sig
	route_concept_id
	lot_number
	provider_id
	visit_occurrence_id
	drug_source_value
	drug_source_concept_id
	route_source_value
	dose_unit_source_value


Procedure Occurrence

- Contains records of activities or processes ordered or carried out by a healthcare Provider on the patient with a diagnostic or therapeutic purpose.
- Vocabularies include CPT-4, HCPCS, ICD-9 Procedures, ICD-10 Procedures, LOINC, SNOMED

Procedure_Occurrence	
	procedure_occurrence_id
	person_id
	procedure_concept_id
	procedure_date
	procedure_datetime
	procedure_type_concept_id
	modifier_concept_id
	quantity
	provider_id
	visit_occurrence_id
	procedure_source_value
	procedure_source_concept_id
	modifier_source_value


Measurement

- Contains records of:
 - Measurement
 - Structured values (numerical or categorical) obtained through systematic and standardized examination or testing of a Person or Person's sample
- Data sources:
 - Structured
 - Quantitative measures, such as laboratory tests
- Measures have associated units

Measurement	
	measurement_id
	person_id
	measurement_concept_id
	measurement_date
	measurement_datetime
	measurement_type_concept_id
	operator_concept_id
	value_as_number
	value_as_concept_id
	unit_concept_id
	range_low
	range_high
	provider_id
	visit_occurrence_id
	measurement_source_value
	measurement_source_concept_id
	unit_source_value
	value_source_value

Observation


- Captures clinical facts about a Person obtained in the context of examination, questioning or a procedure
- Any data that cannot be represented by any other domains, such as social and lifestyle facts, medical history, family history, etc. are recorded here
- Instrument for CDM extension

Observation	
	observation_id
	person_id
	observation_concept_id
	observation_date
	observation_datetime
	observation_type_concept_id
	value_as_number
	value_as_string
	value_as_concept_id
	qualifier_concept_id
	unit_concept_id
	provider_id
	visit_occurrence_id
	observation_source_value
	observation_source_concept_id
	unit_source_value
	qualifier_source_value


ATLAS - Cohort

- Review the dashboard – Data sources
- Search Concepts – Hypertension, Diabetes, Asthma, Obesity
- Review the Concept hierarchy – Parent and Children Concepts
- Add Descendants – Concepts that are children to the main concept
- Exclude concepts – Example Gestational Hypertension
- Build the Cohort using the concept sets
- Add Initial event, Dates and Attributes

Search Concepts and Vocabularies

 Search

type 2 Diabetes



Advanced Options

Filter:

Column visibility Copy CSV Show 15 entries

Showing 1 to 15 of 6,422 entries

Vocabulary

EPIC EDG .1 (5892)

SNOMED (147)

ICD10CM (125)

Nebraska Lexicon (108)

Class

Epic Concept (5892)

Clinical Finding (236)

7-char billing code (52)

Read (48)

Domain

Condition (6374)

Observation (41)

Procedure (4)

Measurement (2)

Standard Concept

Non-Standard (5892)

Unknown (404)

Standard (124)

Classification (2)

Invalid Reason

Valid (5892)

Unknown (483)

Invalid (47)

	Id	Code	Name	Class	RC	DIRC	Domain	Vocabulary
<input type="checkbox"/>	4193704	313436004	Type 2 diabetes mellitus without complication	Clinical Finding	42,485	42,869	Condition	SNOMED
<input type="checkbox"/>	2001259621	1321962	Type 2 diabetes mellitus without complication, without long-term current use of insulin	Epic Concept	16,988	16,988	Condition	EPIC EDG .1
<input type="checkbox"/>	2000602205	521601	Type 2 diabetes mellitus without complications	Epic Concept	16,983	16,983	Condition	EPIC EDG .1
<input type="checkbox"/>	37016349	368051000119109	Hyperglycemia due to type 2 diabetes mellitus	Clinical Finding	12,144	12,144	Condition	SNOMED
<input checked="" type="checkbox"/>	201826	44054006	Type 2 diabetes mellitus	Clinical Finding	11,123	62,947	Condition	SNOMED
<input type="checkbox"/>	2000599869	523781	Type 2 diabetes mellitus with hyperglycemia	Epic Concept	6,409	6,409	Condition	EPIC EDG .1
<input type="checkbox"/>	443729	422166005	Peripheral circulatory disorder due to type 2 diabetes mellitus	Clinical Finding	2,761	4,465	Condition	SNOMED
<input type="checkbox"/>	2000599917	527480	Type 2 diabetes mellitus with other specified complication	Epic Concept	2,420	2,420	Condition	EPIC EDG .1
<input type="checkbox"/>	43531578	771000119108	Chronic kidney disease due to type 2 diabetes mellitus	Clinical Finding	2,400	2,612	Condition	SNOMED
<input type="checkbox"/>	2000602088	528363	Type 2 diabetes mellitus with unspecified complications	Epic Concept	2,391	2,391	Condition	EPIC EDG .1
<input type="checkbox"/>	2000691482	1322061	Type 2 diabetes mellitus without complication, with long-term current use of insulin	Epic Concept	2,326	2,326	Condition	EPIC EDG .1
<input type="checkbox"/>	2000480410	1321789	Uncontrolled type 2 diabetes mellitus with hyperglycemia	Epic Concept	2,295	2,295	Condition	EPIC EDG .1
<input type="checkbox"/>	443731	420279001	Renal disorder due to type 2 diabetes mellitus	Clinical Finding	2,207	4,819	Condition	SNOMED
<input type="checkbox"/>	37017432	713706002	Polyneuropathy due to type 2 diabetes mellitus	Clinical Finding	2,139	2,139	Condition	SNOMED
<input type="checkbox"/>	2000692533	1321828	Type 2 diabetes mellitus with hyperglycemia, without long-term current use of insulin	Epic Concept	1,853	1,853	Condition	EPIC EDG .1

Showing 1 to 15 of 6,422 entries

Previous 1 2 3 4 5 ... 429 Next

Concept set – Inclusion and Exclusion Criteria

Concept Set #84
created by medabp01 on 2022-10-06 20:40 , modified by medabp01 on 2022-10-06 20:40

hypertension

Concept Set Expression Included Concepts (141) Included Source Codes Export Import Compare

Show 25 entries

Showing 1 to 4 of 4 entries

Search: Search...

Previous 1 Next

<input type="checkbox"/>	Concept Id	Concept Code	Concept Name	Domain	Standard Concept Caption	<input type="checkbox"/> Exclude	<input type="checkbox"/> Descendants	<input type="checkbox"/> Mapped
<input type="checkbox"/>	45757356	118781000119108	Pre-existing hypertensive chronic kidney disease in mother complicating pregnancy	Condition	Standard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	316866	38341003	Hypertensive disorder	Condition	Standard	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	321080	198941007	Hypertension complicating pregnancy, childbirth and the puerperium	Condition	Standard	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	320128	59621000	Essential hypertension	Condition	Standard	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

☐ Classification ☒ Non-Standard ☒ Standard

ATLAS Concept Sets

- **Concept Set** – list of Concepts that can be reused
- **Attributes** – Descendants, Mapped, Excluded
- **Concept Set Expression** – 2 Concept sets

Concept ID	Concept Name	Descendants	Mapped	Excluded
4329847	Myocardial Infarction	YES	YES	NO
314666	Old Myocardial Infarction	YES	YES	YES

Concept Sets

Column visibility

Copy

CSV

Show 15 entries

New Concept Set

Search:

Showing 1 to 15 of 52 entries

Previous **1** 2 3 4 Next

Id	Name	Created	Modified	Author
68	Essential hypertension	05/02/2022 6:51 PM	05/03/2022 4:30 PM	medabp01
70	Colitis	05/03/2022 4:08 PM	05/03/2022 4:08 PM	medabp01
69	GI Bleed	05/03/2022 2:49 PM	05/03/2022 2:49 PM	medabp01
65	COVID-19 and MI	05/02/2022 3:48 PM	05/02/2022 5:46 PM	banasb01
64	Diabetes Mellitus	05/01/2022 5:53 PM	05/01/2022 5:53 PM	medabp01
63	THASSOS p_link	04/29/2022 1:33 PM	04/29/2022 1:33 PM	lees152
62	COPY OF aa	04/22/2022 1:55 PM	04/22/2022 1:55 PM	minerg01
61	aa	04/22/2022 12:59 PM	04/22/2022 1:42 PM	minerg01
59	Depression	04/17/2022 1:09 PM	04/17/2022 1:56 PM	medabp01
17	covid	10/19/2021 12:55 PM	04/07/2022 9:31 PM	nirens01
56	Migraines	04/01/2022 10:16 AM	04/01/2022 10:19 AM	dentl01
54	MSI Test	03/15/2022 1:49 PM	03/24/2022 2:27 PM	grubec05
53	Product of Conception	03/09/2022 11:01 AM	03/09/2022 11:08 AM	bogund01
52	Down syndrome	03/09/2022 10:13 AM	03/09/2022 10:58 AM	bogund01
51	d22.9	01/26/2022 2:50 PM	01/26/2022 2:50 PM	owjis01

Showing 1 to 15 of 52 entries

Previous **1** 2 3 4 Next

COHORT Definition

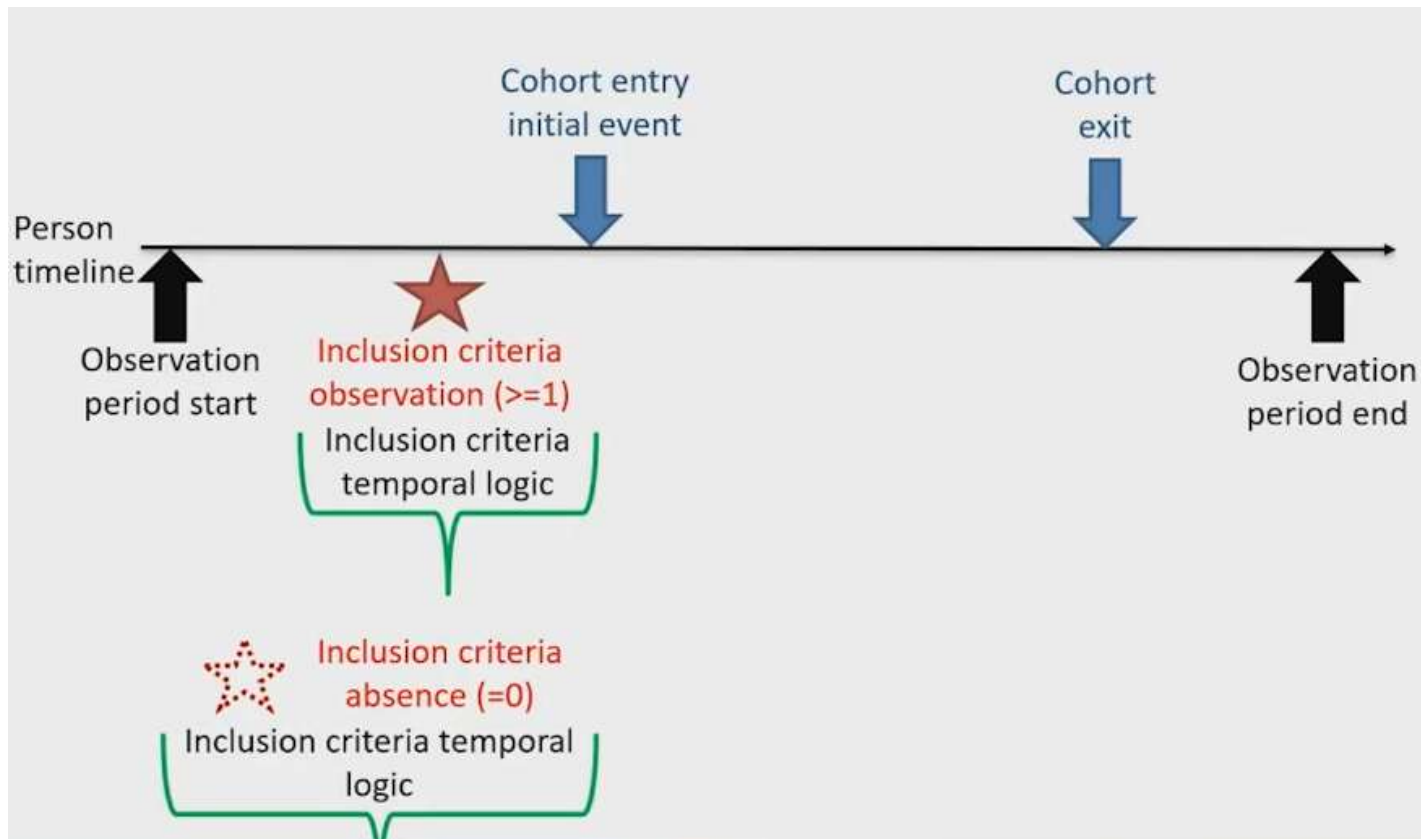
A cohort definition defines when an individual qualifies (or does not qualify) for a cohort during this span of time

Cohort entry event which happens in a moment in time to qualify an individual for cohort entry.

Inclusion criteria

Cohort exit is the event in time at which an individual does not qualify anymore for a cohort and leaves it

Defining a Cohort



Cohort Definitions

ATLAS

Home

Data Sources

Search

Concept Sets

Cohort Definitions

Characterizations

Cohort Pathways

Incidence Rates

Profiles

Estimation

Prediction

Jobs

Configuration

Feedback

Apache 2.0
open source software

Cohort Definitions

New Cohort

Column visibility Copy CSV Show 15 entries

Filter Search

Showing 1 to 15 of 41 entries

Created

2+ Weeks Ago (34)

Last Week (3)

Within 24 Hours (3)

This Week (1)

Updated

2+ Weeks Ago (34)

Within 24 Hours (3)

This Week (2)

Last Week (2)

Author

sampa01 (8)

medabp01 (4)

korieu01 (4)

dent01 (2)

Designs

Other designs (34)

My designs (7)

Id	Name	Created	Updated	Author
55	DM Poor Control	05/02/2022 6:23 PM	05/02/2022 7:01 PM	medabp01
53	New users of ACE inhibitors as First line of Monotherapy	05/02/2022 5:06 PM	05/02/2022 5:06 PM	medabp01
52	High Myopia	05/02/2022 3:44 PM	05/02/2022 3:44 PM	banasb01
51	Demo Cohort	05/01/2022 6:05 PM	05/01/2022 6:05 PM	medabp01
48	Thassos	04/20/2022 11:45 AM	04/29/2022 3:00 PM	lees152
50	aa	04/22/2022 2:33 PM	04/22/2022 2:33 PM	minerg01
49	Externa for Nasal Polyps	04/22/2022 9:32 AM	04/22/2022 9:32 AM	donbok01
47	Depression	04/17/2022 1:59 PM	04/17/2022 2:01 PM	medabp01
46	Down 2	03/09/2022 11:08 AM	03/09/2022 11:08 AM	bogund01
45	Down syndrome test	03/09/2022 10:25 AM	03/09/2022 10:25 AM	bogund01
44	the demographics	01/26/2022 2:49 PM	01/26/2022 4:08 PM	owjis01
42	test rhino	01/25/2022 6:35 PM	01/25/2022 6:35 PM	hernam13
41	allpatients	01/18/2022 4:51 PM	01/18/2022 4:52 PM	johnsk26
40	Sexual assault encounter	01/11/2022 1:11 AM	01/11/2022 1:38 AM	lepowl01
38	DRF Rehab	12/22/2021 7:33 AM	12/22/2021 7:39 AM	sternb06

ATLAS Application Status and Roadmap

Status

ATLAS application is currently in software version 1 at Mount Sinai and is available for user testing. Features and functionality are regularly updated, and scheduled maintenance is announced in advance through msdw.mountsinai.org.

As of December 2021, all ATLAS functions (left-hand tabs) are available to users.

ATLAS functionality is currently limited to include:

- De-identified data source only
- OMOP standard concept IDs are contained within only the following clinical domains: conditions, procedures, visits, vitals measurements
- All other domains can be queried using concepts in Epic vocabularies

ATLAS version 1 contains the following limitations:

- Data containing PHI, including datamarts, are not yet available for query
- Most ATLAS data uses OMOP standard concept IDs, but some live data uses non-standard vocabularies


Clinical Query Tools – Leaf and Atlas

	Leaf	OMOP/ATLAS
Description	Web-based, lightweight drag-and-drop query tool that quickly analyzes population demographics	Web-based integrated platform for database exploration, standardized vocabulary browsing, cohort definition, and population-level analysis
Access	Use your Mount Sinai network username/password to login	Use your Mount Sini School network username/password. For users with only a Hospital account, request a school account through Sailpoint to access ATLAS.
Data Types	Conditions (diagnoses), procedures, demographics, encounters (patient encounter locations), lab results, vitals, patient cohorts	Facilities, diagnoses, procedures, medications, labs, orders, patient demographics
PHI	No	Yes, if IRB approved
Turnaround	Seconds	Seconds
Advantages/Disadvantages	Can visualize demographic details of cohorts, drag-and-drop query feature	Utilizes common data model and queries; numerous query analysis tools available in github

See more details at <https://labs.icahn.mssm.edu/msdw/services/>

Query Tool Access Request Form - Cohort Selection Tools

<https://labs.icaohn.mssm.edu/msdw/>



Scientific Computing / Cohort Selection Tools

Query Tool Access Request Form

Requestor Name:

Network ID:

Email:

Department Name:

Name of PI, if applicable (optional):

Platform:

Leaf

Data Source:

- ☐ MSDW 2.0 Anal Cancer
- ☐ MSDW 2.0 BioMe
- ☒ MSDW 2.0 De-identified
- ☐ MSDW 2.0 Liver
- ☐ MSDW 2.0 PHI

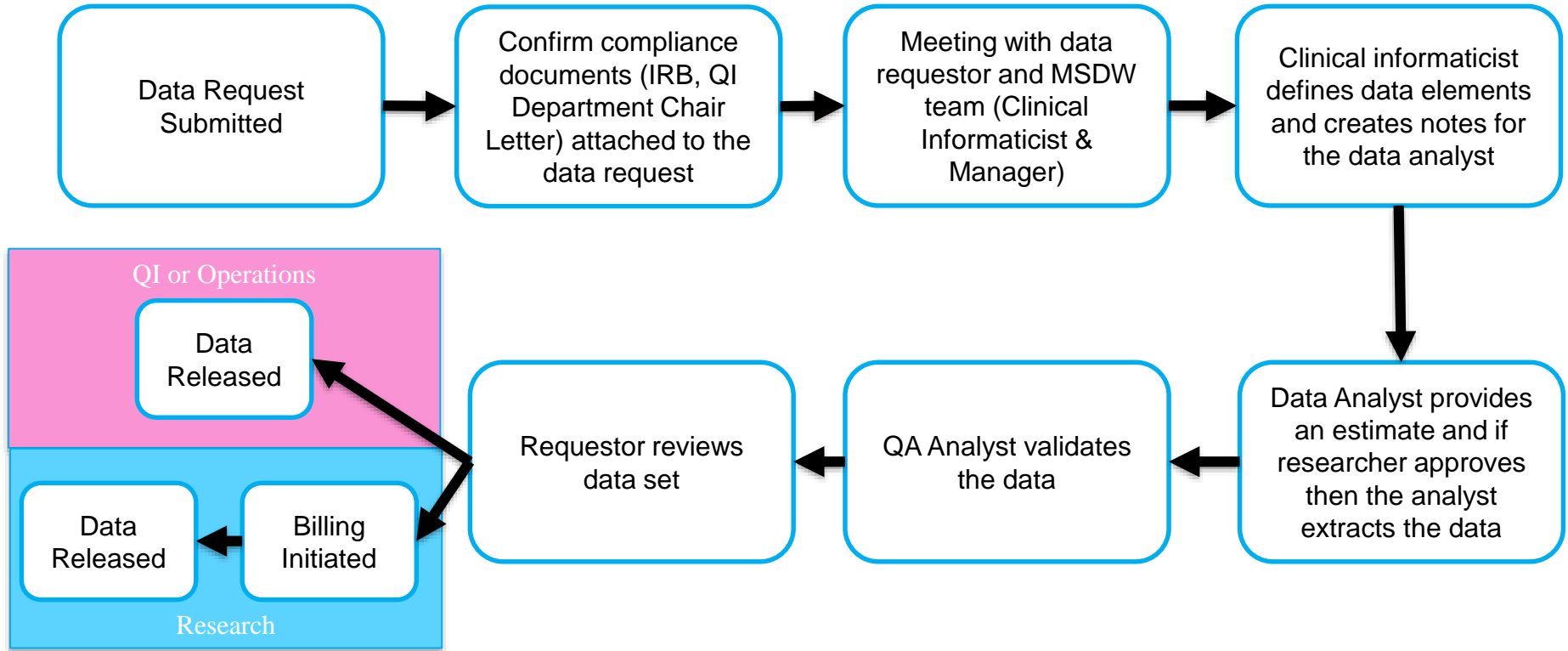
Brief Description of Data Request Purpose (optional):

Custom Data Request Process

When You Need Custom Data

- ▶ Complex question that cannot be answered with one of the self-service query tools
- ▶ Need additional data that is not included in a de-identified data set
- ▶ Need PHI data for your analysis

Workflow Once Data Request Submitted



JIRA ticketing system used to monitor the status of data requests

Learn more about MSDW2 and Clinical Query tools from the links below:

<https://labs.icahn.mssm.edu/msdw/>

<https://labs.icahn.mssm.edu/msdw/services/>

<https://labs.icahn.mssm.edu/msdw/data-sources/>

Office Hours onsite – Nov 1st week

Survey - <https://redcap.link/alt8n8dm> or



Icahn
School of
Medicine at
**Mount
Sinai**