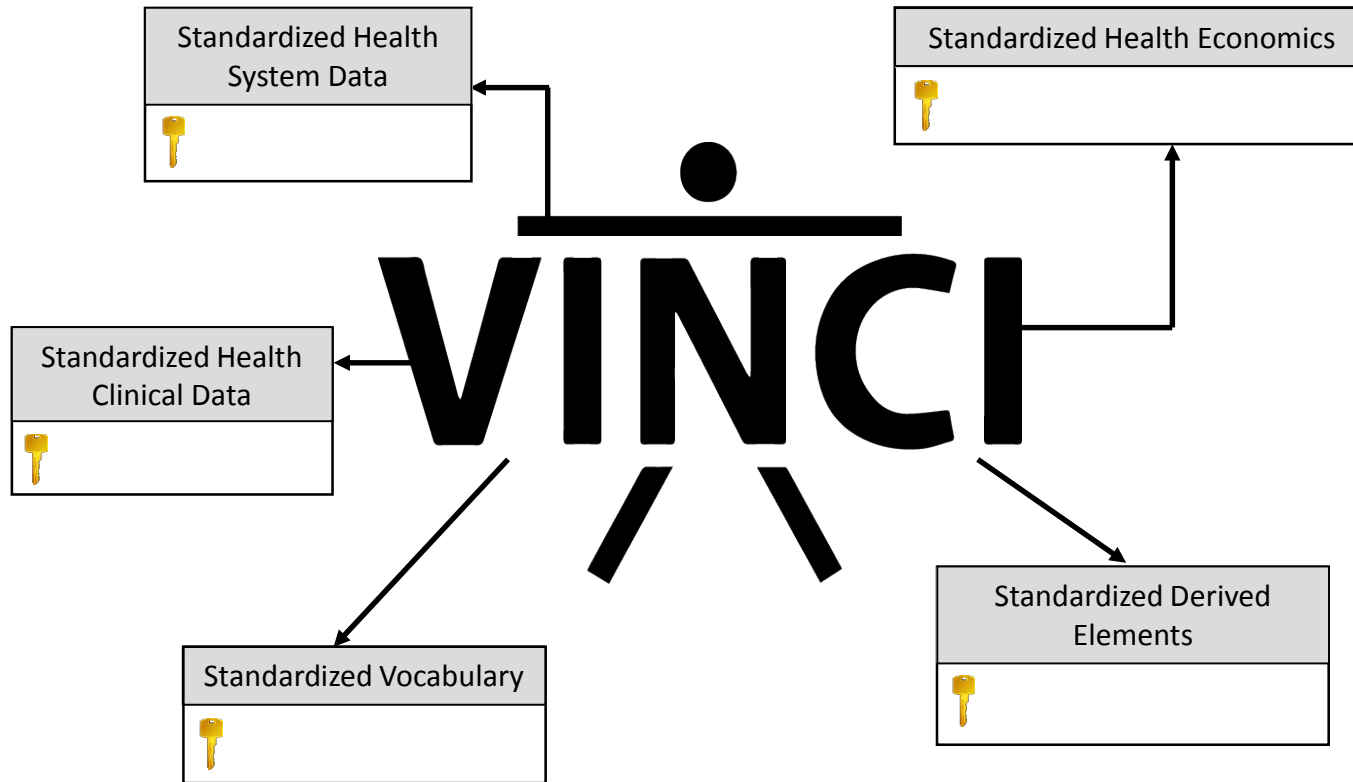


VA User Workshop



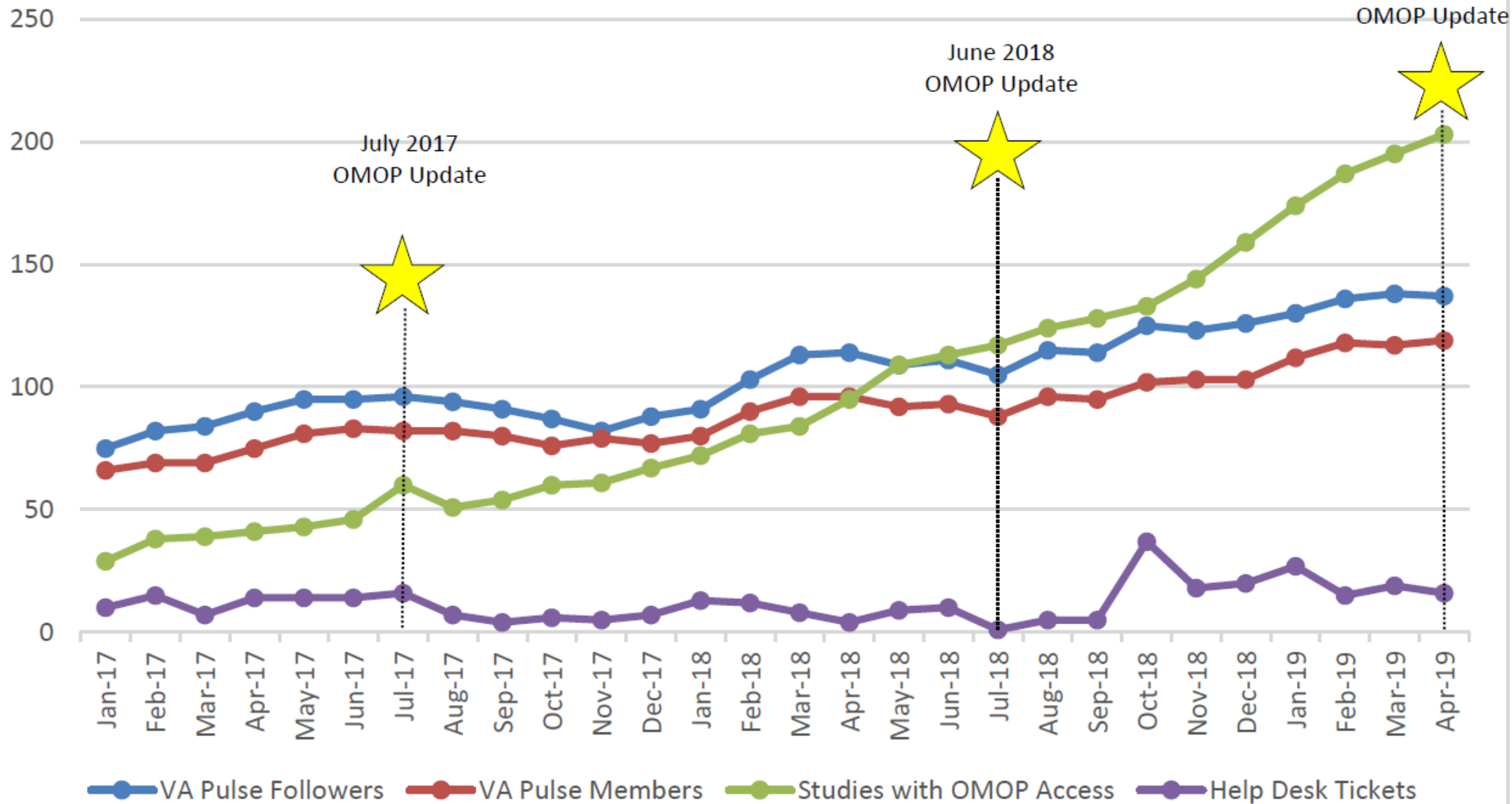
VA OMOP: The basics

Cyberseminar May 9, 2019

Kristine E Lynch, PhD



VINCI OMOP USAGE METRICS



VA OMOP



- 1. What is it and why should I use it?**
- 2. How to get it?**
- 3. How to get help?**
4. How to use it?

Poll questions:



3.) What is your OMOP knowledge level?

- a) High
- b) Moderate
- c) Low
- d) None

Poll questions:



3.) What is your VA OMOP working experience level?

- a) High
- b) Moderate
- c) Low
- d) None

What is it?



OMOP: Observational Medical Outcomes Partnership

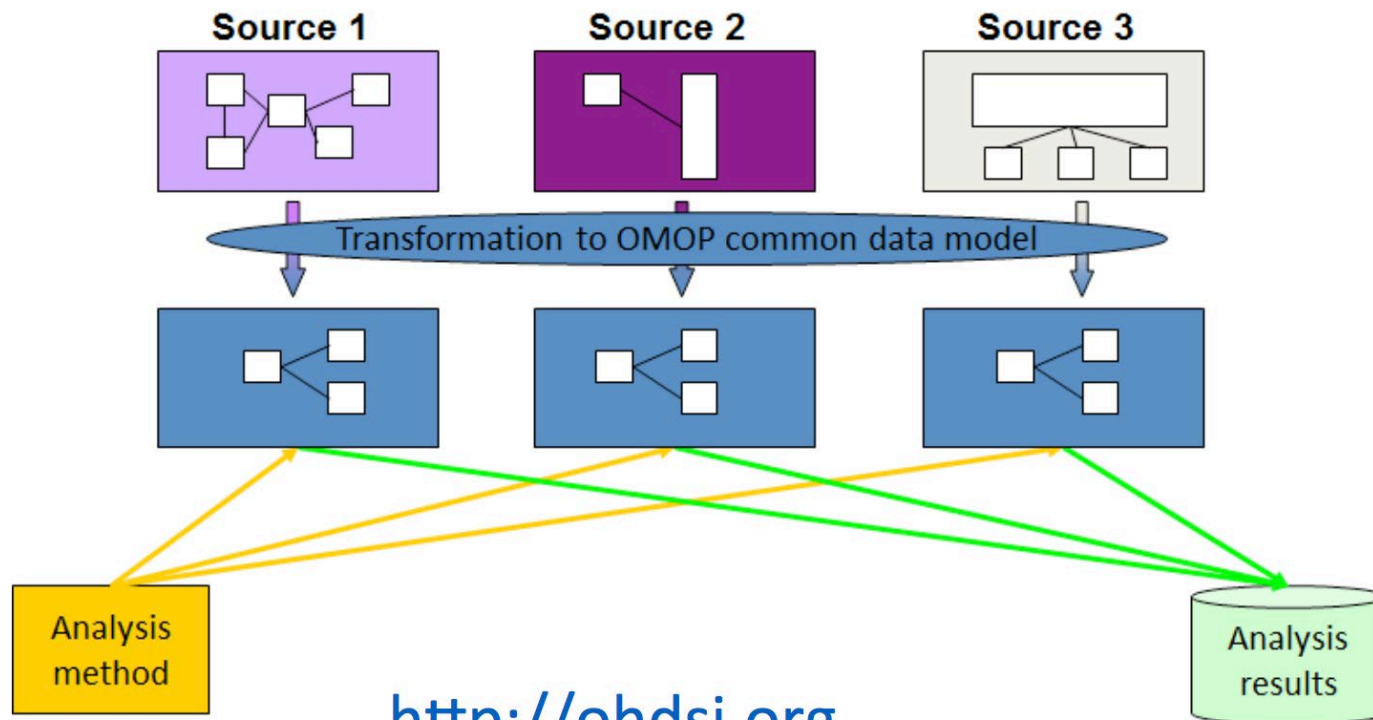
- A community developed and supported common data model (CDM)
 - Implemented and used by VA
 - Developed and maintained by the ODHSI community
 - >100 health data systems worldwide use it
 - Person-centric, relational data model
 - The content and content representation is the same across systems

What is it?

- Representation of **CDW records** using CONCEPTS and stored in the model with their standard CONCEPT_ID

| Source CDW Vocabulary | Source Concept ID | Standard Vocabulary | Standard Concept ID |
|-----------------------|-------------------|---------------------|---------------------|
| ICD9 and 10 | ICD concept ID | SNOMED | SNOMED concept ID |
| NDC | NDC concept ID | RxNorm | RxNorm concept ID |
| LOINC | LOINC concept ID | LOINC | LOINC concept ID |

Why the need for OMOP?



Three disparate data sources

Standardized content via standardized vocabularies

Comparable results

Standardized analytics

<http://ohdsi.org>

Why the need for OMOP?



Why the need for OMOP?



Why the need for OMOP?



Using it for your own research



Using it for your own research

OMOPV5dim.PatientLabChem_CONCEPT

| Source CDW Vocabulary | Source Concept ID | Standard Vocabulary | Standard Concept ID |
|-----------------------|-------------------|---------------------|---------------------|
| ICD9 and 10 | ICD concept ID | SNOMED | SNOMED concept ID |
| NDC | NDC concept ID | RxNorm | RxNorm concept ID |
| LOINC | LOINC concept ID | LOINC | LOINC concept ID |

Using it for your own research

OMOPV5dim.PatientLabChem_CONCEPT

Originally in
CDW

Curated for OMOP
transformation

| LabChemTestSID | LOINC_Original | LOINC_Mapped | LabChemTestName | Units | topographysid | Topography | CONCEPT_ID | instance_count |
|----------------|----------------|--------------|----------------------|-------|---------------|---------------------|------------|----------------|
| 800042945 | 2160-0 | 2160-0 | CREATININE (SERUM) | | 800000735 | URINE | 3016723 | 945 |
| 800042945 | NULL | 2160-0 | CREATININE (SERUM) | mg/dL | 800000735 | URINE | 3016723 | 7 |
| 800054184 | 12190-5 | 2160-0 | CREATININE~disc6/09 | mg/dL | 800001445 | SERUM & TIMED URINE | 3016723 | 63 |
| 1000062296 | NULL | 2160-0 | CREAT 6/7/05-6/20/05 | | 1000000645 | SERUM | 3016723 | 9 |
| 1000062296 | 2160-0 | 2160-0 | CREAT 6/7/05-6/20/05 | mg/dL | 1000000645 | SERUM | 3016723 | 352 |

Using it for your own research

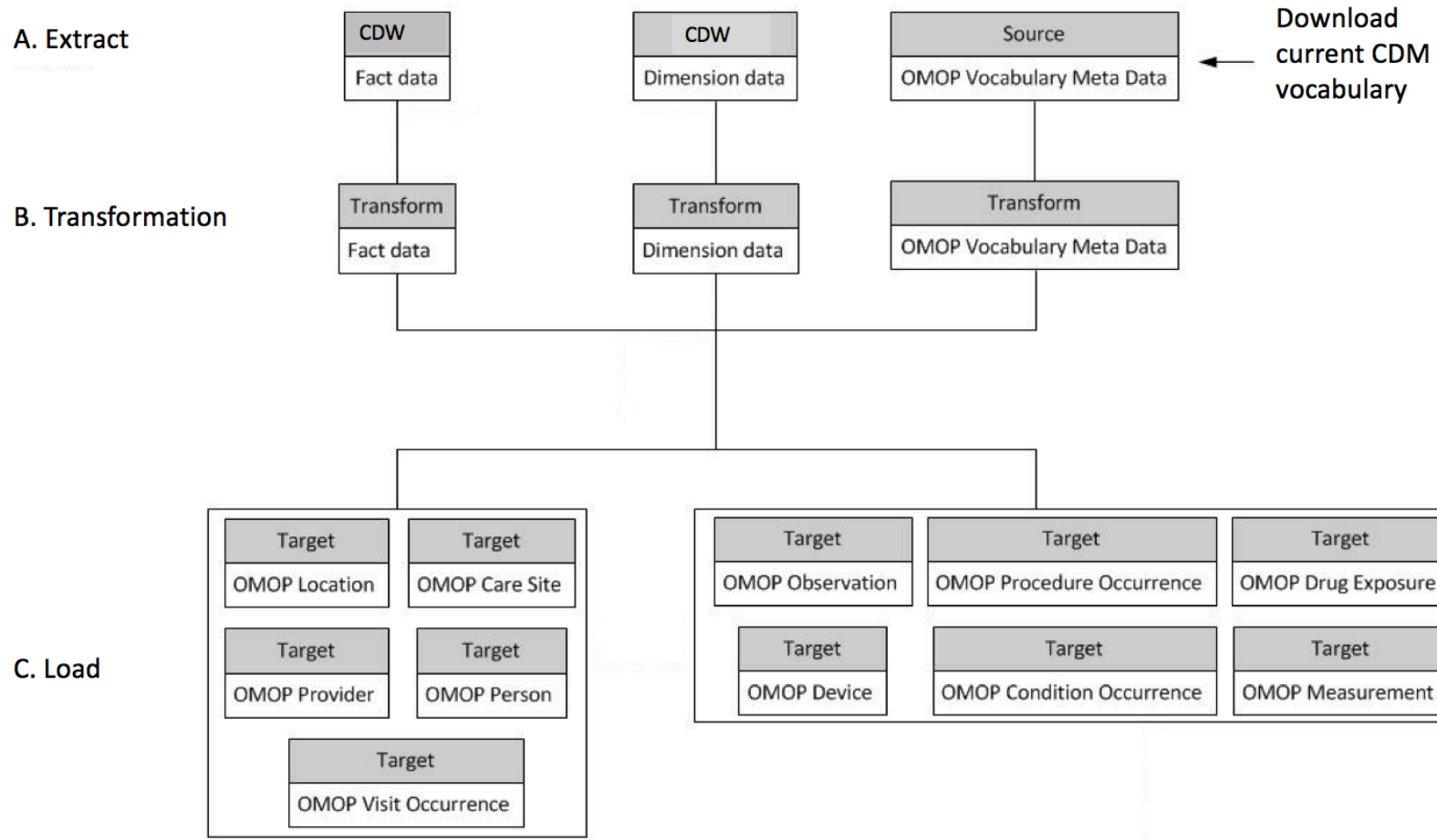
CDWORK.dim.ICD9

| | ICD9SID | ICDIEN | Sta... | ICD9Code | DRGIdentif... | DRGConditionComorbidityExclusion... | ReproductiveSystem |
|---|-----------|--------|--------|----------|---------------|-------------------------------------|--------------------|
| 1 | 800040103 | 8593 | 640 | 138. | C | -1 | NULL |

OMOPV5dim.ICD9_CONCEPT

| | ICD9SID | ICD9Code | Sta3n | ICD9Description | DOMAIN_ID | CONCEPT_ID |
|---|-----------|----------|-------|-------------------------------------|-----------|------------|
| 1 | 800040103 | 138 | 640 | LATE EFFECTS OF ACUTE POLIOMYELITIS | Condition | 377802 |

CDW to OMOP Common Data Model



CDW Domains Transformed and available NOW



- Physical Care Site (Location, Institution)
- Patient (Spatient)
- Staff/Provider (Sstaff)
- Inpatient Domain (Encounters, Admin Codes)
- Outpatient Domain (Encounters, Admin Codes)
- Inpatient BCMA (Solution, IV, dispensed)
- Outpatient Pharmacy Fill
- Patient Chemistry Laboratory
- Vital Signs
- Tobacco Use (Dental)
- Inpatient Fee Basis Records (Diagnoses and procedures)

Future transformations



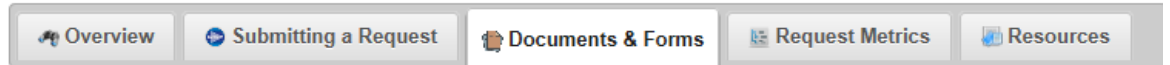
- VA Medicare
- VA HERC
- DaVINCI (DoD)

How do I get it?



- Regulatory approvals
- <http://vaww.vhadataportal.med.va.gov/DataAccess/DARTRequestProcess.aspx>
 - Documents and forms tab

DART Research Request Process



Documents & Forms

DART will generate a list of documents and forms that you are required to submit. Here is a list of documents and forms you may need.

Research Project Documents & Approvals

Some IRB documents are required for all studies, while others are specific to your study. Contact your local IRB for more information about these forms.

- Research Study IRB Approval Letter(s) – *initial and most recent continuing approval.*
- Research and Development Committee Approval Letter(s)
- Research Study Protocol
- IRB Approved Sample Informed Consent & HIPAA Authorization – *required if signed informed consent forms or HIPAA authorizations will be collected for any portion of the study.*
- IRB Approved [Waiver of HIPAA Authorization](#) – *required if a Waiver of HIPAA Authorization is required for any portion of the study.*

Data Specific Request Forms

DART will prompt you to upload the following forms depending on your selections in the Data Sources section of the request.

| Required for... | Form |
|------------------------|--|
| ALL DART Requests | Research Request Memo |
| Real SSN Identifiers | Real SSN Access Request Form |
| CAPRI | Research Access to VHA Electronic Health Records |
| CDW Production Domains | CDW Domain Checklist |
| CDW Raw Domains | CDW Domain Checklist |

How do I get it?



CDW DOMAIN CHECKLIST

CDW Production

- Allergy
- Appointment
- Beneficiary Travel
- Consult
- CPRS Orders
- Dental
- Emergency Dept. Int. Software (EDIS)
- Health Factors
- Health Benefits Request
- Immunization
- Inpatient
- Integrated Billing
- Lab Microbiology
- Lab Chem
- Mental Health Assessment
- Non-VA Meds
- Outpatient
- Patient
- Patient Associated

CDW RAW*

- CAPRI Audit Trail table
- CliniComp
- Echocardiogram
- Equipment Inventory
- FBCS (Fee Basis Claim System)
- IFCAP (Integrated Funds Control, Accounting, and Procurement)
- Intravenous meds (IV)
- Oncology
- Prosthetics
- Pulmonary Function Test (PFT)
- Talent Management System (TMS)
- Unit Dose (Pharmacy)
- VACAA (Veterans Choice Program Eligibility)

Other Data

- Department of Defense and Department of Veterans Affairs Infrastructure for Clinical Intelligence (DAVINCI)
- Lung Cancer Screening Demonstration Cohort
- OMOP Common Data Model (CDW Production/Raw Source)
- PSSG Geocoded Files
- SAS Fee (Formerly HERC FEE)
- VINCI NLP Output

For additional information about the domains, please refer to the link below:

<http://vaww.virec.research.va.gov/CDW/Documentation.htm>

How do I see/use it?



Rb02/Rb03

- **ORD_Lynch_201807010D**
- + Database Diagrams
- + Tables
- + Views
- + Synonyms
- + Programmability
- + Service Broker
- + Storage
- + Security

CDW views

- ORD_Lynch_201807010D
- + Database Diagrams
- + Tables
- **Views**
- + System Views
- + Src.Appt_Appointment
- + Src.Appt_AppointmentMultiple
- + Src.Appt_AppointmentRequest
- + Src.BCMA_BCMAAdditive
- + Src.BCMA_BCMADispensedDrug
- + Src.BCMA_BCMAMedicationLog
- + Src.BCMA_BCMAMedicationVariance
- + Src.BCMA_BCMAMissingDoseRequest
- + Src.BCMA_BCMASolution
- + Src.BCMA_BCMAUnableToScan
- + Src.BCMA_BCMAUnableToScanDrug
- + Src.Chem_LabPanel
- + Src.Chem_OrderedLabPanel
- + Src.Chem_PatientLabChem

OMOP views

- + Src.OMOPV5_CONCEPT
- + Src.OMOPV5_CONCEPT_ANCESTOR
- + Src.OMOPV5_CONCEPT_CLASS
- + Src.OMOPV5_CONCEPT_RELATIONSHIP
- + Src.OMOPV5_CONCEPT_SYNONYM
- + Src.OMOPV5_CONDITION_ERA
- + Src.OMOPV5_CONDITION_OCCURRENCE
- + Src.OMOPV5_DEATH
- + Src.OMOPV5_DEVICE_COST
- + Src.OMOPV5_DEVICE_EXPOSURE
- + Src.OMOPV5_DOMAIN
- + Src.OMOPV5_DOSE_ERA
- + Src.OMOPV5_DRUG_COST
- + Src.OMOPV5_DRUG_ERA
- + Src.OMOPV5_DRUG_EXPOSURE

How do I see/use it?



Crosswalks

+ Database Diagrams

- Tables

+ System Tables

+ FileTables

+ Src.CohortCrosswalk

+ Src.CohortOMOPPERSON_ID

+ Src.CohortPatientICN

+ Src.CohortPatientICN2

+ Src.CohortPatientSID

+ Src.CohortScrSSN

+ Src.OMOPV5_CohortCrosswalk

→ List of Person_IDs (OMOP's
unique patient identifier)

→ Crosswalk of Person_IDs,
PatientICN, PatientSID,
PatientSSN, ScrSSN



How up-to-date are the data?

- Goal: quarterly updates
- Current data on Rb02/Rb03 are for:
 - 10/1/1999 – 6/1/2018
- Next release in Summer 2019
 - 10/1/1999 - approximately 4/1/2019



How do I get help?

- VINCI Help Desk– include OMOP in your ticket descriptor or subject line in email to VINCI@VA.gov
- VAPulse.net VINCI OMOP Users Group- Training resources, Documentation, FAQ, Example code
- OHDSI OMOP-CDM Community - Open Source www.ohdsi.org

How do I get help?



- VINCI Central
 - Archived Cyberseminars
 - Achieved VINCI Happy Hours
- OMOP Academy – COMING SOON!!

Questions?



VINCI Help Desk– include OMOP in your ticket descriptor or subject line in email to VINCI@VA.gov