



VIReC CMS Data Mini-Series

Session 3:

Medicare data in the OMOP
Common Data Model

April 12th, 2022



Kristin de Groot, MPH

Project Director, VA/CMS Data for Research Project

VA Information Resource Center (VIReC)



VIReC CMS Data Mini-Series

Mini-Series about the research use of data from Centers for Medicare and Medicaid Services (CMS), which provides information on healthcare Veterans received outside the VA.

Sessions Cover...

- Overview of the Types of Data available from VIReC
- Methods for using the data in research
- Limitations of the data
- Requirements for access
- Examples of VA research that use these data



Upcoming VIREC CMS Data Sessions

2nd Tuesday of the month (quarterly) | 3:00pm-4:00pm ET

Date	Topic
7/12/22	Medicaid data in VA Research

Visit our Education page for more information & registration links:

<https://bit.ly/39B1JUo>

Visit HSR&D's VIREC Cyberseminar Archive to watch previous sessions:

<https://bit.ly/3dZFJWG>

Where can I download a copy of the slides?



SAMPLE EMAIL

Host: HSR&D Cyberseminars (cyberseminar@va.gov)

Event number (access code): 199 009 5117

Event password: 3844

Registration ID: This event does not require an enrollment ID

Join event

To join the audio conference only

To receive a call back, provide your phone number when you join the event, or call the number below and enter the access code.

USA Toll Number: 14043971596

Toll-free dialing restrictions:

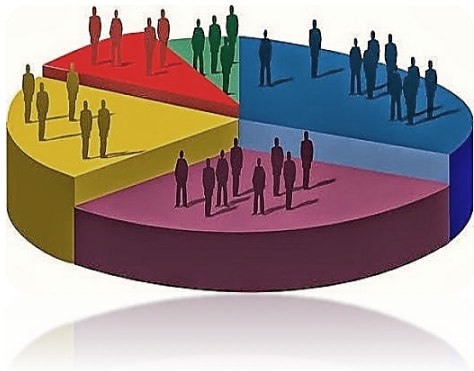
https://www.webex.com/pdf/tollfree_restrictions.pdf

Access code: 199 009 5117

[Please download today's slides](#)
[Please click here for today's live captions](#)

Poll #1:

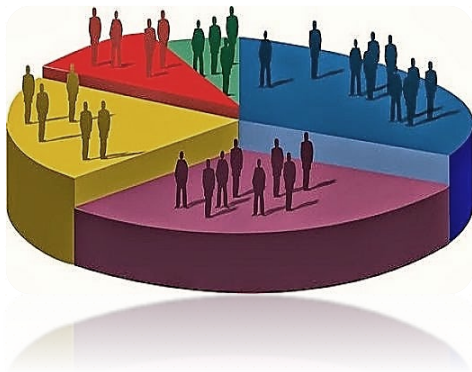
*What is your **role** in research and/or quality improvement projects?*



- Investigator, PI, Co-I
- Statistician, methodologist, biostatistician
- Data manager, analyst, or programmer
- Project coordinator
- Other – please describe via the chat function

Poll #2:

How many years of experience working with VA data?



- None – I'm brand new to this!
- One year or less
- More than 1, less than 3 years
- At least 3, less than 7 years
- At least 7, less than 10 years
- 10 years or more



VIReC CMS Data Mini-Series

Session 3:

Medicare data in the OMOP
Common Data Model

April 12th, 2022



Kristin de Groot, MPH

Project Director, VA/CMS Data for Research Project

VA Information Resource Center (VIReC)

VIReC-VINCI Partnership

VA/CMS Data for Research Project



VINCI's OMOP Initiative



Kristin de Groot

Lucy Zhang

Maria Souden



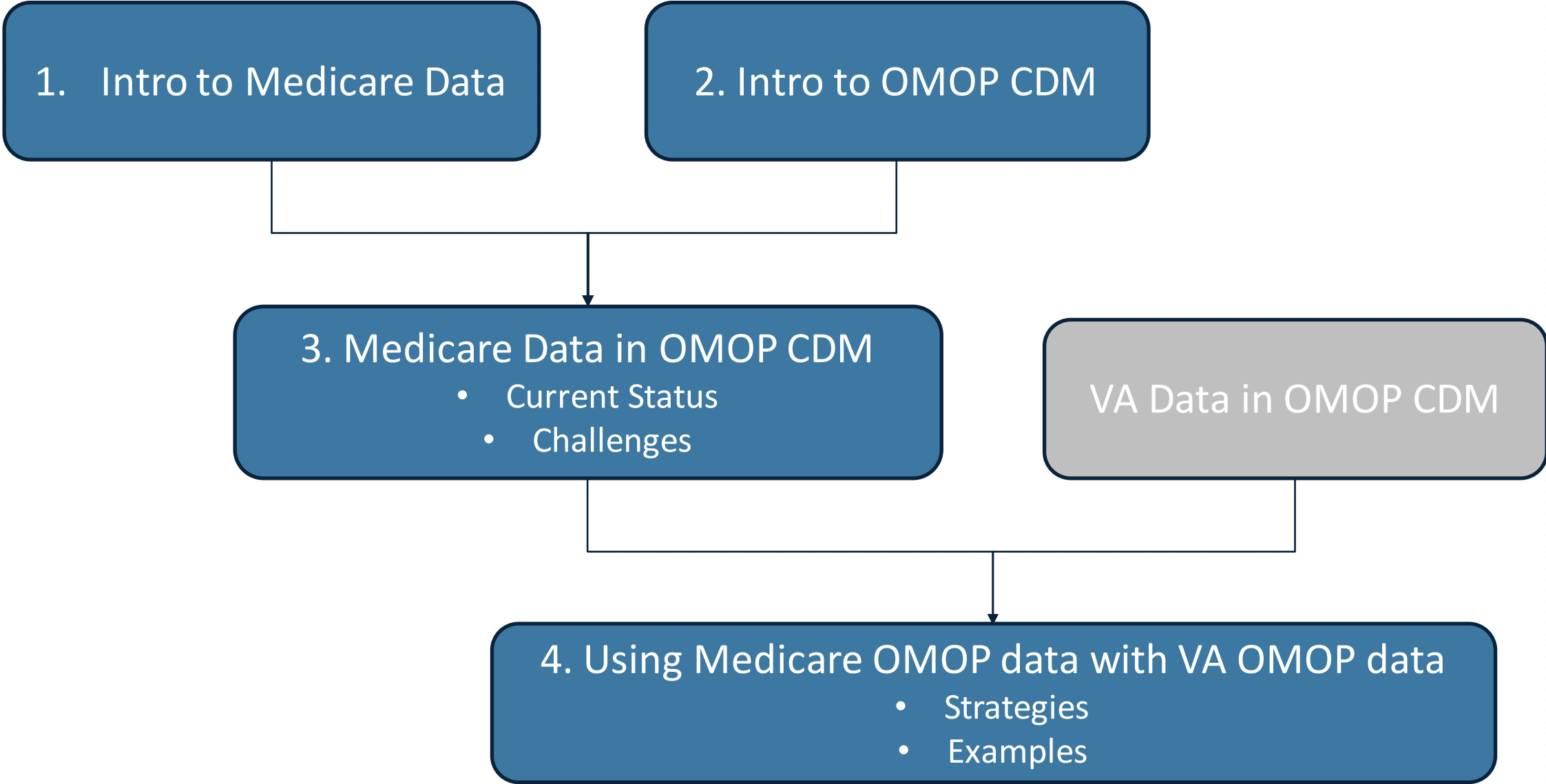
Daniel Park

Robert Winter

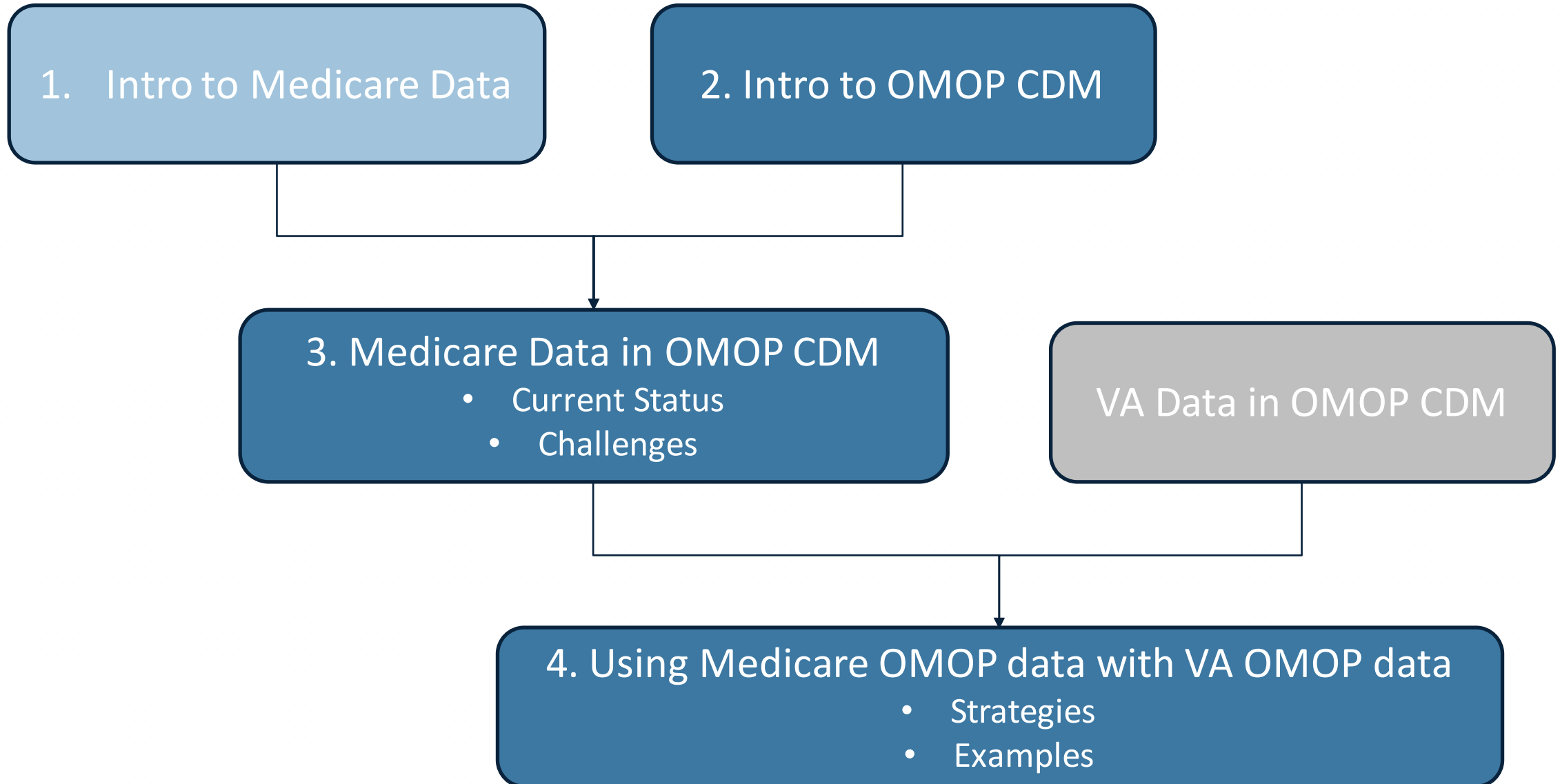
Michael Matheny

Scott DuVall

Outline for today's presentation

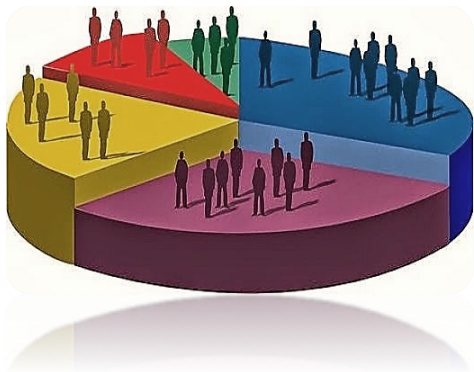


Outline for today's presentation



Poll #3:

How would you rate your overall knowledge of Medicare data?



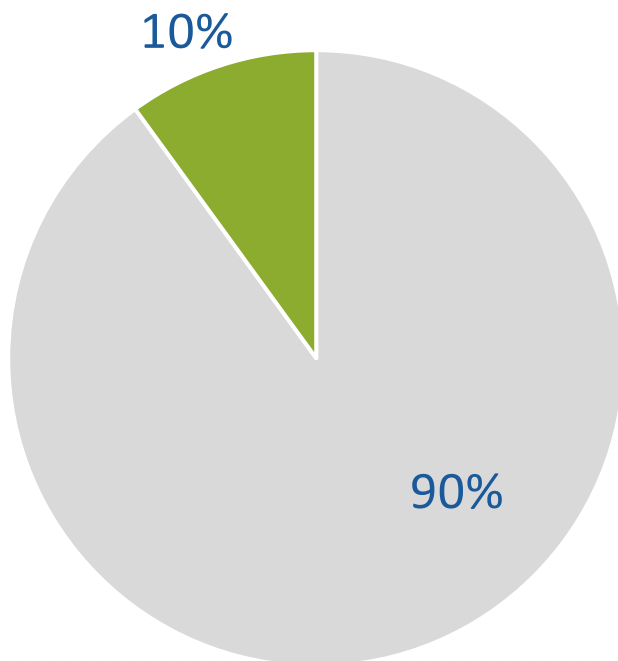
- 1 (No knowledge)
- 2
- 3
- 4
- 5 (Expert-level knowledge)

Veterans' Enrollment in Medicare

Percent of VHA Enrollees in Medicare in September 2020

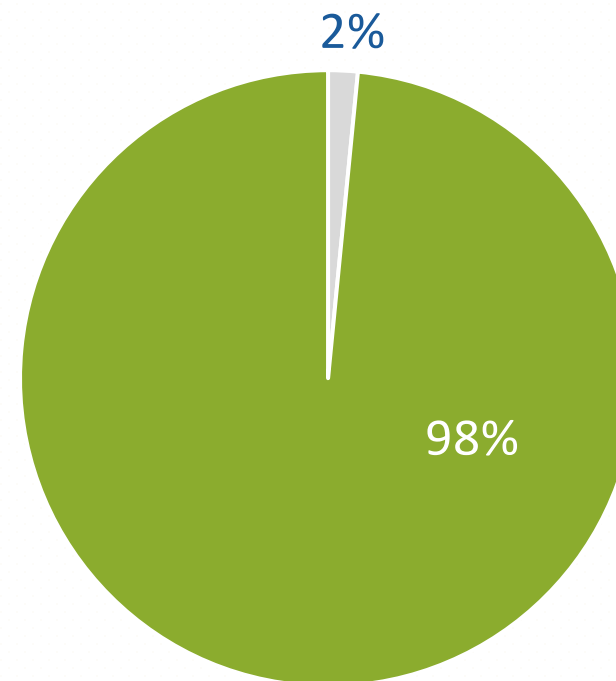
Veterans age <65

N = 4.5 million



Veterans age 65+

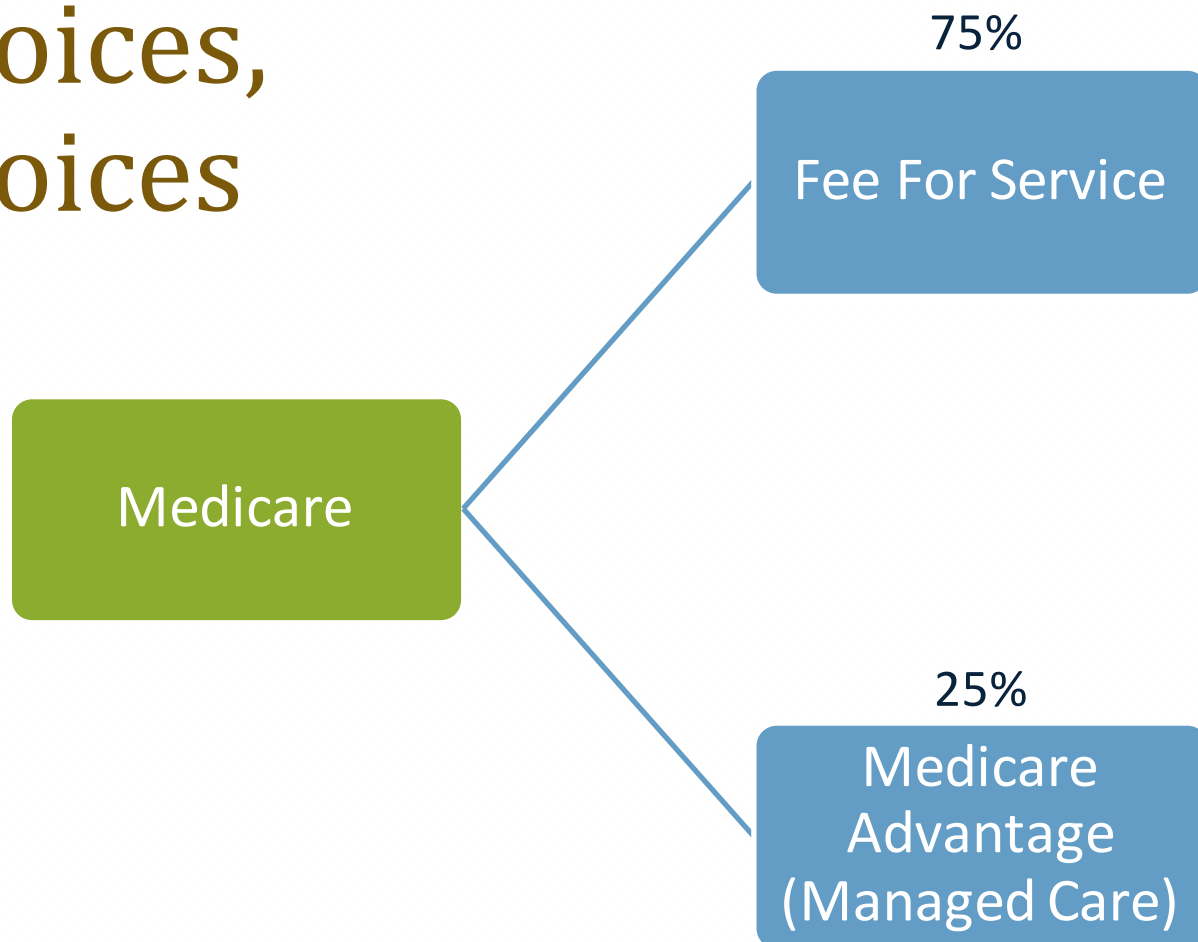
N = 4.35 million



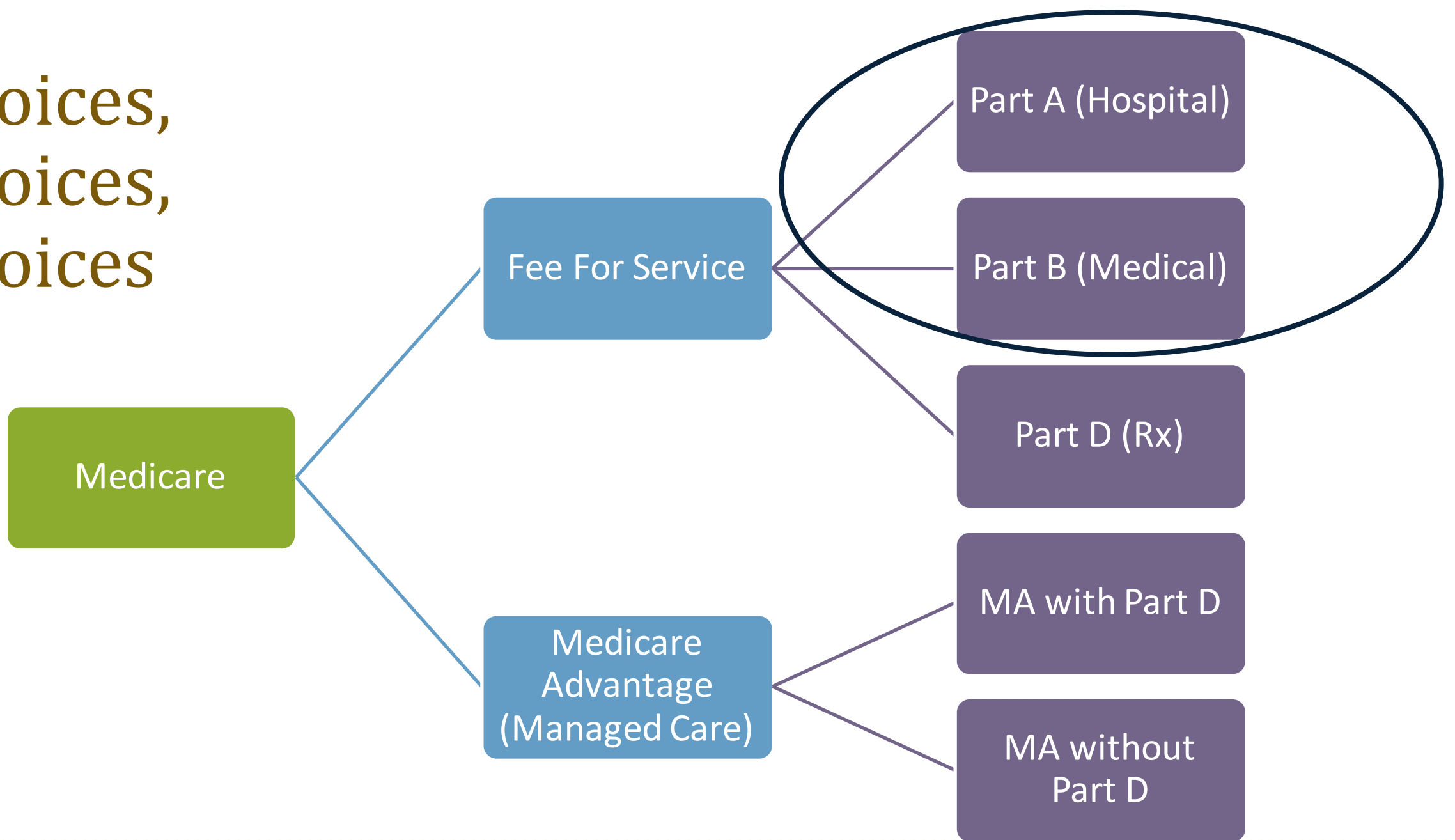
 VHA only

 VHA + Medicare

Choices, Choices, Choices



Choices, Choices, Choices

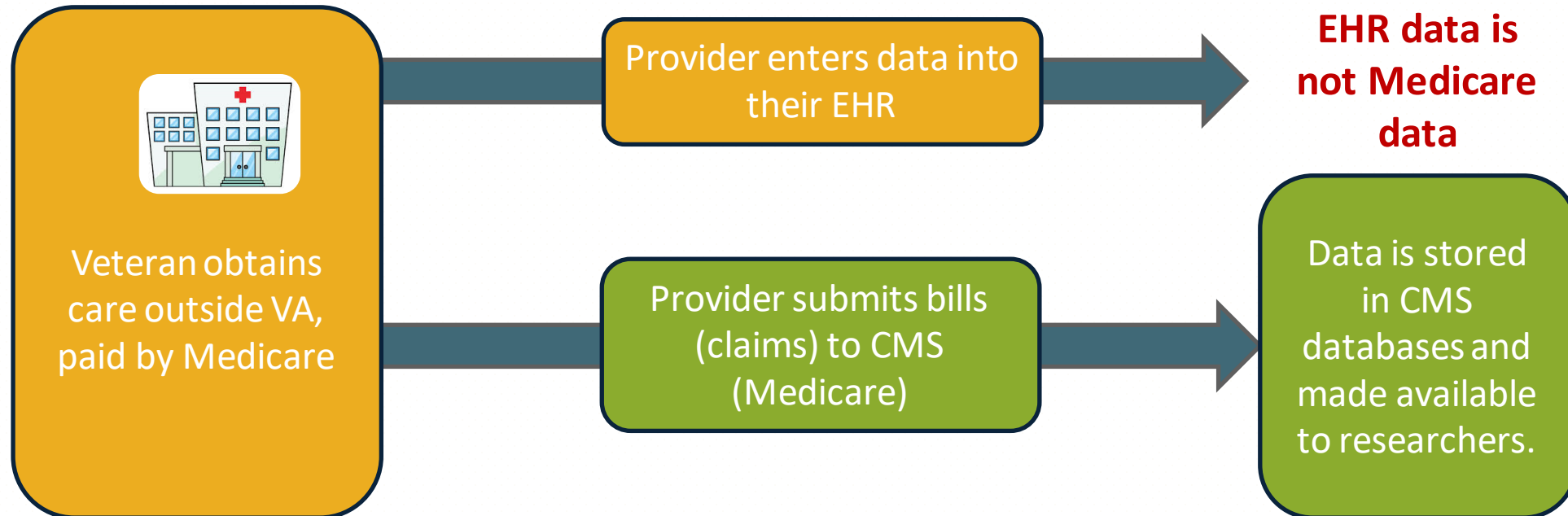


Source of VA and Medicare Utilization Data

VA Data Flow



Medicare Data Flow



Type of Provider



Type of Claim Form



Type of Claim File

Institutional



Hospital or
nursing
facility



Home health
agency or hospice



**CMS 1450/
UB-04**



5 Institutional Claim Files

Inpatient (IP)
Skilled Nursing (SN)
Home Health
Hospice
Outpatient

Non-Institutional



Clinical
laboratories



Individual
physicians,
chiropractors,
other
providers



Physician
groups



Ambulances



Medical
Suppliers



CMS 1500



2 Non-Institutional Claims Files

Carrier
Durable Medical Equipment

What does a claim represent?

1 claim = multiple
visits

1 claim = 1 visit

Multiple claims = 1
visit

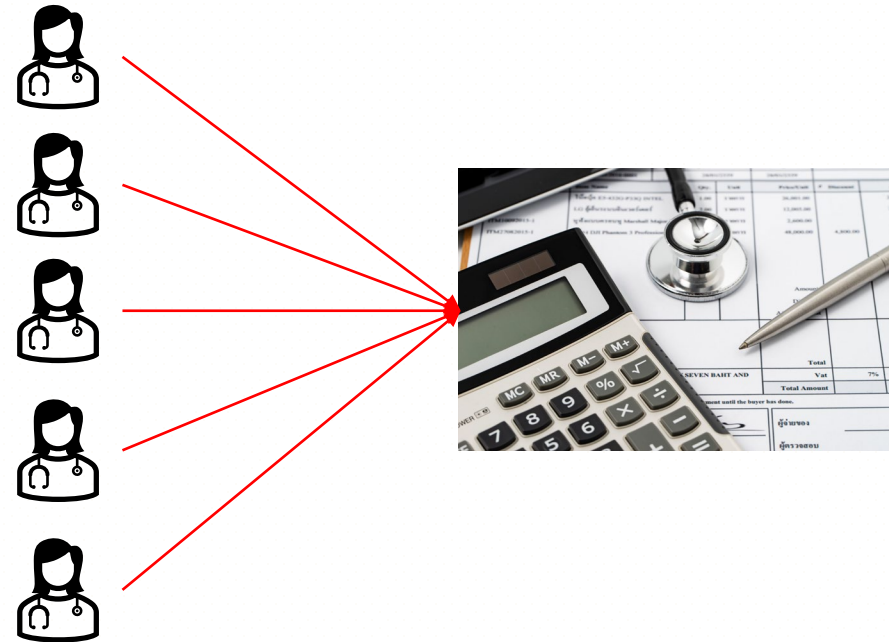
1 claim = multiple visits

Single claim is used for multiple encounters with

- same provider
- same purpose
- short time period

Examples

- Physical therapy
- Dialysis
- Home healthcare

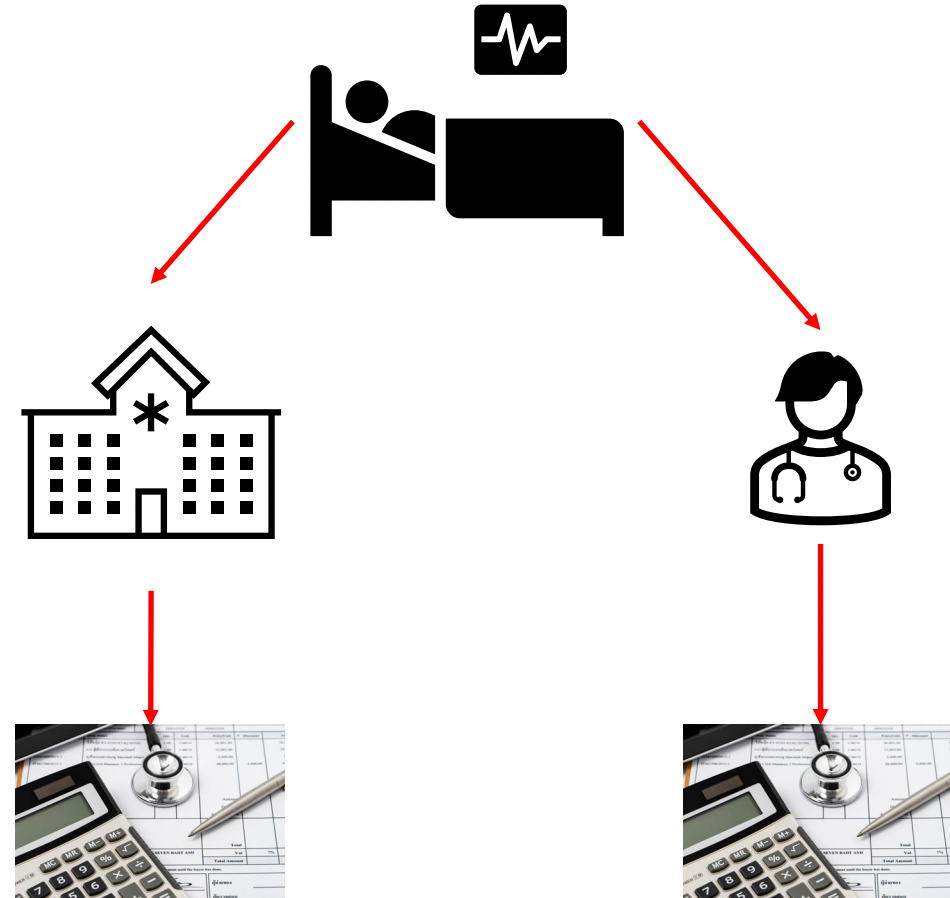


Multiple claims = 1 visits

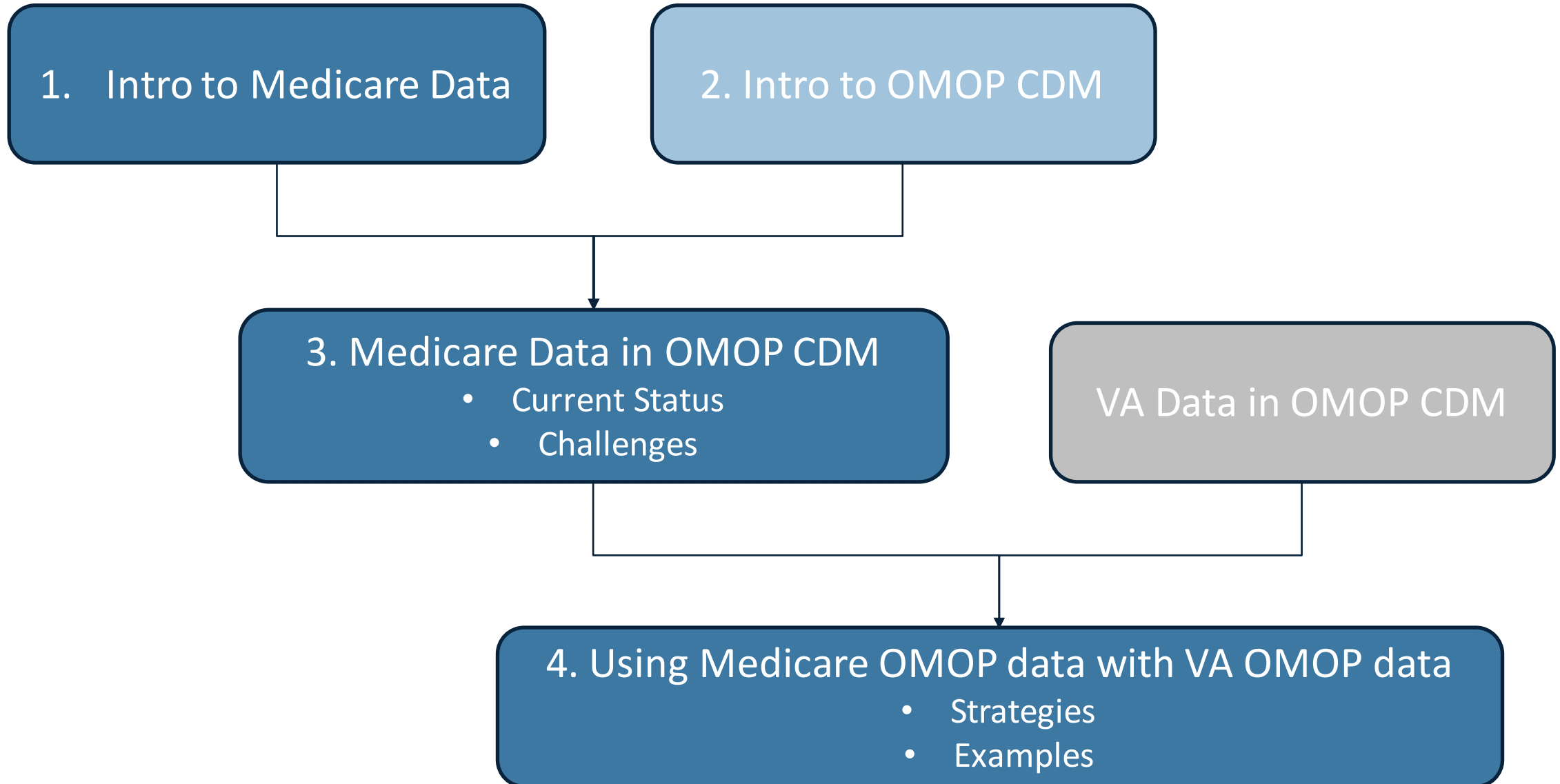
Facility & physician bill separately

Common in

- Emergency room
- Inpatient hospital
- LTC facility

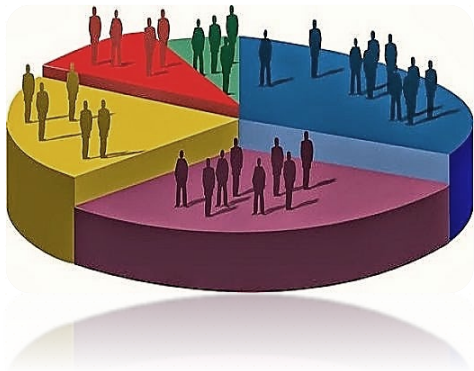


Outline for today's presentation



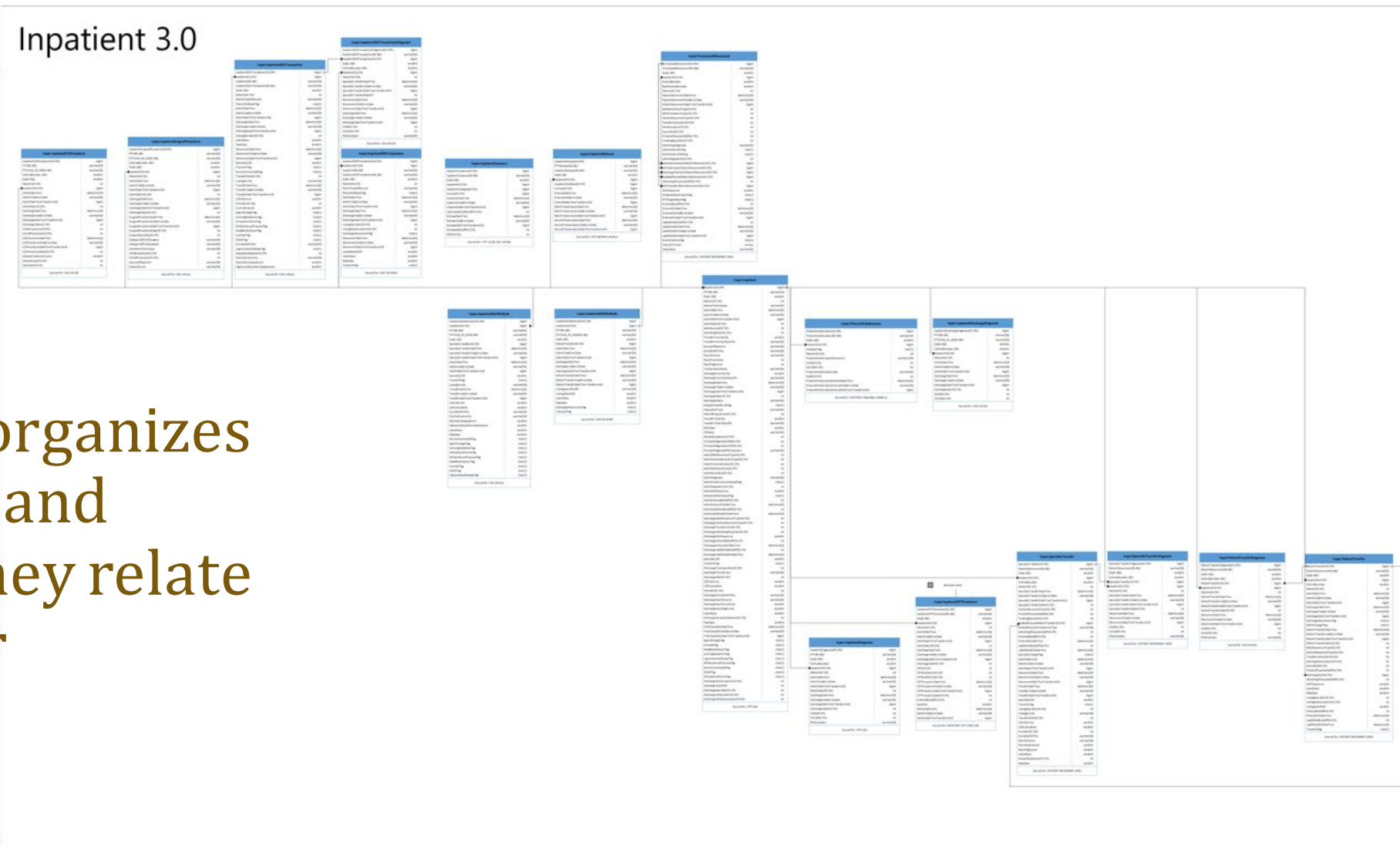
Poll #4:

How would you rate your knowledge of OMOP Common Data Model?



- 1 (No knowledge)
- 2
- 3
- 4
- 5 (Expert-level knowledge)

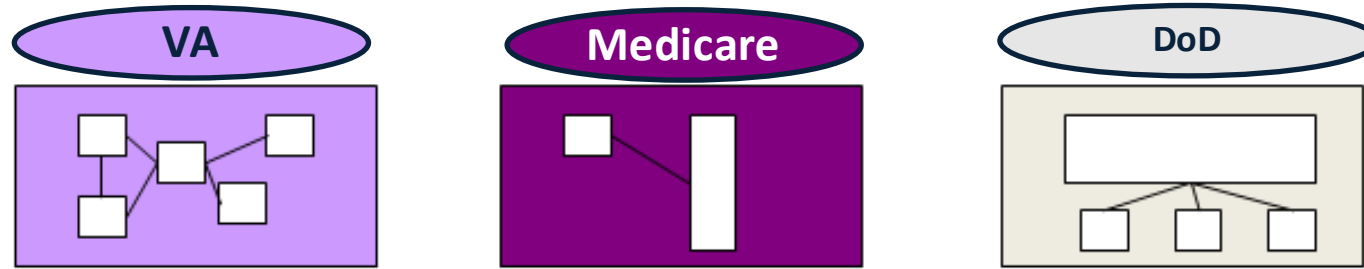
Example from VA's CDW



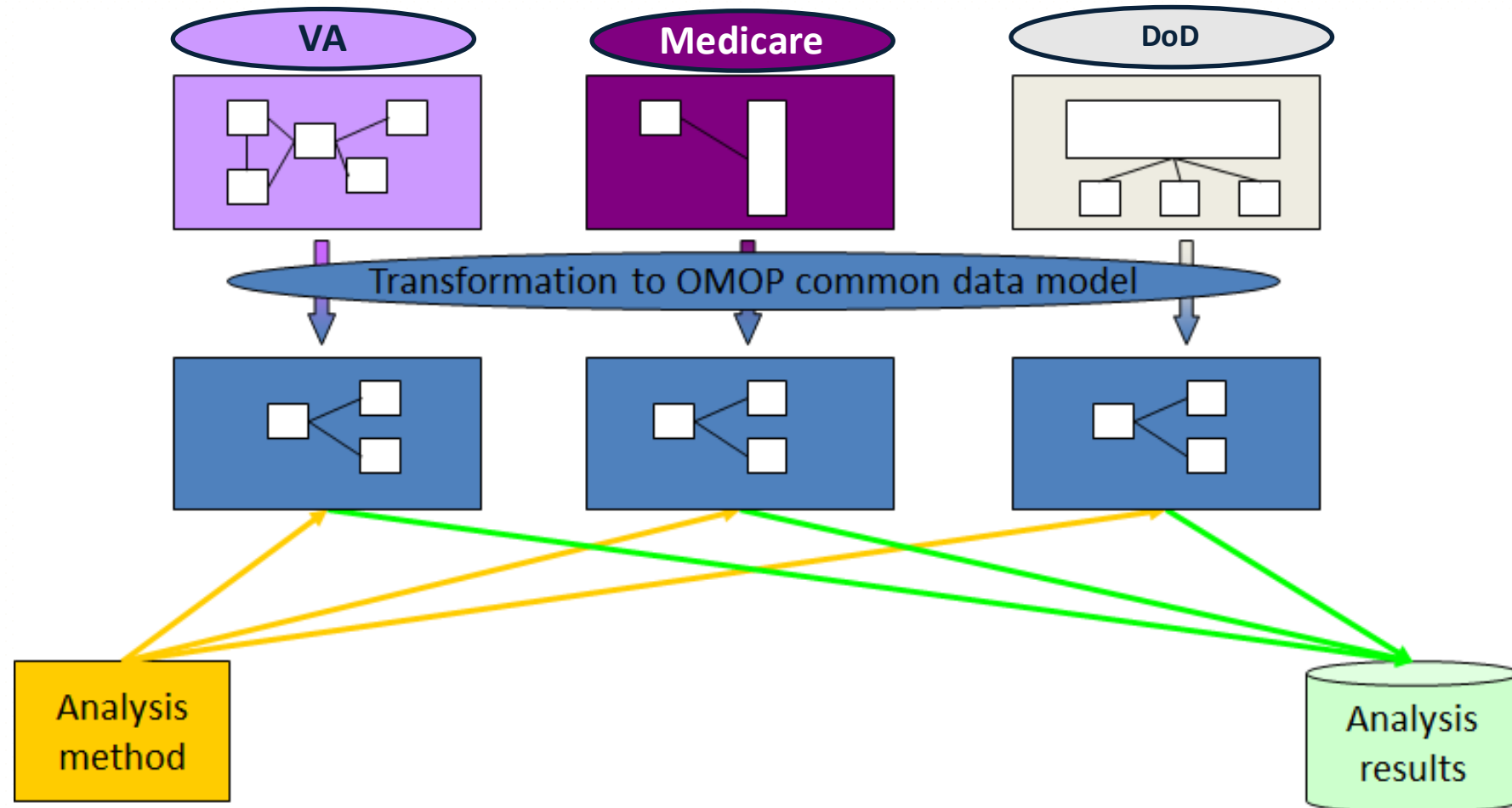
A data model organizes data elements and defines how they relate to one another

Source: https://dvagov.sharepoint.com/sites/OITBISL/MetaData/Reports/ERDiagramsOfViews/Inpatient%202.2_5659.jpg

Why do we need a Common Data Model?



Benefits of Having Data in a Common Data Model



Source: <https://www.ohdsi.org/data-standardization/the-common-data-model/>

Why a Common Data Model (CDM)?

- Standardization of
 - Tables: names, contents, relationships
 - Variable/field names
 - Values
- Embed knowledge of data into the model

Why Observational Medical Outcomes Partnership (OMOP) CDM?

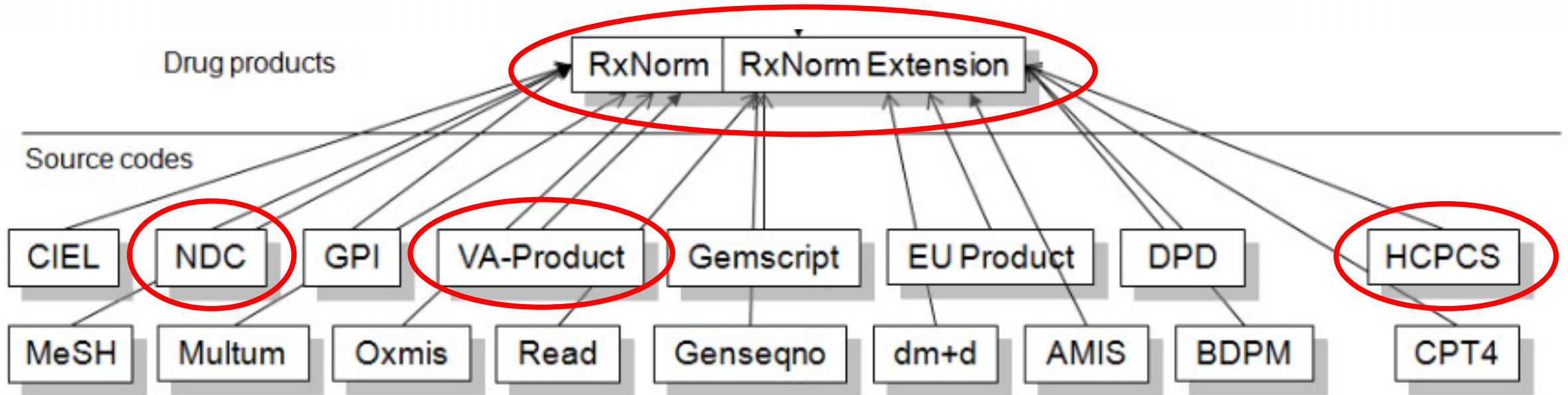
- Used by VA (CDW data) and DoD
- Benefits
 - Broad coverage
 - Open source tools
 - Standard vocabularies & concepts

OMOP Concepts

- All code sets needed to represent data
- Currently 8.4 million concepts
- All concepts are assigned a Concept ID
 - Number is not used to represent anything else
 - No decimals or special characters

Concept ID	Source Code	Vocabulary	Description
44836914	250.00 (or 25000 in Medicare data)	ICD-9	Diabetes mellitus without mention of complication, type II or unspecified type, not stated as uncontrolled
2104055	25000	CPT	Incision, extensor tendon sheath, wrist

Standardizing Concepts



<https://www.ohdsi.org/web/wiki/doku.php?id=documentation:vocabulary:drug>

Search Vocabularies:

Athena (web-based)

- athena.ohdsi.org

SQL tables

- Concept
- Concept Relationship
- ...and more

The screenshot displays the Athena web-based search interface. At the top, there is a navigation bar with the Athena logo and buttons for SEARCH, DOWNLOAD, LOGIN, and a help icon. Below this is a search bar with the text 'aspirin' and a search icon. The main content area is divided into a left sidebar and a main results table.

Left Sidebar:

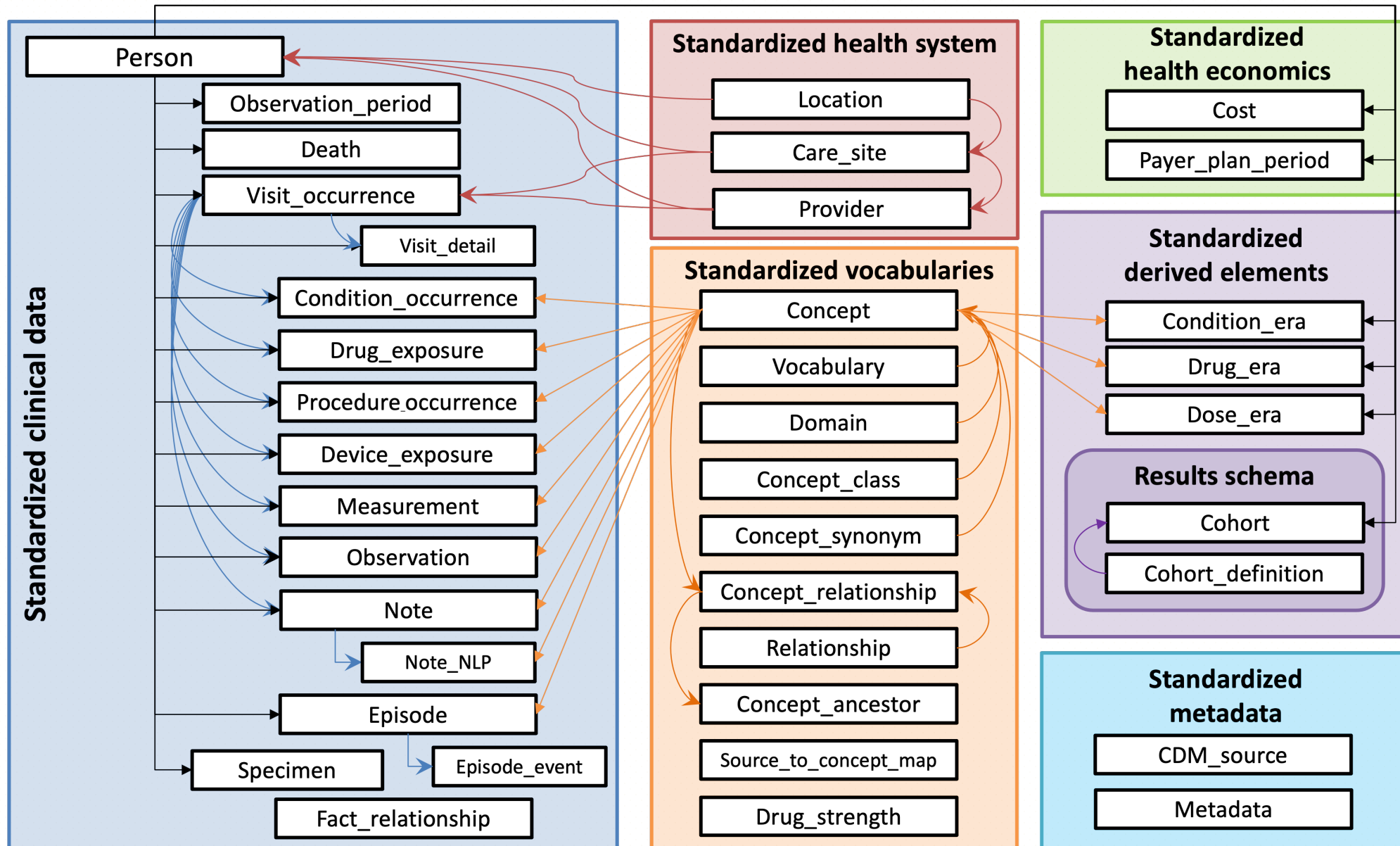
- Condition x
- Standard x
- DOMAIN (selected)
- STANDARD CONCEPT
- CLASS
- VOCABULARY
- INVALID REASON
- Valid (168420)
- Invalid (0)
- CLEAR FILTERS

Main Results Table:

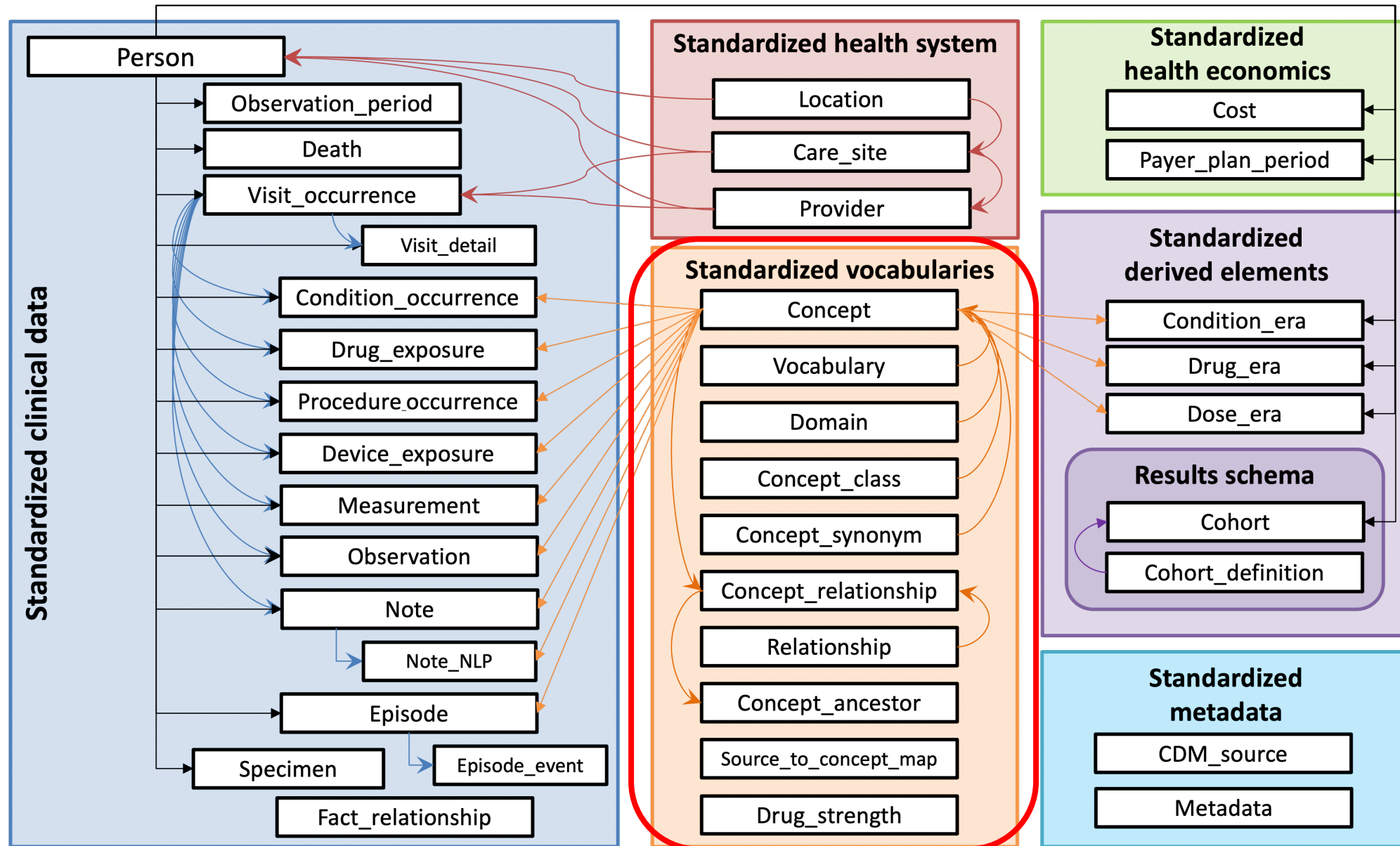
DOWNLOAD RESULTS | Show by 15 items | Total 168,420 items | 1 2 3 4 5 ... 11228 >

ID	CODE	NAME	CLASS	CONCEPT	VALIDITY	DOMAIN	VOCAB
4122880	289381000	-1 level of presenting part in relation to ischial spines	Clinical Finding	Standard	Valid	Condition	SNOMED
4126418	289380004	-2 level of presenting part in relation to ischial spines	Clinical Finding	Standard	Valid	Condition	SNOMED
4128998	289379002	-3 level of presenting part in relation to ischial spines	Clinical Finding	Standard	Valid	Condition	SNOMED
4126417	289378005	-4 level of presenting part in relation to ischial spines	Clinical Finding	Standard	Valid	Condition	SNOMED
4122879	289377000	-5 level of presenting part in relation to ischial spines	Clinical Finding	Standard	Valid	Condition	SNOMED
4126419	289382007	0 level of presenting part in relation to ischial spines	Clinical Finding	Standard	Valid	Condition	SNOMED
4240068	369787008	0-5 mitoses per 10 HPF	Clinical Finding	Standard	Valid	Condition	SNOMED
4128999	289383002	1 level of presenting part in relation to ischial spines	Clinical Finding	Standard	Valid	Condition	SNOMED
4031867	129772004	1 o'clock position on mammogram	Clinical Finding	Standard	Valid	Condition	SNOMED
4288932	396447006	1 or more mitotic figure per mm2	Clinical Finding	Standard	Valid	Condition	SNOMED
4015559	170259009	1 year examination abnormal - for observation	Clinical Finding	Standard	Valid	Condition	SNOMED
4016214	170261000	1 year examination abnormal - on treatment	Clinical Finding	Standard	Valid	Condition	SNOMED
4014878	170260004	1 year examination abnormal - referred	Clinical Finding	Standard	Valid	Condition	SNOMED
4227224	420829009	1+ pitting edema	Clinical Finding	Standard	Valid	Condition	SNOMED
4306303	83170004	1,3 Indandion poisoning	Clinical Finding	Standard	Valid	Condition	SNOMED

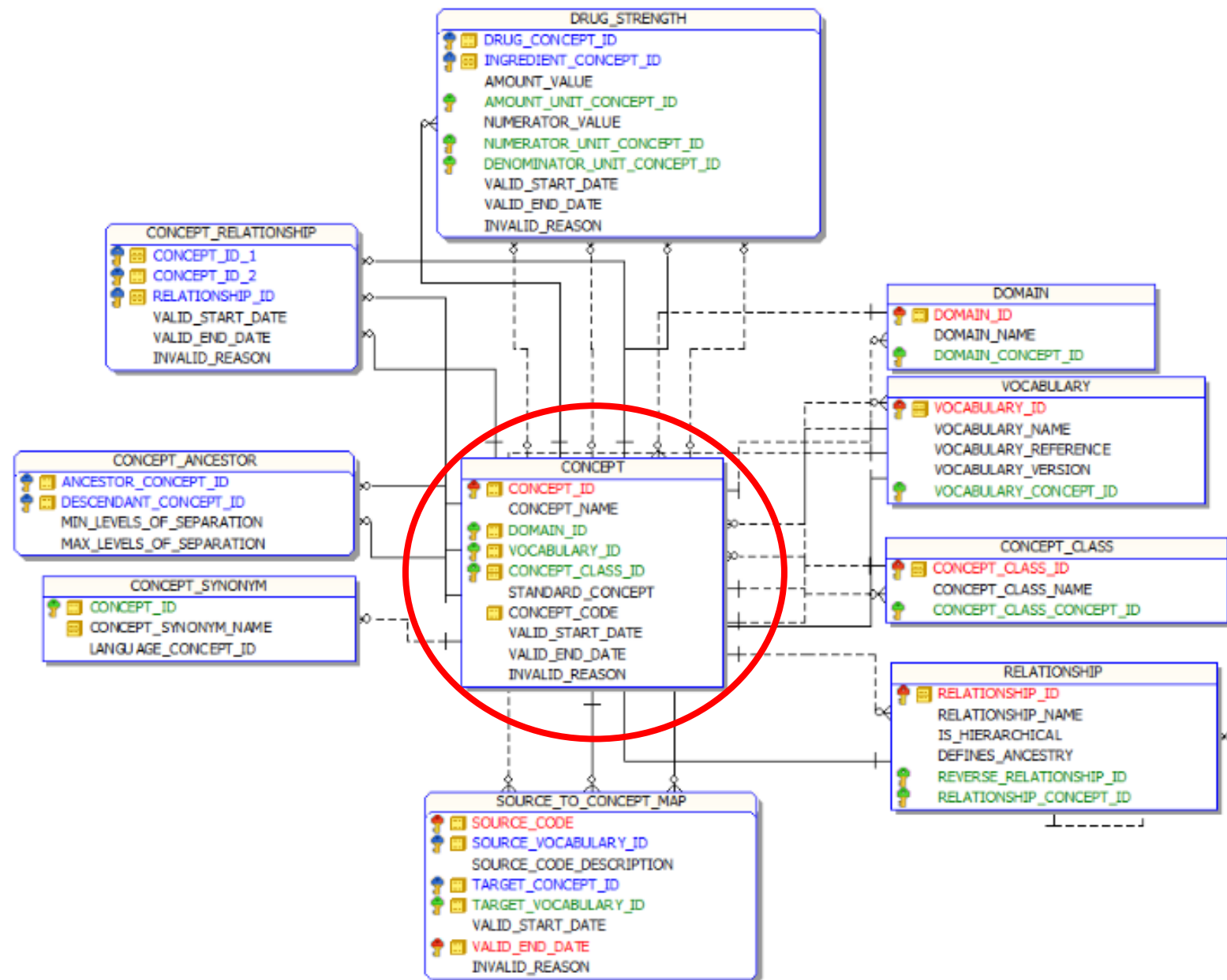
OMOP Common Data Model, Version 5.3



OMOP Common Data Model, Version 5.3

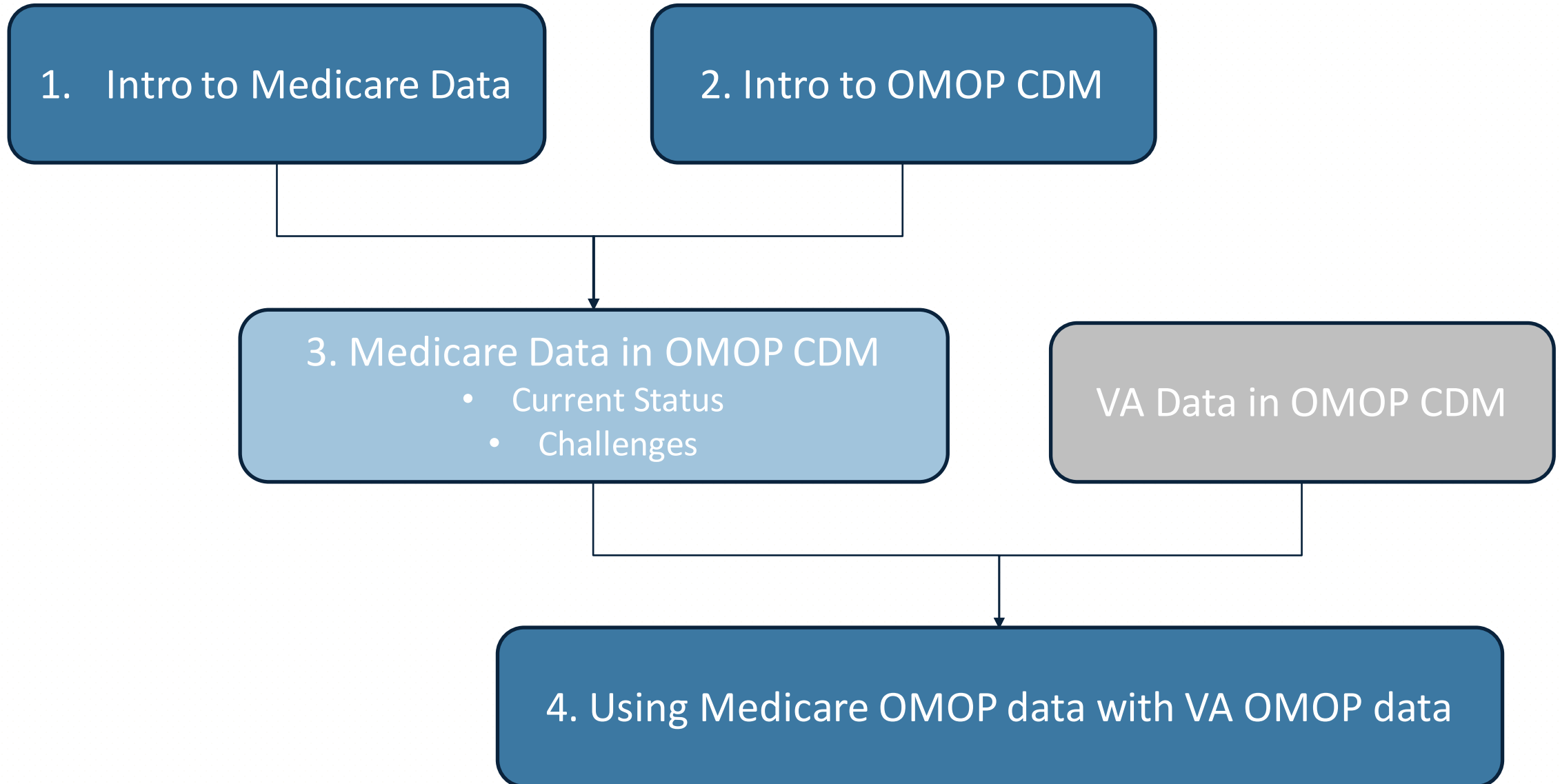


Standardized Vocabularies

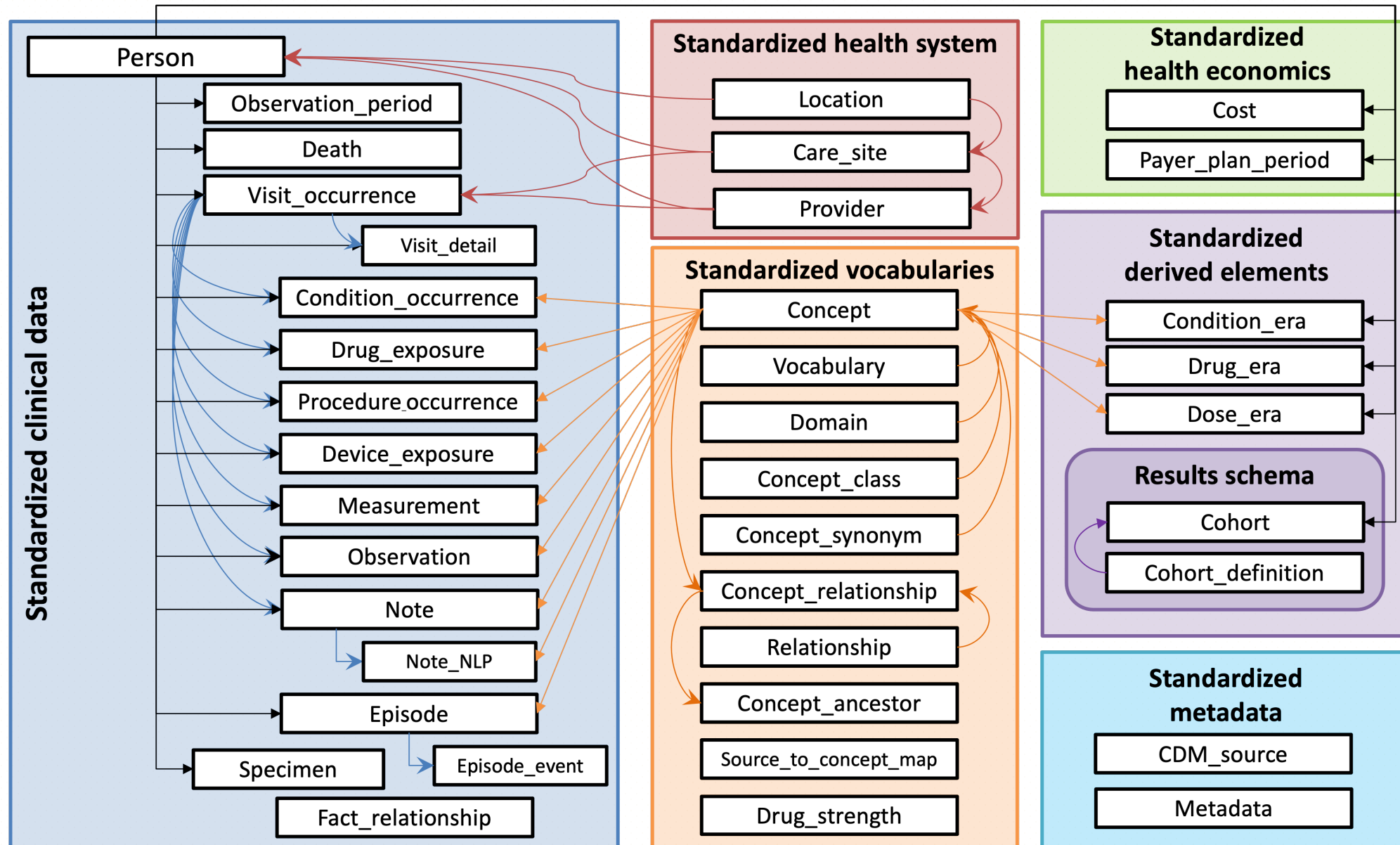


Source: https://www.ohdsi.org/web/wiki/doku.php?id=documentation:cdm:standardized_vocabularies

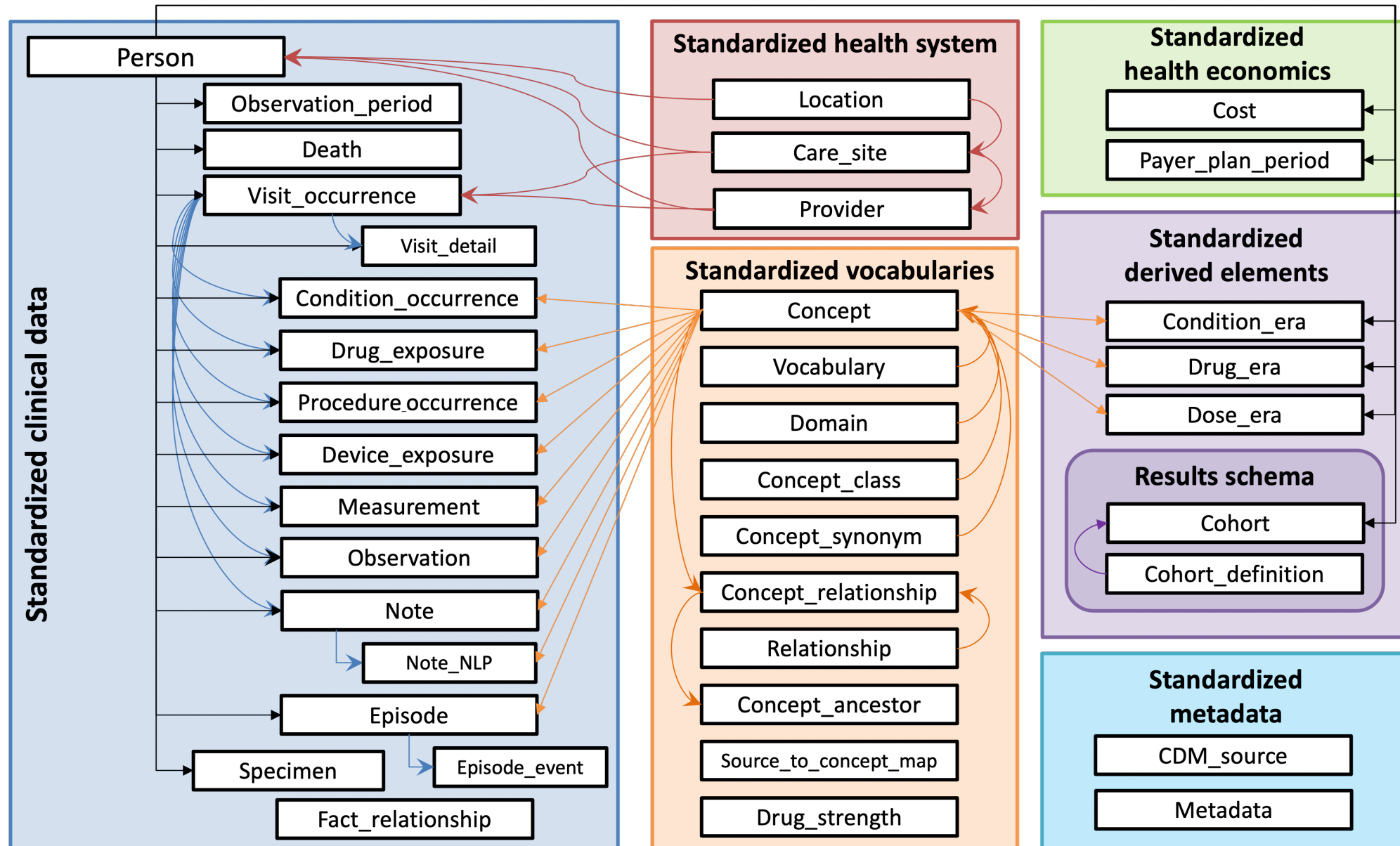
Outline for today's presentation



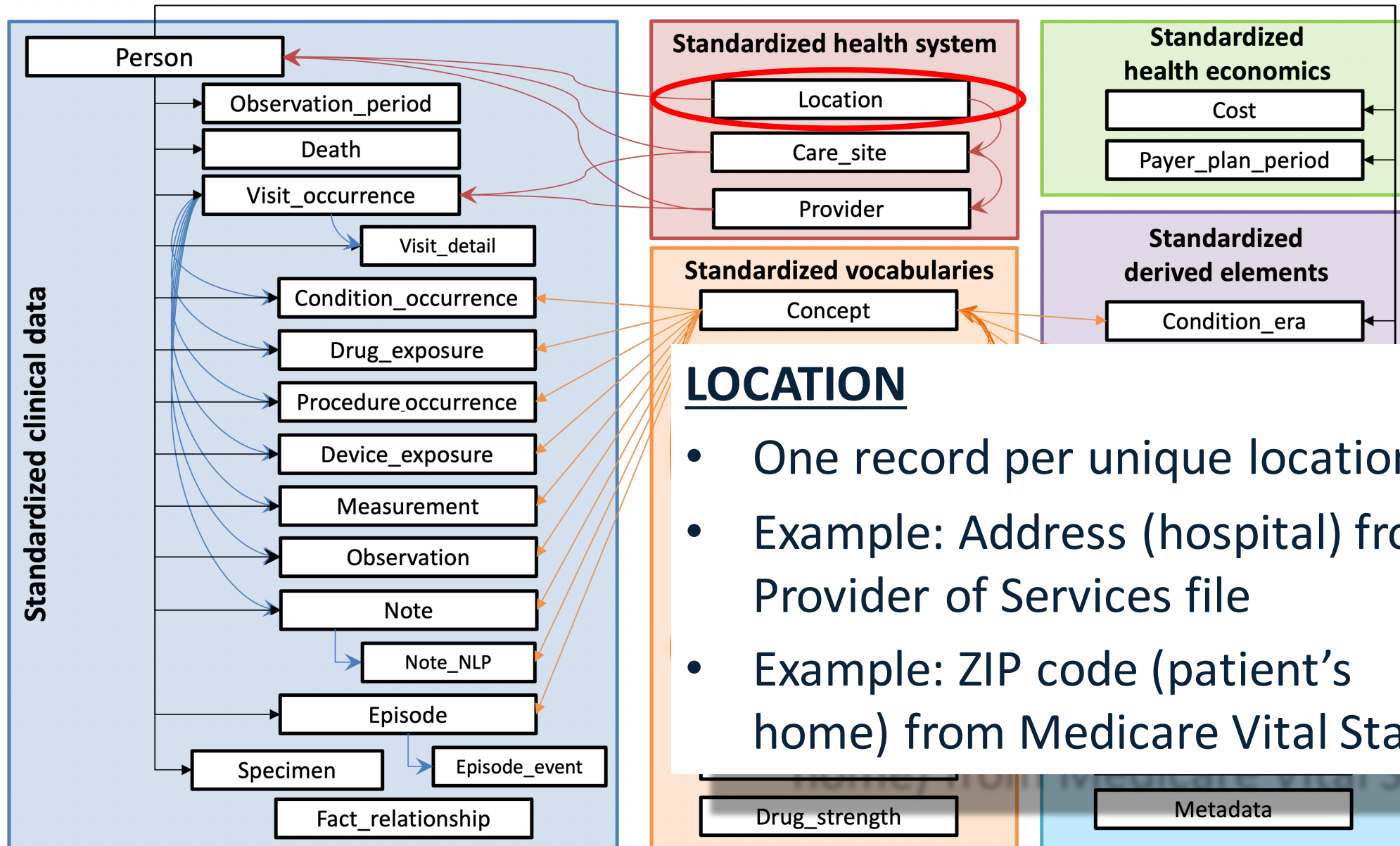
OMOP Common Data Model, Version 5.3



Medicare data in the OMOP Common Data Model



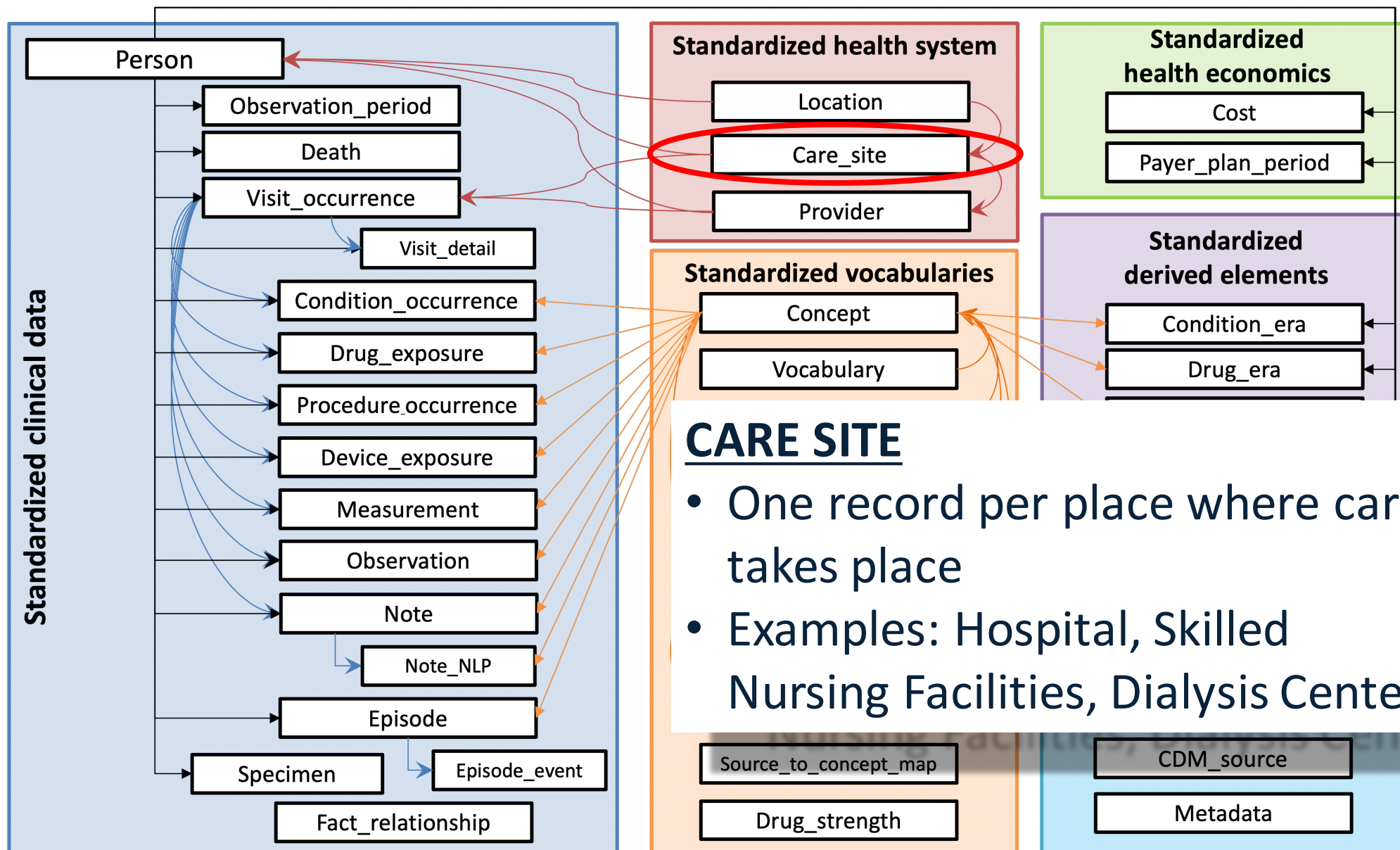
Medicare data in the OMOP Common Data Model



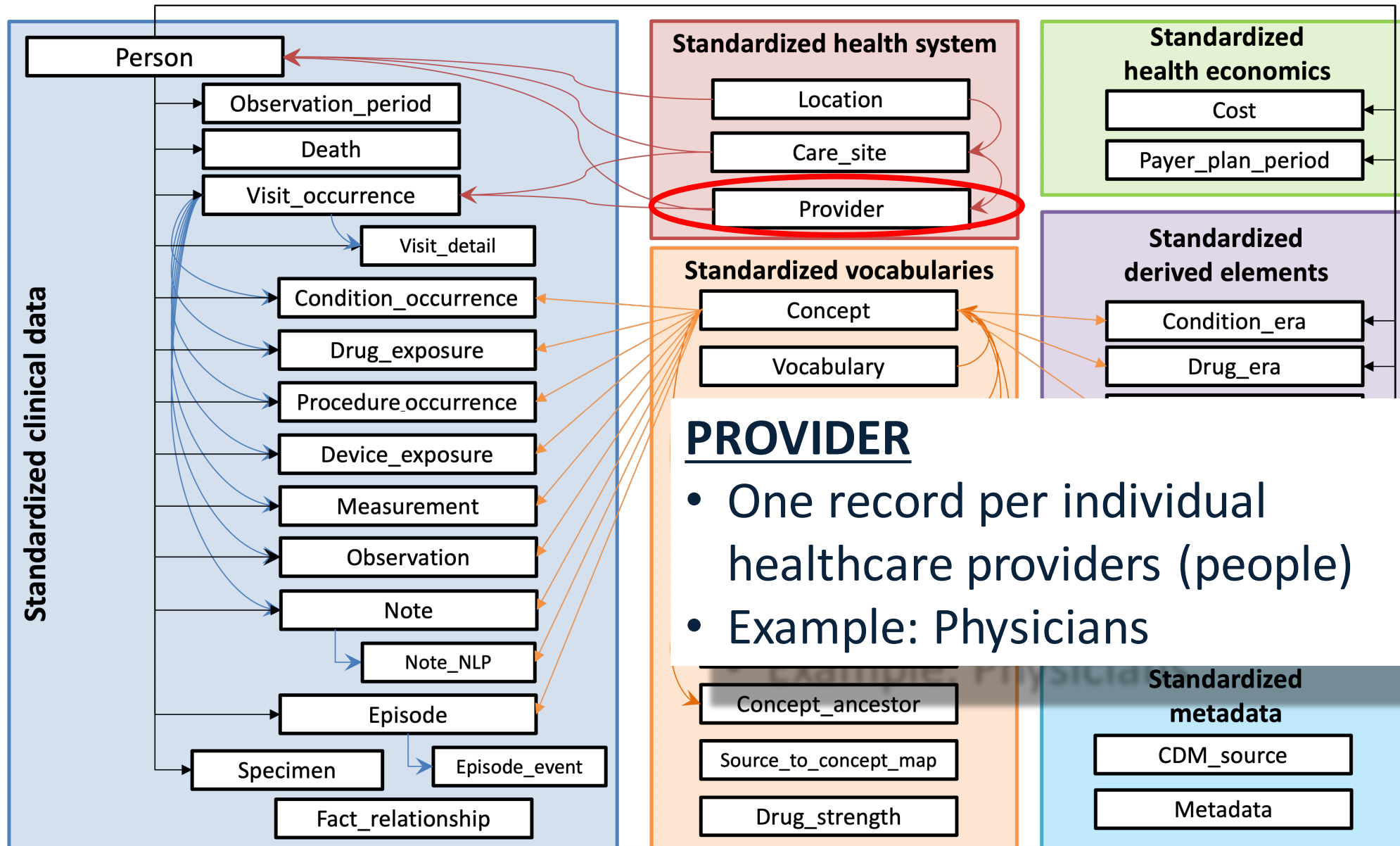
LOCATION

- One record per unique location
- Example: Address (hospital) from Provider of Services file
- Example: ZIP code (patient's home) from Medicare Vital Status

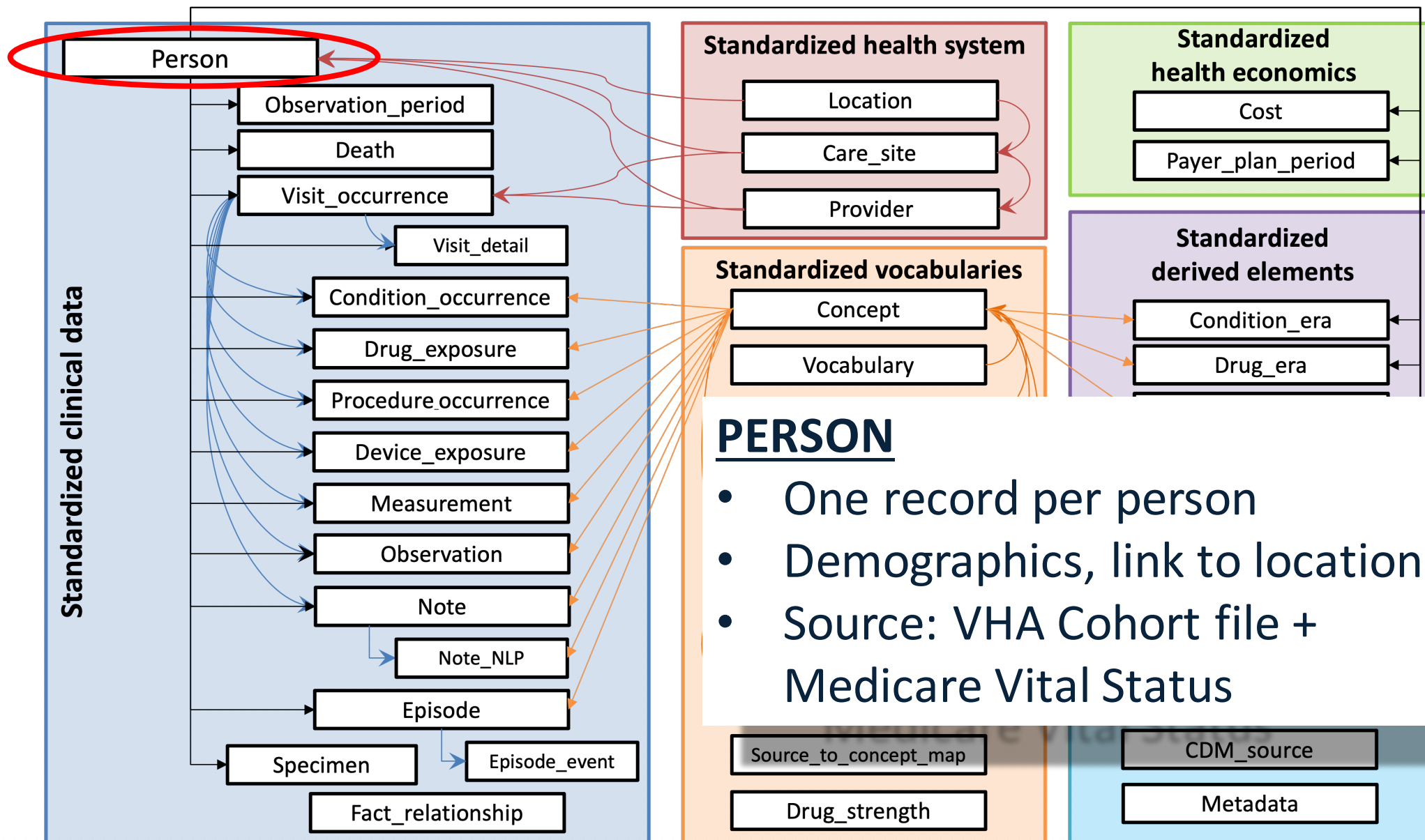
Medicare data in the OMOP Common Data Model



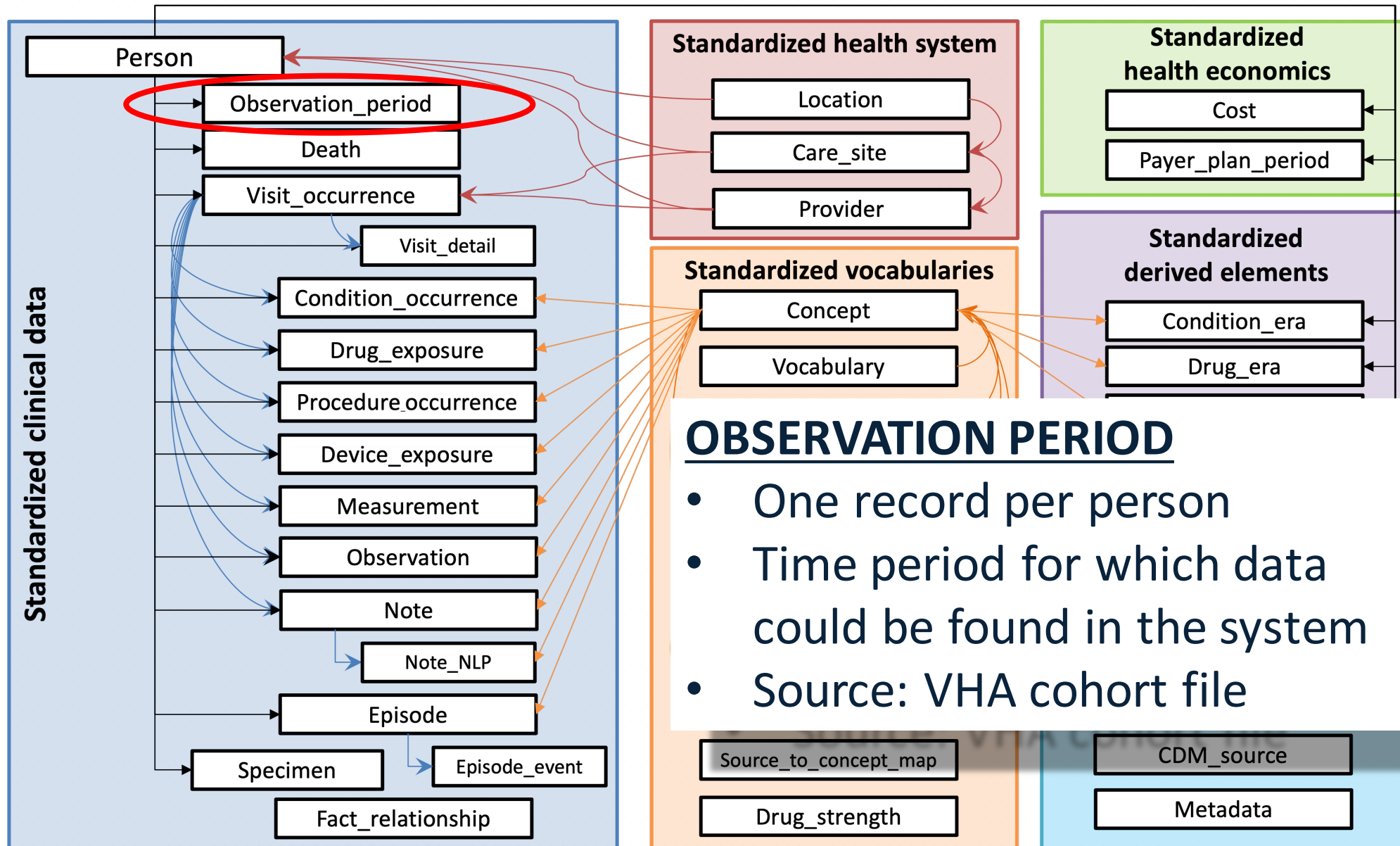
Medicare data in the OMOP Common Data Model



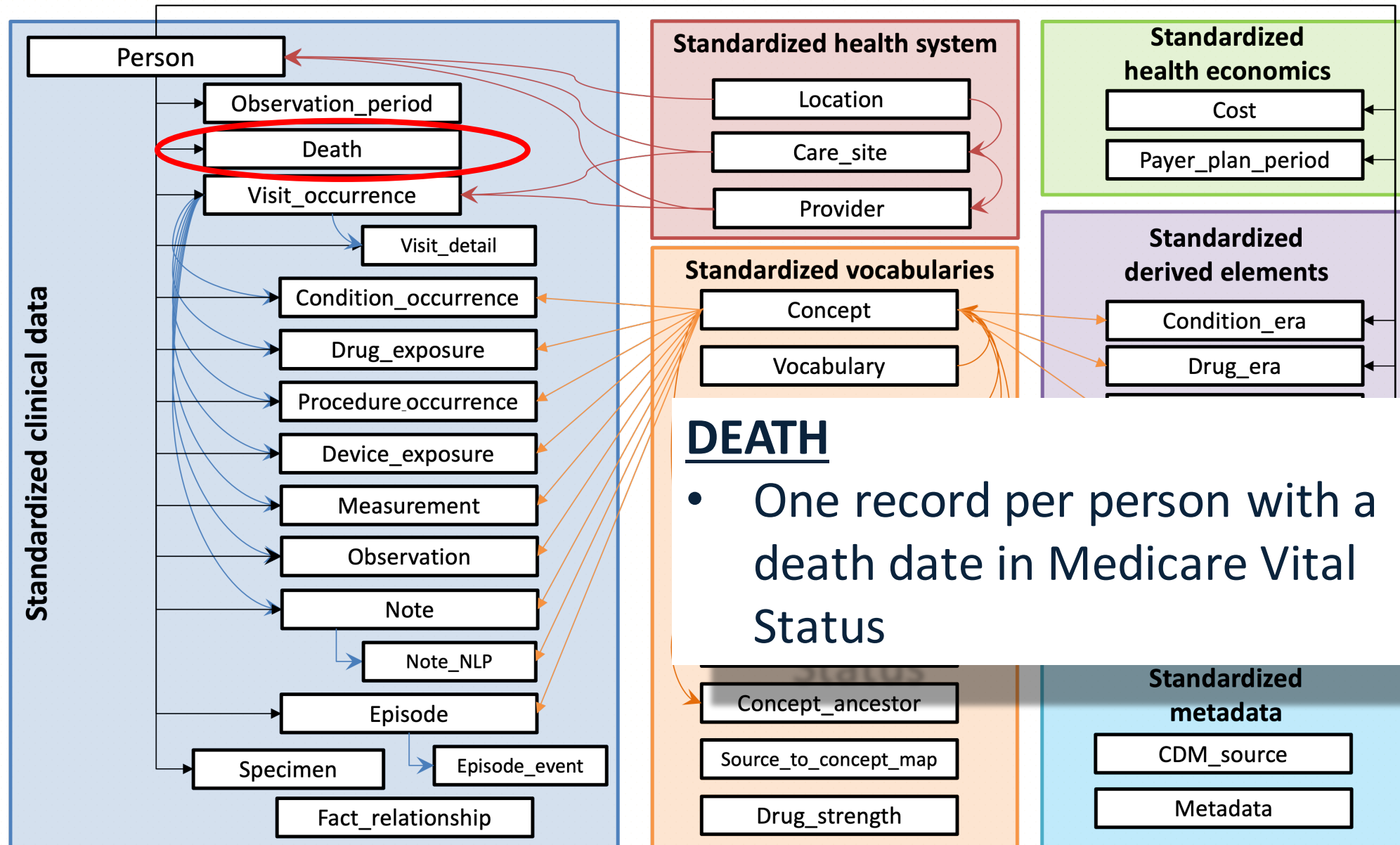
Medicare data in the OMOP Common Data Model



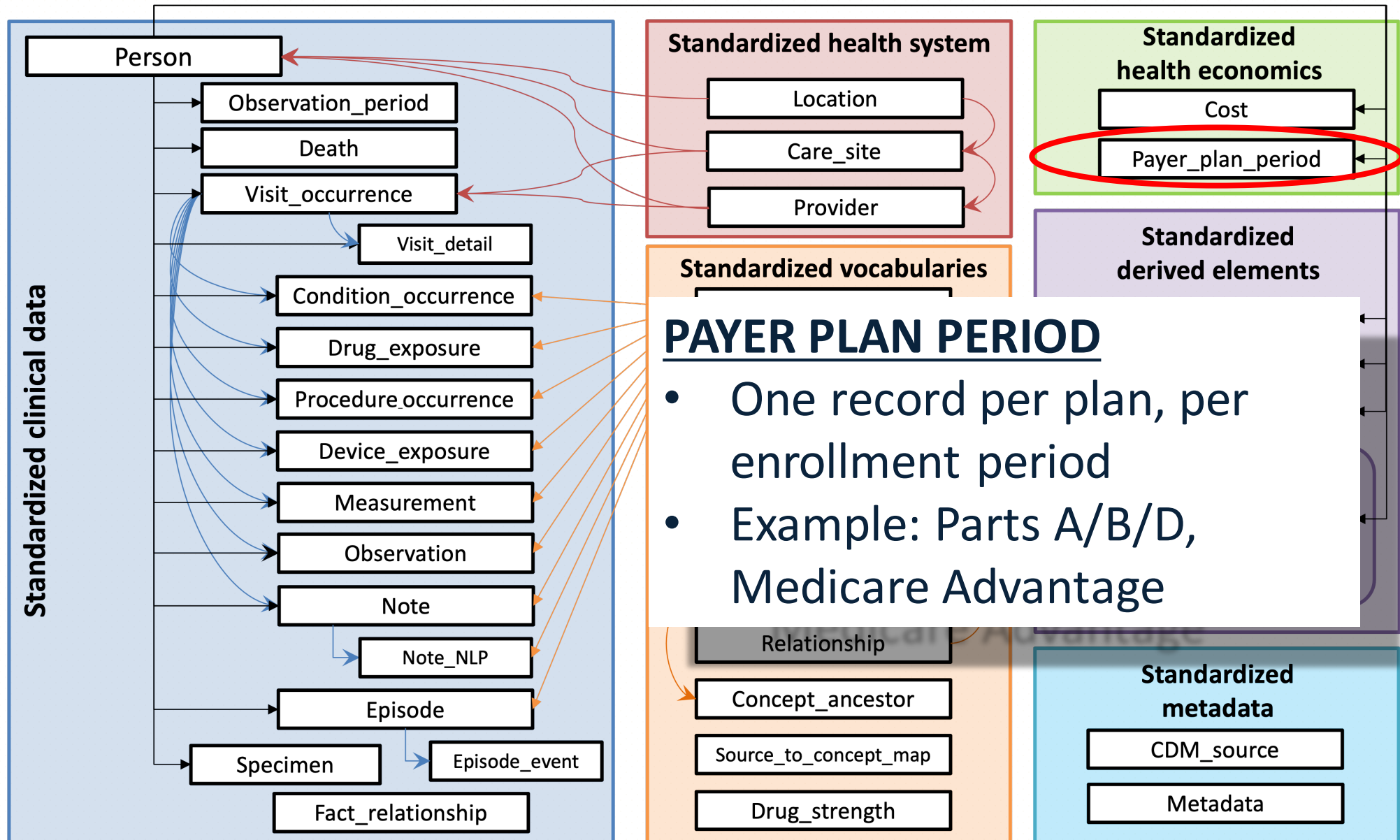
Medicare data in the OMOP Common Data Model



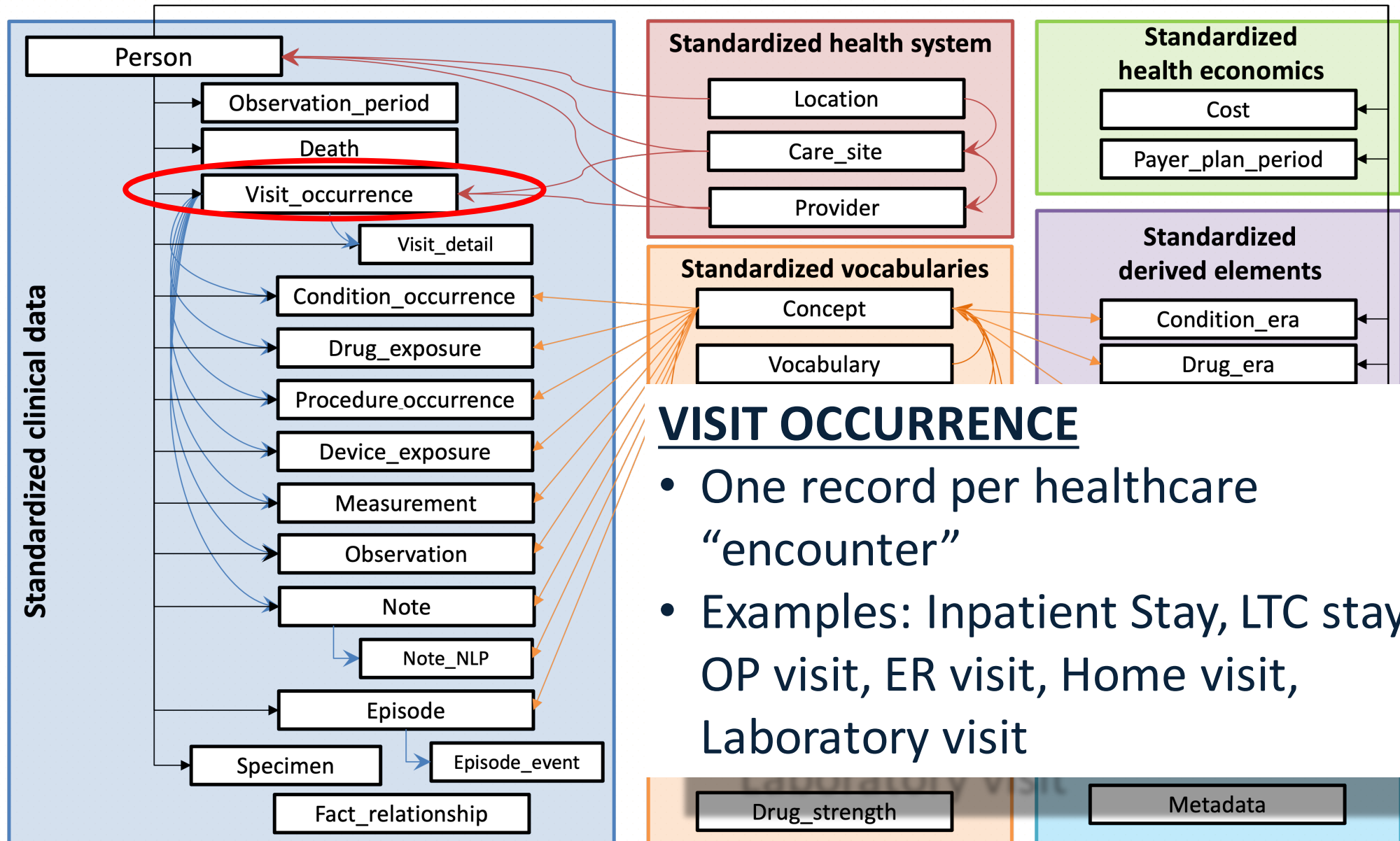
Medicare data in the OMOP Common Data Model



Medicare data in the OMOP Common Data Model



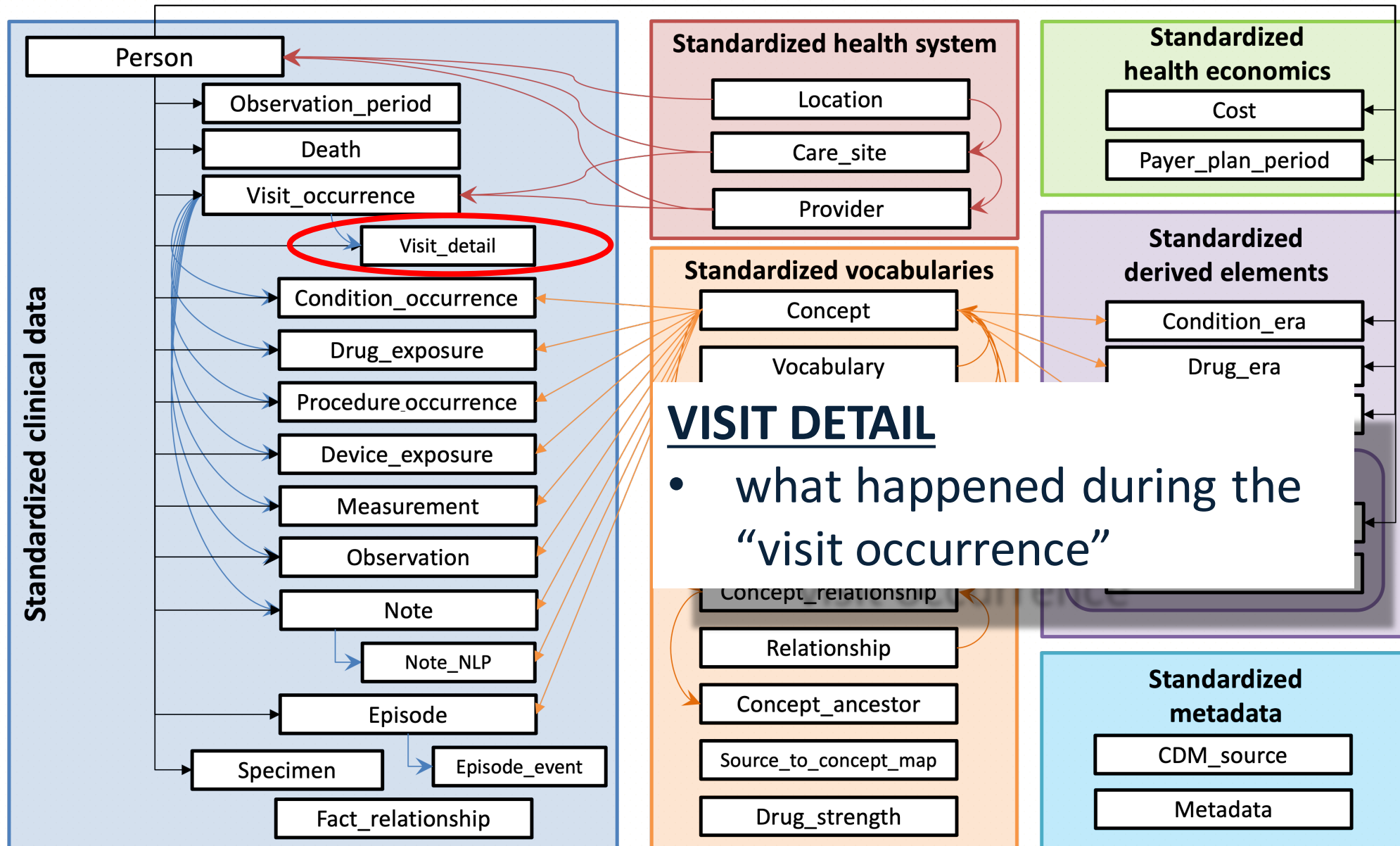
Medicare data in the OMOP Common Data Model



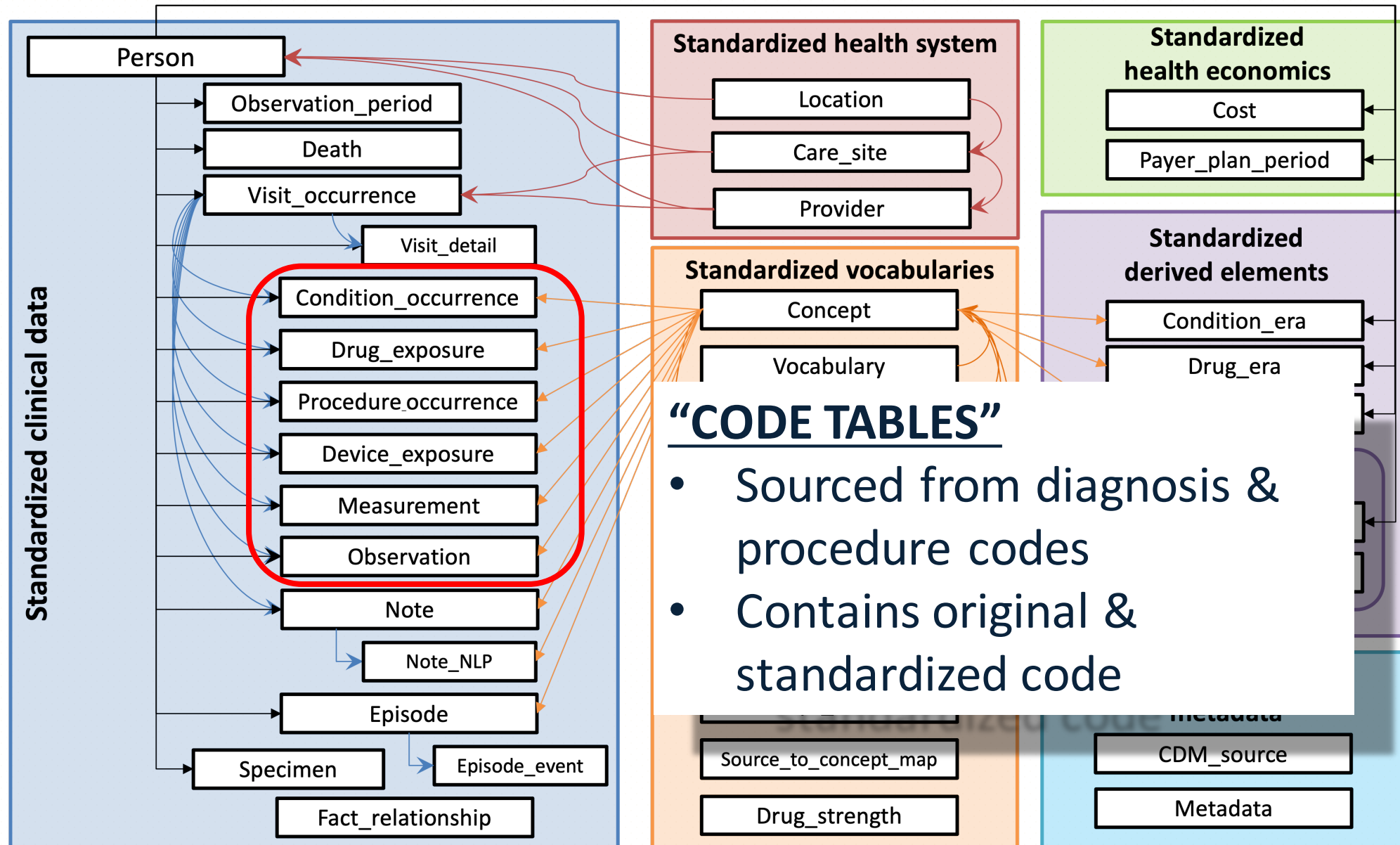
VISIT OCCURRENCE

- One record per healthcare “encounter”
- Examples: Inpatient Stay, LTC stay, OP visit, ER visit, Home visit, Laboratory visit

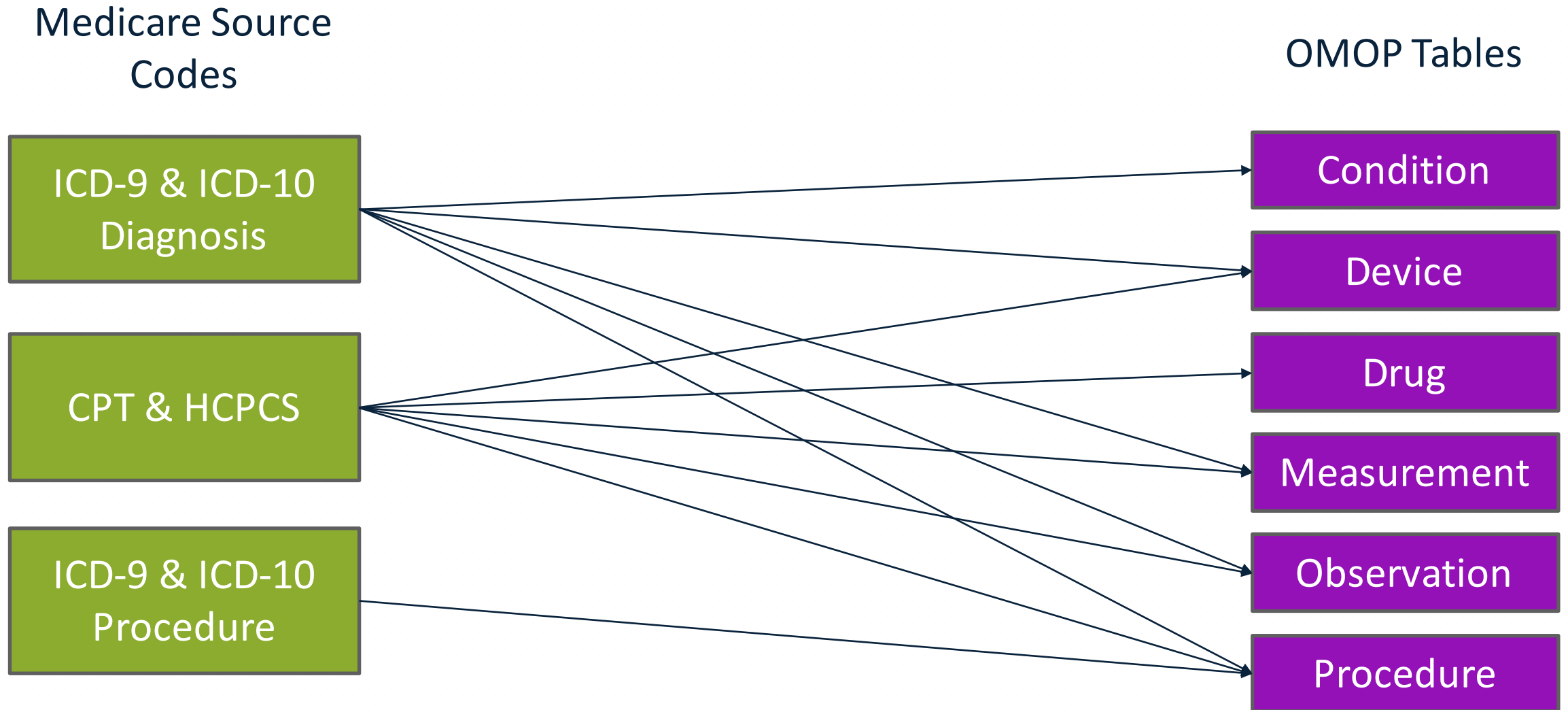
Medicare data in the OMOP Common Data Model



Medicare data in the OMOP Common Data Model



Organization of “Codes”



Most Frequent Codes

OMOP Table	Concept ID & Description	Value Concept ID & Description
Condition Occurrence	320128 (Essential hypertension)	
Device Exposure	2614966 (Syringe, with or without needle, each)	
Drug Exposure	35605564 (Epoetin Alfa Injection)	
Measurement	2212648 (Blood count; complete (CBC), automated (Hgb, Hct, RBC, WBC and platelet count) and automated differential WBC count)	0 (Missing; 99%) 4135493 (Abnormal)
Observation	4215685 (Past history of procedure)	0 (Missing; 68%) 4266367 (Influenza)
Procedure Occurrence	2414397 (Office or other outpatient visit for the evaluation and management of an established patient, Level 3, 15 minutes)	

Current Status of Medicare OMOP in the VHA

Current Version

Includes

- CY 1999-2019 Medicare data
- Sourced from
 - Medicare MBSF (enrollment), Vital Status, Primary Payer, Group Health Organization
 - MedPAR (Inpatient, Skilled Nursing Facilities)
 - Outpatient
 - Carrier
 - Part D (prescription drugs)

OMOP table	Records in 1999-2019 OMOP data
PERSON	23,835,485
OBSERVATION_PERIOD	23,835,485
DEATH	8,329,811
PAYER_PLAN_PERIOD	43,574,966
VISIT_OCCURRENCE	2,073,385,857
VISIT_DETAIL	5,022,973,358
CONDITION_OCCURRENCE	8,188,984,772
DRUG_EXPOSURE	1,227,919,969
PROCEDURE_OCCURRENCE	3,246,723,008
DEVICE_EXPOSURE	89,995,749
MEASUREMENT	1,193,560,579
OBSERVATION	1,052,039,773
CARE_SITE	1,876,226
LOCATION	13,421,327
PROVIDER	3,642,362

Next Release

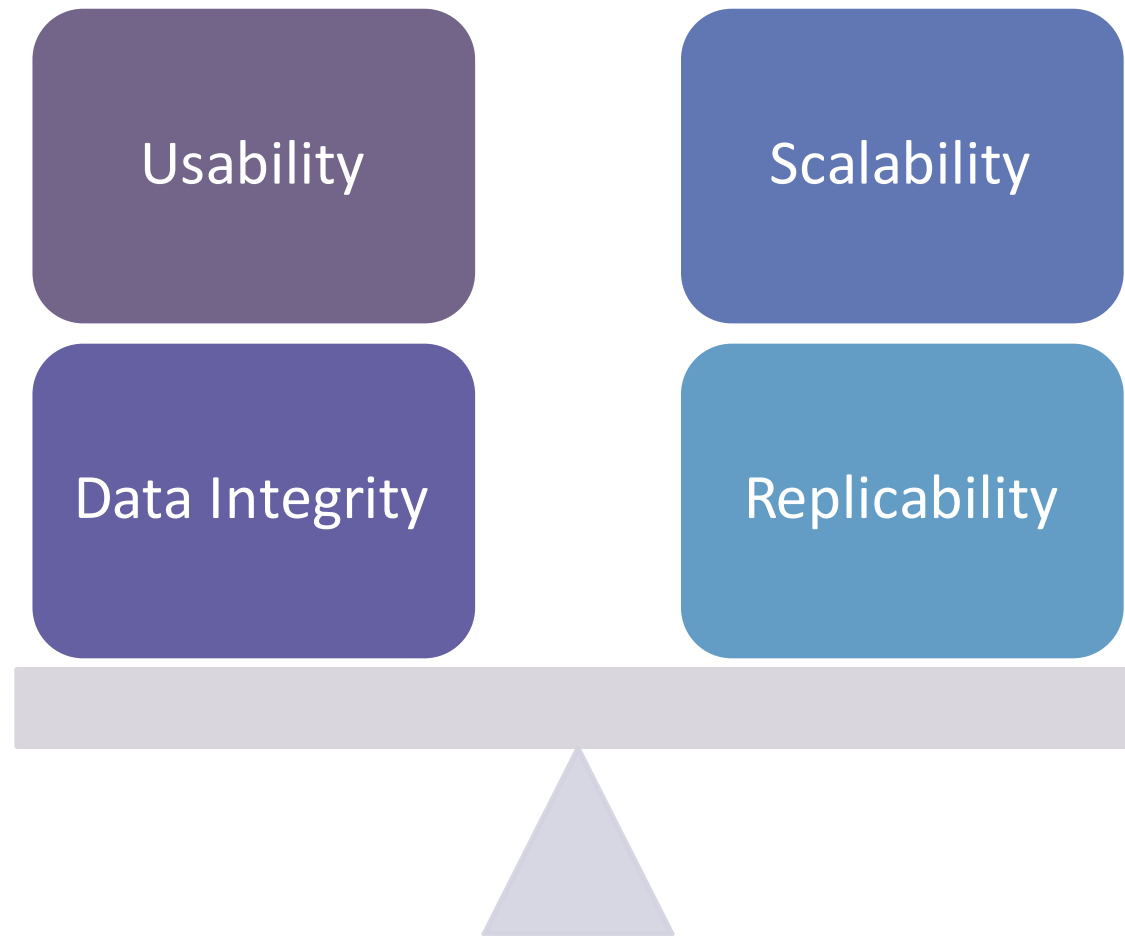
- Adds CY 2020 data
- Adds additional Medicare claims
 - Home Health
 - Durable Medical Equipment
 - Hospice
- Estimated availability summer 2022

Future data?

Type of data	Considerations
Medicare Advantage Encounter	Limited years available (2015-2019)
Medicaid	2 separate data formats MAX (1999-2015) TAF (2014-2020) State specific issues
MDS (Nursing home stays)	Overlaps with Medicare & Medicaid
US Renal Data System	ESRD-related care only (dialysis, transplants) Overlaps with Medicare

Challenges when Transforming Medicare Data into OMOP CDM

Factors in decision making



Person ID

- Unique identifier
 - Medicare data uses SSN based identifier (real or scrambled)
 - CDW data uses ICN (and others)
 - OMOP recommends use of a randomly assigned Person ID

- Goal
 - Use the same Person ID in the Medicare OMOP data as is used in the VA OMOP & DoD OMOP data

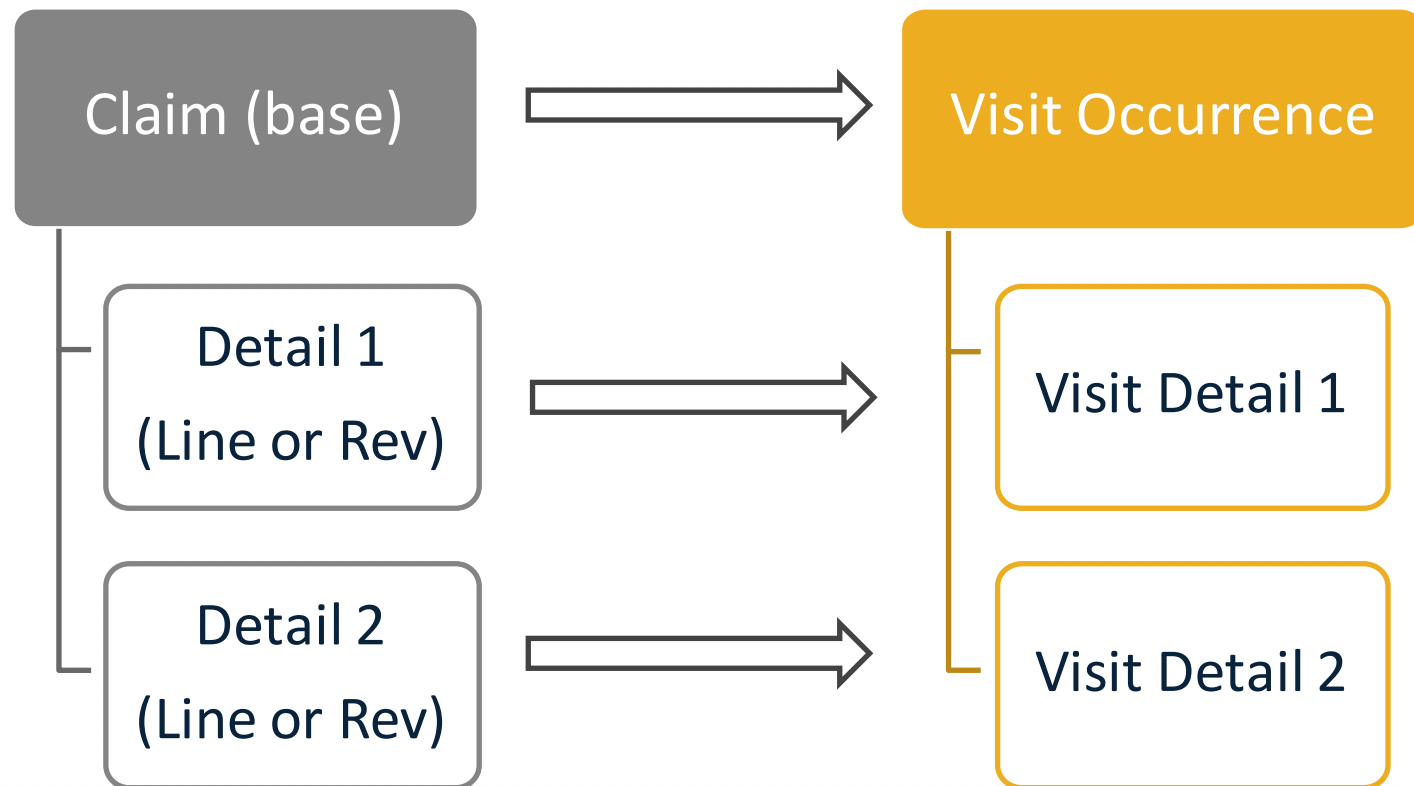
Problem: Not all Veterans in Medicare data are found in CDW

- 865k million scrambled SSNs
- Mostly VA compensation & pension recipients

Solution: New Person IDs were created

- Avoid overlaps with VA OMOP Person IDs
- Start with a high number (300,000,000,000)
- Reevaluate annually, to properly link data for Veterans new to VHA

Claims vs OMOP visits



1 claim = multiple visits

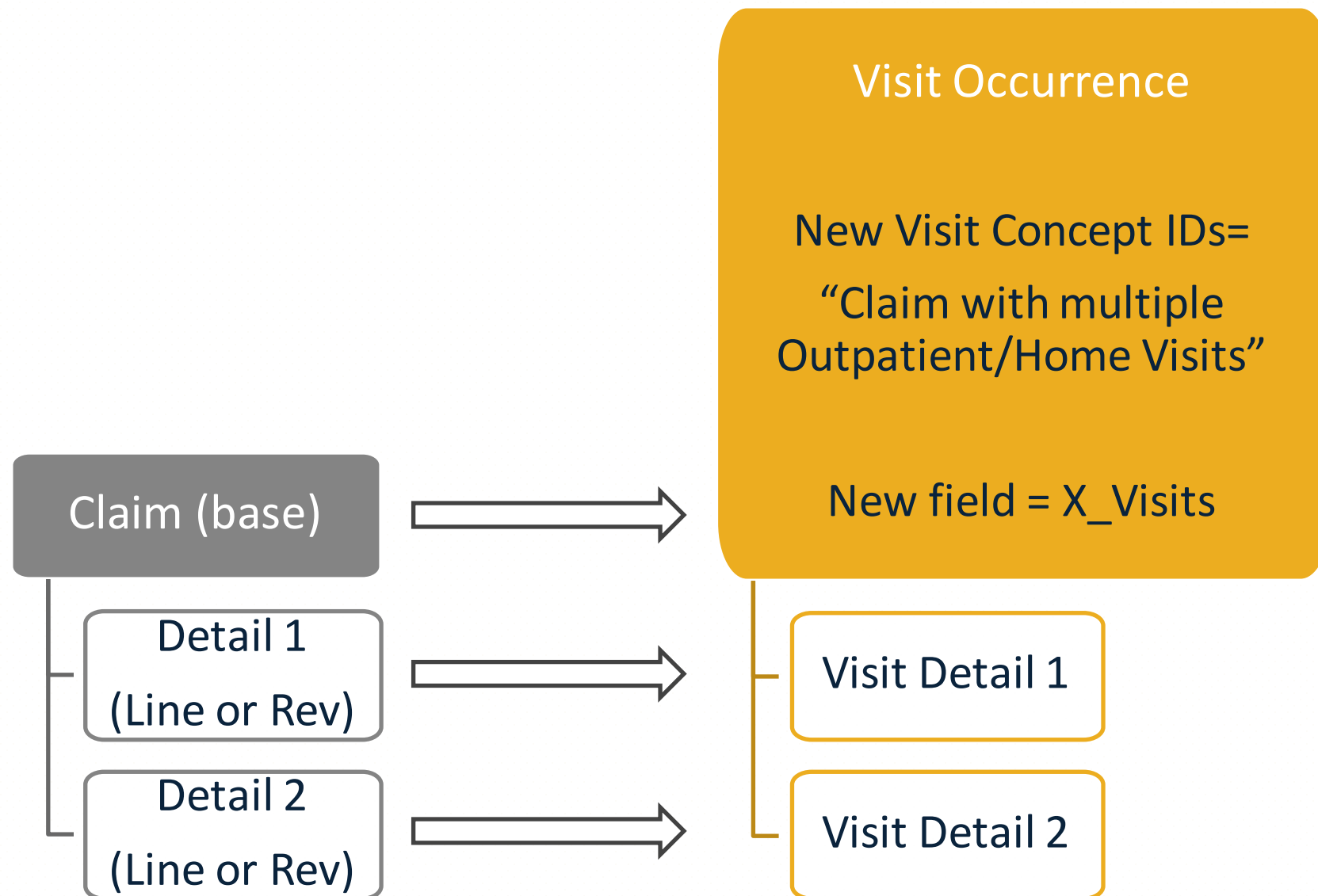
How frequent?

- 5% Carrier/Physician
- 10% Outpatient
- 96% Home Health

Can be complicated to convert claims to visits

- Some information exists only at the claim level
 - Diagnosis codes, costs
- Splitting claims into visits may involve imputing and/or duplicating information

OMOP transformation when 1 claim contains multiple visits



Multiple claims = 1 visits

Facility & Physician bill Medicare separately

How Frequent?

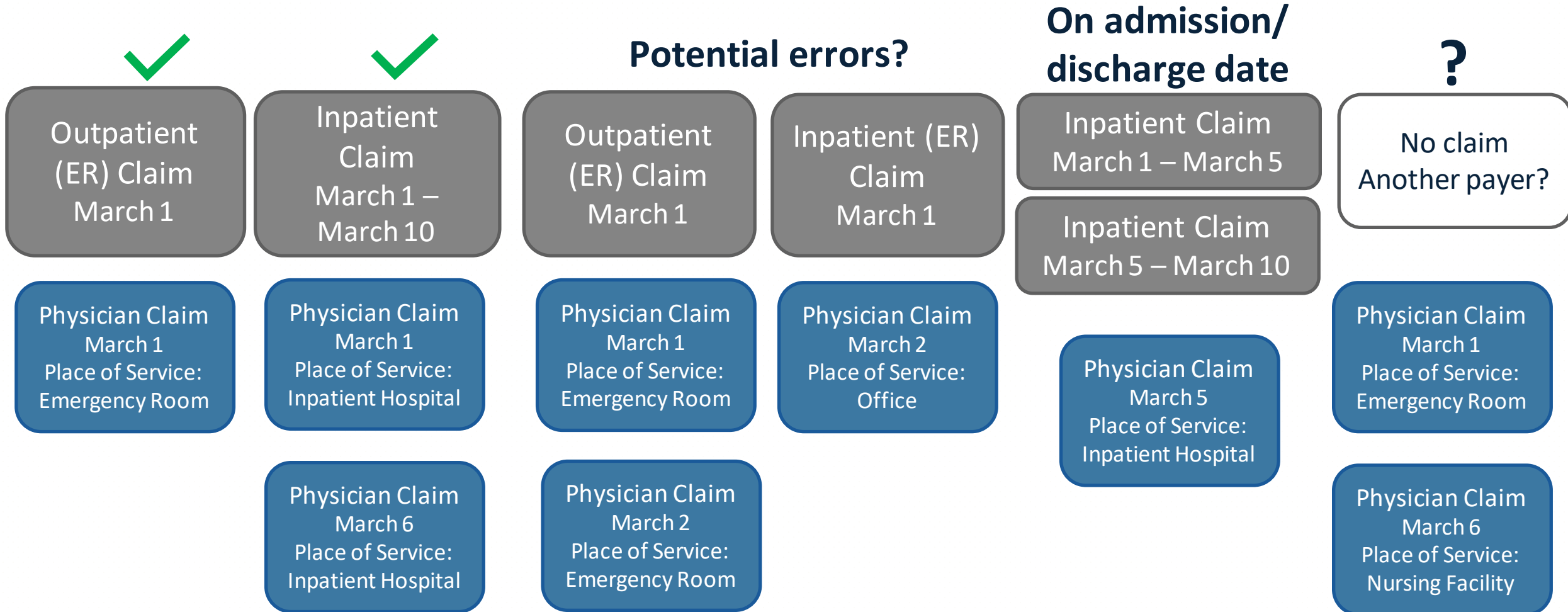
Carrier/physician claims have “place of service”

- 14% Inpatient Hospital
- 4% Emergency Room
- 3% Nursing Facility/SNF

Can be complicated to combine claims into a single visit

- No way to link facility + physician claims
- Can attempt to link using dates
 - How to handle claims on admission or discharge dates?
- Facility claim may be missing from Medicare data

Examples



OMOP transformation when facility & physicians bill separately

Inpatient, SNF or
ER Claim



Visit Occurrence

Physician Claim



Visit Occurrence

Where place of service =

Inpatient hospital

Skilled Nursing Facility

Nursing Facility

Custodial Care Facility

Hospice

Inpatient Psych Facility

Intermediate Care Facility

Residential Substance Abuse Treatment Facility

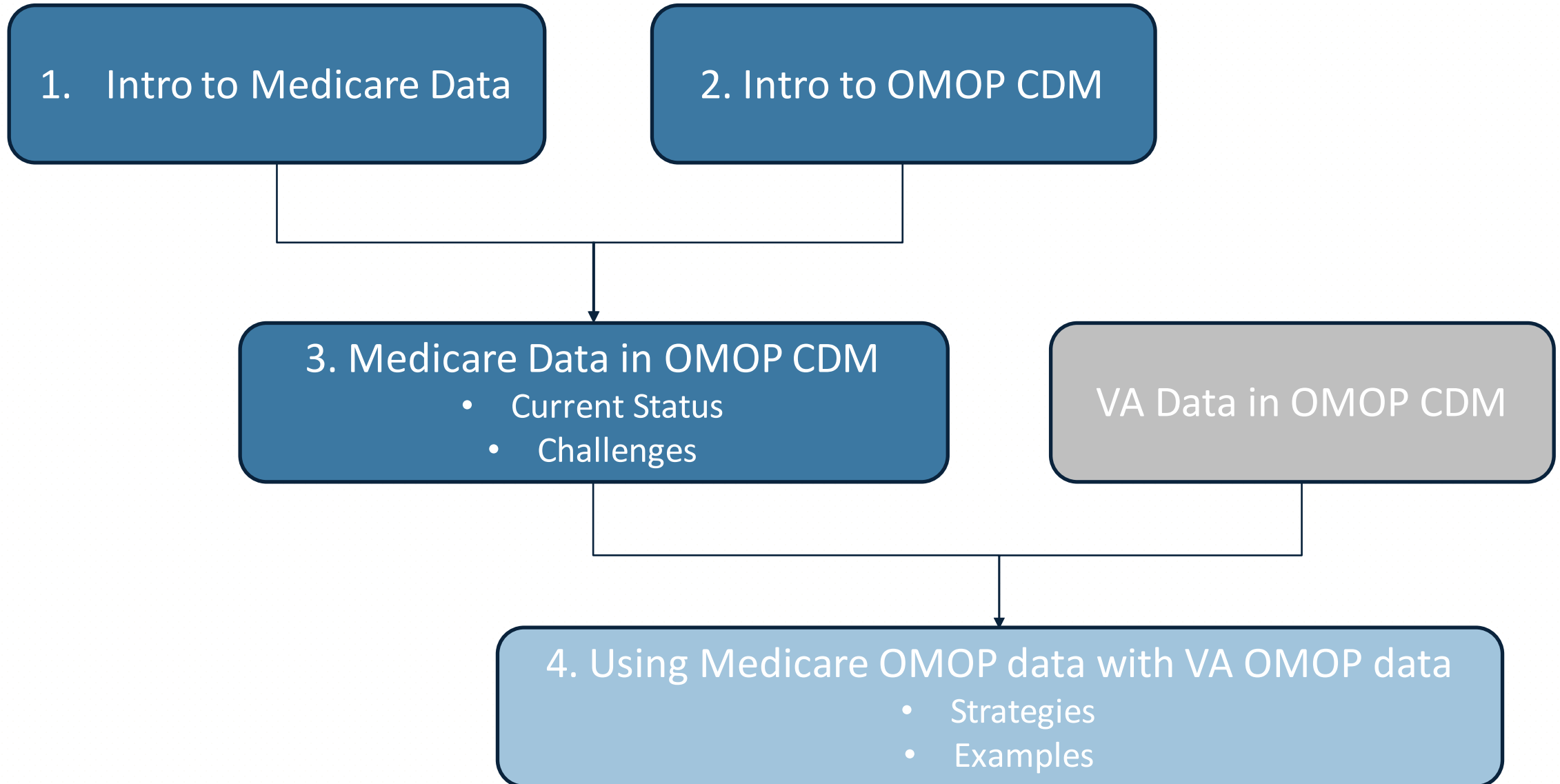
Psychiatric Residential Treatment Center

Comprehensive Inpatient Rehab Facility

New Visit Concept IDs=
“Service during facility stay”
“Service during ER visit”

Based on Place of Service code

Outline for today's presentation



Using multiple instances of OMOP data

VA OMOP

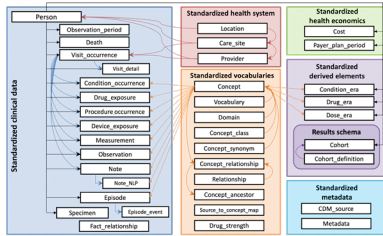
- CDW
- Fee

DaVINCI OMOP

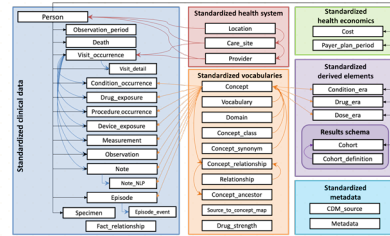
- DOD, Military Health System

CMS OMOP

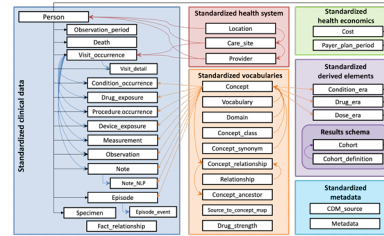
- Medicare
- More in future?



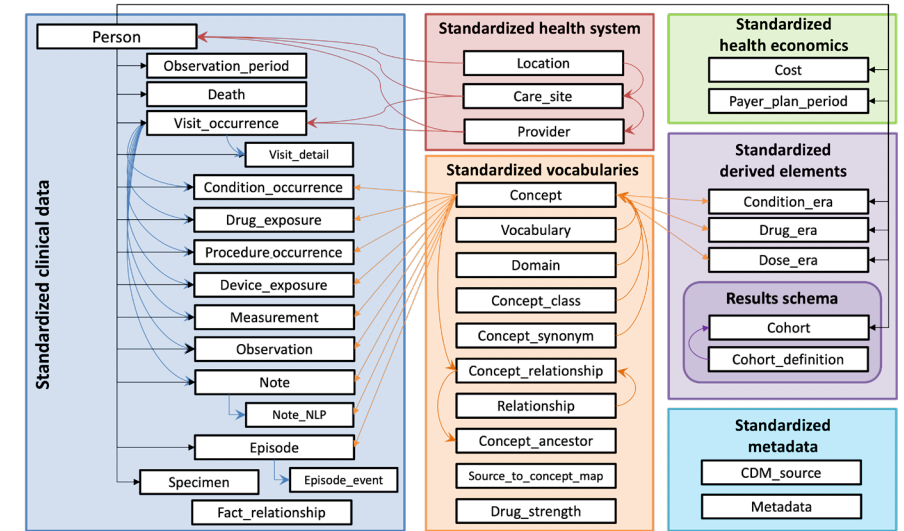
+



+



=



Considerations

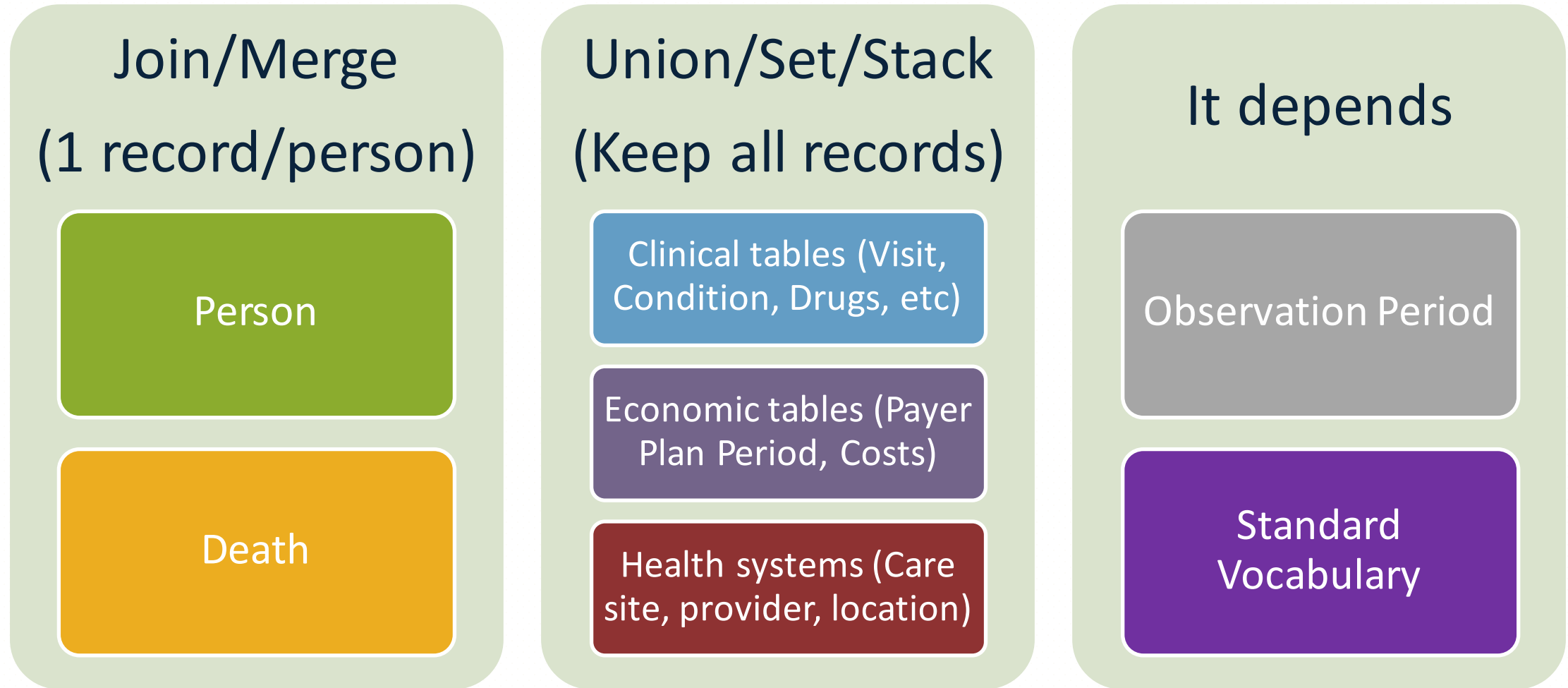
When **building** multiple OMOP instances

- Same Person ID in all 3 instances
- All other IDs are unique (non-overlapping)
- Use same version of OMOP vocabulary

When **using** multiple OMOP instances

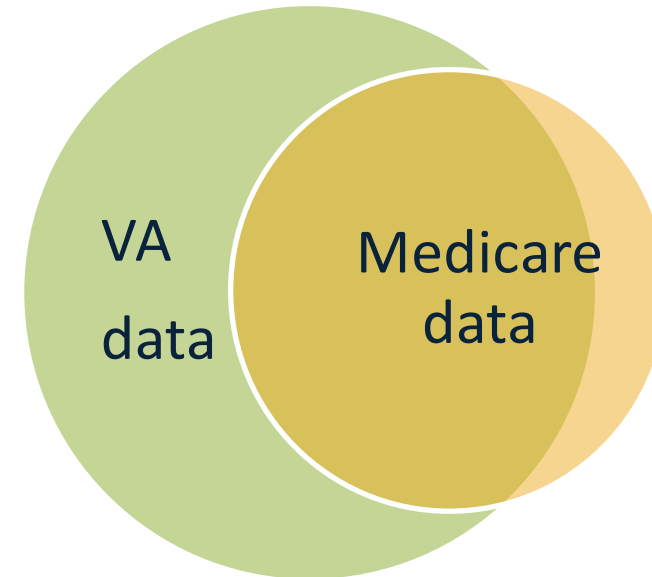
- Most tables should keep all records (union, stack, set)
- Some tables should have 1 record per person (join, merge)

How to combine the data



Example 1: Demographics

- Half of people in CDW will have data in Medicare
- ~94% of people in VA's Medicare data will have data in CDW
- Ideally only 1 OMOP Person table



Methods

Join/Merge

- VA OMOP Person table
- Medicare OMOP Person table

By Person_ID

VA DOB	VA Sex	VA Race	Person ID	Medicare DOB	Medicare Sex	Medicare Race
1/1/11	M	White	123456	1/1/11	M	White
2/2/22	M	Black	234567			
			345678	3/3/33	F	Asian
4/1/44	M	AI/AN	456789	4/4/44	M	White



	VA data only	In VA and Medicare	Medicare data only
Person ID	12,215,287 (46%)	13,673,926 (51%)	865,028 (3%)

	Matched	Missing in VA or Medicare	Doesn't match
Sex	99.1%	0.1%	0.8%
Date of Birth (Full)	93.4%	-	6.6%
Date of Birth (2 parts)	97.6%	-	2.4%
Race	52.7%	46.3%	1.0%
Ethnicity	2.1%	97.2%	0.7%

Example 2: Conditions

- Some Veterans have conditions diagnosed only in Medicare data
- Important to add Medicare diagnoses when studying VA users
- Problem: Burdensome

BRIEF REPORT

Comorbidity Assessment Is Uneven Across Veterans Health Administration and Medicare for the Same Patient

Implications for Risk Adjustment

Risha Gidwani-Marszowski, DrPH,†‡ Derek Boothroyd, PhD,§ Jack Needleman, PhD,‡
Samantha Illarino, MPH,* and Steven M. Asch, MD, MPH†||*

Medical Care 2020; 58: 717-721

CDW Tables to search

EDIS_EDISLogDischargeDiagnosis
 Fee_FeeInpatInvoiceICDDiagnosis
 Fee_FeeInpatInvoiceICDProcedure
 Fee_FeeServiceProvided
 IB_BillClaimProcedure
 Immun_Immunization
 Inpat_Inpatient
 Inpat_InpatientDiagnosis
 Inpat_InpatientFeeDiagnosis
 Inpat_InpatientICDProcedure
 Inpat_InpatientSurgicalProcedure
 Inpat_PatientTransferDiagnosis
 Inpat_SpecialtyTransferDiagnosis
 Outpat_ProblemList
 Outpat_VDiagnosis
 Outpat_VProcedureDiagnosis
 Rad_RadiologyNuclearMedicineOrder
 Surg_SurgeryOtherPostOpDiagnosis
 Surg_SurgeryPRE
 Surg_SurgeryPrincipalAssociatedDiagnosis
 Surg_SurgeryProcedureDiagnosisCode

Searching Diagnosis Codes without OMOP

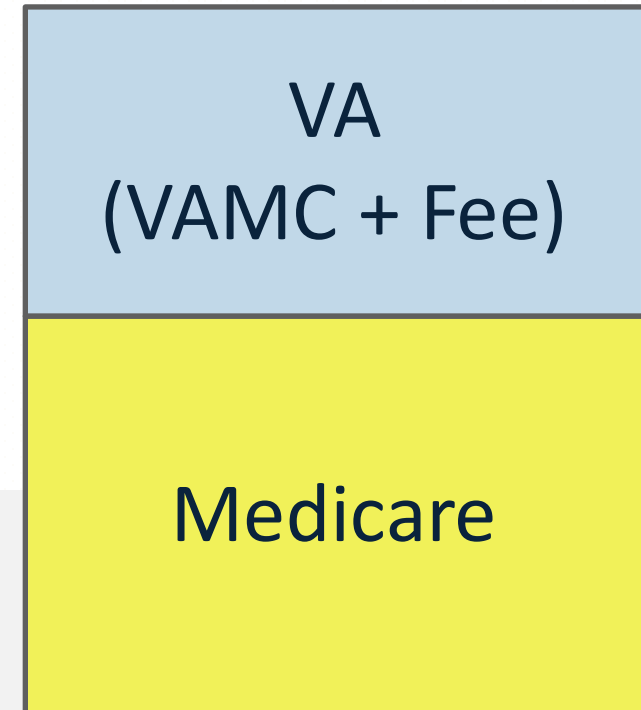
Medicare datasets & variables to search

IP_base – ADMTG_DGNS_CD, ICD_DGNS_CD_1 - ICD_DGNS_CD_25
 SN_base – ADMTG_DGNS_CD, ICD_DGNS_CD_1 - ICD_DGNS_CD_25
 OP_base – ICD_DGNS_CD_1 - ICD_DGNS_CD_25
 CA_base – ICD_DGNS_CD_1 - ICD_DGNS_CD_12
 CA_line – LINE_ICD_DGNS_CD
 DM_base – ICD_DGNS_CD_1 - ICD_DGNS_CD_12
 DM_line – LINE_ICD_DGNS_CD

Methods

Union All (Stack)

- VA OMOP Condition Occurrence table
- Medicare OMOP Condition Occurrence table



Code to Select Conditions Using OMOP

```
SELECT DISTINCT [PERSON_ID]
FROM ( SELECT [PERSON_ID] FROM [DB].[OMOPV5_CONDITION_OCCURRENCE]
      UNION ALL
      SELECT [PERSON_ID] FROM [DB].[OMOP_CMS_CONDITION_OCCURRENCE]
      WHERE [CONDITION_CONCEPT_ID]=123) AS NEWTABLE
```


Sample Results

Patients with Condition in CY2016 VA and/or Medicare data

Concept ID	Patients found in VA data only	Additional patients found when adding Medicare data
193782 (ESRD)	33,950	49,740 (↑ 147%)
25573 (COPD)	545,366	501,254 (↑ 92%)
4193704 (Type 2 diabetes w/o comp)	1,211,776	787,337 (↑ 65%)
436676 (PTSD)	454,163	57,348 (↑ 13%)

Medicare & OMOP Resources


The VA/CMS Data for Research Project is based at VIREC, the data steward for CMS data used for VA research.

- Distributing data from Centers for Medicare & Medicaid Services (CMS) to VA approved projects since 2003
- Providing assistance to VA research projects using CMS data
- No cost to VA researchers

<https://vaww.virec.research.va.gov/Index-VACMS.htm> (VA intranet only)



Requesting Medicare data (including OMOP)



[Open Advanced Search](#)

VA INFORMATION RESOURCE CENTER (VIREC)

VIREC Home

VA/CMS Home

About Us

Updates

Publications

Education

FAQs

Help

New Request for VA/CMS Data

Process Overview

The following is an overview of the process for submitting a new VA/CMS data request for a project that does not have a Data Use Agreement (DUA) with VIREC. This process takes approximately 1-2 months from receipt of all required documents to delivery of the data.

Important! Do not follow this request process if you need additional data for a research project that is already using VA/CMS data and has a DUA with VIREC. Submit a [Request for Additional VA/CMS Data](#).

Step	Action
1. (Optional)	A study team member requests a Pre-Request consultation (highly recommended for new VA/CMS users).
2.	The project submits the unsigned request forms (excluding VA/CMS Rules of Behavior forms) to VIREC for review. VIREC provides corrections to forms, and/or asks the project to schedule a Pre-Request Consultation, if applicable. VIREC signs and returns the Data Description form for the project to obtain local signatures.
3.	The project obtains the required signatures on the request forms, including VA/CMS Rules of Behavior (ROB) signed by project staff, and submits the completed and signed VA/CMS data request forms to VIREC.
4.	VIREC re-reviews VA/CMS data request forms. If no issues are identified, VIREC requests a cohort or finder file from the researcher, if applicable.
5.	VIREC prepares the data and provides the PI with the Data Use Agreement (DUA) for signature.
6.	PI returns the signed DUA to VIREC. After a final review, VIREC releases the data to the project.



Forms & Required Documents

The following documents are required when submitting a new VA/CMS data request for a project that does not have a DUA with VIREC. Email the completed documents to virec.vacmsdata@va.gov.

Important! When projects are engaged in research at multiple sites, each project site with staff who will have access to VA/CMS data is required to submit a complete set of the documents below.

General Resources

- [Learn about VA/CMS Data](#)
- [Non-Repository Data](#)
- [Provider Data](#)
- [Cohorts & Identifiers](#)
- [Requests](#)
- [Current Data Users](#)

DATA DESCRIPTION CMS/USRDS Data for Veterans Only

Instructions:

- This form is used to request data from the Centers for Medicare and Medicaid Services (CMS) and United States Renal Data Systems (USRDS) for use in VA research.
- This form should be used when a project is requesting VA/CMS Repository Data for the VHA cohort.
- A new form should be used for each study cohort/finder file requested.
- Researchers are encouraged to arrange a [pre-request consultation](#) for assistance in completing this form.
- This form must be reviewed by VIREC prior to obtaining other signatures. The form can be sent to VIREC at virec.vacmsdata@va.gov.
- Both wet and electronic signatures are accepted.

Section 1: General Information

VIREC Project ID (ex: Jones-01) (if known)		<input type="text"/>
Principal Investigator		<input type="text"/>
Project Title		<input type="text"/>
Facility Name		<input type="text"/>
City	<input type="text"/>	State <input type="text"/>
Are you requesting data to be delivered to: (select only one)		<input type="checkbox"/> VINCI SAS Grid. Provide name of VINCI workspace: <input type="text"/> <input type="checkbox"/> Non-VINCI server. Please provide: Name of server: <input type="text"/> DART ID, to facilitate data transfer: <input type="text"/>

How many subjects has the IRB approved for inclusion in this project? (Numbers only)

Please note that:

- An IRB amendment and Privacy Officer approval will be required prior to data release if the number of subjects included in either the finder file or the data requested is larger than the number of subjects listed here.
- Projects requesting a large number of subjects will be asked to provide justification.

Contact VIREC prior to completing this form if this request is for approval to use CMS or USRDS data that has already been provided to:

- Another research project or research data repository
- A VHA program office or VHA operations project

<https://vaww.virec.research.va.gov/VACMS/Requests/Initial-Data-Request.htm> (VA Intranet only)

Medicare OMOP Documentation

- VA/CMS Home page -> Medicare -> Resources
<https://vaww.virec.research.va.gov/VACMS/Medicare/Data-Specifications-Medicare-OMOP.pdf>

VIReC's Medicare data in the OMOP Common Data Model
*Enrollment/Demographics, Inpatient, Skilled Nursing Facility,
 Outpatient, Carrier, and Part D data*

Data Specifications

November 2021
 Version 1.2

Table Name: **CONDITION_OCCURRENCE**

Records: 8,188,984,972

Description:

The Condition Occurrence table contains one record for each condition, found as diagnosis codes in the Medicare claims data.

More information about Condition Occurrence table:

https://ohdsi.github.io/CommonDataModel/cdm53.html#condition_occurrence

Data Transform Logic:

- Records in the CONDITION table are sourced from ICD-9 and ICD-10 diagnosis codes. These codes are represented in the CONDITION table using SNOMED standardized codes.
- ICD-9 and ICD-10 codes were sourced from the following Medicare files:
 - CA_BASE
 - CA_LINE
 - OP_BASE
 - IP_BASE
 - SN_BASE
 - MEDPAR
- The codes in Medicare claim files are mapped to standard concepts in the standardized vocabularies as described in the mapping administrative codes to OMOP clinical data tables section, and concepts in the CONDITION domain are loaded into the CONDITION_OCCURRENCE table.

OMOP Field Transform Logic:

OMOP Field	Source Data	Source Field	Comment
CONDITION_OCCURRENCE_ID			Primary key, auto-generated
PERSON_ID		SCRSSN	Foreign key to Person table. See explanation within PERSON table.
CONDITION_CONCEPT_ID			Standard concept ID mapped from "CONDITION_SOURCE_VALUE"
CONDITION_START_DATE	MedPAR	ADMSN_DT	
	IP/SN/OP/CA Base	FROM_DT	
	CA Line	EXPNSDT1	
CONDITION_START_DATETIME			Same as CONDITION_START_DATE

Learn more about CMS & Medicare data

VIReC (links are VA intranet only)

- Medicare <https://vaww.virec.research.va.gov/VACMS/Medicare/Data.htm>
- CMS data available from VIReC
<https://vaww.virec.research.va.gov/VACMS/Intro/Data-Available.htm>
- Cyberseminars on using Medicare data in VA
<https://vaww.virec.research.va.gov/VACMS/Education/Overview.htm>

External support for CMS data users

- ResDAC - <https://www.resdac.org/>
- CCW - <https://www2.ccwdata.org/>

Learn more about OMOP CDM

Observational Health Data Sciences and Informatics (OHDSI)

- <https://www.ohdsi.org/>

OMOP CDM documentation

- <https://github.com/OHDSI/CommonDataModel/wiki>

Athena – search standardized vocabularies

- <http://athena.ohdsi.org/>

Learn more about other OMOP data

VA OMOP Academy

- https://vincicentral.vinci.med.va.gov/SitePages/VINCI_University-OMOP_Academy.aspx (VA intranet only)

DaVINCI (DoD/Military Health System Data Repository) Data Academy

- https://vincicentral.vinci.med.va.gov/SitePages/VINCI_University-DaVINCI_Academy.aspx (VA intranet only)

Thank you!
Questions?



Contact Information

Kristin de Groot, MPH

Project Director

VA/CMS Data for Research Project

kristin.degroot@va.gov

VA Information Resource Center

Hines VA Hospital

virec@va.gov

708-202-2413





VIReC CMS Data Mini-Series

**Next session:
July 12th at 3 pm Eastern**

Medicaid data in VA Research

Additional Resources

Quick links for VA data resources

Quick Guide: Resources for Using VA Data

<https://vaww.virec.research.va.gov/Toolkit/QG-Resources-for-Using-VA-Data.pdf> (VA Intranet)

VIReC: <https://vaww.virec.research.va.gov/Index.htm> (VA Intranet)

VIReC Cyberseminars: <https://www.virec.research.va.gov/Resources/Cyberseminars.asp>

VHA Data Portal: <https://vaww.vhadataportal.med.va.gov/Home.aspx> (VA Intranet)

VINCI: <https://vaww.vinci.med.va.gov/vincicentral/> (VA Intranet)

Health Economics Resource Center (HERC): <https://vaww.herc.research.va.gov> (VA Intranet)

CDW: <https://vaww.cdw.va.gov/Pages/CDWHome.aspx> (VA Intranet)

Archived cyberseminar: What can the HSR&D Resource Centers do for you?

https://www.hsr.d.research.va.gov/for_researchers/cyber_seminars/archives/video_archive.cfm?SessionID=1014

HSRData Listserv

- Community knowledge sharing
- ~1,400 VA data users
- Researchers, operations, data stewards, managers
- Subscribe by visiting <https://vaww.virec.research.va.gov/Support/HSRData-L.htm> (VA Intranet)

VIReC HelpDesk

- Individualized support



virec@va.gov



Options for
Questions
(Supported by VIReC)