

 CMS DATA MINI-SERIES

Session 2:

# Medicare data in the OMOP Common Data Model

January 10th, 2023



Hosted by 

Kristin de Groot, MPH

Project Director, VA/CMS Data for Research Project

VA Information Resource Center (VIReC)



# CMS DATA CYBERSEMINAR 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 CMS DATA SESSIONS

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

Date	Topic
4/11/23	Deeper Dive into Medicare Data
7/11/23	TBD

Visit the [VIReC Cyberseminars](#) page for more information & registration links.

Visit [HSR&D's VIReC Cyberseminar Archive](#) page to watch previous sessions.

Where can I  
download a  
copy of the  
slides?

VA HSR&D

CYBERSEMINARS



## SAMPLE EMAIL

**A Practical Approach to Working with VA-Purchased Community  
Care Data**

Thursday, October 13, 2022

2:00 PM | (UTC-04:00) Eastern Time (US & Canada) | 1 hr

Please download today's slides

~~Please click here for today's live captions~~

Join webinar

More ways to join:

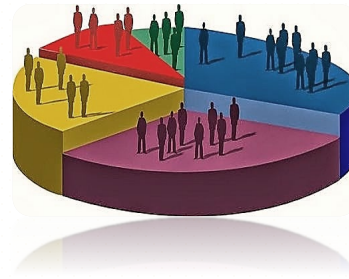
Join from the webinar link

<https://veteransaffairs.webex.com/veteransaffairs/j.php?>

## Poll #1:

*What is your primary role in projects using VA data?*

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



## Poll #2:

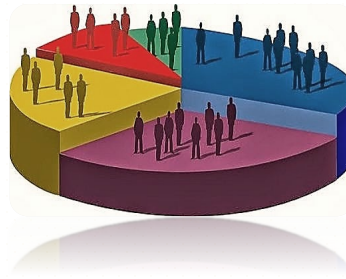
*How many years of experience working with VA data?*

- 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

## Poll #3:

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

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



## Poll #4:

*How would you rate your knowledge of Medicare data?*

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



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# VIReC-VINCI Partnership

VA/CMS Data for Research Project



VINCI's OMOP Initiative



Kristin de Groot

Lucy Zhang

Maria Souden



Daniel Park

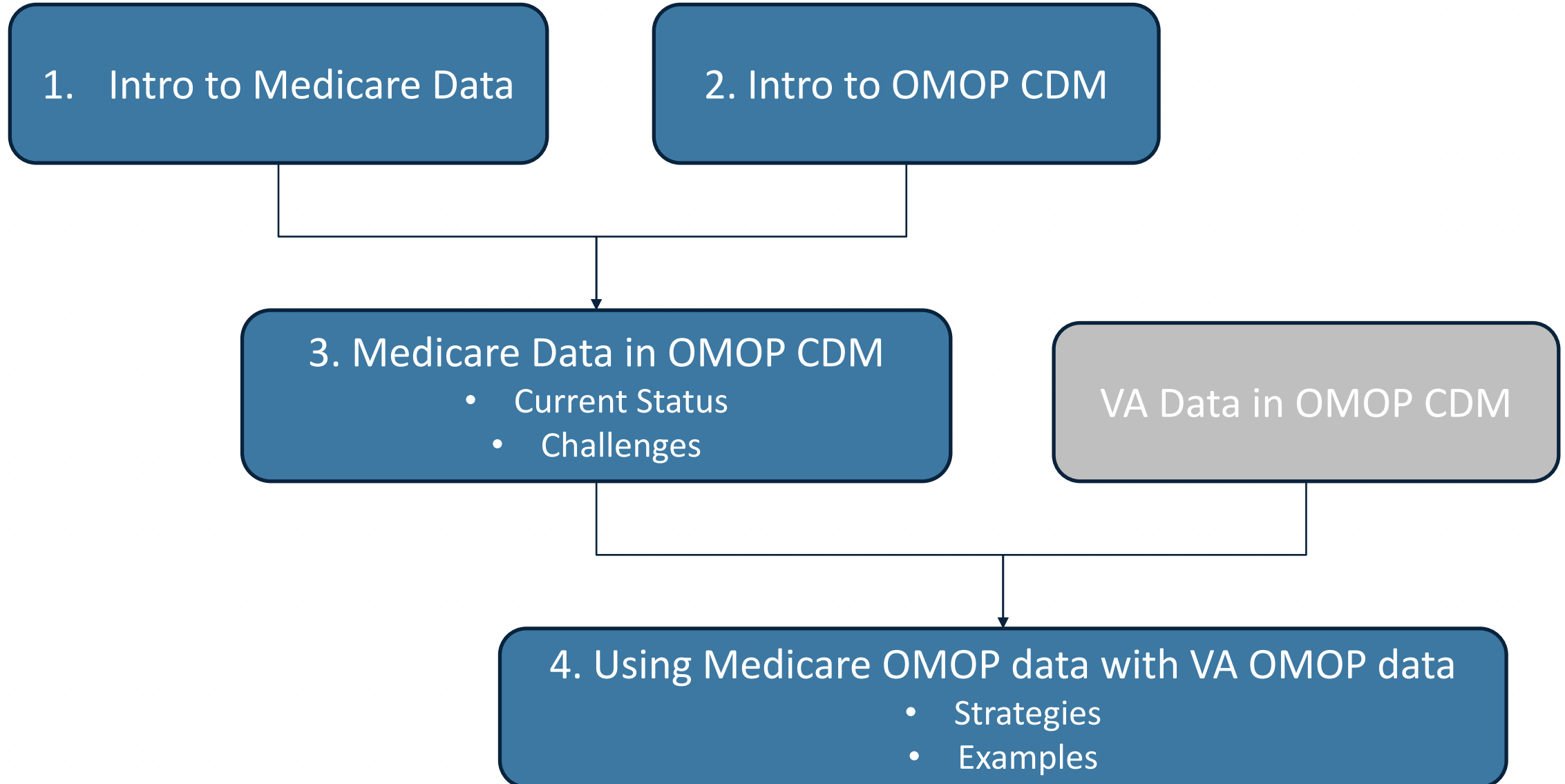
Robert Winter

Michael Matheny

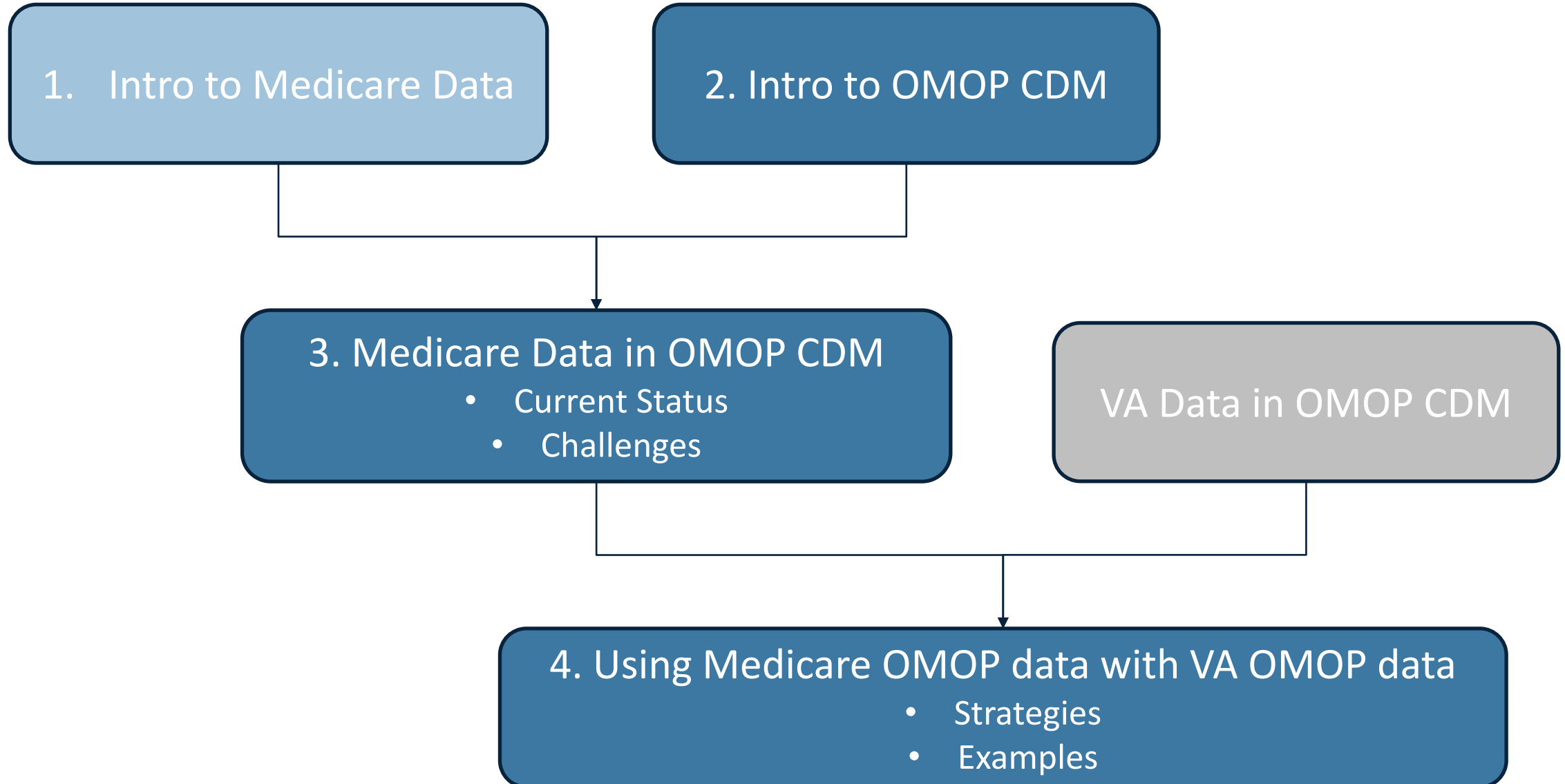
Scott DuVall



# Outline for today's presentation



# Outline for today's presentation

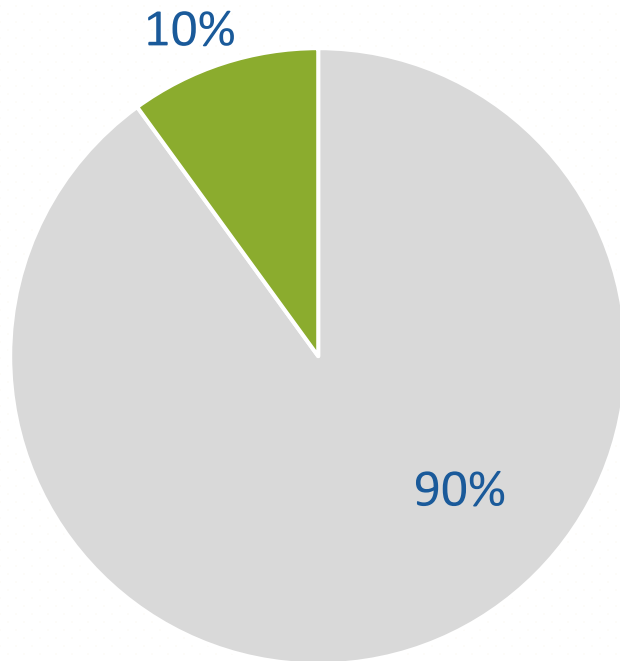


# Veterans' Enrollment in Medicare

*Percent of VHA Enrollees in Medicare in September 2020*

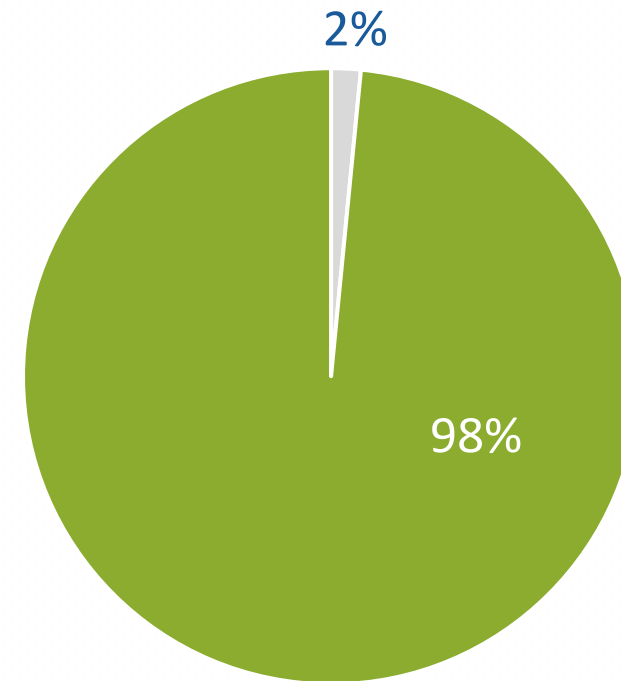
**Veterans age <65**

*N = 4.5 million*



**Veterans age 65+**

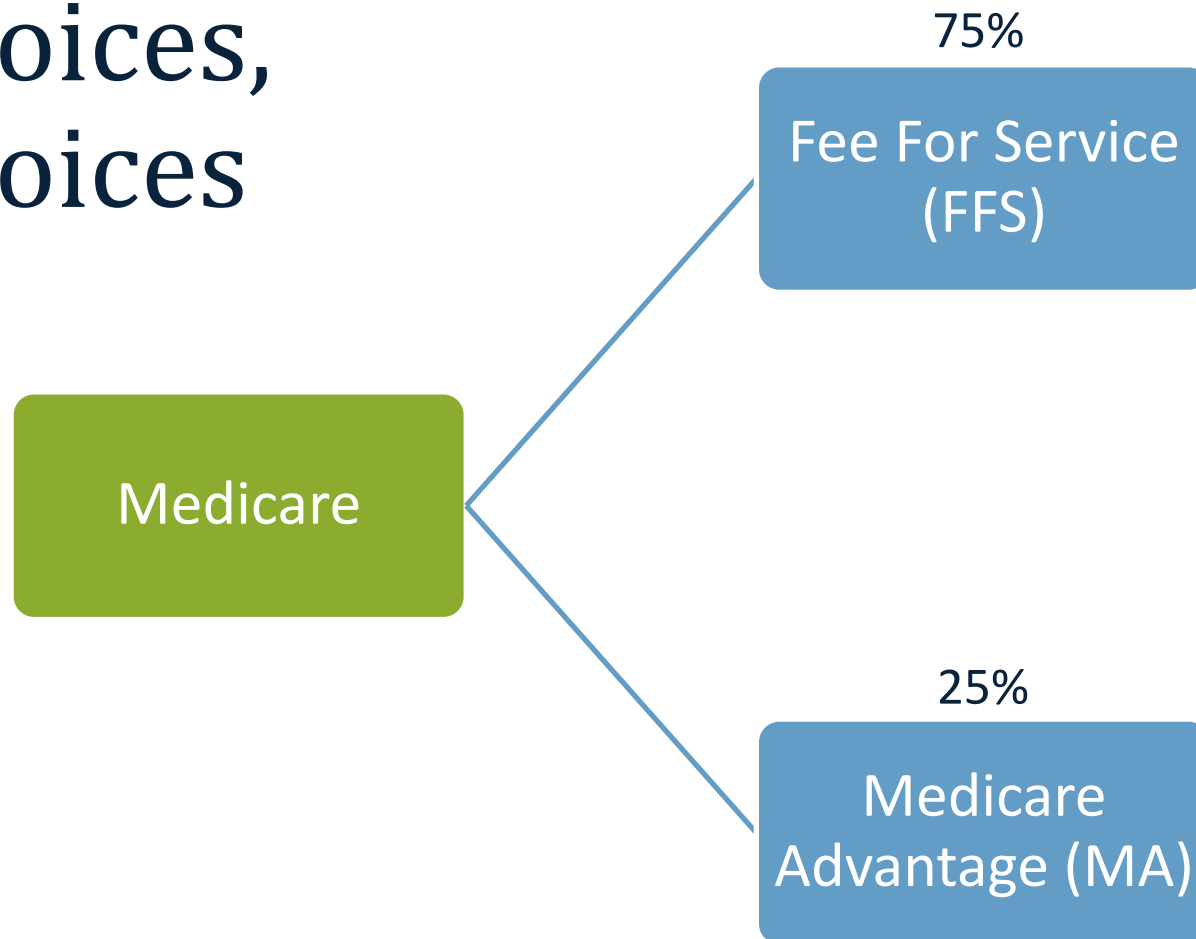
*N = 4.35 million*



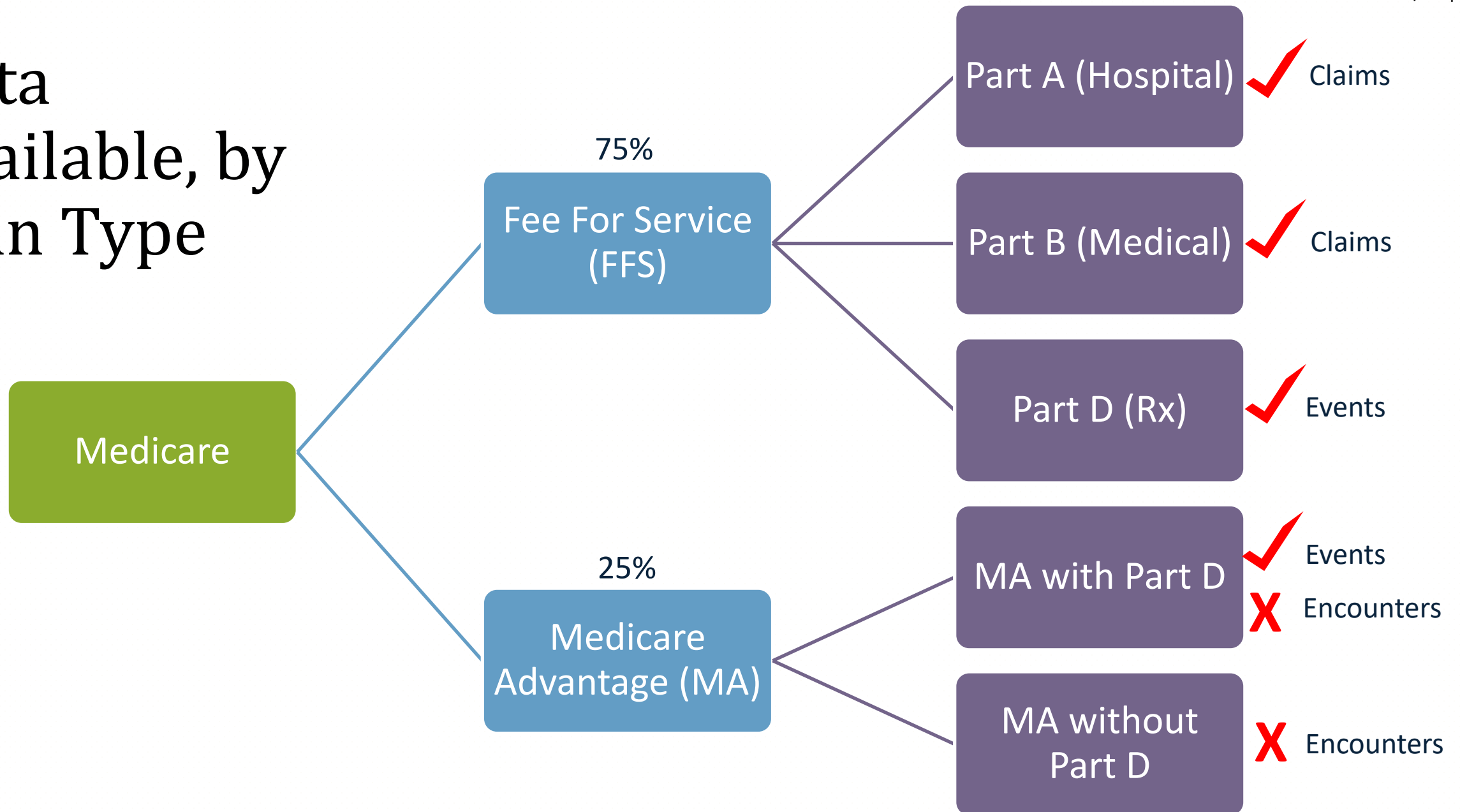
 VHA only

 VHA + Medicare

# Choices, Choices, Choices

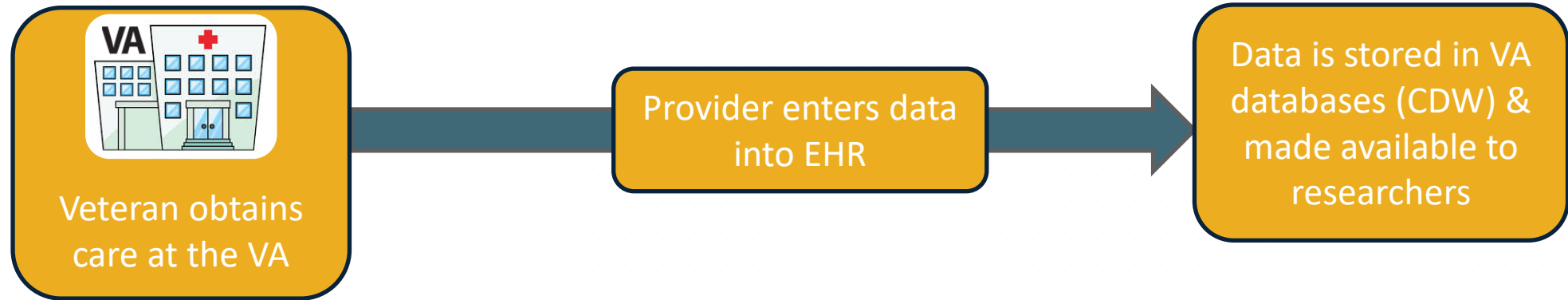


# Data Available, by Plan Type

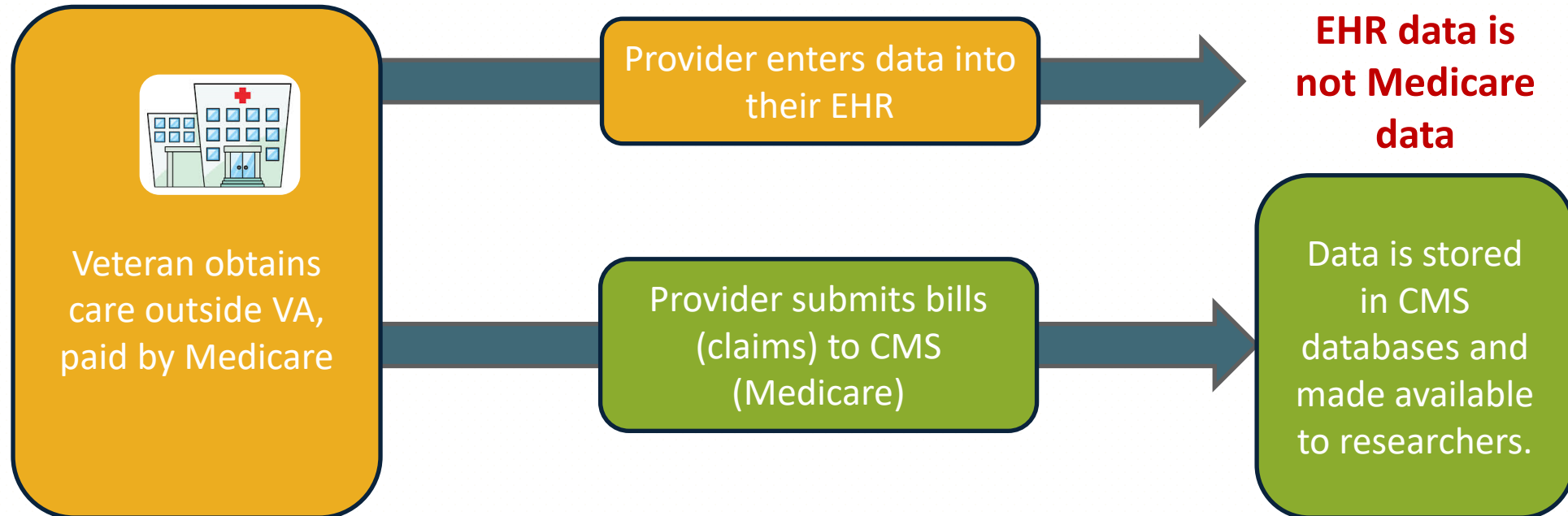


# Source of VA and Medicare Utilization Data

## VA Data Flow



## Medicare Data Flow



Type of Provider



Type of Claim Form



Type of Claim File

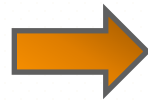
### Institutional



Hospital or  
nursing  
facility



Home health  
agency or hospice



**CMS 1450/  
UB-04**



### 5 Institutional Claim Files

Inpatient  
Skilled Nursing Facility  
Home Health  
Hospice  
Outpatient

### Non-Institutional



Clinical  
laboratories



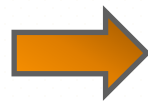
Individual  
physicians,  
chiropractors,  
other  
providers



Physician  
groups



Ambulances



**CMS 1500**



### 2 Non-Institutional Claims Files

Carrier/Physician  
Durable Medical Equipment



# What does a claim represent?

1 claim = multiple  
visits

1 claim = 1 visit

Multiple claims = 1  
visit



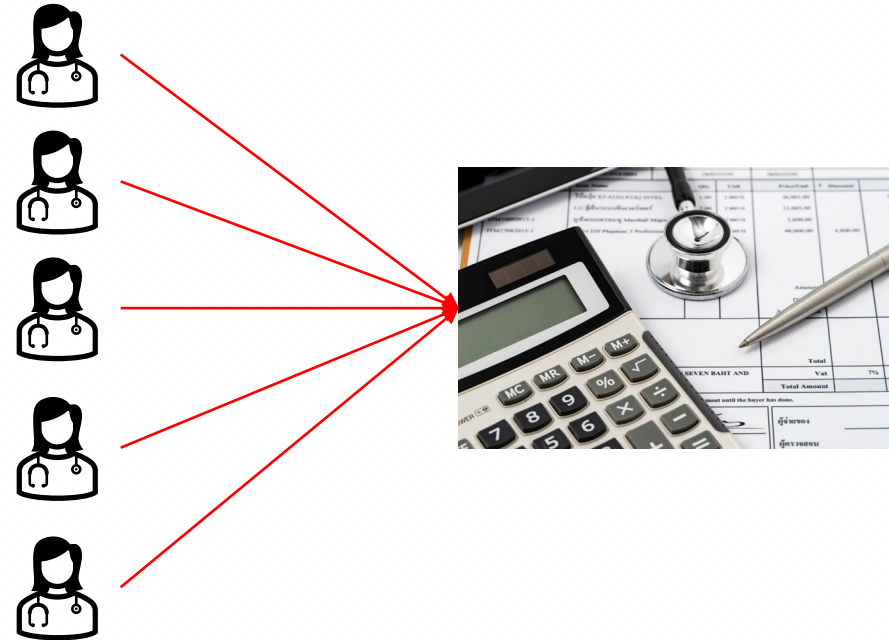
# 1 claim = multiple visits

Single claim is used for multiple encounters with

- same provider
- same purpose
- short time period

## Examples

- Physical therapy
- Dialysis
- Home healthcare

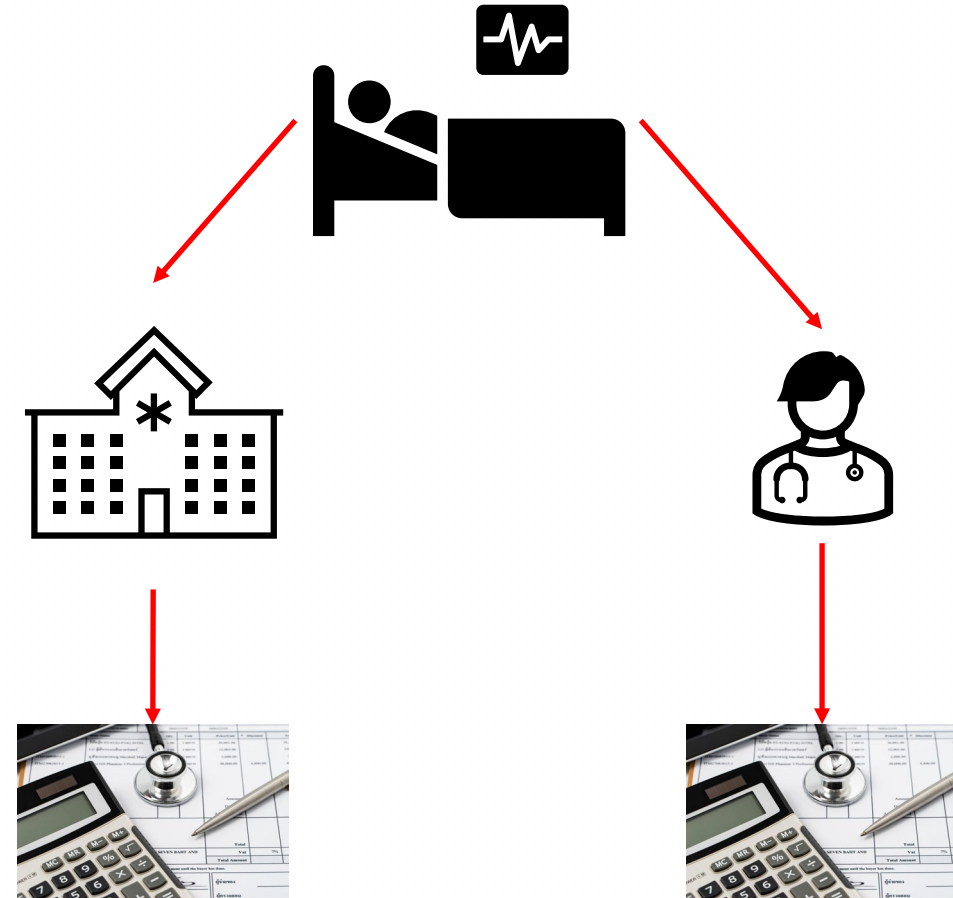


# Multiple claims = 1 visits

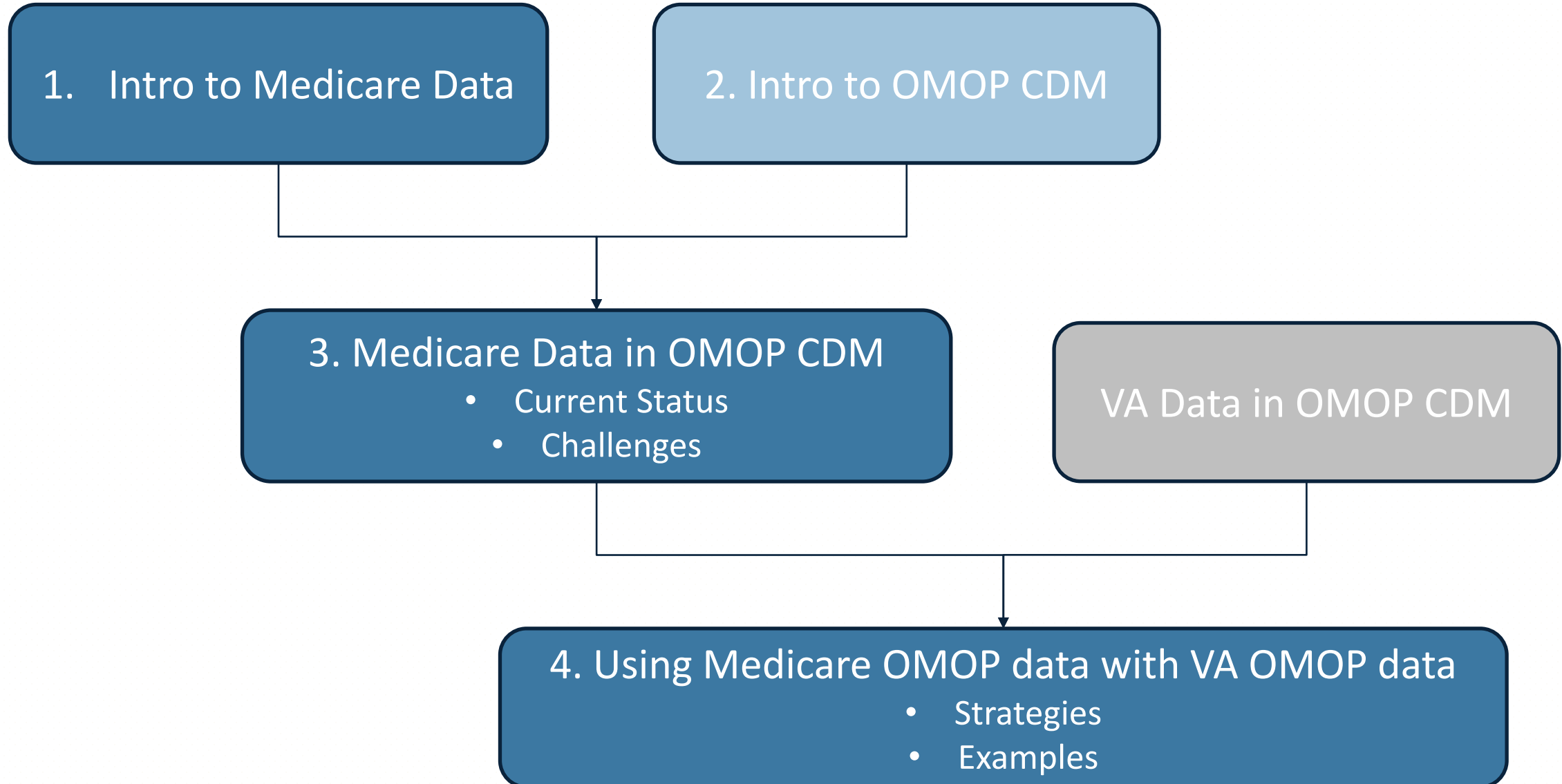
## Facility & physician bill separately

Common in

- Emergency room
- Inpatient hospital
- LTC facility



# Outline for today's presentation



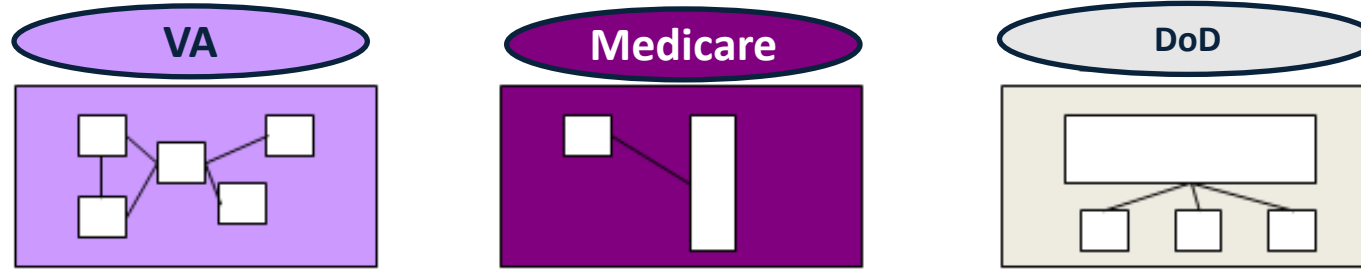
## Example from VA's CDW



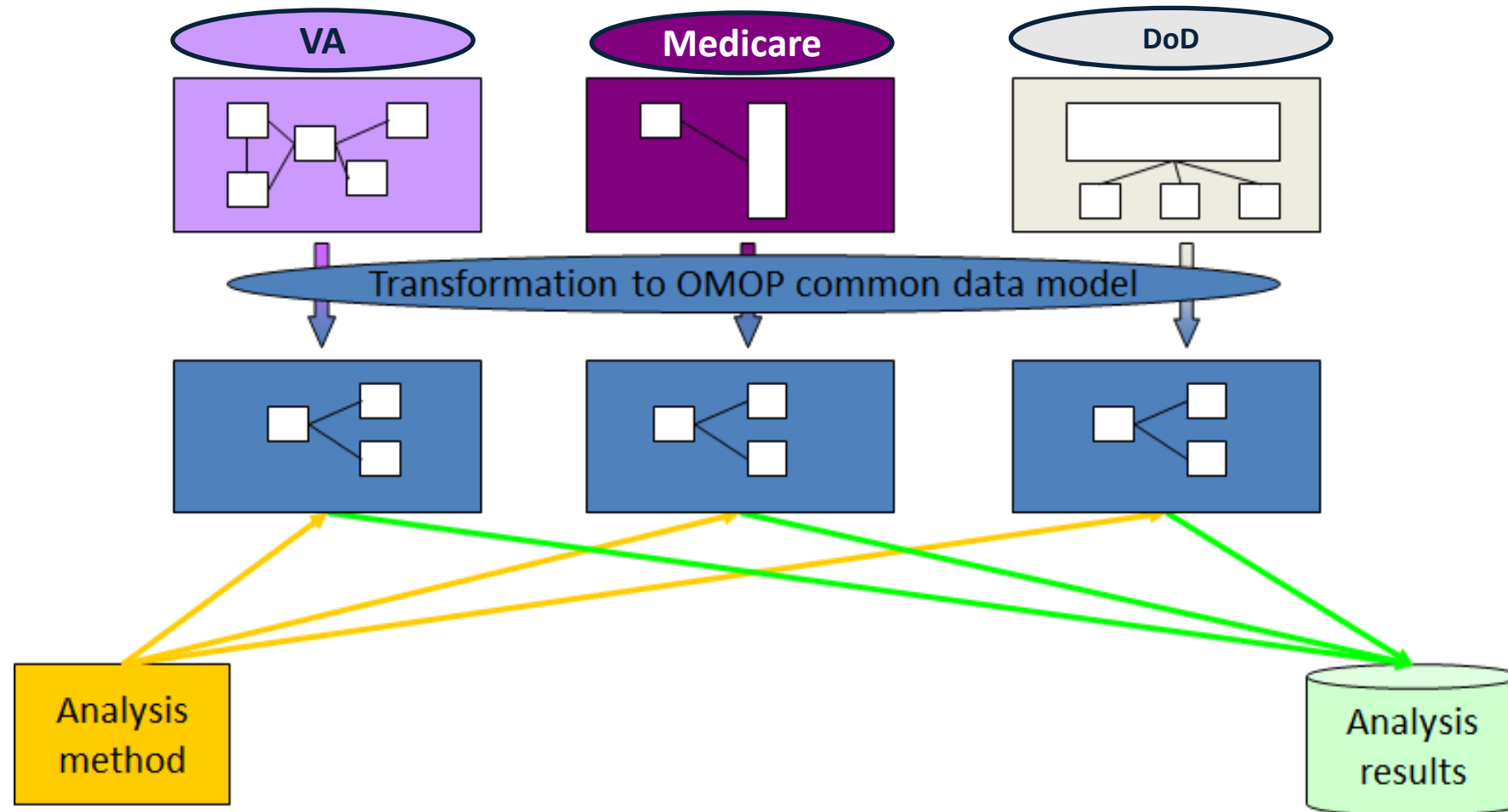
A data model organizes data elements and defines how they relate to one another

Source: [https://dvagov.sharepoint.com/sites/OITBISL/MetaData/Reports/ERDiagramsOfViews/Inpatient%202.2\\_5659.jpg](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)?

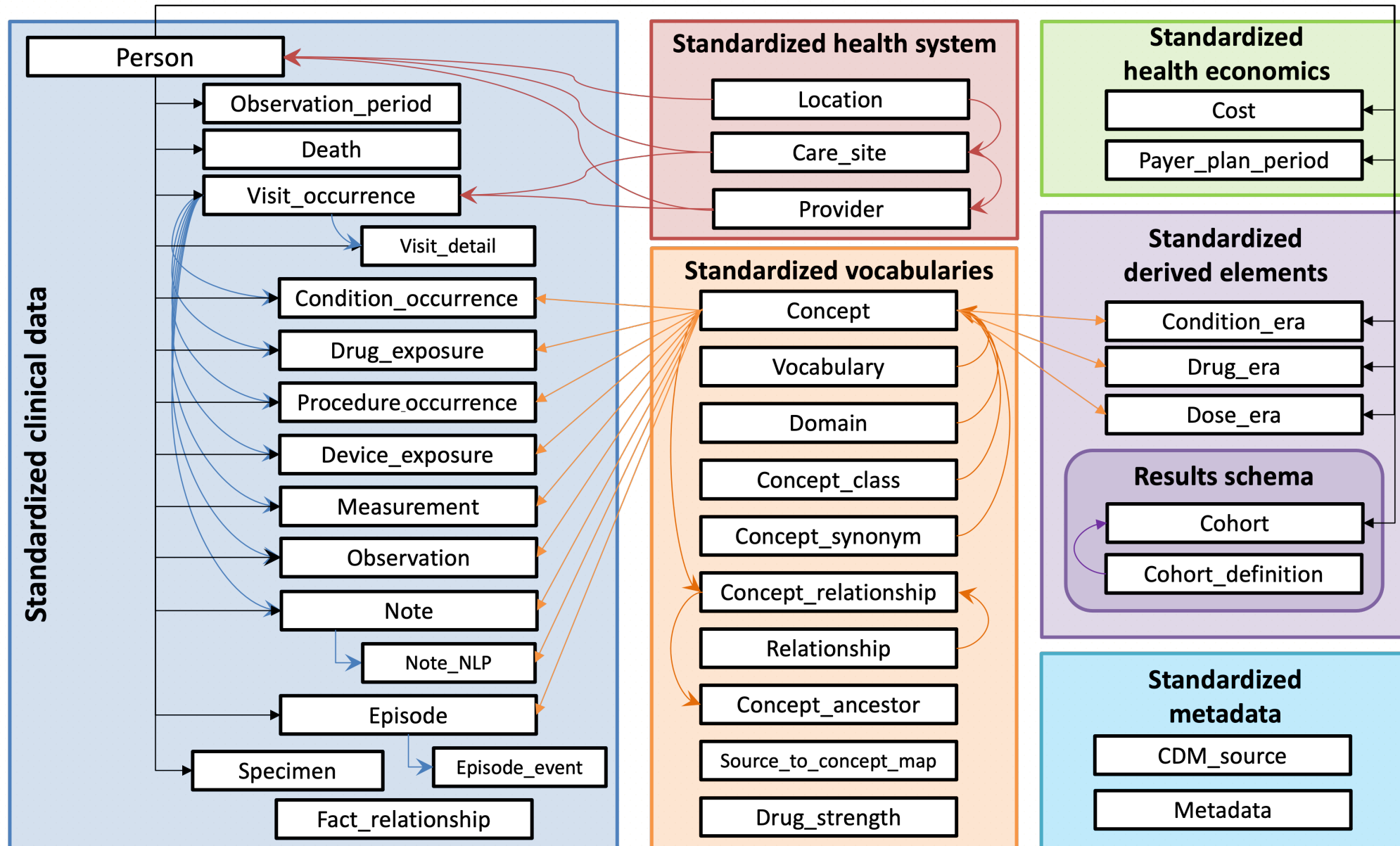
- Standardization of
  - Tables: names, contents, relationships
  - Variable/field names
  - Values
- Embed knowledge of data into the model

# Why Observational Medical Outcomes Partnership (OMOP) CDM?

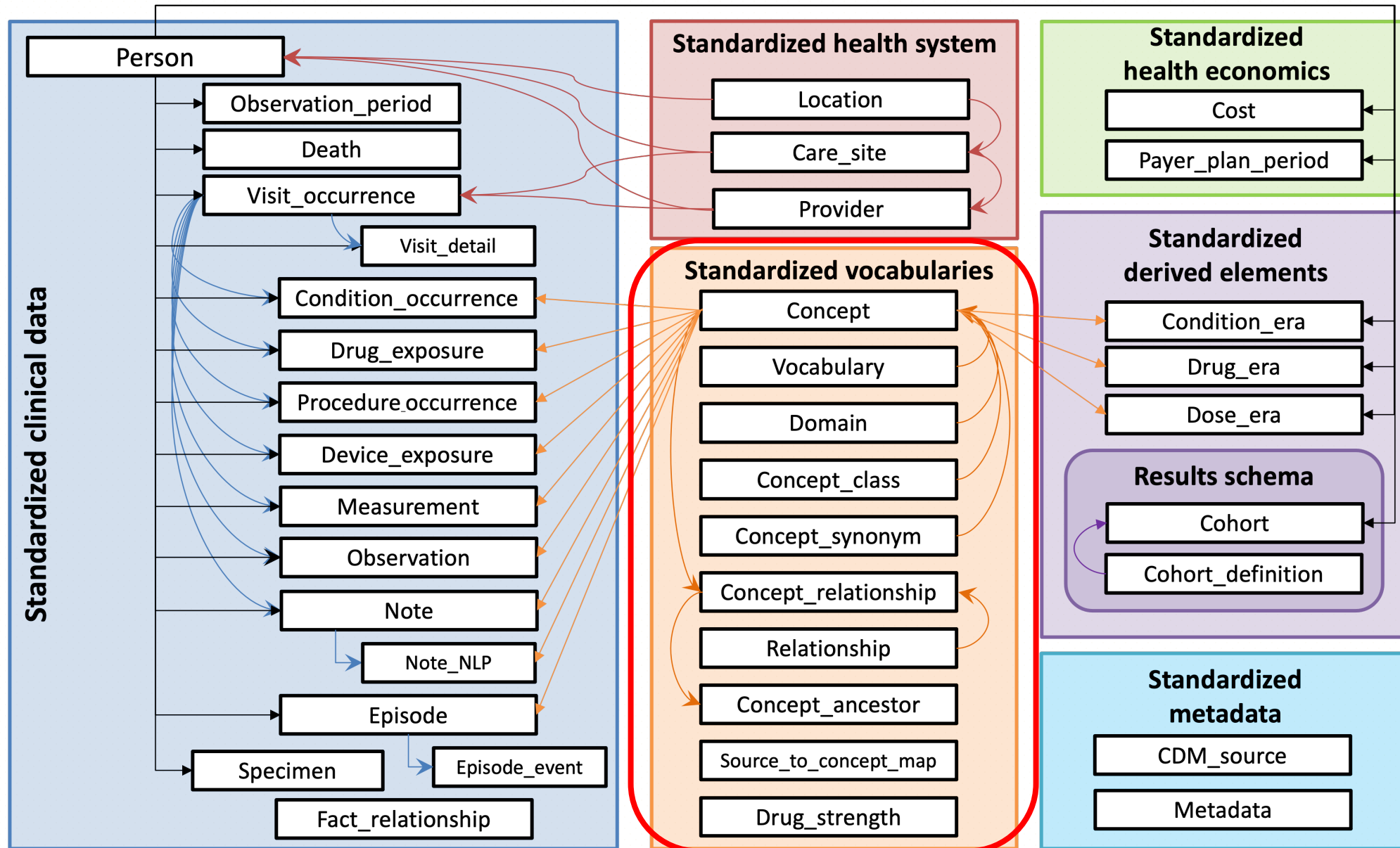
- Used by VA and DoD
- Benefits
  - Broad coverage
  - Open source tools
  - Standard vocabularies & concepts



# OMOP Common Data Model, Version 5.3



# OMOP Common Data Model, Version 5.3

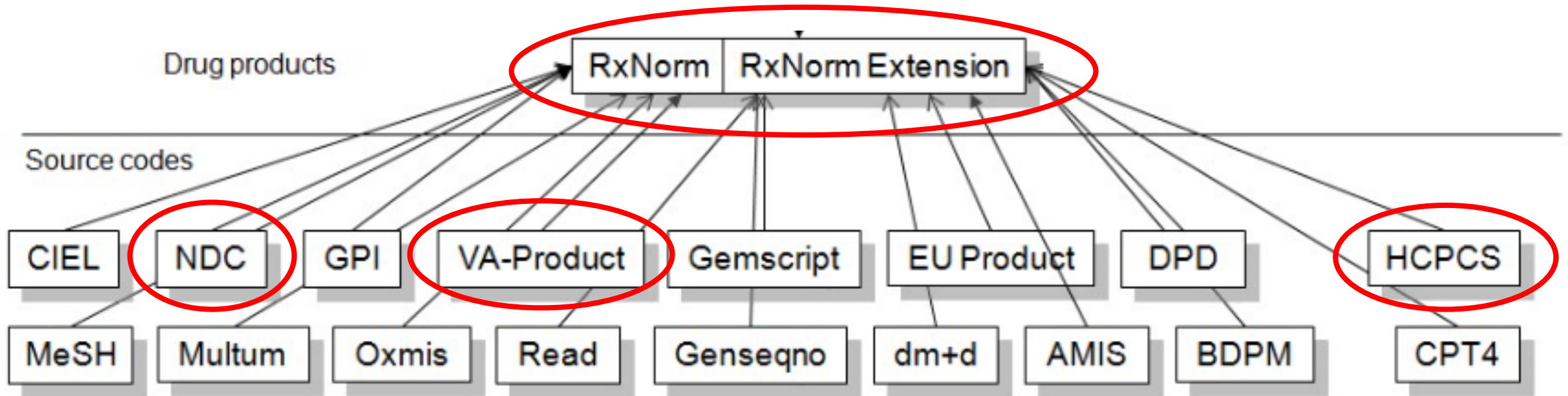


# OMOP Concepts

- All code sets needed to represent data
- Currently 8.6 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 Concepts:

## Athena (web-based)

- athena.ohdsi.org

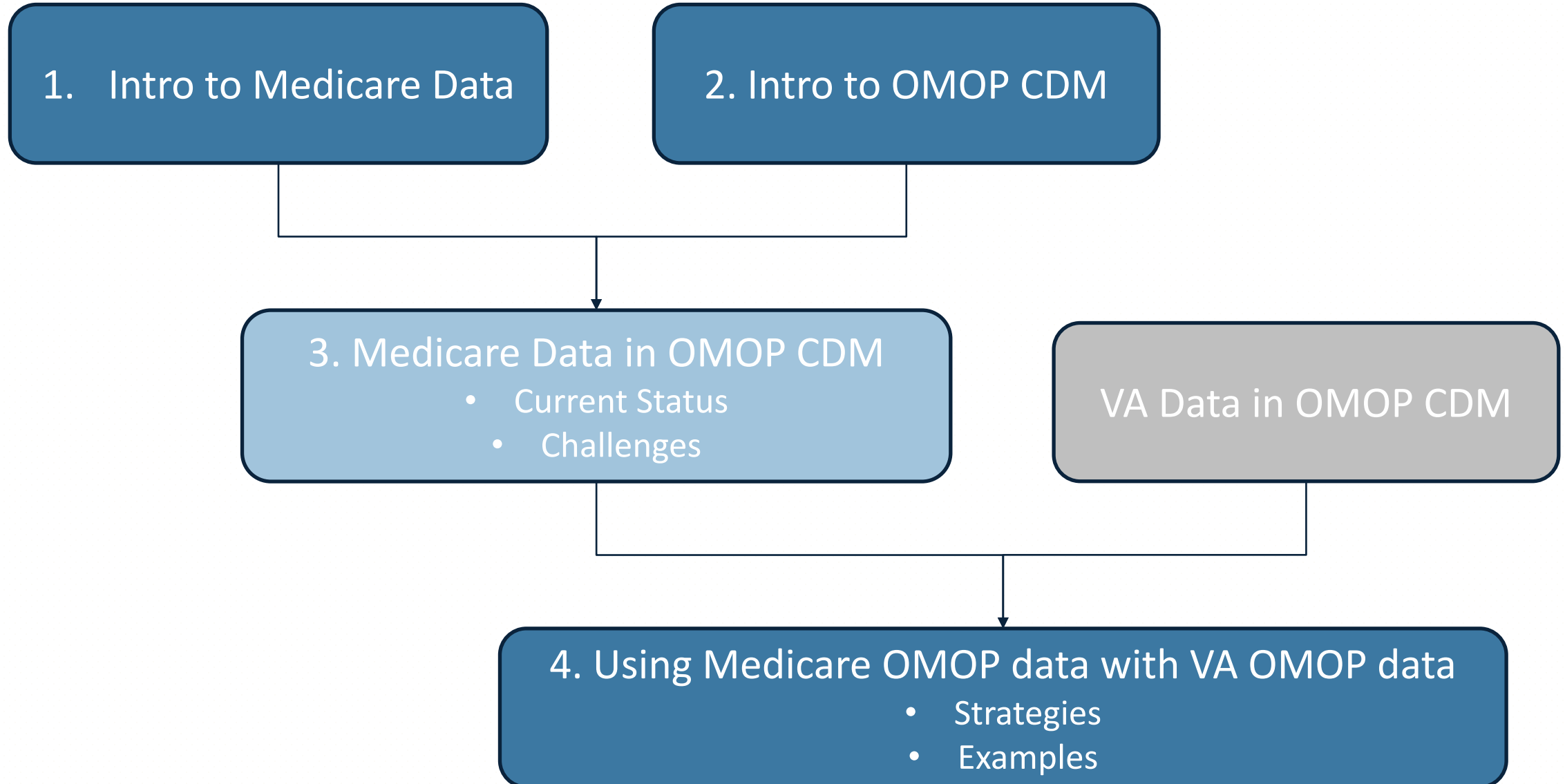
## SQL tables

- Concept
- Concept Relationship
- ...and more

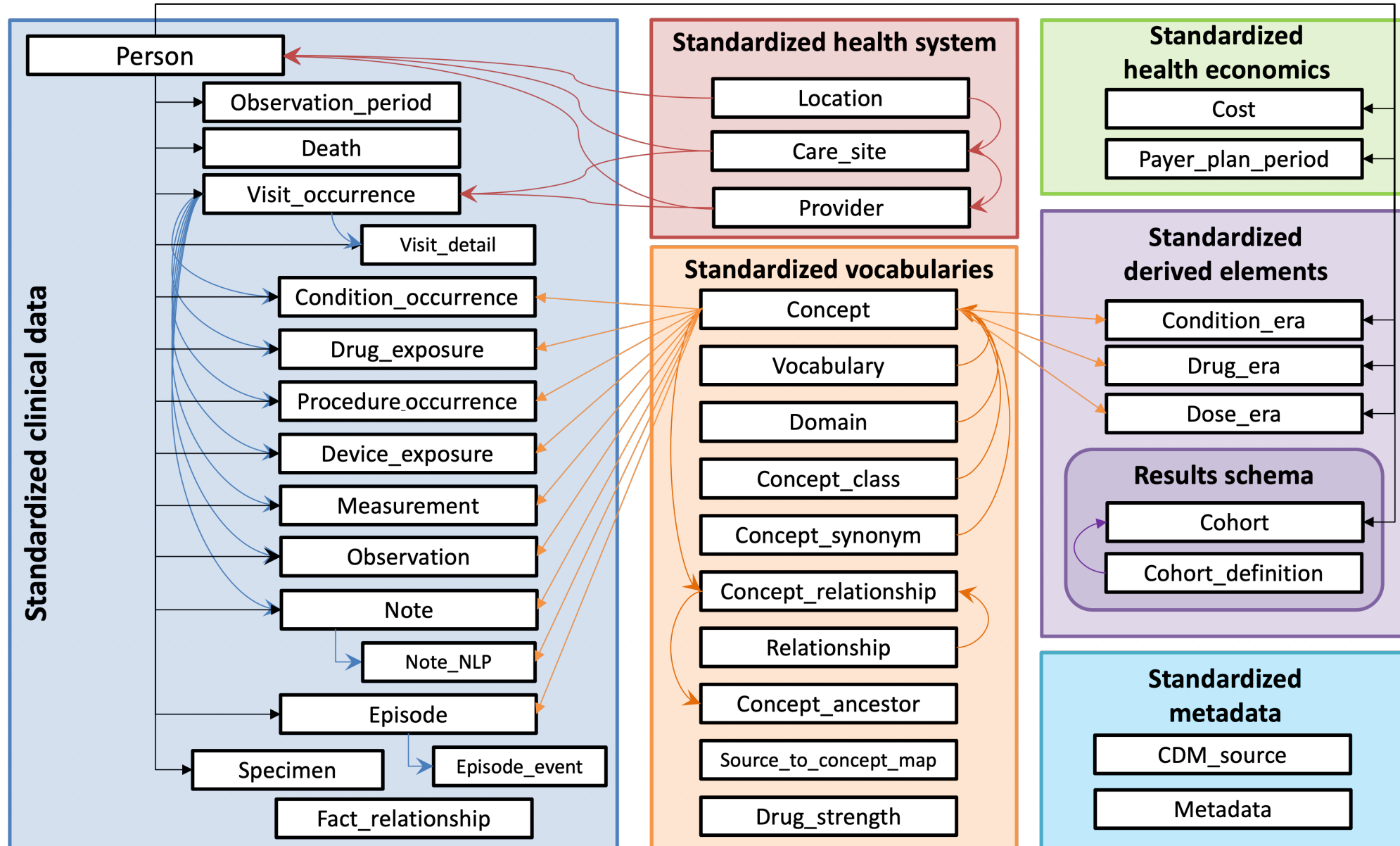
The screenshot shows the Athena web interface with a search for 'aspirin'. The interface includes a navigation bar with 'SEARCH', 'DOWNLOAD', and 'LOGIN' buttons. Below the search bar, there are filters for 'Condition' (Standard) and 'INVALID REASON'. The main content area displays a table of search results with columns for ID, CODE, NAME, CLASS, CONCEPT, VALIDITY, DOMAIN, and VOCAB. The results are filtered to show 15 items per page, with a total of 168,420 items. The table lists various clinical findings related to ischial spines and mitoses per HPF.

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

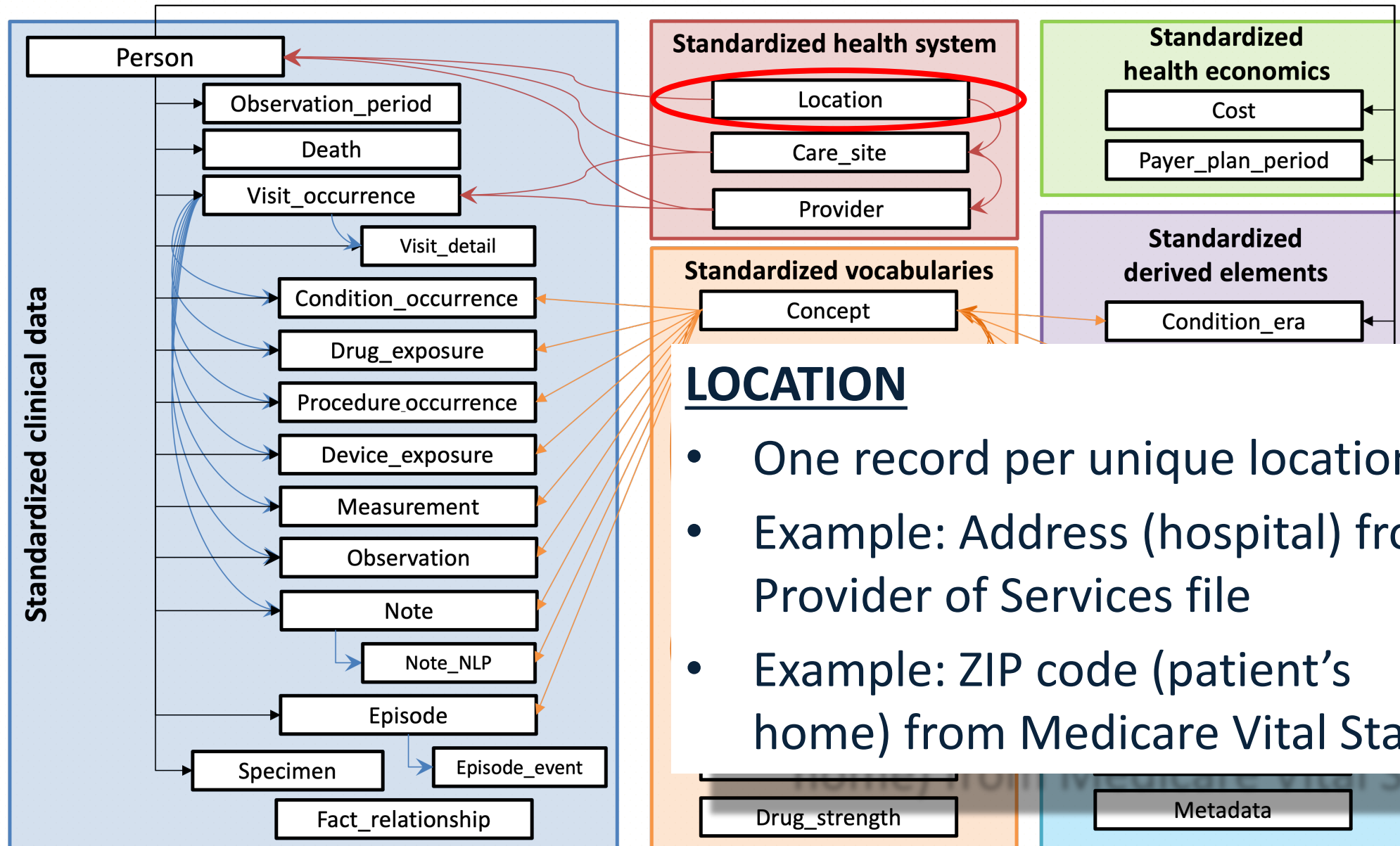
# Outline for today's presentation



# Medicare data in the OMOP Common Data Model



# Medicare data in the OMOP Common Data Model



## LOCATION

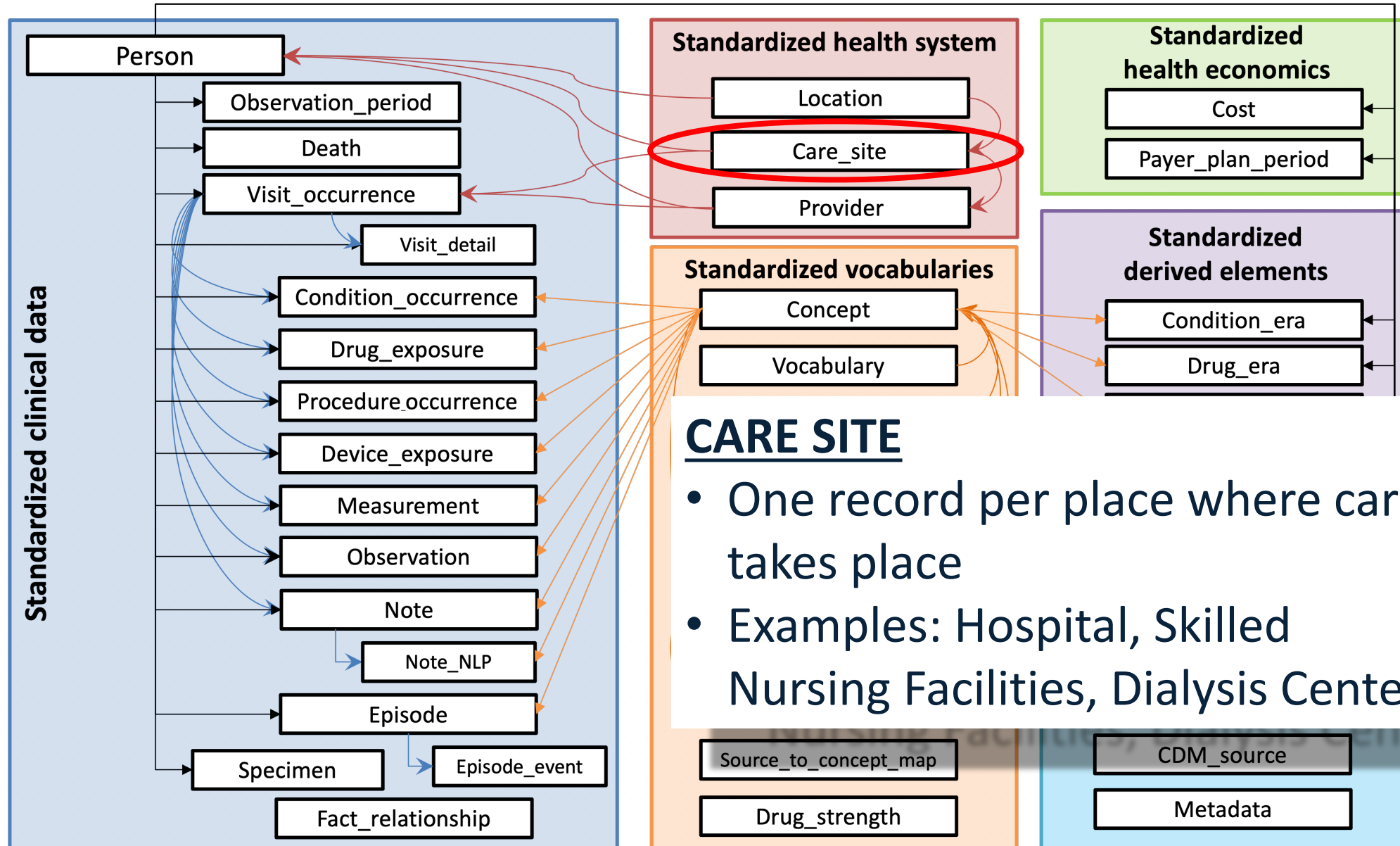
- One record per unique location
- Example: Address (hospital) from Provider of Services file
- Example: ZIP code (patient's home) from Medicare Vital Status

Drug\_strength

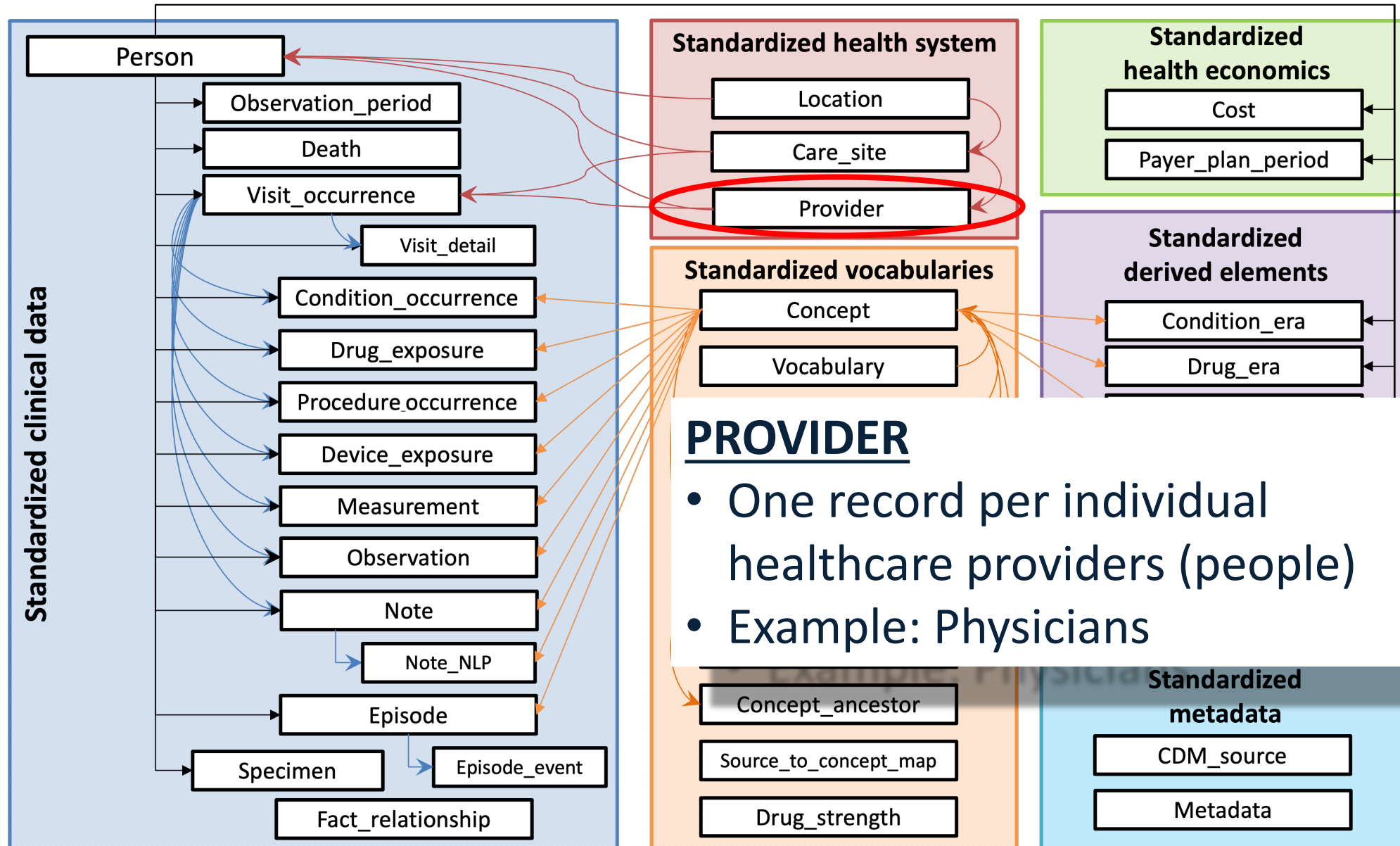
Metadata



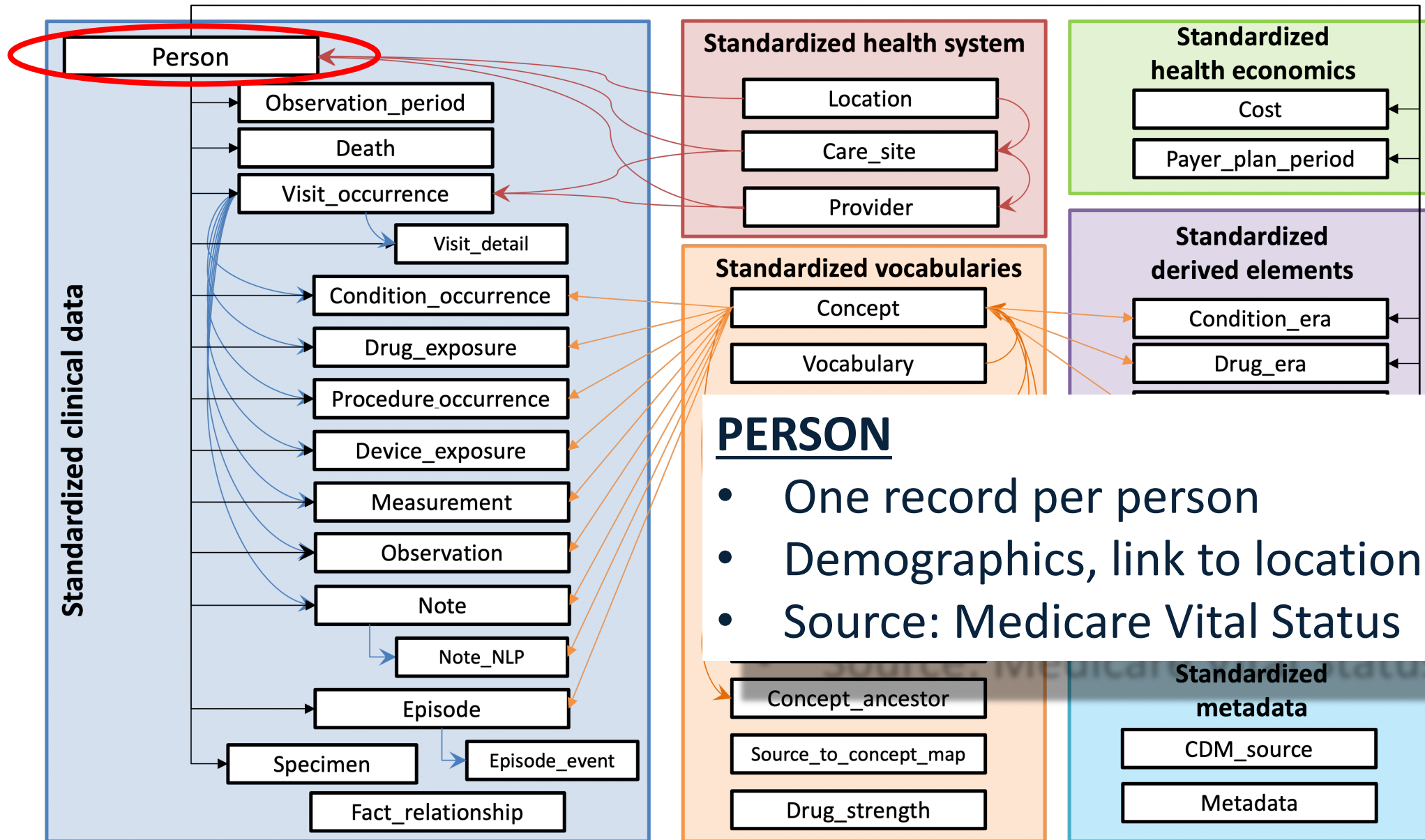
# Medicare data in the OMOP Common Data Model



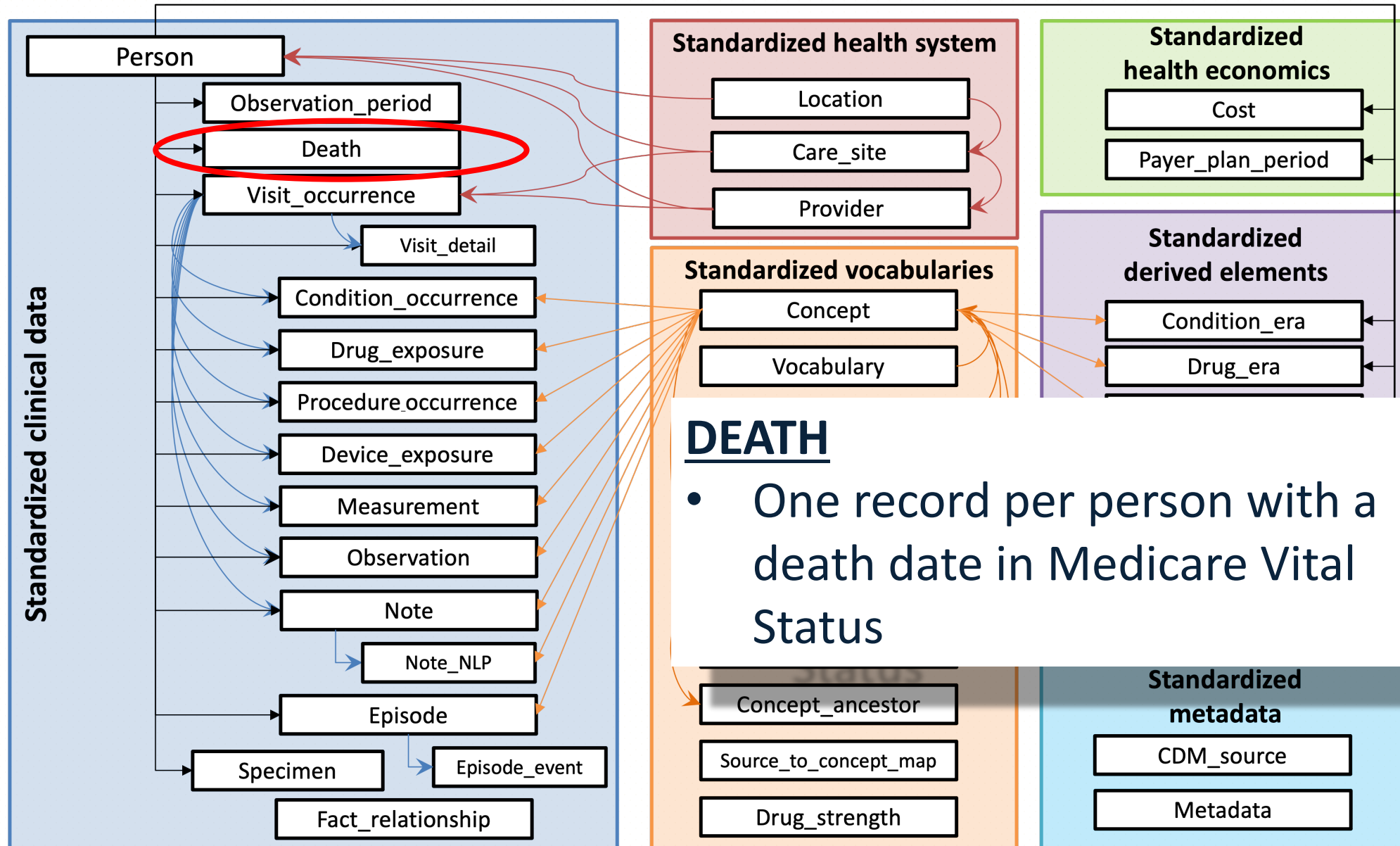
# Medicare data in the OMOP Common Data Model



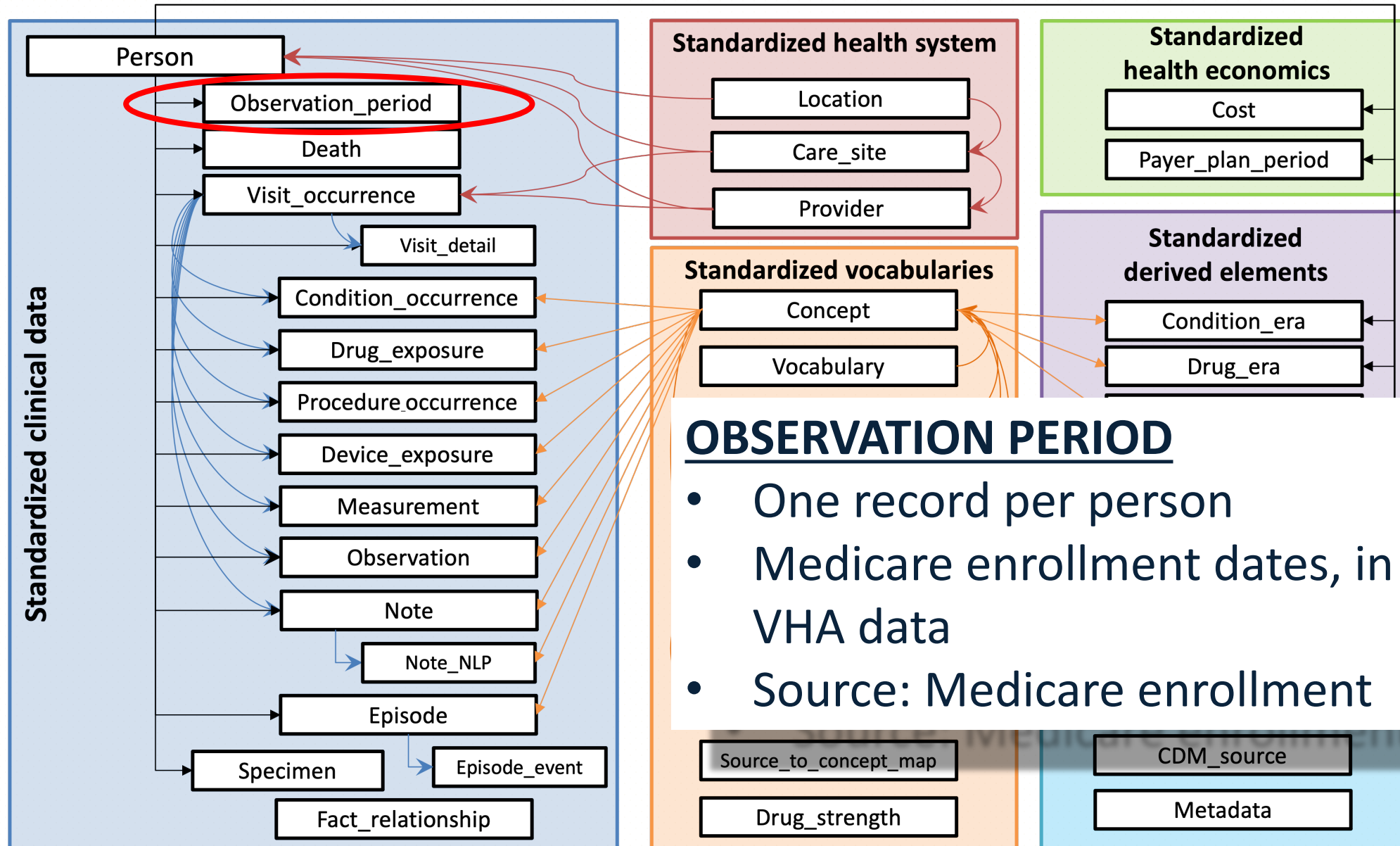
# Medicare data in the OMOP Common Data Model



# Medicare data in the OMOP Common Data Model



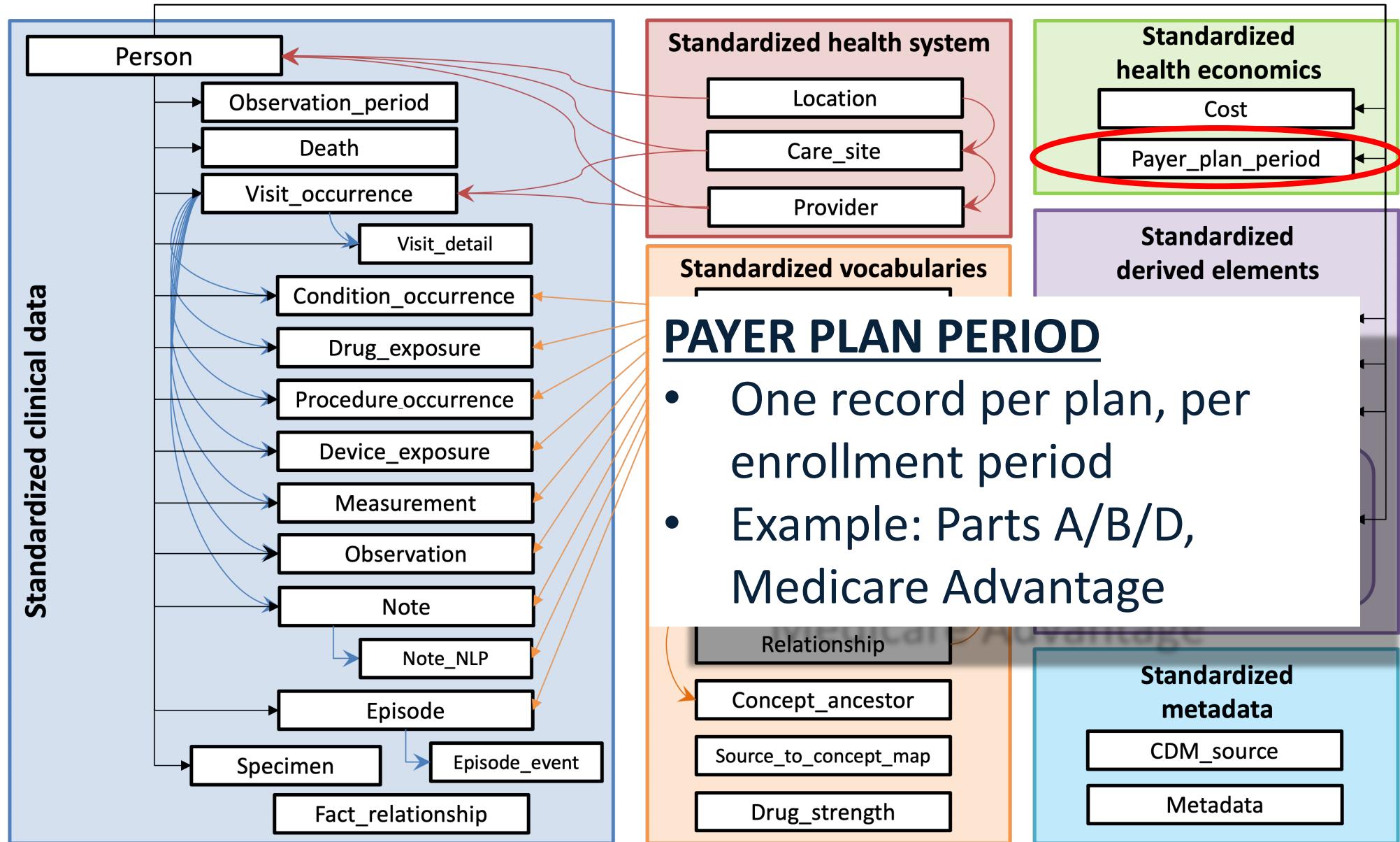
# Medicare data in the OMOP Common Data Model



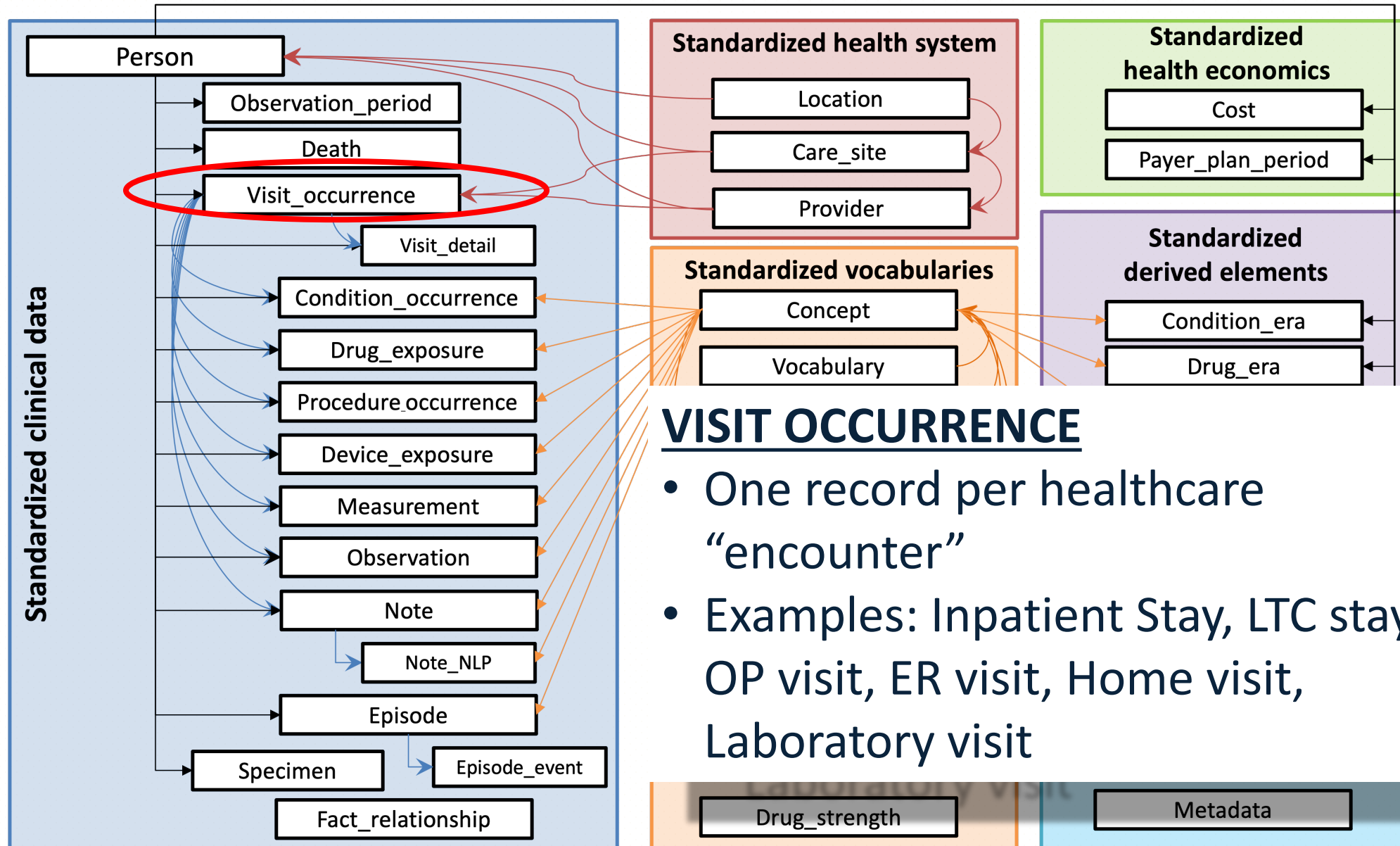
## OBSERVATION PERIOD

- One record per person
- Medicare enrollment dates, in VHA data
- Source: Medicare enrollment

# Medicare data in the OMOP Common Data Model



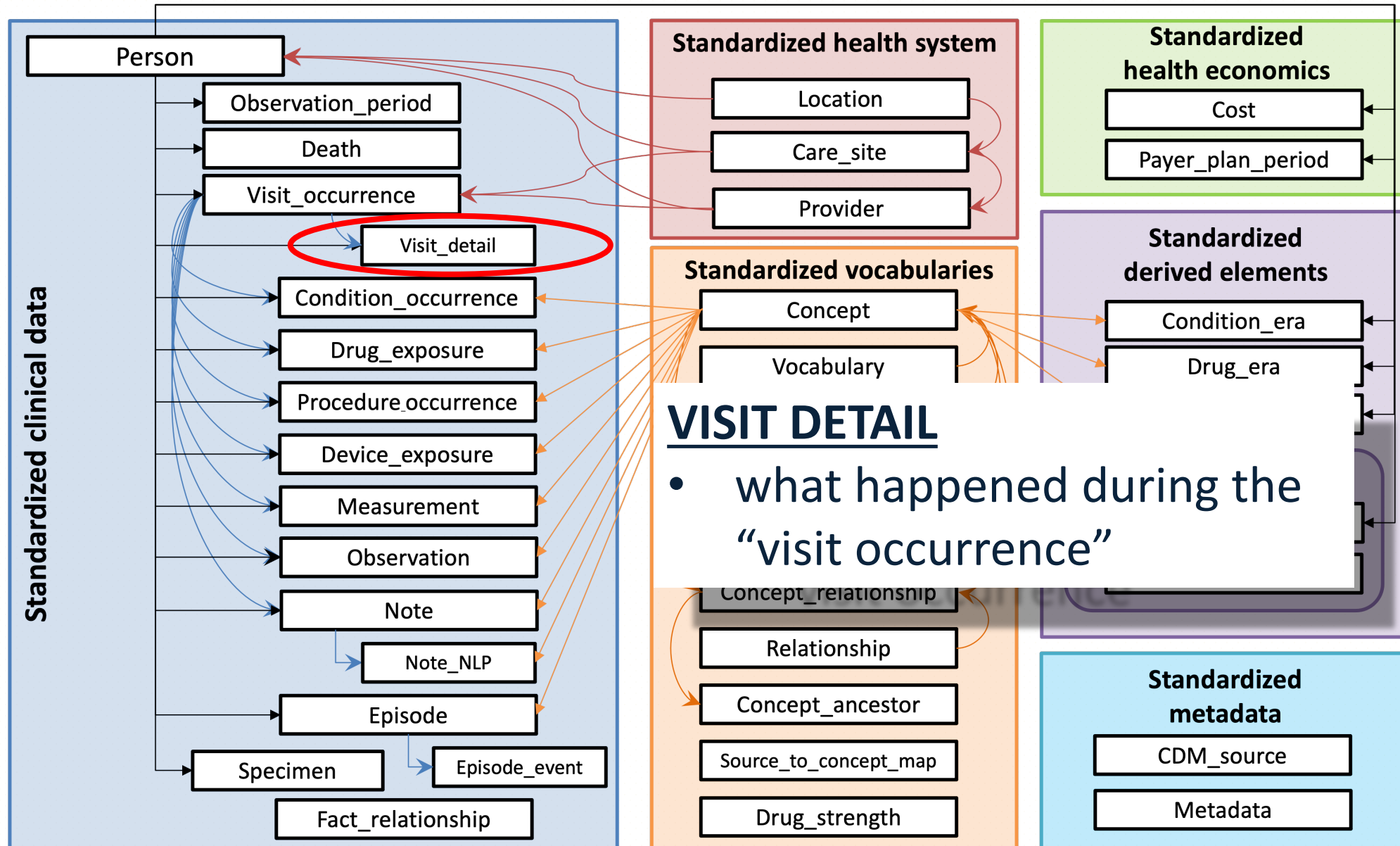
# Medicare data in the OMOP Common Data Model



## VISIT OCCURRENCE

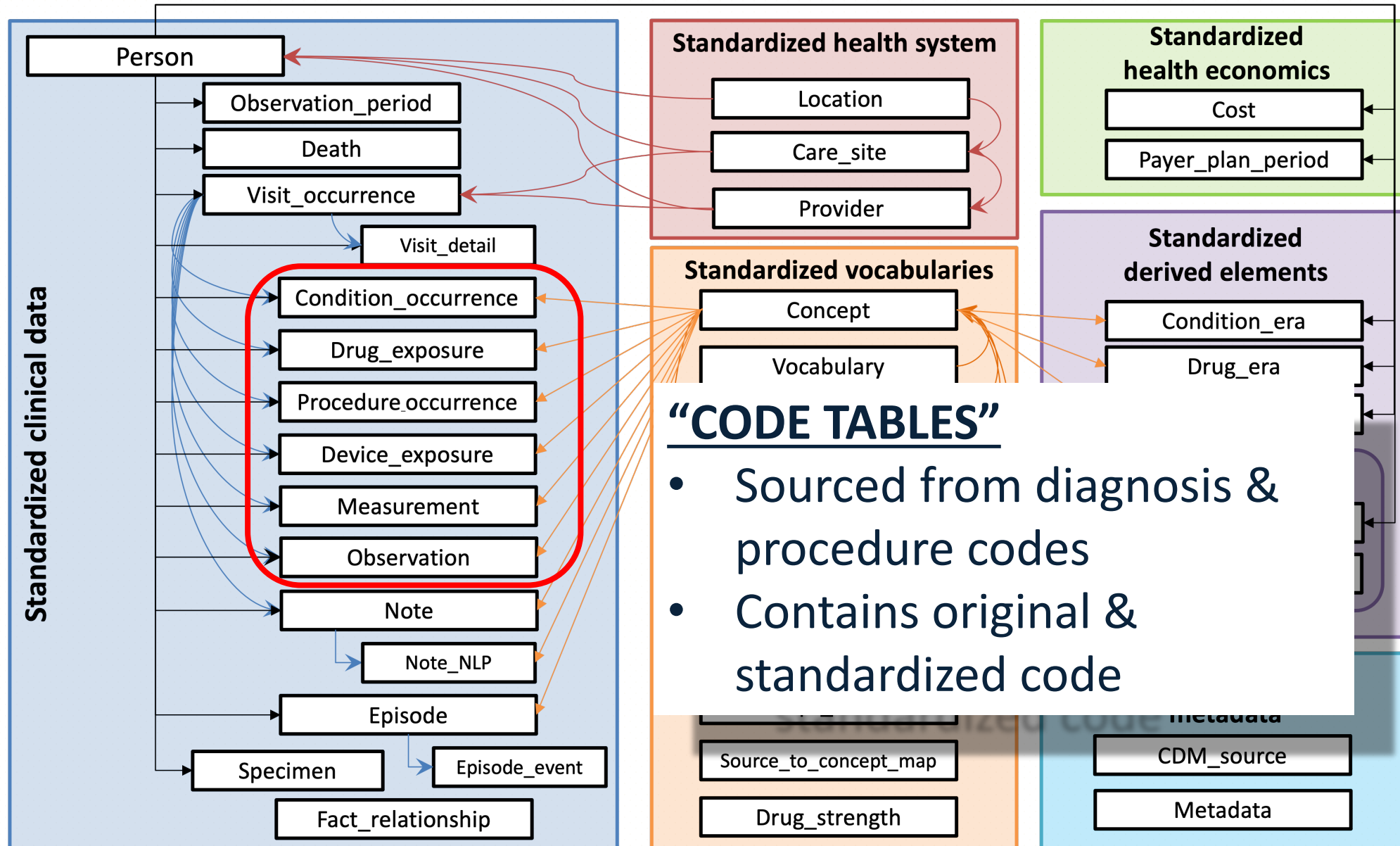
- One record per healthcare “encounter”
- Examples: Inpatient Stay, LTC stay, OP visit, ER visit, Home visit, Laboratory visit

# Medicare data in the OMOP Common Data Model

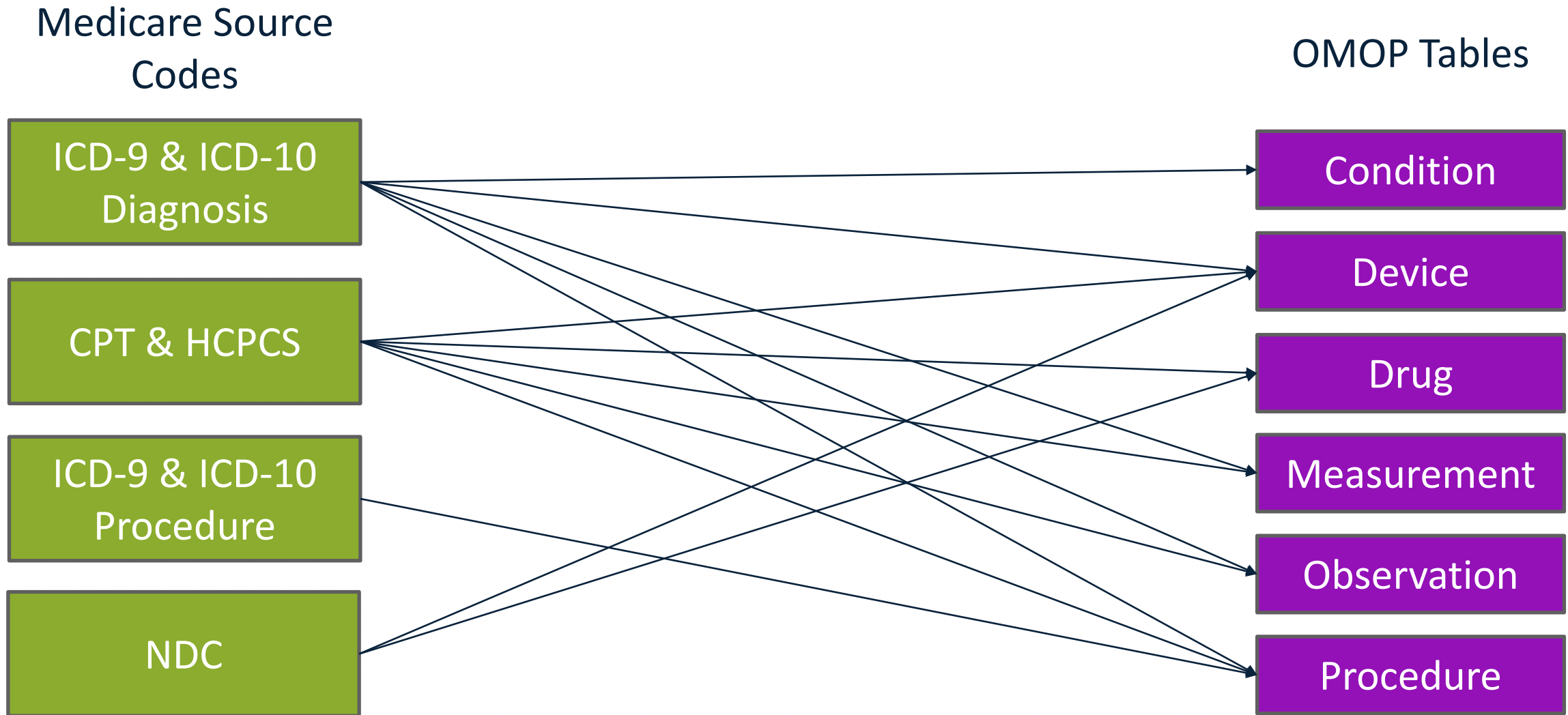




# Medicare data in the OMOP Common Data Model



# 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	4203722 - Patient encounter procedure	0 - Missing (84%)
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

- CY1999-2020 Medicare data

Source Files	FFS enrollees	MA enrollees
Enrollment files: MBSF, Vital Status, Primary Payer, Group Health Organization	Yes	Yes
MedPAR (Inpatient, Skilled Nursing Facilities)	Yes	Inpatient only, incomplete
FFS claims: Outpatient, Home Health, Hospice, Carrier, Durable Medical Equipment (DME)	Yes	Hospice only
Part D (prescription drugs)	Yes	Yes

OMOP table	Records in 1999-2020 OMOP data
PERSON	14,765,449
OBSERVATION_PERIOD	14,765,449
DEATH	8,645,173
PAYER_PLAN_PERIOD	45,416,273
VISIT_OCCURRENCE	2,329,784,391
VISIT_DETAIL	5,916,079,455
CONDITION_OCCURRENCE	9,214,591,138
DRUG_EXPOSURE	1,340,693,315
PROCEDURE_OCCURRENCE	3,445,036,336
DEVICE_EXPOSURE	307,178,408
MEASUREMENT	1,268,001,725
OBSERVATION	1,514,419,428
CARE_SITE	1,970,237
LOCATION	13,501,961
PROVIDER	3,743,263

# Next Release

- Adds CY 2021 data
- Add Inpatient & Skilled Nursing Facility to Visit Detail
- Estimated availability summer 2023

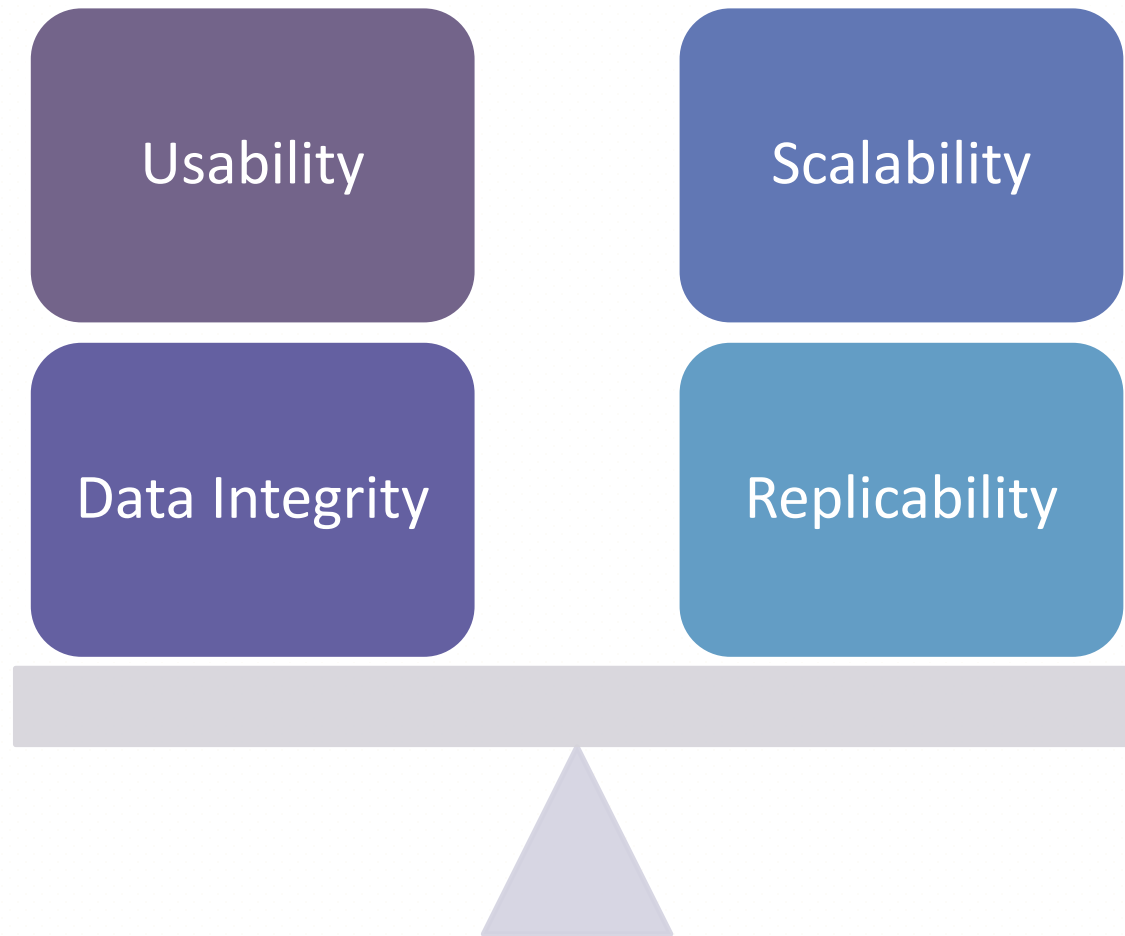
# Future data?

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

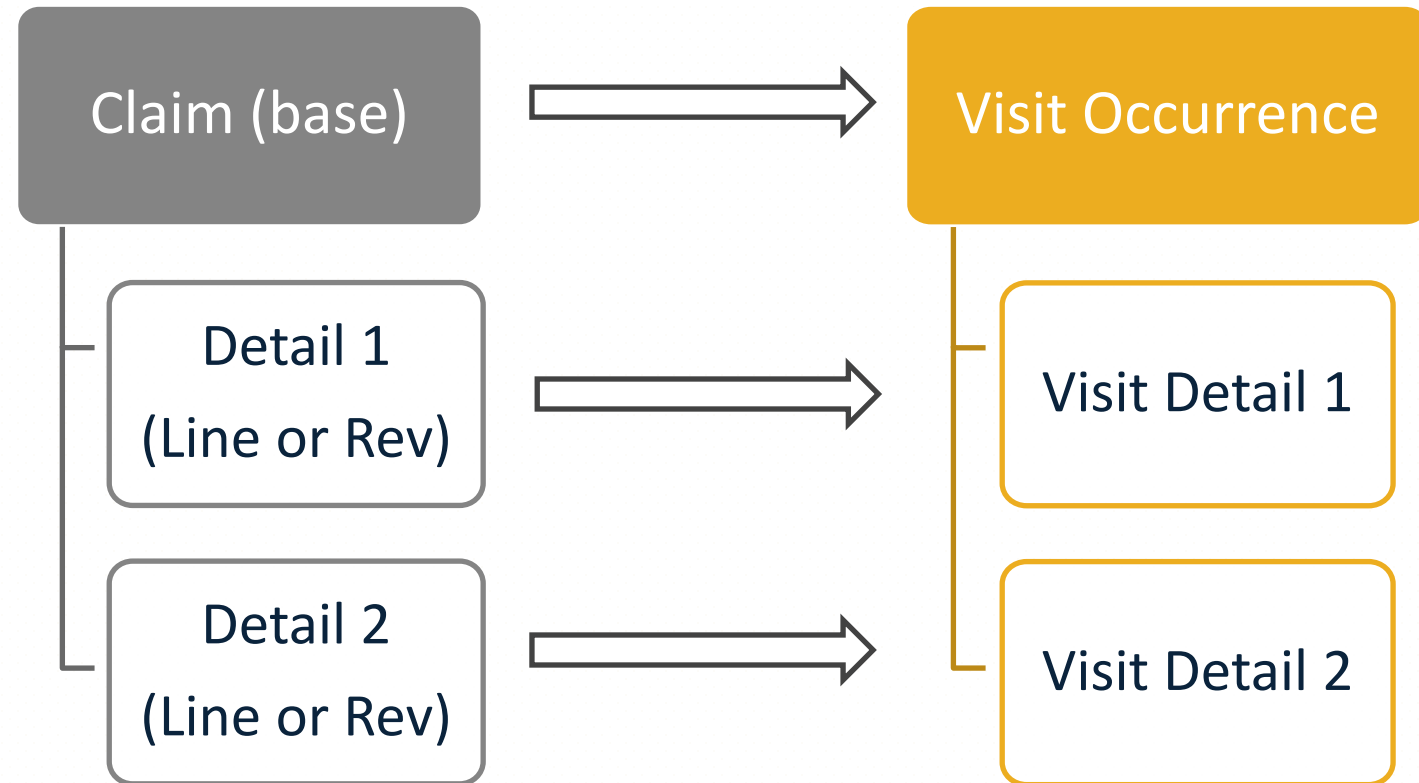


# Challenges when Transforming Medicare Data into OMOP CDM

# Factors in decision making



# Claims vs OMOP visits



# 1 claim = multiple visits

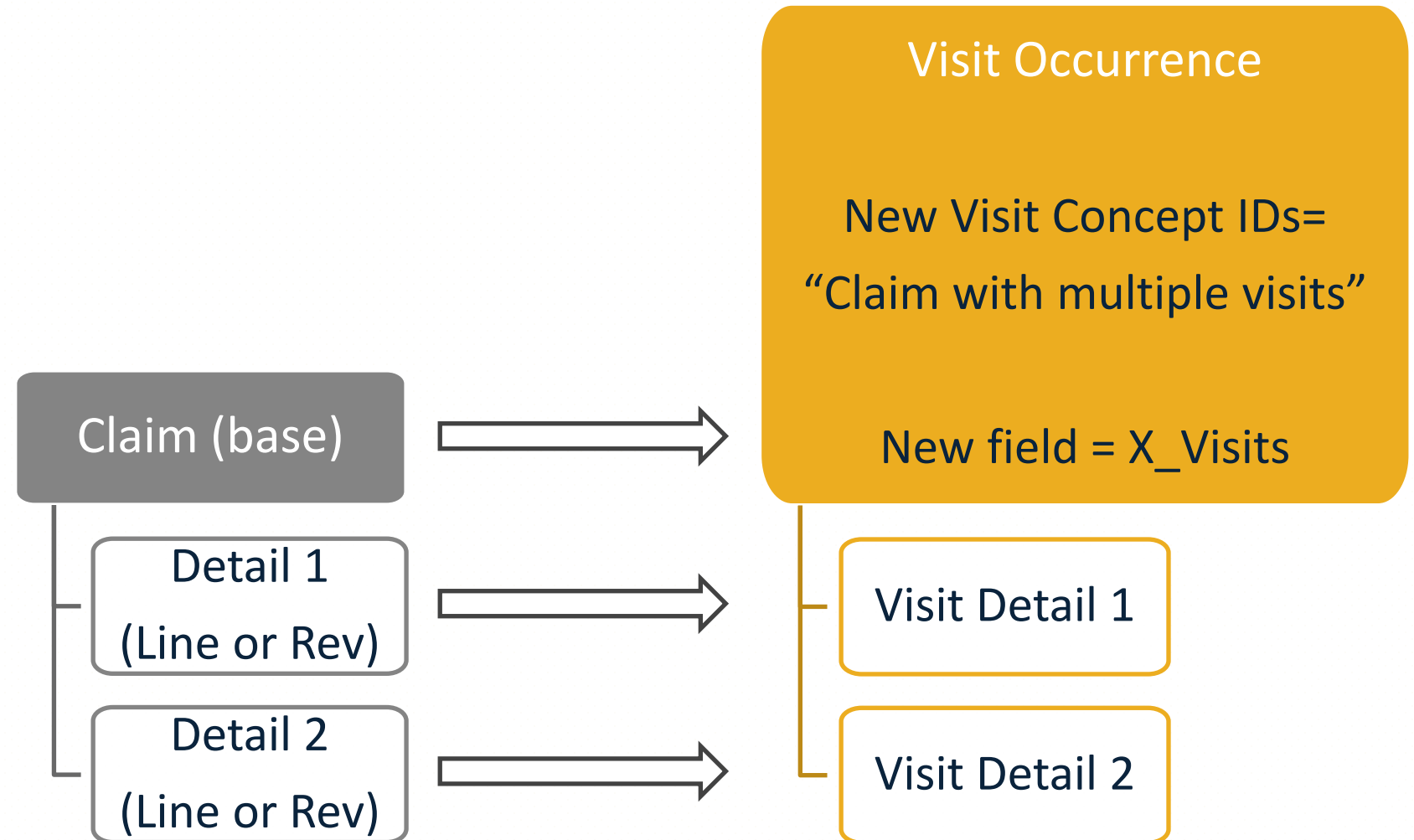
## How frequent?

- 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 involves 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”

- 16% Inpatient Hospital
- 5% Emergency Room
- 4% 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 not be in Medicare data

# OMOP transformation when facility & physicians bill separately

Inpatient, SNF or  
ER Claim



Visit Occurrence

Carrier/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

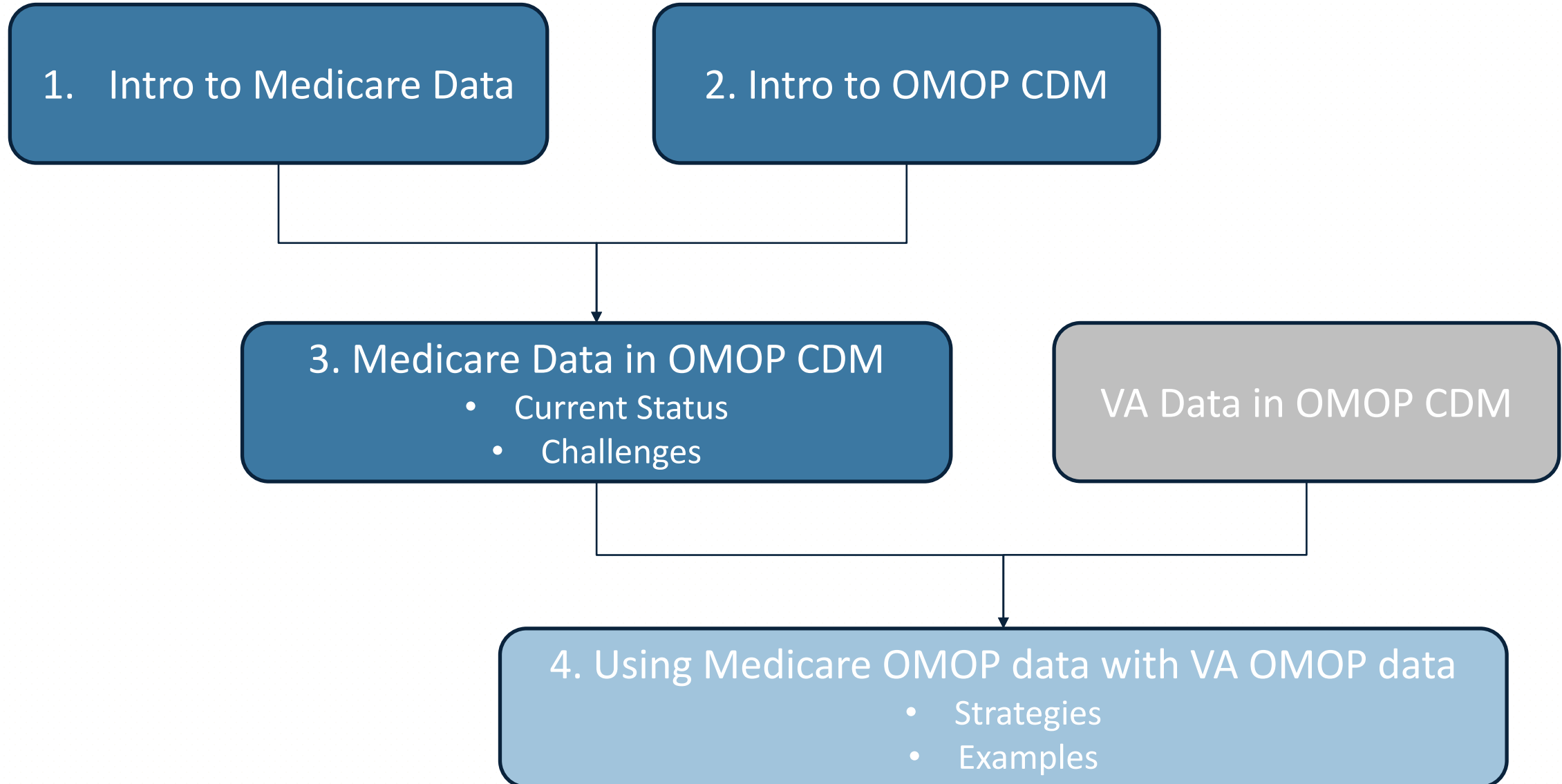
New Visit Concept IDs=  
“Service during ER visit”  
“Service during facility stay”

Based on Place of Service code

Visit Concept ID & Description	Percent
9202 (Outpatient visit)	55.3
820010044 (Service during facility stay)	12.8
32036 (Laboratory visit)	10.5
33004 (Supplier/Service Provider)	5.7
820010043 (Service during emergency room visit)	3.8
820010047 (Claim with multiple visits during facility stay)	3.0
820010045 (Claim with multiple outpatient visits)	2.4
581478 (Ambulance)	1.4
9203 (Emergency room visit)	1.2
262 (Inpatient visit with emergency room visit)	0.9
581476 (Home visit)	0.7
820010046 (Claim with multiple home visits)	0.7
9201 (Inpatient visit)	0.6
820010002 (Hospice claim)	0.4
42898160 (Long Term Care visit)	0.3
820000518 (Emergency room & observation visit)	0.1
820000520 (Observation visit)	<0.1



# Outline for today's presentation



# Using multiple instances of OMOP data

## VA OMOP

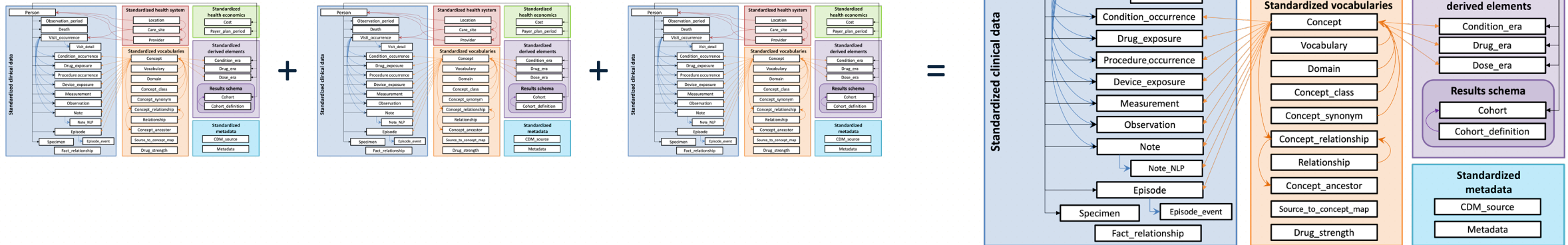
- CDW/VistA
- Fee

## DaVINCI OMOP

- DOD, Military Health System

## CMS OMOP

- Medicare
- More in future?



# Considerations

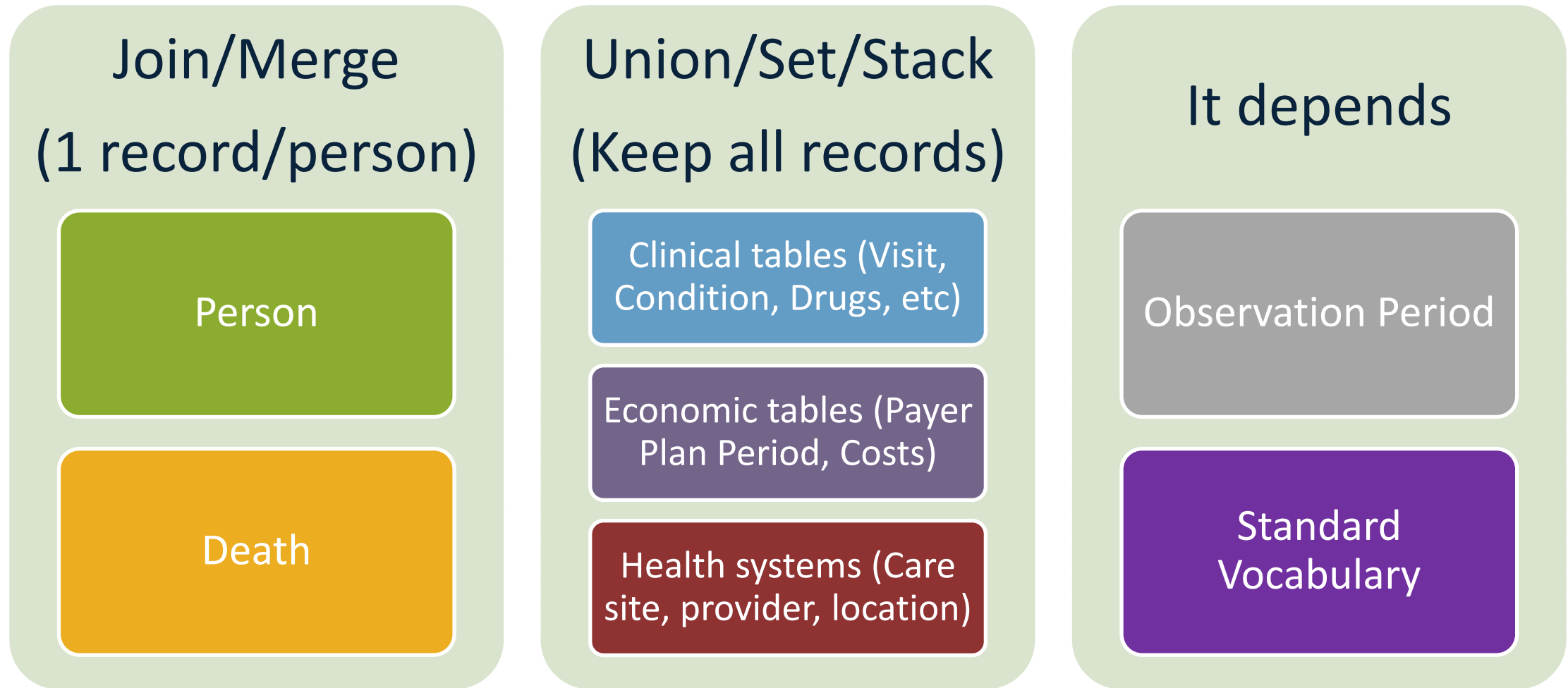
## When **building** multiple OMOP instances

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

## When **using** multiple OMOP instances

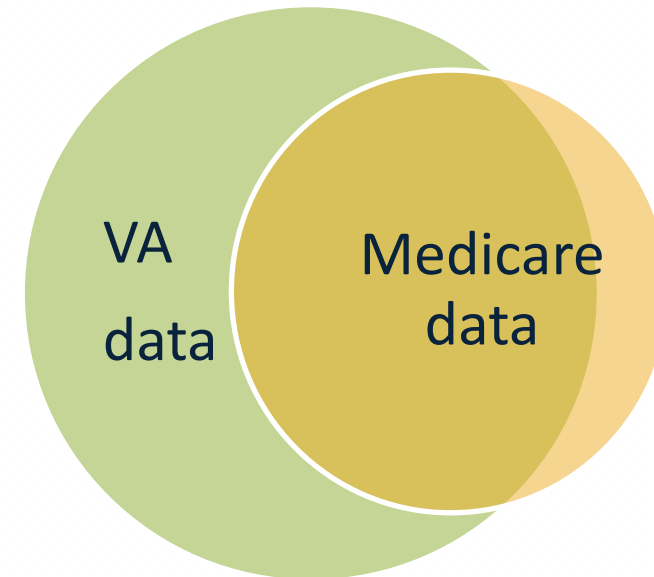
- Most tables should keep all records (union, stack, set)
- Some tables should have 1 record per person (join, merge)

# How to combine the data



## Example 1: Demographics

- Half of people in VA data will also have data in Medicare
- ~94% of people in VA's Medicare data will have data in VA data
- 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	F	Black	234567			
			345678	3/3/33	M	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	12,462,390 (46%)	13,911,078 (51%)	854,371 (3%)

	Matched	Missing in VA or Medicare	Doesn't match
Sex	99.2%	0.1%	0.8%
Date of Birth (Full)	93.7%	<0.1%	6.3%
Date of Birth (2 parts)	97.9%	<0.1%	2.1%
Race	53.1%	45.9%	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

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### BRIEF REPORT

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## 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

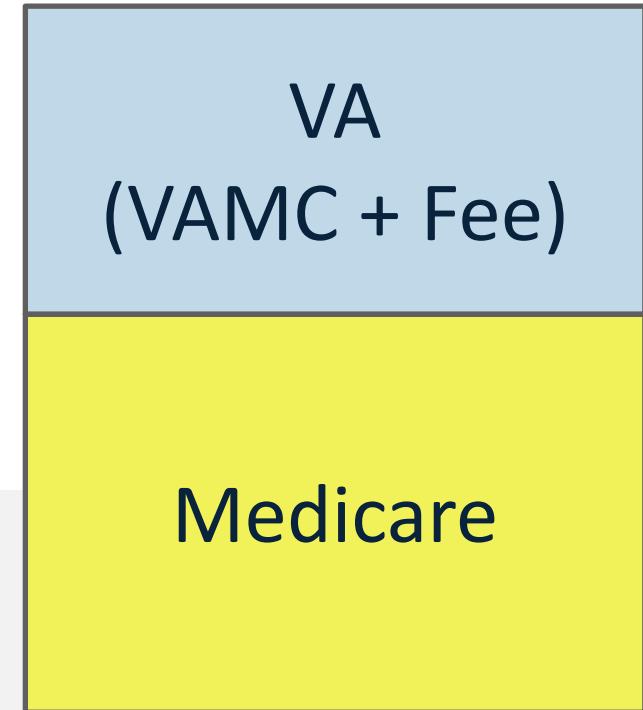
### Medicare datasets & variables to search

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 CY2018-2020 VA and/or Medicare data

Concept ID	Patients found in VA data only	Additional patients found when adding Medicare data
193782 (ESRD)	58,856	96,541 (↑ 164%)
255573 (COPD)	853,109	791,696 (↑ 93%)
4193704 (Type 2 diabetes w/o complications)	1,651,506	1,018,876 (↑ 62%)
436676 (PTSD)	852,020	126,448 (↑ 15%)

# 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](#)

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**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.	A study team member requests a <a href="#">Pre-Request consultation</a> (highly recommended for new VA/CMS users).
2.	The project submits the <b>unsigned</b> 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 <b>completed and signed</b> 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](mailto: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

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. Researchers are encouraged to arrange a [pre-request consultation](#) with VIREC for assistance in completing this form.

- This form should be used when a project is requesting CMS and/or USRDS for the [VHA cohort](#).
- VIREC must review and sign this form **before** the Principal Investigator signs the form. Send the **unsigned form** to [virec.vacmsdata@va.gov](mailto:virec.vacmsdata@va.gov) for review.

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**Section 1: General Information**

VA/CMS Project ID, if known (e.g., LastName-01)

Principal Investigator

Project Title

Facility Station Number  City, State

1a. Are you requesting data directly from VIREC or approval to use data from another source?

Directly from VIREC. Most projects will selection this option.

Other, please describe. Contact VIREC before selecting this option.

1b. Where will data be delivered?

VINCI. Most projects will selection this option. Name of the VINCI workspace:

Other, please describe. Contact VIREC before selecting this option.

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**Section 2: Identifier**

CMS & USRDS data are provided with scrambled SSNs. Please contact VIREC, if Real SSNs are required.

Real SSNs were previously approved by VIREC and should be included again with this data request.

<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](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 <a href="#">PERSON</a> 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://ohdsi.github.io/CommonDataModel/>

## 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](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](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

VA Information Resource Center (VIReC)

Hines VA Hospital

[kristin.degroot@va.gov](mailto:kristin.degroot@va.gov)





## CMS DATA MINI-SERIES

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Next session:

April 11<sup>th</sup> at 3 pm Eastern

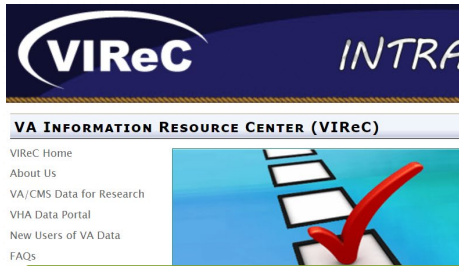
Deeper Dive into Medicare Data



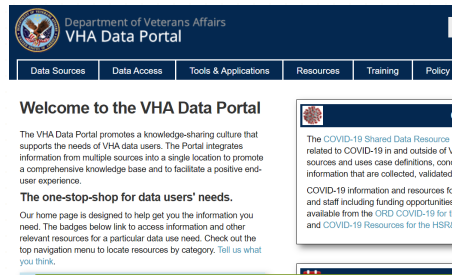
CMS Data Mini-series  
**BONUS SLIDES**

# Resources for VA Data Users

Select image to visit page



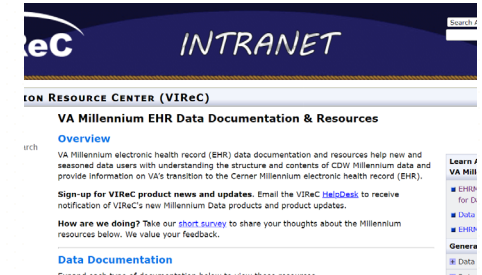
VA Information Resource Center (VIREC) (VA Intranet)



VHA Data Portal (VA Intranet)



VIREC Cyberseminars



VA Millennium EHR Data Documentation (VA Intranet)

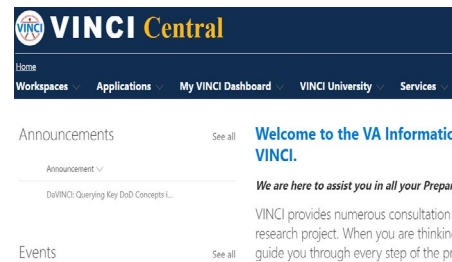


Resource Center (VIREC) is funded by the VA Research & Development Service (HSR&D) to help you use data effectively for research and development programs, and to foster communication between data users and the VA healthcare community.

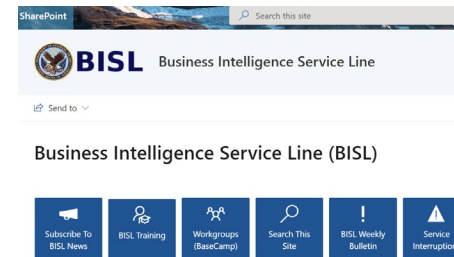
Visit Our Website  
www.virec.research.va.gov

Visit the VHA Data Portal

Quick Guide: Resources for Using VA Data (VA Intranet)



VA Informatics and Computing Infrastructure (VINCI) (VA Intranet)



BISL/CDW (VA Intranet)



Health Economics Resource Center (HERC) (VA Intranet)



## Questions about using VA Data?

### HSRData Listserv

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

### VIReC HelpDesk

- Individualized support
- Request Form: [varedcap.rcp.vaec.va.gov/redcap/surveys/?s=KXMEN77LXK](http://varedcap.rcp.vaec.va.gov/redcap/surveys/?s=KXMEN77LXK) (VA Intranet)