



VA

U.S. Department
of Veterans Affairs

Department of Defense
and
Department of Veterans Affairs
Infrastructure for Clinical Intelligence
(DaVINCI)



The DaVINCI Team

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Poll Question #1

- What data elements from the Military Health System are you most looking forward to using?



Why DaVINCI?

Results: During FY2011-2015, a total of 878,005 SM completed 1,414,567 PDHRA forms. Linking to VHA data resulted in a **45% match for SM with any VHA encounter** in the +90 days after the PDHRA certification date. Overall, **15% SM screened positive** for PTSD, depression, or alcohol abuse; **36% of those who screened positive had MH referrals on their PDHRA**. Over the 5 year study period, **66% SM receiving a MH referral had an associated MH fulfillment in either DTF or VHA within 90 days** of the PDHRA certification date. Overall, **43% of all MH referrals were fulfilled in DTF, 18.7% in VHA, with 3.8% SM having MH visits in both systems**. Active duty SM had high levels of fulfillment 81% as compared to guard and inactive guard reserve, with 78% of the fulfillment occurring in DTF. Guard SM had the highest VHA fulfillment rate 34%. Of the services, Air Force had the highest fulfillment rate 74% as compared to others.



History and Progress of DaVINCI

- **JIF Proposal Submitted in June 2013**

VA Sponsor: Jonathan Nebeker

↓
Scott DuVall

DoD Sponsor: Col. John Scott

↓
Col. Albert Bonnema
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Col. David Carnahan
↓
Chris Nichols



History and Progress of DaVINCI

- Funded in FY14, interagency coordinated design
- Pilot data transfer FY14
- Pilot studies FY14
 - Post Deployment Mental Health Referrals vs Fulfillments
 - Integrated Administrative Data + Natural Language Processing (NLP)
- FY15, FY16
 - VA investment in data standardization
 - DoD HSDW and contracting
 - pilot projects continued



History and Progress of DaVINCI

- Interagency coordination and revamp in FY16
- FY16
 - Common logical model defined (raw + combined OMOP)
 - VA contracting and procurement
 - Regulatory and governance processes explored and proposed
- FY17:
 - Governance processes defined and approved
 - First bulk data transfer, OMOP data transformation begun
- FY18:
 - OMOP data transformation to be completed
 - Sustainment and expanded use

FY18+
Cerner

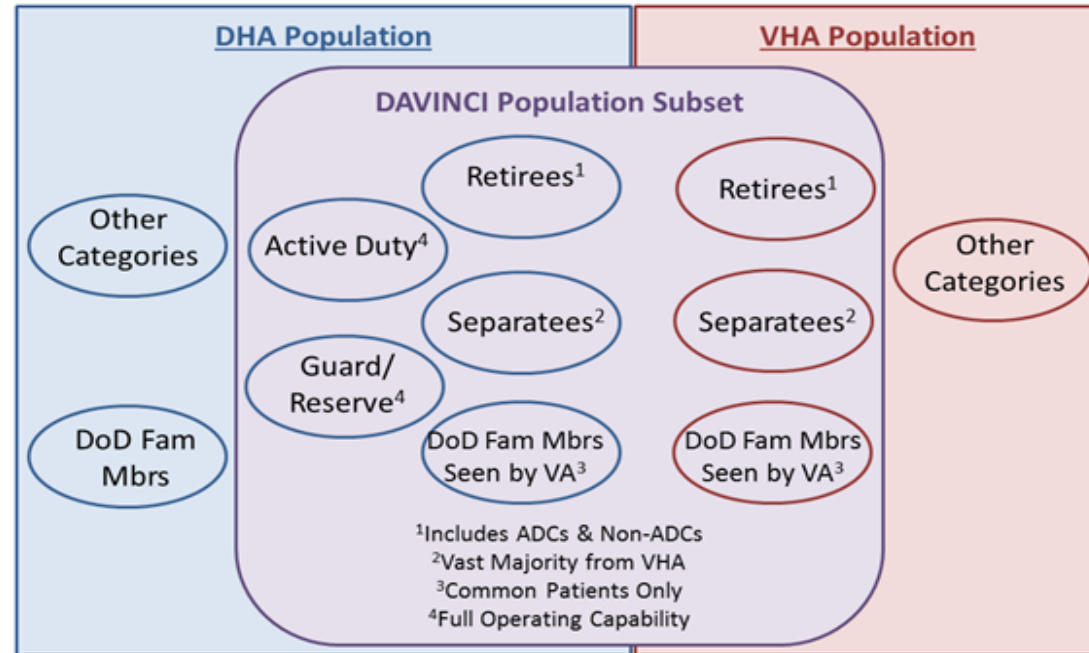


What is DaVINCI?

- Increase DoD-VA data integration for interagency collaboration and resource sharing
- Implement governance process for interagency operation & research collaboration
- Identify technical solution for each agency to access & use data
- Identify opportunities to leverage integrated platform to develop novel clinical tools and test computing performance



DaVINCI Population



DaVINCI creates a consolidated view of healthcare from accession to interment for Service women and men, Veterans, and other eligible patients receiving care from DoD or VA



- [Launch Workspace](#)
- [New To VINCI](#)
- [My VINCI Dashboard](#)
- [VINCI University](#)
- [VINCI Tube](#)
- [VINCIpedia/FAQ](#)
- [User Guides](#)
- [VINCI Services](#)
- [Computing Cloud](#)
- [Data Sources](#)
- [Applications](#)
- [Events](#)
- [Policies and Forms](#)
- [Let's Collaborate VA!](#)
- [Quick Links](#)
- [Voogle Notes](#)

Let's Collaborate VA!
Find collaborators to do projects with.

[More Details](#)

Welcome to the VA Informatics and Computing Infrastructure

Scott Duvall
VINCI Email: VINCI@VA.gov
Concierge Desk: 1-801-872-3324
[Request Help Online](#)

Data Sources

- [CDW Production](#)
- [CDW and Other Raw](#)
- [OMOP](#)
- [DaVINCI](#)

The Military Health System Data Repository (MDR) is the most comprehensive source of data available for researchers and is the source of data being sent to the VA through DAVINCI. This source contains records on all health care events (that are required to be reported) paid for by the MHS, regardless of setting. This system also contains robust historical beneficiary data, including coverage information, service-related information and demographics. The MDR incorporates important clinical data such as vital signs, Body Mass Index, tobacco usage, radiology results, and chemistry, microbiology, and pathology lab results. Most of the clinical data is only available for Fiscal Year (FY) 2009 and forward, while most other administrative data sources go back many more years, some as far as FY 1989. For records from FY 2000+, the MDR contains a unique person identifier allowing person-level files to be linked across data sources. MDR files are useful for cohort definition, in that all event and beneficiary data are available in one system. The MDR is generally considered the most reliable source for MHS data.

[DaVINCI Data Dictionary](#)
[DoD Dataset Descriptions](#)
- [SAS Datasets](#)

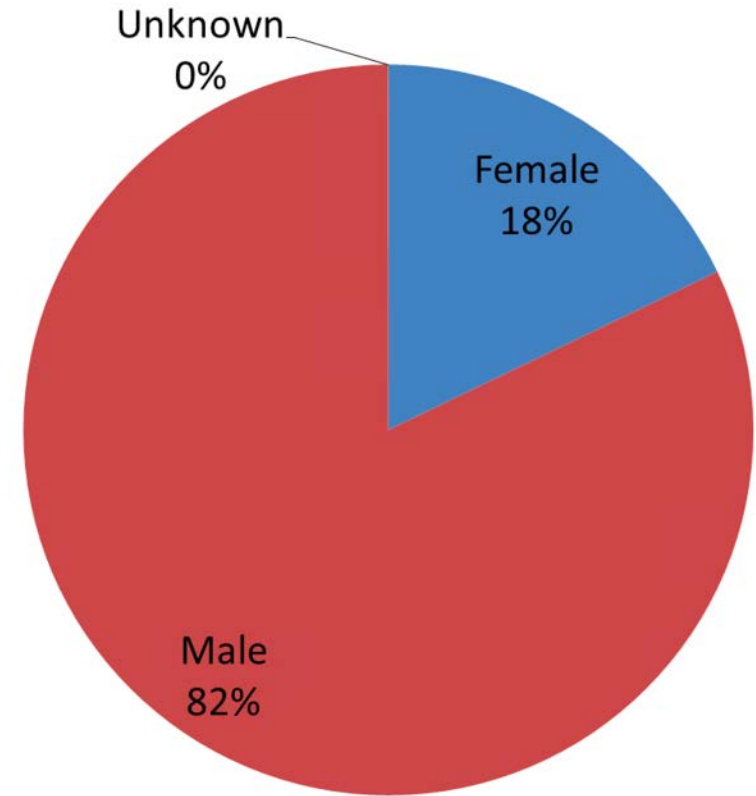
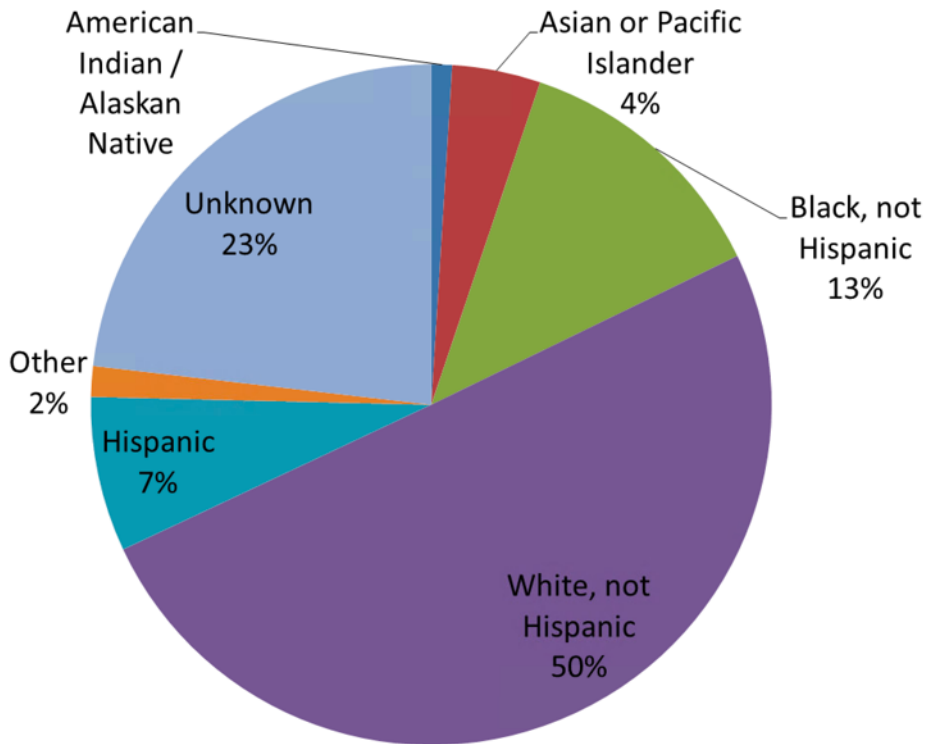
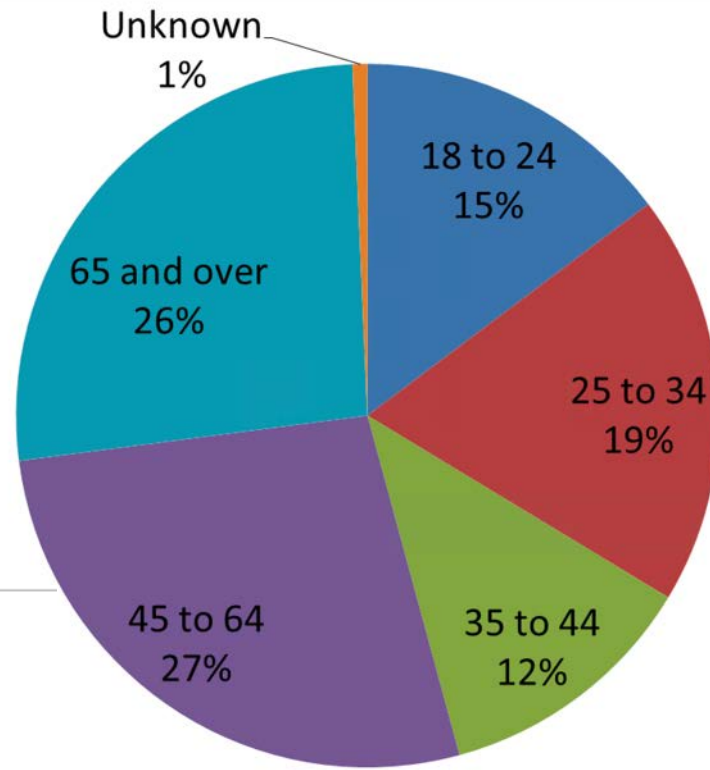
Additional Resources

[Identifying and Maintaining a Patient Cohort in the CDW Over Time](#)

[VINCI Data Topics](#)

Feedback

HSDW/MDR Table Name	Content	Timeframe	FOC Rows
Ancillary (Lab and Rad) Procedures	One record per MTF outpatient laboratory test, or two records per MTF radiology exam. Contains person and provider information, test date, procedure codes, demographic and other information.	FY05+	364,818,730
CAPER (Comprehensive Ambulatory Provider Encounter Record)	One record per kept appointment at an MTF. Contains person and provider information, encounter date, diagnosis and procedure codes, demographic and other information.	FY05+	298,267,847
DEERS VM6BEN (Person Detail)	One record per eligible beneficiary per month (some ineligible beneficiaries are also in the file). Primary source of official demographics for MHS eligibles.	FY08+	470,172,620
Designated Provider (Clinical)	Purchased Care claims. One record per procedure claimed for Designated Provider Enrollees.	FY05+	10,899,397
Designated Provider (Pharmacy)	Purchased Care claims. One record per medication claimed for Designated Provider Enrollees.	FY10+	6,242,352
PDTS	One record per outpatient prescription from direct care or purchased care.	FY03+	736,707,249
SIDR (Standard Inpatient Data Record)	One record per inpatient stay at an MTF. Contains person and provider information, dates of care, diagnosis and procedure codes, demographic, and other information.	FY00+	1,834,549
TED-I/HCSR-I	Purchased Care claims. One record per institutional claim. Contains information about patient, provider, care delivered and payment/billing data.	FY00+	5,364,824
TED-NI/HCSR-NI	Purchased Care claims. One record per non-institutional claim. Contains information about patient, provider, care delivered and payment/billing data.	FY00+	1,361,494,083
Vitals	Alcohol and tobacco use, blood pressure, height/weight/body mass index, respiratory rate, tobacco usage, pulse oximetry, other key clinical data, patient identifiers and demographics.	FY09+	92,331,141





In the “mail” ...

- ADDP Claims
- Behavioral Health Screenings
- Casualty Death
- Chemistry
- DED (Dental Encounter Data)
- Health Risk
- Master Death
- Medications
- Microbiology Results
- Microbiology Susceptibility
- MMSO Dental Care Claims
- Pathology Results
- Radiology Results
- SO Notes
- TDP (TRICARE Dental Program) Claims
- TMDS (Theater Medical Data Store) CPT
- TMDS (Theater Medical Data Store) Diagnosis
- TMDS (Theater Medical Data Store) Encounter
- TRDP (Tricare Retiree Dental Program) Claims



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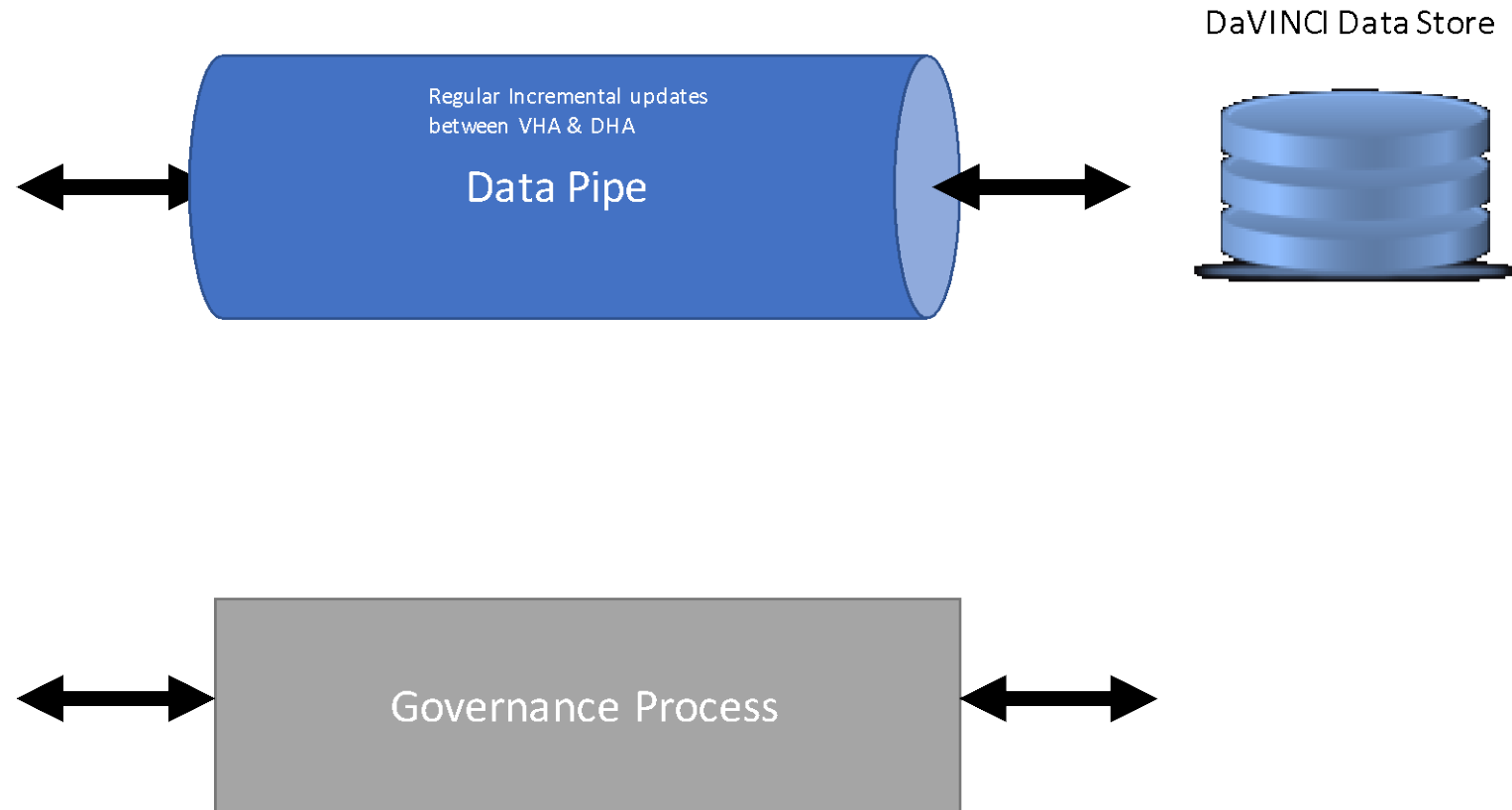


DaVINCI Data Transfer

- Authority
 - Signed MOU – authority to transfer data between DoD and VA
 - MOA – authority to transfer stewardship for transferred data
- Path
 - Big load via encrypted hard drives
 - Exploring options for continuous load via direct connection
- Scope
 - CDW + transformed OMOP data
 - HSDW, M2, MDR + transformed OMOP data



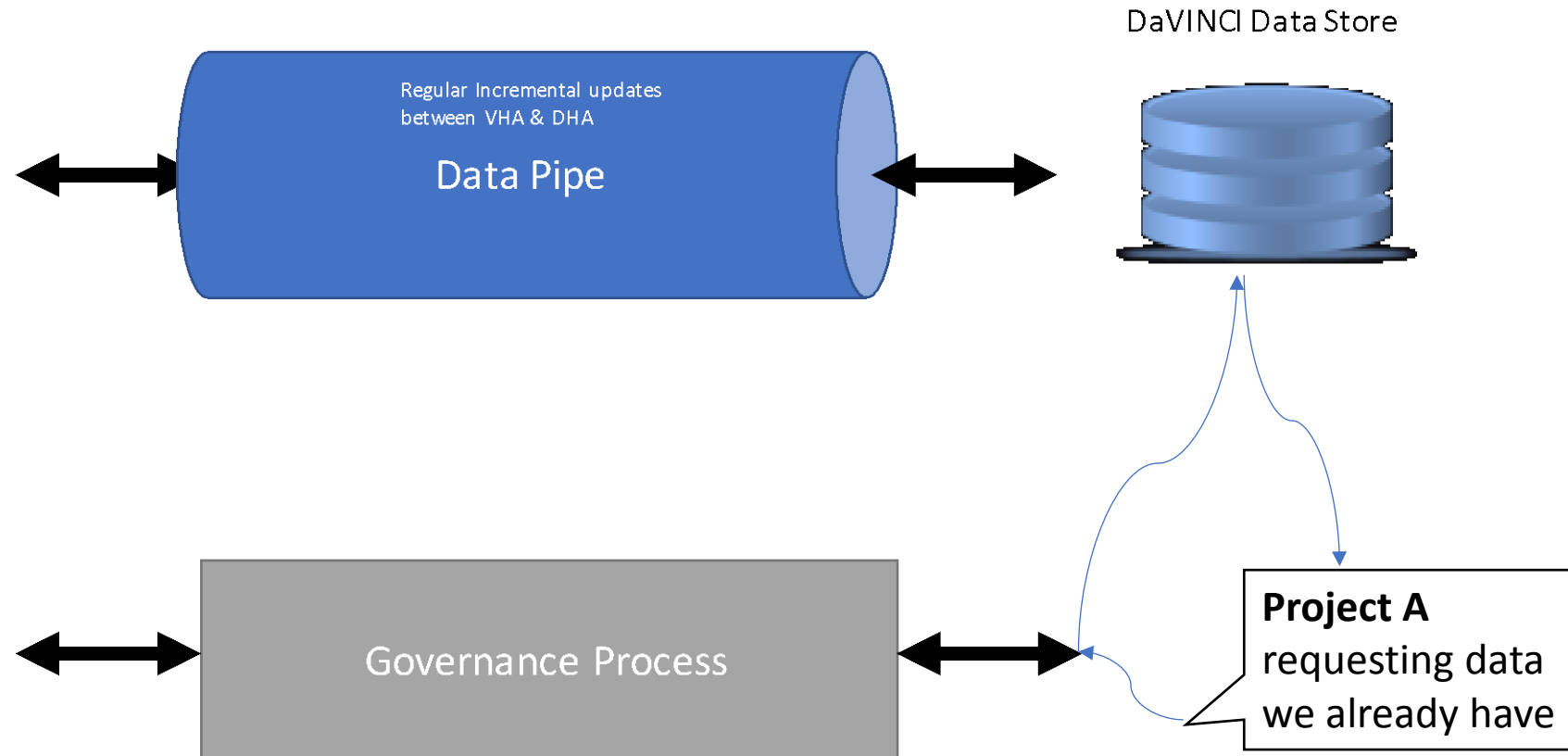
DaVINCI Interagency Governance





DaVINCI Interagency Governance

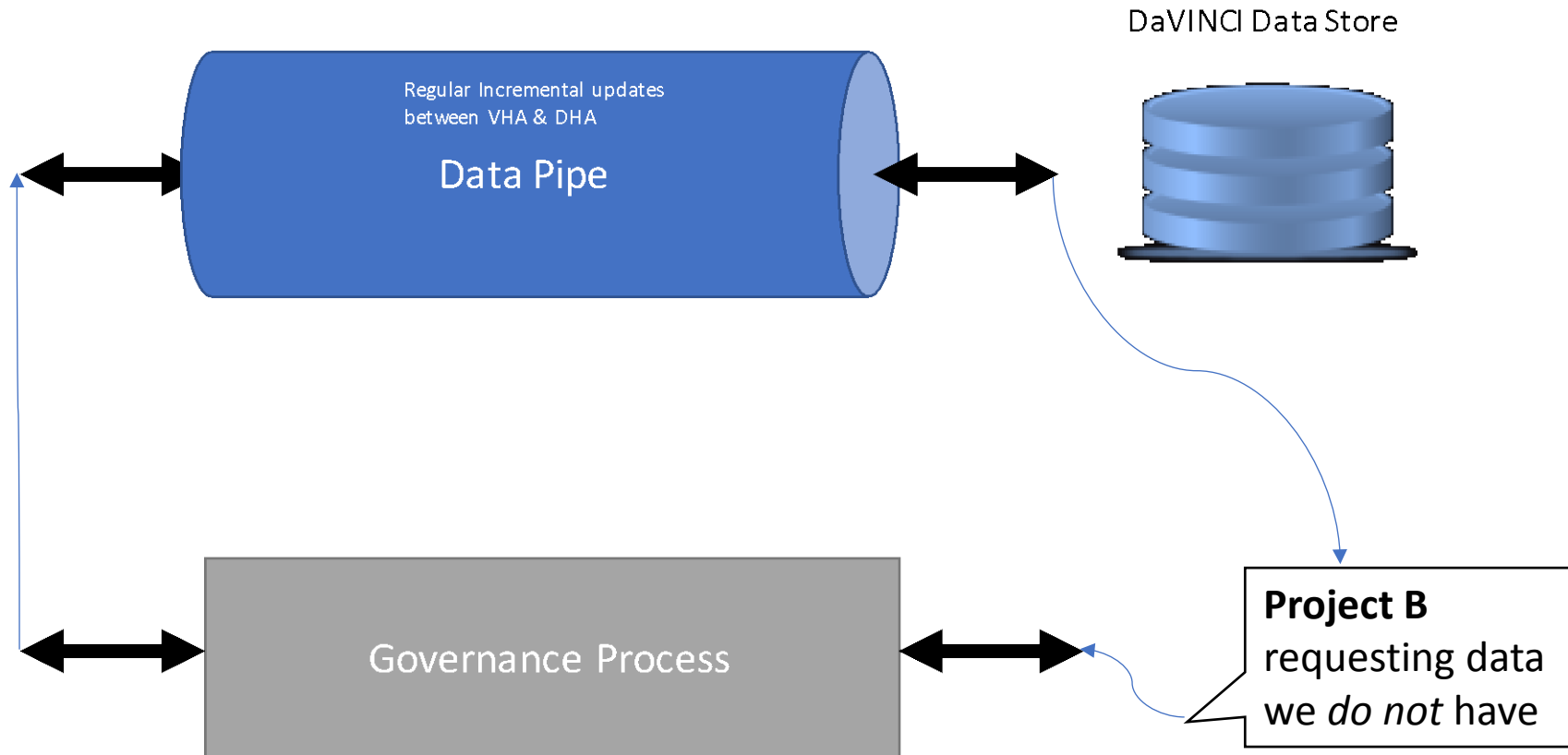
(local process)





DaVINCI Interagency Governance

(inter-agency process)





How do I Request DaVINCI Data?

Research

- DART
- Research Request Memo
- Project Location

Operations

- ePAS
- Explanatory Email
- Project Location

National Data Systems



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Joint Agency OMOP Common Data Model

- Observational Medical Outcomes Partnership (OMOP) creates common structure and semantic model between VA and DoD data
 - Structure: Maps different source data (both internal VA and DoD source systems and VA CDW and DoD HSDW) to same logical model
 - Semantics: Maps different source codes to same standard terminology
- Results in a consistent, longitudinal view of health care provided regardless of agency



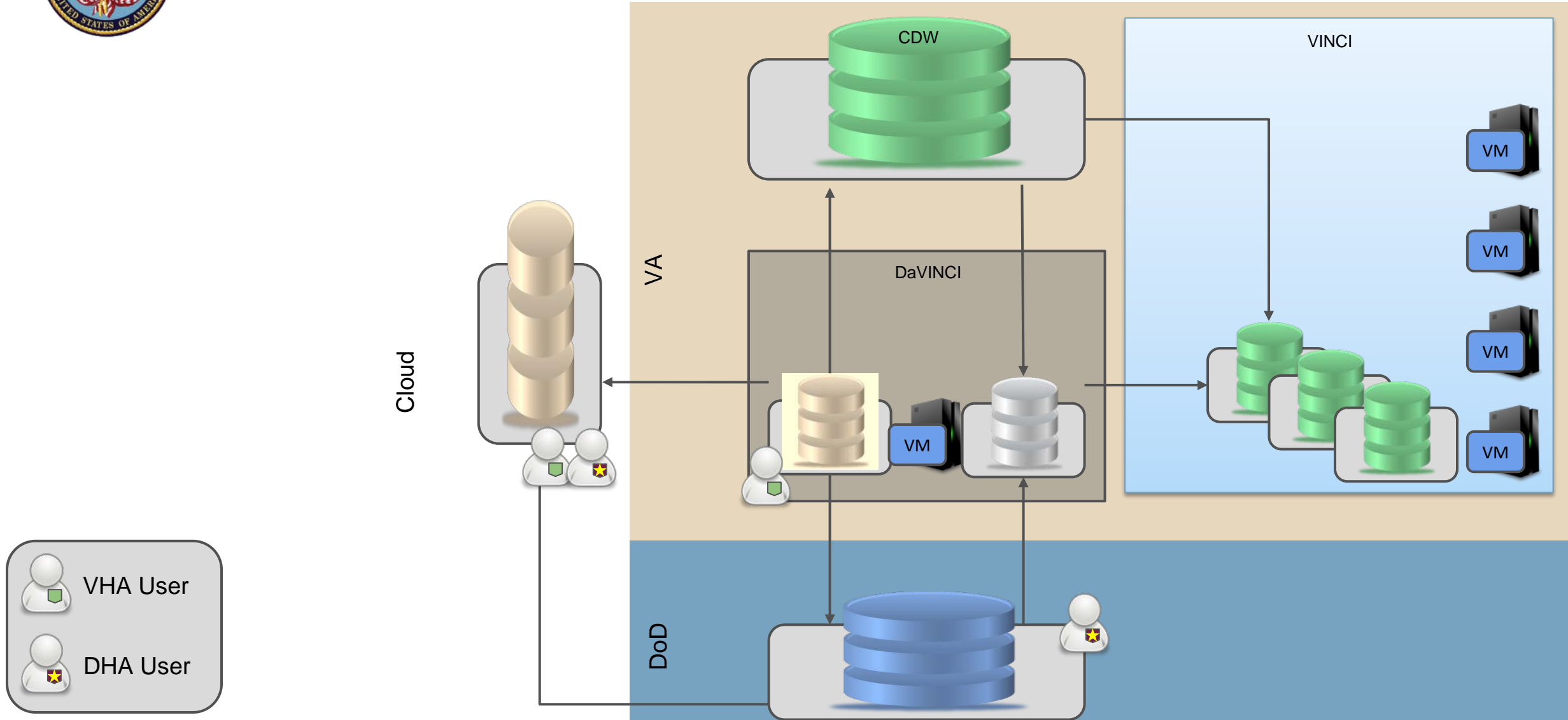
Joint Agency OMOP Common Data Model

Table	Field Name	Definition
DEERS	person_id	DEERS Person ID of the beneficiary (EDIPN)
SIDR	Patient_Unique_ID	EDIPN of the beneficiary
CAPER	PersonID	Unique patient identifier supplied by the Defense Manpower Data Center (DMDC). The Electronic Data Interchange Person Number (EDI_PN).
TEDI	personid	DEERS Electronic Data Interchange Person ID (EDIPN)
TEDNI	PersonID	DEERS Electronic Data Interchange Person ID (EDIPN)
PDTS	PatientIdentifier	A unique identifier of a person, as assigned by DEERS. This is sometimes, under HIPAA, called the Electronic Data Interchange - Patient Identifier (EDI-PN).
Anc Lab	PersonID	DEERS Person ID (EDIPN)
Anc Rad	PersonID	DEERS Person ID (EDIPN)
DESPROV	PATID	Identifier associated with a specific patient.
Vitals	EDI_PN	Unique person identifier.
Immunizations	bnfcry_deers_id	Unique patient identifier supplied by the Defense Manpower Data Center (DMDC). The Electronic Data Interchange Person Number (EDI_PN).

- Results in a consistent, longitudinal view of health care provided regardless of source system



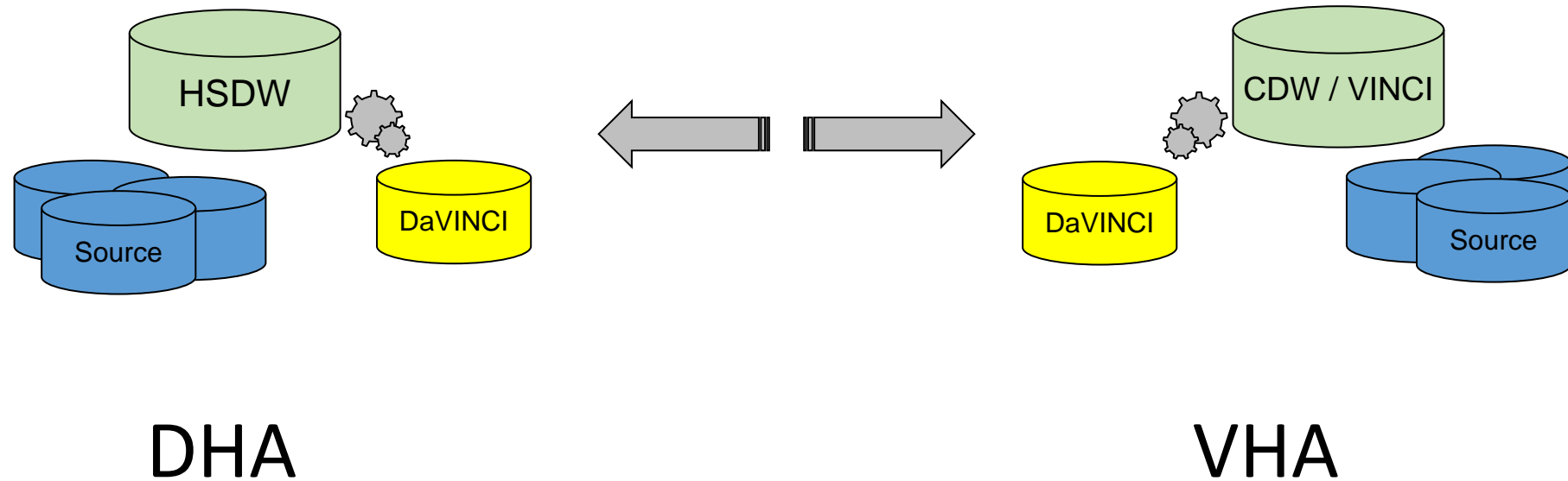
DaVINCI Architecture





DaVINCI Architecture

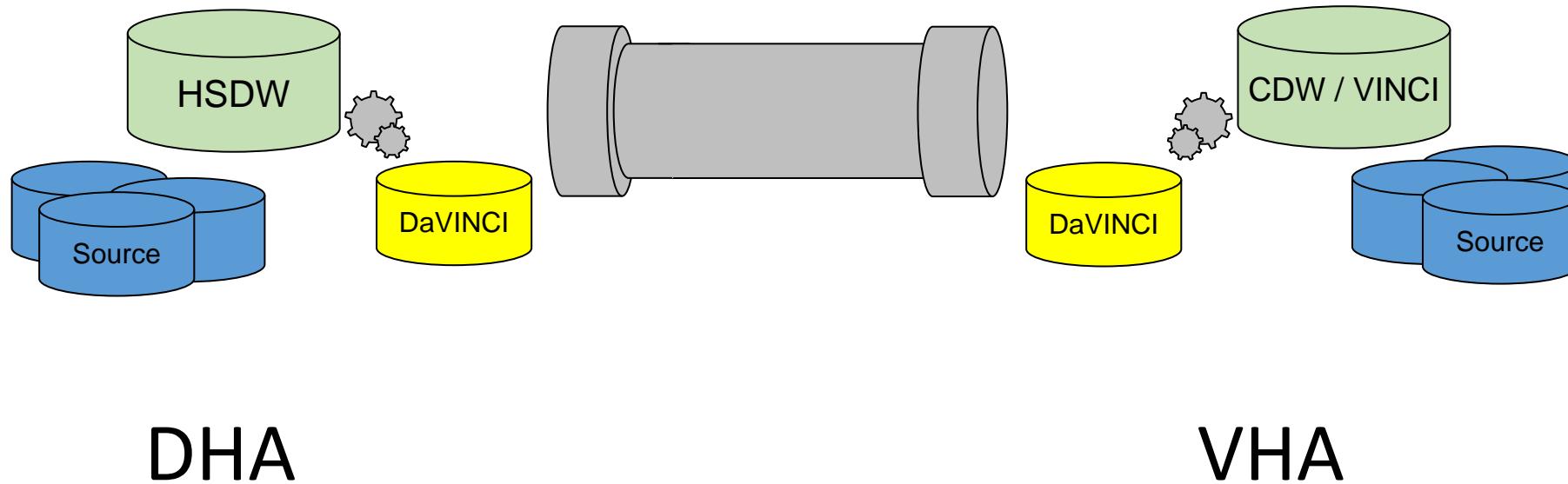
DaVINCI Infrastructure (now)





DaVINCI Architecture

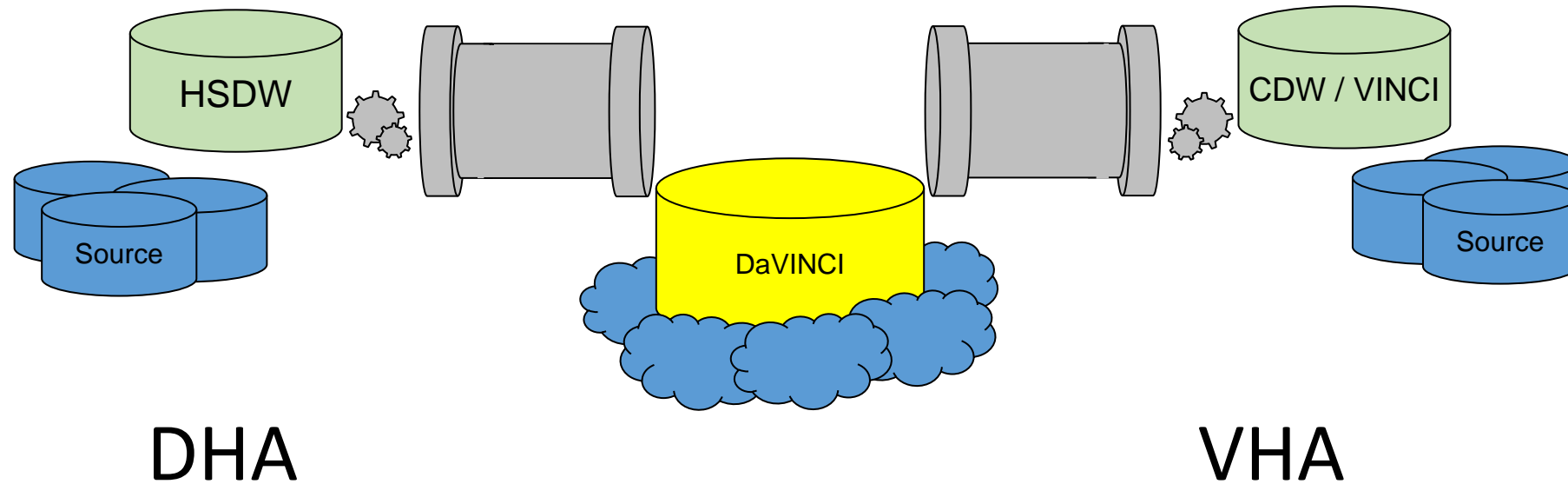
DaVINCI Infrastructure (exploring solutions)





DaVINCI Architecture

DaVINCI Infrastructure (future)



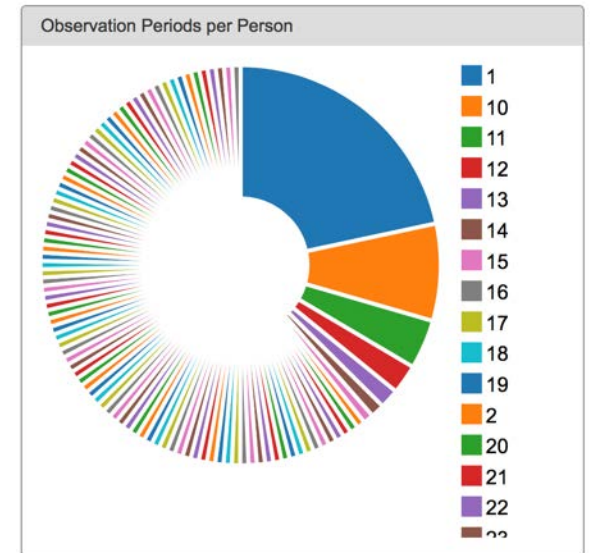
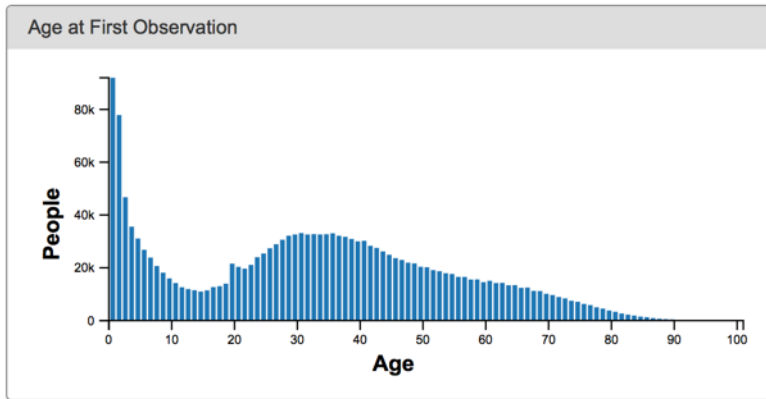
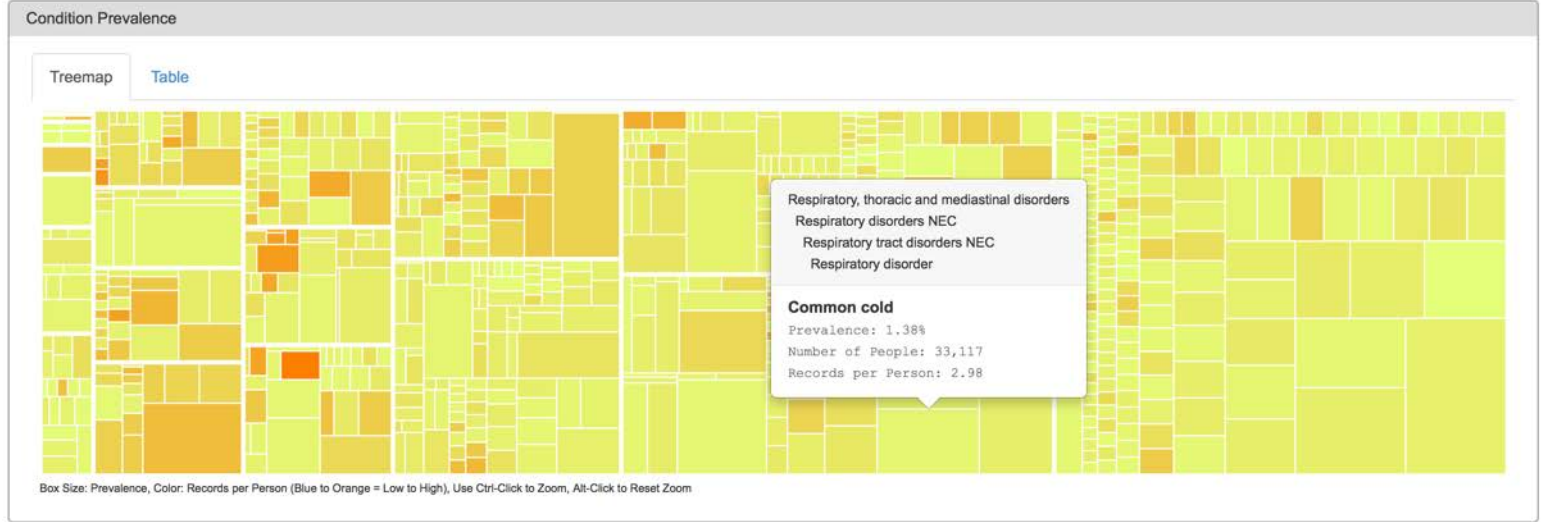


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OHDSI
OBSERVATIONAL HEALTH DATA SCIENCES AND INFORMATICS





Research Implications

- Use responsibly
- New data sources – undergoing quality assurance
- Made available as delivered from DHA (HSDW, MDR)



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