

OMOP Implementation and Environment at the VA

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VINCI OMOP and OHDSI Services

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Our Team

Salt Lake VINCI Group

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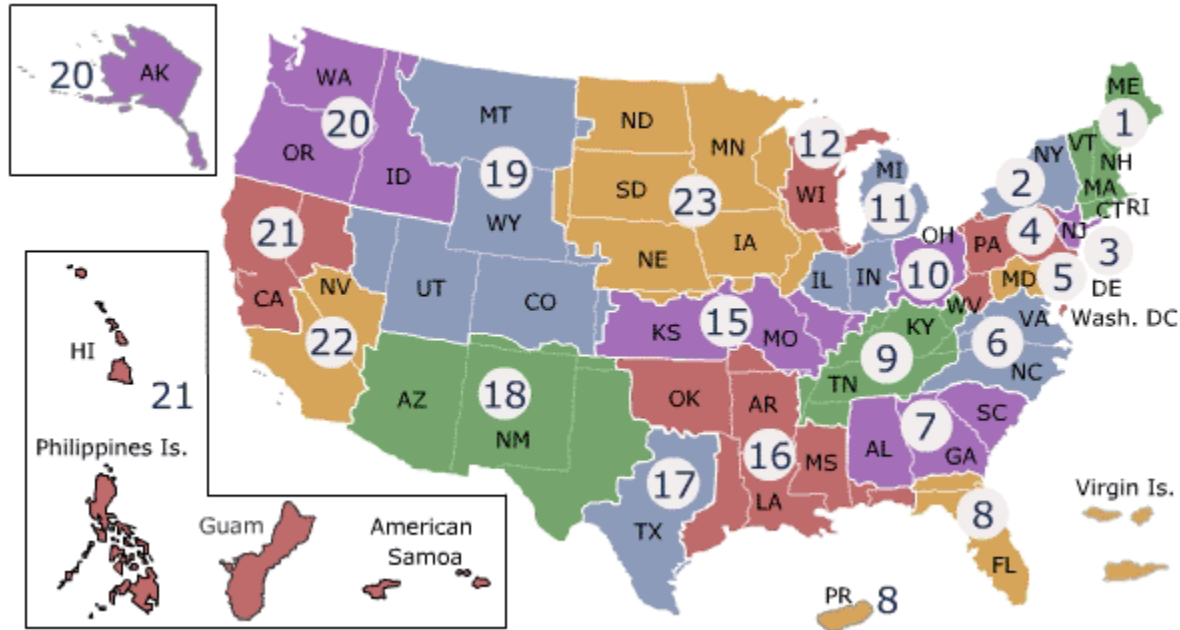
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VA Demographics



150 Acute care hospitals

1,400 Community based clinics

53,000 independent licensed health care practitioners

21 million Vets (~9% female)

\$59 Billion overall budget FY2015

Majority of care is not fee based



VA Demographics

- Clinical data warehouse (CDW) supports VA research and operational data needs
- Data services supported by VA Informatics and Computing Infrastructure (VINCI) and VA Information Resource Center (VIReC)
- VINCI and VIReC support about 500 health services researchers and operations users of CDW
- Robust, active community with comprehensive data infrastructure



VA OMOP Demographics

~13 million unique patients

25.3 Million Inpatient

2.2 Billion Outpatient (VA and fee basis encounters)

Domiciliary/Nursing Home/Sub-acute care excluded

Encounters from late '90s to 10/2015



Table Specific Demographics

Condition_occurrence 2.3 Billion rows

Observation Table	
VitalSign	2,939,830,385
PatLabChem	6,642,418,410
inpatinpat	45,914,135
DentalExam	195,840



Table Specific Demographics

Top 10 Lab Tests

CONCEPT_ID	concept_name	SOURCE_VALUE	COUNT
3013682	Urea nitrogen [Mass/volume] in Serum or Plasma	3094-0	137,773,363
3011424	Glucose [Mass/volume] in Blood by Test strip auto	2340-8	65,686,625
3024629	Glucose [Mass/volume] in Urine by Test strip	5792-7	35,840,420
3023539	Ketones [Mass/volume] in Urine by Test strip	5797-6	32,118,157
3018311	Urea nitrogen/Creatinine [Mass ratio] in Serum or Plasma	3097-3	10,849,999
3006175	Mucus [Presence] in Urine sediment by Light microscopy	8247-9	10,682,702
3037072	Urobilinogen [Mass/volume] in Urine by Test strip	20405-7	10,433,455
3004077	Glucose [Mass/volume] in Capillary blood	32016-8	7,815,582
3022407	Monocytes/100 leukocytes in Blood by Manual count	744-3	7,642,610
3016879	Cocaine [Presence] in Urine	3397-7	6,928,029



Issues

Data manipulation and mapping often too unwieldy when issues found (e.g. missing ICD-9 codes from dropped decimal or digit in source or vocabulary) for quick fix and reload.

Lag within data version given long load times of incremental loads.

Complex mapping of certain aspects of VA activity resulting in loss of detail (visit location)



OHDSI Tools

- Development contract to make tools VA compliant
- Hermes, Achilles and Cohort design 1st tools developed to meet internal VA security standards
- Hermes and Achilles are currently in test and training of VINCI staff as to their use is ongoing
- Beginning of cohort design on v5.
- Final QA of v4.5 and training of



OMOP advantages

- Extensive data cleaning, only Vets and not their dependents, duplicates and incorrect SSN removed, etc.
- Robust combination disparate data groups – fee based; SSI, NDI and VA benefits for mortality; inpt and outpt pharmacy and lab testing with cleaning of the top 50 lab tests
- Includes source data to facilitate use by current data users and experts
- Integrates VA specific vocabularies into OMOP model and concept table
- Coded data readily integrated – Dental Tobacco Screening



Where we are now

- Final QA of v4.5 and training of VINCI staff
- Initial marketing of OMOP to VA researchers and operational users
- Help Desk staffed and process for requesting OMOP data completed
- VINCI OMOP users group with documentation and metadata created - VA pulse environment
- v5 partial load begun and QA and documentation initiated



Where we are going

- Anyone with operational access will be able to request OMOP access upon final QA, research must add to their IRB.
- NPL data integration begun – Ejection Fraction and cardiac outcomes, test case.
- Integrated phenotypes, independently verified
- Integrate CMS data and link to Million Vet Project
- Other data – microbiology, pathology, cancer registry, problem list, alerts, service specific notes (TIU), NPL-AKI and cancer screening.