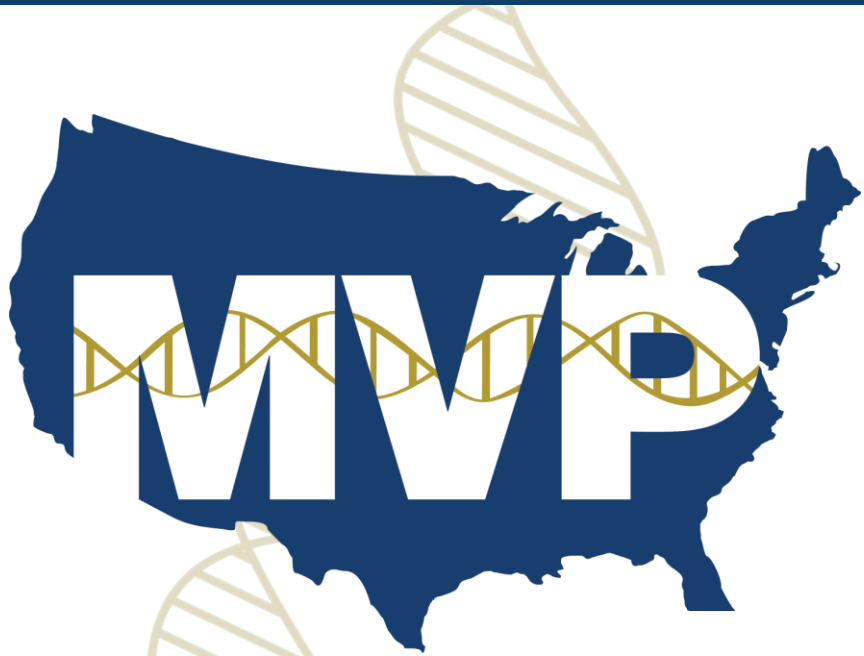




VA Boston Healthcare System

MILLION VETERAN PROGRAM

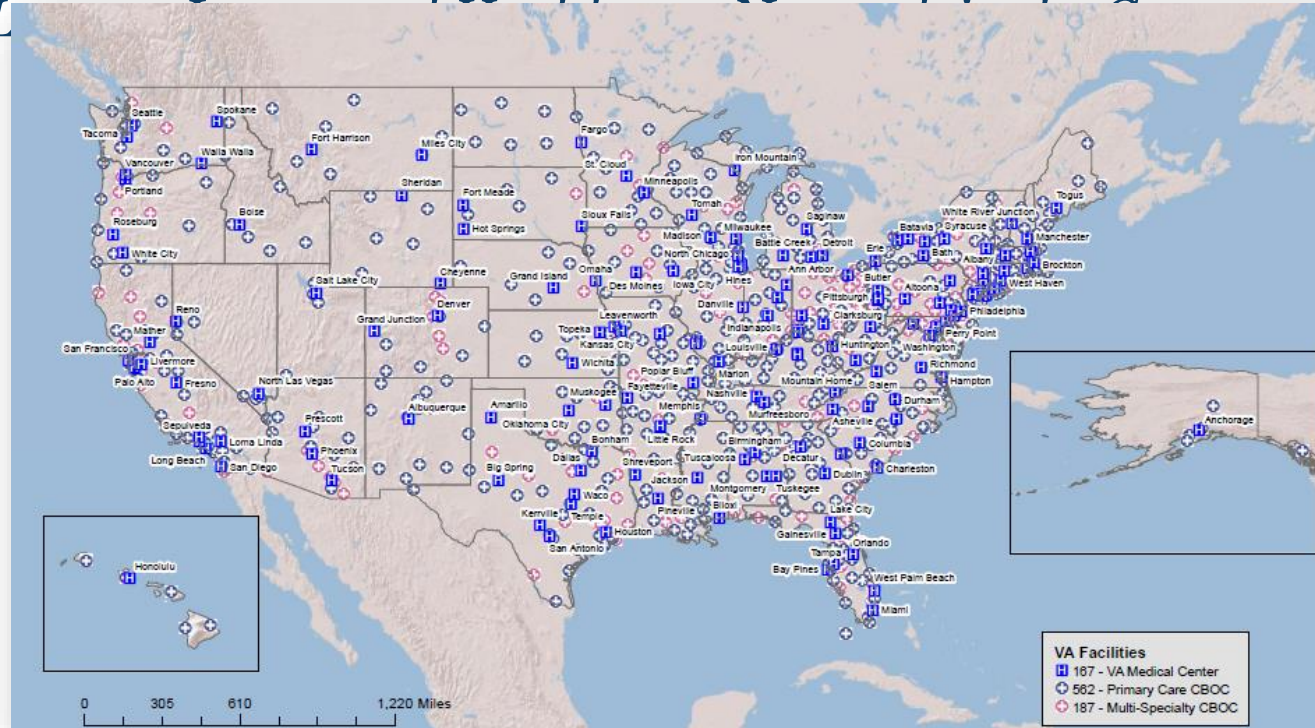
A Partnership with Veterans

MVP: Update on Omics and Future Plans

J. Michael Gaziano, MD, MPH
Chair, MVP Executive Committee
NAS, October, 2019

Veterans Health Administration (VHA)

The L



VHA Points of Care (1,748)

- Integrated Healthcare Networks: 21
- Major Medical Centers: 152
- Outpatient Clinics: 990
- Vet Centers: 370
- Domicillaries: 102
- Community Living Centers: 134

Patient Population

- Enrollees: 8.8M
- Active Patients: 6M
- All Time Patients: 22M
- FY15 Outpatient Visits: 84M
- FY15 Inpatient Admissions: 703K



Governance Board

- Strategy
- Policy
- Priorities
- Requirements

VA Analytic Ecosystem (2015)

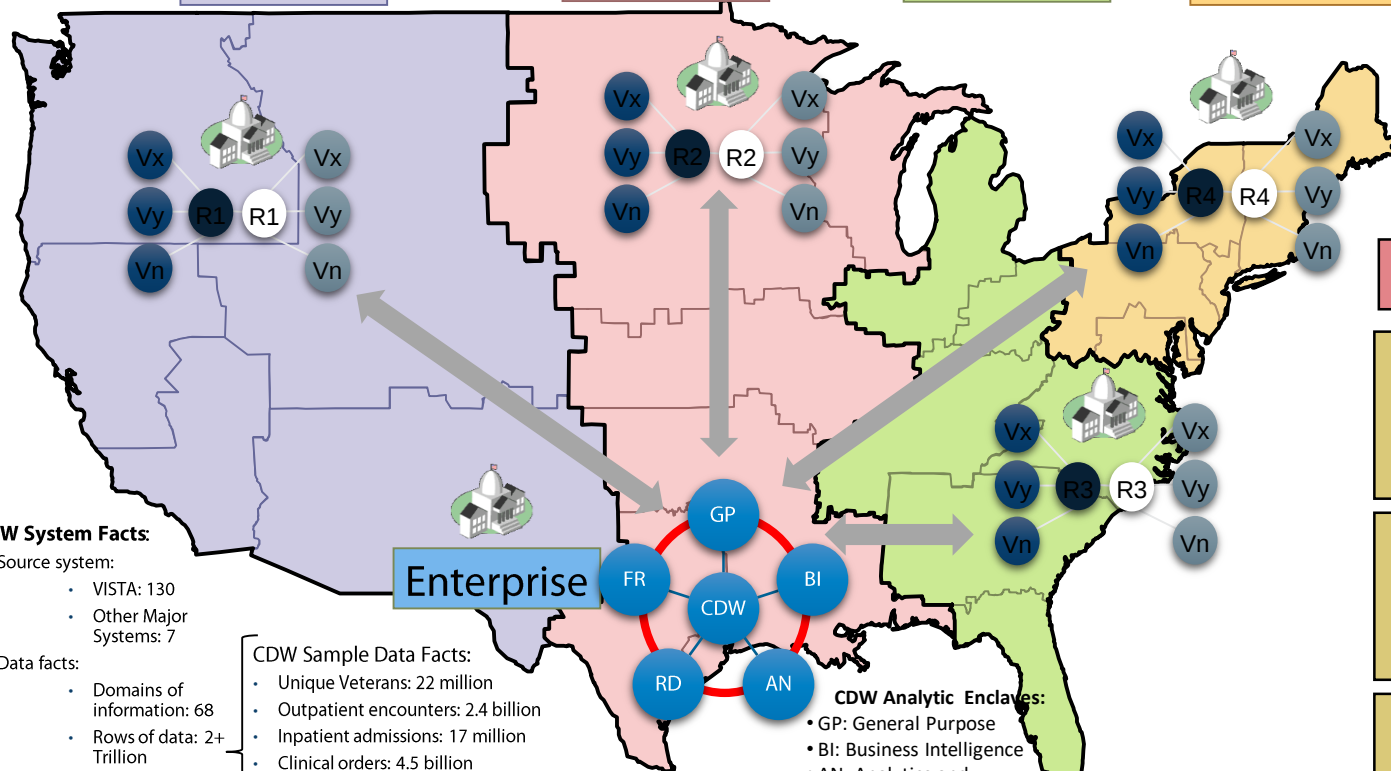
Common Data ♦ Common Infrastructure ♦ Common Tools ♦ Common Security

REGION 1

REGION 2

REGION 3

REGION 4



CDW System Facts:

- Source system:
 - VISTA: 130
 - Other Major Systems: 7
- Data facts:
 - Domains of information: 68
 - Rows of data: 2+ Trillion
 - Columns of data: 22,000+
 - Tables of data: 840+
- Active Users: 30,000/Month
- Vibrant user community
- Active governance process
- Data quality program

CDW Sample Data Facts:

- Unique Veterans: 22 million
- Outpatient encounters: 2.4 billion
- Inpatient admissions: 17 million
- Clinical orders: 4.5 billion
- Lab tests: 7.7 billion
- Pharmacy fills: 2.2 billion
- Radiology procedures: 202 million
- Vital signs: 3.3 billion
- Text notes: 3.2 billion

CDW Analytic Capabilities:

- Primary/Secondary/Data Mart Structures
- Data Standardization
- Metadata Services
- Business Intelligence Reporting & Dashboards Tools
- Geospatial Mapping Tools and Images
- SAS/Grid High Performance Compute Grid
- Natural Language Processing Engines
- Hadoop Cluster

CDW Analytic Enclaves:

- GP: General Purpose
- BI: Business Intelligence
- AN: Analytics and Informatics
- RD: Health Services R&D (VINCI)
- FR – Field Reporting

The EHR data available in the CDW and other data sources is among the best in the world.

Patients: 22 M

Lab Results

7.7B

Clinical Orders

4.5B

Immunizations

71M

Appointments

1.4B

Pharmacy Fills

2.2B

Clinical Notes

3.2B

Health Factors

2.2B

Encounters

2.4B

Radiology Proc

202M

Vital Signs

3.3B

Consults

315M

Admissions

17M

Surgeries

14M

Oncology

1.3M

Domains: 15/68

MVP at a Glance

**~14M total mailings to
Over 5.5M Veterans
14% enrollment rate
< 1% withdrawal rate**

839,377
Baseline
Surveys
Completed

784,038
Enrolled

344,588
Lifestyle
Surveys
Completed

462,397
Specimens
Genotyped

482,954

61 Active Sites; 86 Satellites



Who's in MVP?



Key health and demographic stats

Below are selected statistics from a recent review of the **demographic, military, and health characteristics** of Veterans enrolled in VA's landmark [Million Veteran Program](#), which has become one of the world's largest databases of health and genomic information. The researchers concluded that the demographic make-up of the MVP cohort—which has **nearly 700,00 Veterans enrolled to date**—is similar to that of VA patients on the whole.

90.4% of the MVP cohort is **male**



The **average age** is 61.9



73.9% of the cohort is **White**, 19% **Black**, and 6.5% **Hispanic**



The most common self-reported disease among **men** is hypertension (64.6%)



The most common self-reported disease among **women** is depression (47.5%)



38.2% of the MVP cohort is obese, and 42.3% is overweight



PTSD was reported by 18.3% of men, and 26% of women



Tinnitus was reported by 34.2% of men, and 20% of women



From "Baseline characterization and annual trends of health care utilization for a mega-Biobank cohort of US veterans 2011–2017" *Journal of Health Research and Behavior*, Aug. 13, 2018. Infographic by [VA Research Communications](#), September 2018. Stock Illustrations © iStock/beatwave; Shutterstock/iStockphoto; alana; beandly23.



New Initiatives





"I have always known someone in the family with Diabetes or Hypertension. I eagerly volunteered to participate in MVP so I can help medical researchers better understand how genes influence diseases. One blood draw is all it took... yet the potential to contribute to scientific discoveries is enormous!"



"I'm participating in the Million Veteran Program so that I can do my part to help future generations of not just Veterans, but everyone who can benefit from this research."

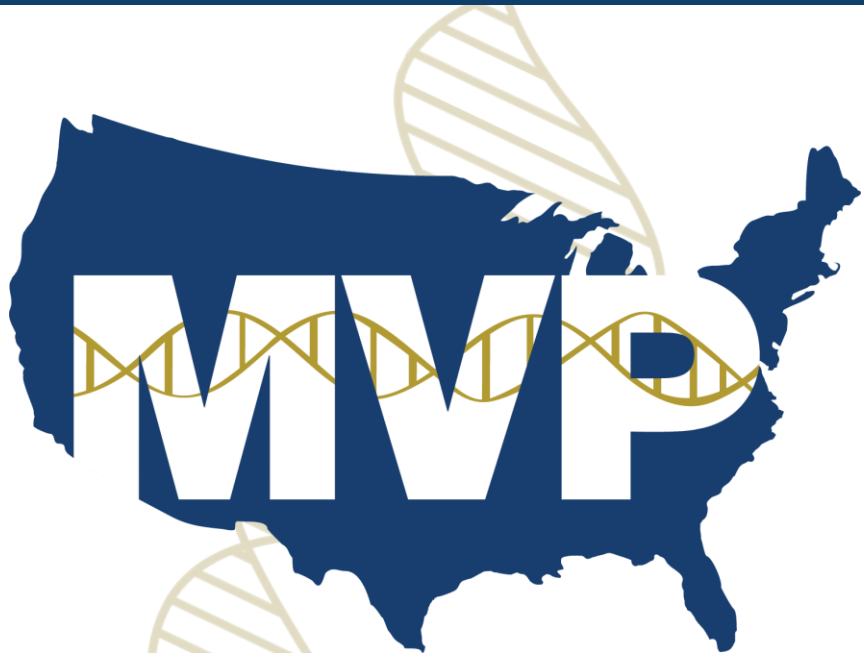


"When I was young, the service gave me a reason. Today, my reason is to help answer those questions yet to be asked....."



"I believe that the data collected from me and other Veterans in the Million Veterans Program will someday provide better ways to diagnose and treat patients. I volunteered to participate in the MVP because I want to do my part to make this a reality one day."





MILLION VETERAN PROGRAM

A Partnership with Veterans

VA



U.S. Department
of Veterans Affairs

DISCOVERY ★ INNOVATION ★ ADVANCEMENT