

VIReC Introduces New Data for VA Research

**QUERI National Meeting
Dec 11, 2008**



VIReC Strategic Goals

- Create a growing knowledge base for VA researchers about VA and select non-VA data
- Share knowledge about databases and information systems with VA researchers
- Represent the interests of VA researchers using databases and information systems in their research

Workshop Objectives

- Introduce data newly available through the VHA Support Service Center (VSSC) and Corporate Data Warehouse (CDW)
- Review data elements and layouts
- Review procedures for acquiring data
- Discuss potential uses of data

Presenters

- Diane Cowper Ripley
- Stephen Anderson
- Ruth Perrin

VSSC OEF/OIF Data

Diane Cowper Ripley
RORC-REAP

NF/SGVHS, Gainesville Division

Rehabilitation **Outcomes** Research Center

VA HSR&D/RR&D Research Enhancement Award Program



Presentation Overview

■ Description of VHA Support Service Center (VSSC) Data Sources

- OEF/OIF Roster
- OEF/OIF Data Cubes & Reports

■ Key Highlights

- Data Elements
- Where and How to Access the Data
- Research Utility

Overview of OEF/OIF Roster

■ Description of VSSC Roster

- Data feeds
- Data elements

■ Accessing the data

- Where to go
- What to do

■ Research Utility

- Limitations

VSSC OEF/OIF Roster

■ Data Feeds

- DoD's Defense Manpower Data Center (DMDC) sends list of recently separated OEF/OIF veterans to VA's Environmental Epidemiology Service (EES)
- Monthly feed from EES to VSSC
- EES list run against VA Health Eligibility Center (HEC) files to get VHA enrollees
- VHA enrollees run against Medical SAS datasets to get VHA users

Creation of Roster (History)

■ September 2003:

- DMDC developed initial file of “separated” Iraqi and Afghan troops using proxy files:
 - Active Duty and Reserve Pay files
 - Combat Zone Tax Exclusion, and
 - Imminent Danger Pay data

■ September 2004:

- DMDC revised procedures for creating periodic updates of the roster
 - Now utilizes direct reports from service branches of deployed OEF/OIF troops

Current VSSC OEF/OIF Roster

- **Roster contains discharged service members (veterans) deployed for OEF/OIF who have been:**
 - Physically located within the OEF/OIF combat zones or areas of operation; or
 - Specifically identified by his/her service as directly supporting the OEF/OIF mission outside the designated combat zone.
- **Roster contains military discharges from 10/1/2001 to date**
 - Current VSSC Roster is through July 31, 2008.

OEF/OIF Roster Data Elements

Variable	Data Type	Length	Data Source
■ Combat_End_Date	Num	10	HEC only
■ DEAD	Char	10	DMDC only
■ FIRSTNAME	Char	15	both
■ INDOD	Char	3	DMDC only
■ LASTNAME	Char	20	both
■ LOCAT	Char	16	HEC only
■ MIDDLENAME	Char	15	both
■ OEFOIF_flag	Char	4	both
■ RACE	Char	8	DMDC only
■ SCRNUM	Num	10	both
■ SCRSSN	Num	3 - 9	both
■ SEX	Char	1	DMDC only
■ Srv_End_Date	Num	10	HEC only
■ UNITCODE	Char	3	DMDC only
■ ZIP	Char	9	DMDC only
■ birth_date	Num	10	DMDC only
■ count_flag	Num	1	both
■ sep_date	Num	10	DMDC only

- Best to use records that have an OEFOIF_flag IN ('both', 'DMDC'). Do not include records where OEFOIF_flag = 'HEC'.

OEF/OIF Roster Data Request Process

■ VA investigators must sign a Data Transfer Agreement

- Details the authorized uses of the data for a limited time period
- Stipulates restricted access, technical safeguards including encryption, and physical safeguards for the VA sensitive data
- Prohibits re-disclosed the data

OEF/OIF Roster Data Request Process

- Contact 'VSSC OEF/OIF' email group and request the Data Transfer Agreement (DTA).
 - Submit documents for review to VSSC contact Jeanne Weishar or Linda Hudock:
 - Protocol
 - IRB approval
 - R&D Committee approval
 - HIPAA Waiver
 - Informed Consent Waiver
 - Data transfer agreement
- ACRS Form 9957 (for¹³real SSN access approval)

OEF/OIF Roster Data Request Process

- When the DTA terms finalized, PI submits same documents to Linda Lipson (ORD)
- Dr. Seth Eisen (ORD) signs off on the DTA
 - ORD
 - notifies VSSC POCs that the DTA request has been approved
 - forwards DTA to VSSC who sends a final signed copy to the PI

OEF/OIF Roster Data Request Process

- Roster data are placed in a designated folder on the VSSC server
- Researchers given “Read” access to the folder
- Can copy file to their own server behind the VA firewall
- Can be provided as a flat file or SAS dataset

OEF/OIF Roster Data Request Process

- **Timeline for receiving data**
- **Many people to be acknowledged for establishing process (Linda Lipson, Joe Francis, Seth Eisen from HSR&D especially)**

OEF/OIF Roster Utility for HSR

- **SCRSSN enables linkages with numerous databases**
- **Once linking has occurred can look at:**
 - Specific cohorts within the OEF/OIF users
 - Gender
 - Race (well-populated field)
 - Four categories: White, African-American, Hispanic, Other
 - Disease groups (e.g., traumatically injured veterans with TBI, SCI, Burns, Visual Impairment, Hearing Impairment, Amputations, Orthopedic injuries, etc.)
 - Utilization
 - Inpatient, outpatient, etc.
 - Outcomes
 - Readmission, morbidity, mortality, etc.

OEF/OIF Roster Utility for HSR

■ Limitations

- Lags by several months after separation
- Cannot differentiate OEF from OIF
- Only separated service members, no active duty/national guard
- Generalizability
 - The data only apply to veterans who have accessed health care at a VA medical facility due to a variety of reasons including evaluation of a current health problem, initial VHA enrollment and evaluation for benefits.
 - The data do not represent all OIF/OEF veterans who have become eligible for VA health care.
 - Because VA health care data is not representative of the veterans who have not accessed VA healthcare, formal epidemiologic studies will be required to answer specific questions about the overall health of recent war veterans.

OEF/OIF Roster Utility for HSR

- **Even with limitations, these data are useful for assessing VHA health care needs of new war veterans who access VHA.**

VSSC OEF/OIF Data Cubes & Reports

VSSC OEF/OIF Reports

Important Announcements [all announcements»](#)

- 11/28/2007 Total Cohort Cost by SSN (dSs) Report can be accessed at: [more»](#)
- 10/24/2007 Actions have been added [more»](#)

Learn more about » [frequently asked questions](#) | [resource documents & links](#) | [tutorials](#)

CLICK ON A SUBJECT AREA BUTTON TO FILTER THE PRODUCT LIST BELOW

-  [OEF/OIF Cost](#)
-  [OEF/OIF Customer Service](#)
-  [OEF/OIF Demographics](#)
-  [OEF/OIF Performance Measures and Supporting Reports](#)
-  [OEF/OIF Utilization](#)

OR CLICK ON AN ICON TO FILTER BY PRODUCT TYPE. [PRODUCT TYPE HELP»](#)



TYPE	PRODUCT NAME/DESCRIPTION	PHI	DEF	SAMPLE
	FY08 Measure Supporting Indicator - OEF/OIF TBI Screening 			
	NonVA Care OEF/OIF - PHI 			
	OEF/OIF Basic Demographics Briefing Book 			
	OEF/OIF Basic Demographics Cube 			
	OEF/OIF Dashboard 			
	OEF/OIF Unique Users - Division Level - Summary Report 			
	OEF/OIF Unique Users - Parent Station Level - Summary Report 			
	OEF/OIF Unique Users - VISN Level - Summary Report 			
	Patient Advocate Customer Service Standards and Summary Statistics for OEF/OIF Patients 			
	PMO - New & Established Patients (Completed Appts) 			
	Wait Times - Pending Future Appointments 			

VSSC OEF/OIF Basic Demographics Cube

- **Identifies basic demographic information for discharged service members (veterans) deployed for OEF/OIF who have been:**
 - Physically located within the OEF/OIF combat zones or areas of operation; or
 - Specifically identified by his/her service as directly supporting the OEF/OIF mission outside the designated combat zone.

VSSC OEF/OIF Basic Demographics Cube

■ Data Sources

- HEC enrollment files.
- OEF/OIF roster file
- VHA workload files from Austin Information Technology Center (AITC) (i.e., Outpatient Encounter file, Inpatient Treatment File)
- Planning Systems Support Group (PSSG) mapping of veteran zip codes to the closest VAMC
- VA Vital Status_Master file

VSSC OEF/OIF Basic Demographics Cube

■ Data Elements

- Age
- Branch\Component
- Catchment Area
- Death Indicator
- Education
- Ethnicity
- Gender
- Killed In Action
- Marital Status
- Multiple Deployments
- Priority
- Race
- Service Connection Percentage
- VA User

VSSC OEF/OIF Non-VA Care Payments Cube

- Incorporates all Fee Payment files to provide a single view of all non-VA care payments being made across VHA

VSSC OEF/OIF Non-VA Care Payments Cube

■ Primary Data Sources

- National Fee files located at the AITC, specifically:
 - Fee Outpatient
 - Fee Inpatient
 - Fee Inpatient Ancillary
 - Fee Pharmacy

VSSC OEF/OIF Non-VA Care Payments Cube

■ Limitations

- Based on claims paid through Central Fee processes
- Excludes data from claims rejected, denied, or paid outside of Fee
- Data is not available until after the claim has been processed through Central Fee and paid by FMS.

VSSC OEF/OIF Traumatic Brain Injury (TBI) Reports

- **Summary reports provide a summary (for fiscal year to date) of station, VISN and national performance on the TBI screening Clinical Reminder for OEF/OIF veterans.**
- **Detail reports provide patient-level information on TBI screening**

VSSC OEF/OIF TBI Reports

- **Detail reports provide patient-level information on TBI screening for:**
 - Veterans who screened positive on the TBI Clinical Reminder (patient name, SSN, screening date, division and if a referral was sent)
 - Veterans who should have been screened for TBI, but were not screened (patient name, SSN, last nexus visit, division and clinic stop)

VSSC OEF/OIF TBI Reports

■ Data Sources

- Inpatient and outpatient workload data from the National Patient Care Database (NPCD)
- Patient detail from the Corporate Data Warehouse (CDW)
- Health factor and patient detail data from direct VistA extraction

VSSC OEF/OIF Unique Users Reports

- **Counts of unique OEF/OIF veterans from the VSSC OEF/OIF Roster file who have utilized VA services (excluding pharmacy only) by Fiscal Year**
- **Summary Reports available for VISN, Division, and Station levels**
- **Data Sources**
 - OEF/OIF Roster File
 - VSSC Workload Unique files
 - VSSC standardized facility dimensions file

VSSC OEF/OIF Dashboard

- **Summary counts of OEF/OIF veterans, by VISN and by facility, grouped by**
 - Demographic categories
 - VA use
 - Special populations (DoD amputation list, DoD burn roster)
 - Performance (e.g., app'ts w/in 30 days)
 - Cost
 - Satisfaction level

VSSC OEF/OIF Dashboard

■ Data Sources

- OEF/OIF Basic Demographics Cube
- Combat Veteran Call Campaign (CVCC) Call Center
- Care Management Tracking and Reporting Application (CMTRA)
- DoD Amputation Roster (Walter Reed Army Medical Center); DoD Burn Roster (Military Treatment Facility in San Antonio, TX)
- OEF/OIF Unique Users Cube
- OEF/OIF Inpatient Utilization Cube
- OEF/OIF Outpatient Utilization Cube
- National TBI Screening Clinical Reminder
- OQP Executive Briefing Book
- Non-VA Care Cube
- VSSC Canned Report, “Patient Advocate Customer Service Standards and Summary Statistics for OEF/OIF Patients” and Patient Advocate Cube

VSSC Data Access

- **Summary reports can be viewed on the VSSC website on the VA Intranet**
- **Patient-level data from the Demographics Cube, Non-VA Care Cube and TBI Reports requires**
 - approval for real or scrambled SSN level access to workload data
 - download of ProClarity Desktop Professional onto your computer to view

VSSC Data Access

- **Patient-level data from VSSC further requires**
 - Protocol
 - HIPAA Waiver
 - IRB approval
 - R&D Committee approval
 - Informed Consent Waiver
 - Data steward approval
 - Chief Financial Office – for any financial or DSS data accessed through the VSSC (James.McGaha@va.gov)
 - Chief Patient Care Services – for any clinical data accessed through the VSSC, including but not limited to: Mental Health, Care Coordination, Diabetes, Long Term Care, TBI, etc. (Lynnette.Nilan@va.gov)
 - VSSC – for any waiting times data accessed through the VSSC (vsscklfhelp.va.gov)

Questions?

- Thanks very much for your attention!

Data Warehouse Update



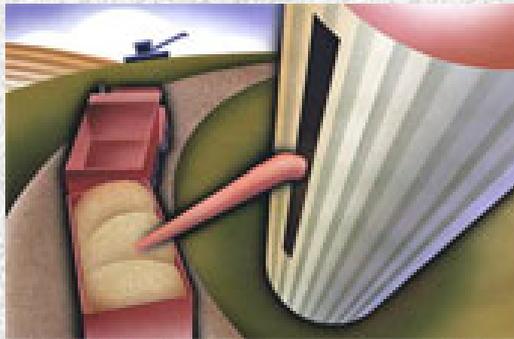
Stephen Anderson
Chief Architect, VHA Corporate
Data Warehouse

Presentation to QUERI National
Meeting, Dec 11, 2008



VHA National Databases

- Extract from source systems (VistA)
- Load into consolidated system



- But remain separate silos

Using VHA Data

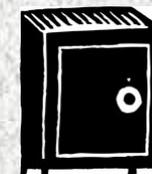


- Get access



- Transport data

- Secure the data

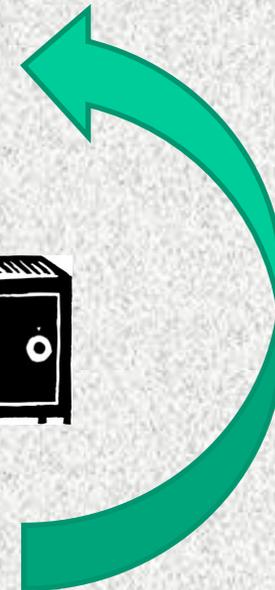


- Profile the data



- Integrate different sources

- Analyze



VHA Data Warehousing History

1995

21 VISNs created
But no VISN information system

1998

Two VISNs (16, 20) pilot project DWs
MS Enterprise Agreement (includes SQL Server)

2000

Other VISNs start DWs based on pilots
Performance measures & research biggest uses

2004

CDW Pilot proposed and funded

2008

Feeder-Collector System Developed
CDW architecture extended to add RDW

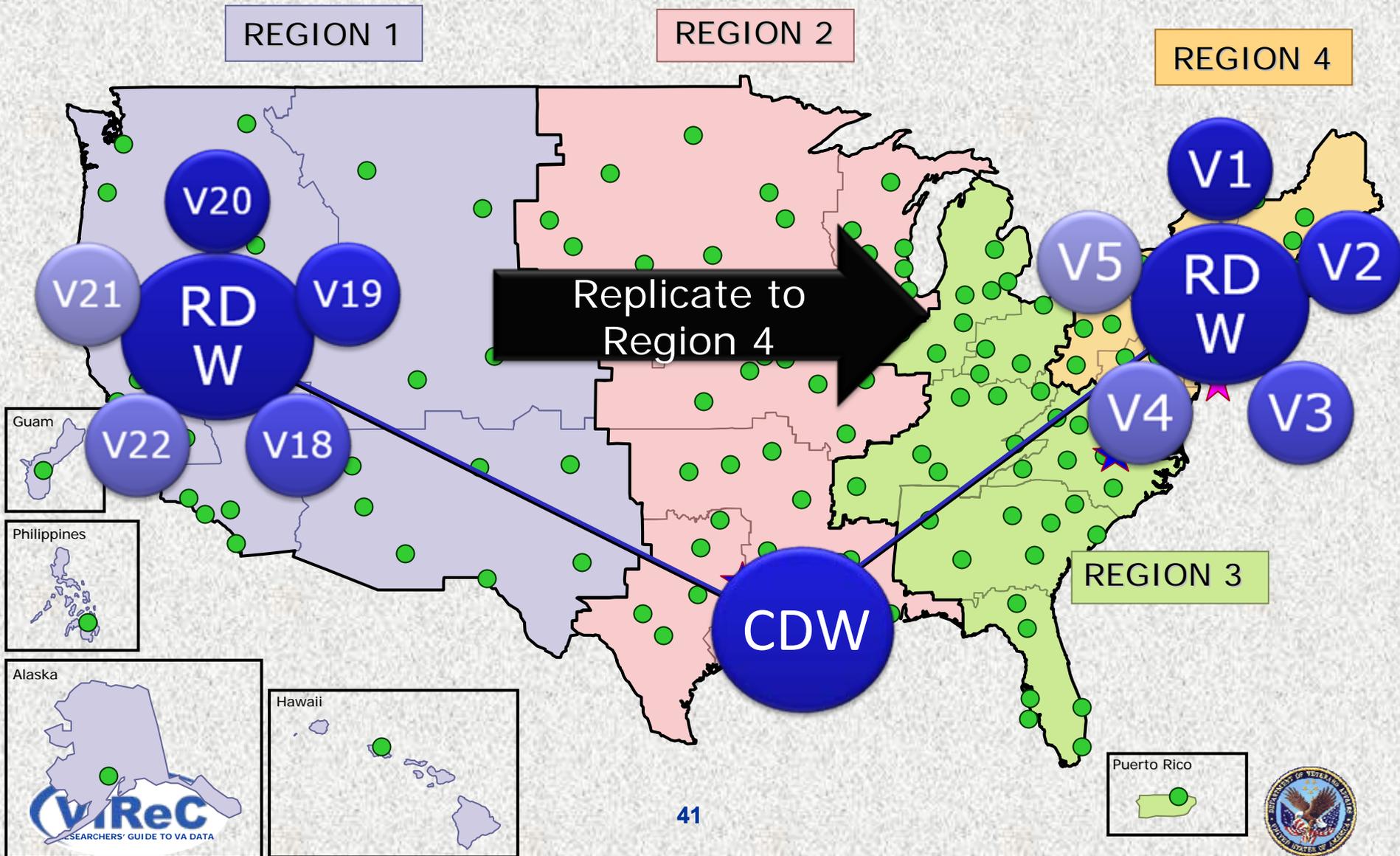


Cottage Industry

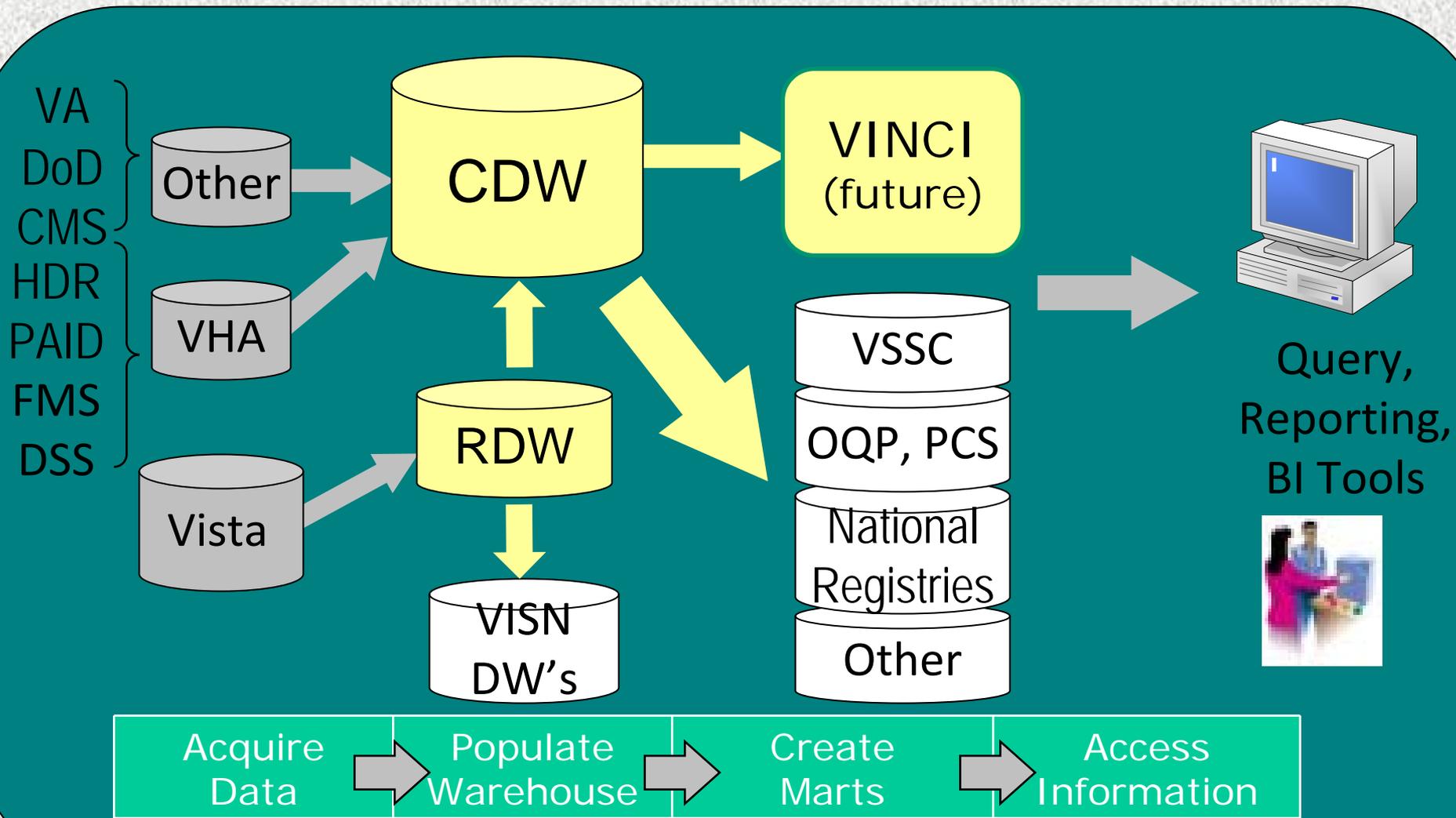


Planned & Architected

VA Office of Information & Technology Regions



VHA Business Intelligence Architecture Current Vision



Data Extract from VistA: Traditional Approaches

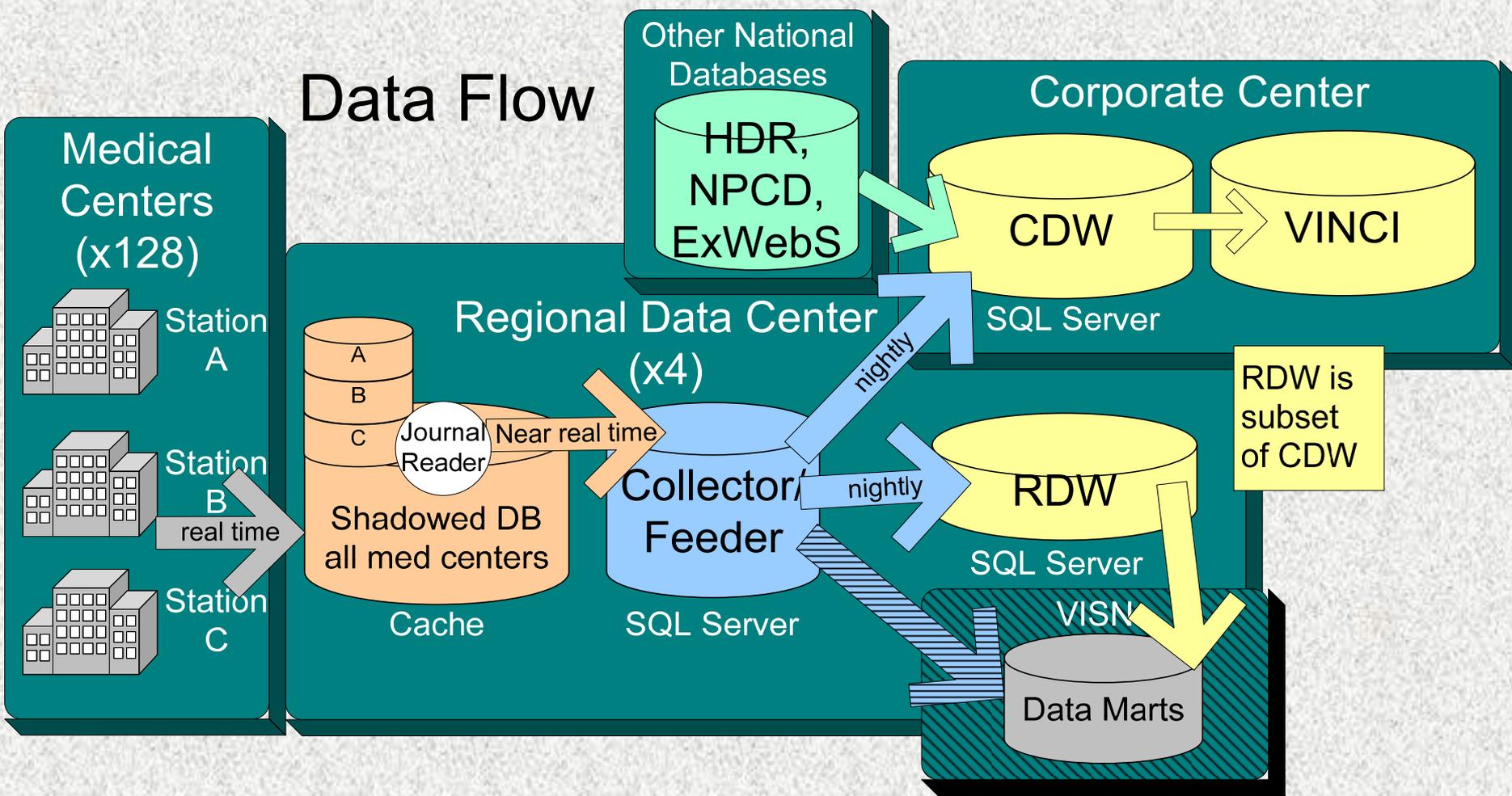
- **Copy the whole file**
 - Doesn't scale up
 - Can't do it frequently
- **Selective extract based on date**
 - Database has clinically relevant date, not when record was edited
 - Inefficient
- **CPRS triggers message**
 - Large development overhead
 - Several transformations
 - Inflexible



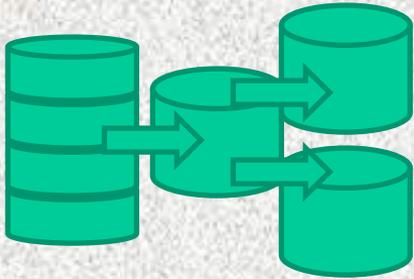
Data Extracts: A Game of Telephone

- Many steps (transformations)
- Dependent on processes built for other purposes
- Assumptions made, not stated
- Poor documentation
- **Loss of data timeliness, quality & confidence**





Advantages to Data Extraction through Collector/Feeder



- **No impact on host systems (uses existing shadowing)**
- **Near real-time**
- **Development is nimble**
No changes required to CPRS
Takes advantage of object programming
- **No processes in the middle**
- **Provides true incremental extracts/loads.**
Writes timestamp of journal entry to record
- **It works!**

VHA Business Intelligence Philosophy



- Fully integrated DW
- Workspace/tools provided means
Minimal distribution of data
- Metadata/documentation
- Shared knowledge



CDW / RDW: Integrated Data

- Across geography
- Across time/All time in one table
National sources begin 10/1/1999
Collector/Feeder takes everything in VistA
- Across subject domains (e.g., Health Factors)
- Common dimensions (e.g. race)
- Across Database Environments
CDW/RDW/VINCI will use same data model
- Allows definition of cohorts either:
 - explicitly (list of subjects)
 - by dx, procedures, meds, labs, etc.



CDW / RDW

Data Quality Efforts

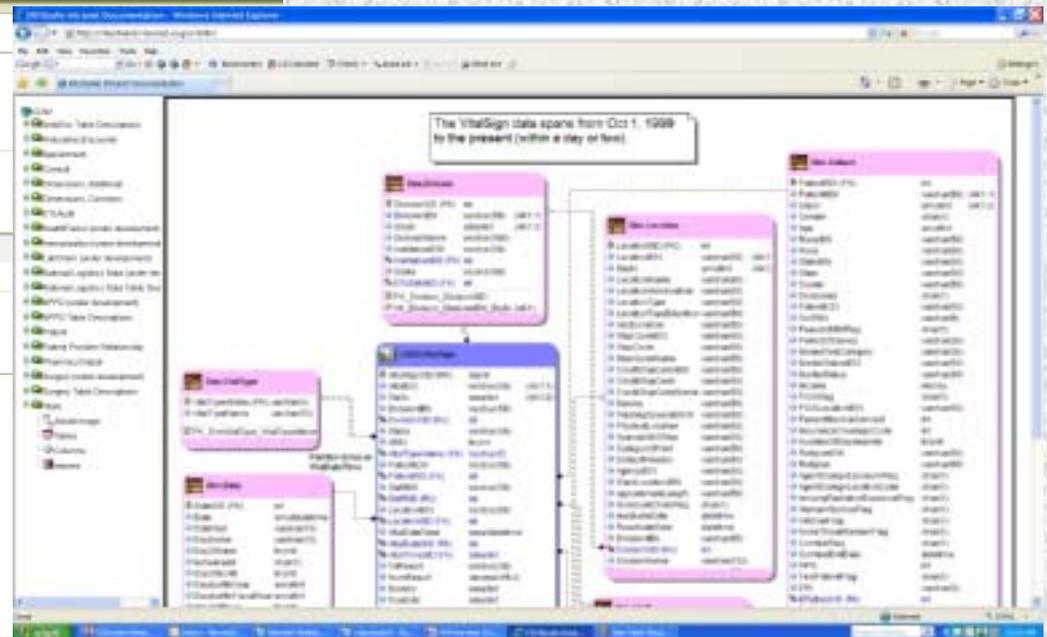


- NPCD (Encounters)
- VHA Data Quality Program (Health Data & Informatics Office)
- OQP
- VIREC
- DSS
- Customers

Metadata: vaww.cdw.med.va.gov

- Subject Domains
- Data models
- Data dictionary

The screenshot shows the homepage of the VHA Corporate Data Warehouse. The browser address bar displays <http://vhacdwa09.vha.med.va.gov/default.aspx>. The page features the VHA logo and the text "VHA Corporate Data Warehouse". Below the header, there are navigation links for "Home", "CDW Blog", and "CDW Wiki". The main content area is divided into several sections: "Announcements" with a welcome message from Griffith, Denver; "Calendar" with a listing for "DAWG (Data Architecture Work Group) Quarterly Meeting"; and "CDW Document Browser" with a list of folders such as "CDW Engagement Process", "CDW Equipment Pictures", "CDW FAQ", "DAWG Quarterly Newsletters", "DAWG Teleconference Minutes", "Draft CDW Documents", "Recent CDW Documents", "CDW Blog Procedures", and "cdw video demos". A left-hand navigation pane includes "View All Site Content", "Site Hierarchy", and "Shared Documents".



Data Available in Data Warehouse

Subject Domain	Region				
	1	4	2	3	
Patient Demographics (incl. VA Staff)					Have data now or development near completion
Vital Signs					
Encounters (diagnoses, procedures)					
Prosthetics (raw VistA format only)					
Ref Data (Drug, ICD9, CPT, Location, etc)					
Rx Outpatient	*				Planned by 4/1/09
LabChem	*				
LabChem from DSS					HDR is in development
Inpatient from DSS					
HealthFactors	*				Planned for 2009
Immunizations	*				
PCMM	*				
Appointments	*				
MentalHealth Instruments (legacy)	*				
Consults	*				Dependent on Regions 2&3 standing up RDPCs
TIU	*				
Adverse Reactions (Allergies)					

* Temporarily released to only VISN DWs in R1



CDW / RDW

Gaining Access

- Determine what data is available:
vaww.cdw.med.va.gov/default.aspx
- Send questions about data to email group
CDW
- For list of materials to be submitted contact
Irma.McCaffrey@va.gov
Forms on
vaww.va.gov/NDS/RealSSNAccess.asp

CDW / RDW Forms for Gaining Access

- Description what data is required
- Study protocol
- IRB approval
- HIPAA waiver
- R & D committee approval
- Signed CDW Rules of Behavior
- Form 9957
- If Real SSN
 - Research Request for Real SSNs
 - Operations Justification
 - SSN Privacy Statement
 - DSS non-Disclosure



Questions?



Contact VIReC at:

- **Web**

- <http://www.virec.research.va.gov/>

- **E-Mail:**

- virec@va.gov

- **Telephone:**

- (708) 202-2413

**Please take a moment to fill out the
session evaluation**

VISTA Data Extraction Mechanisms

	Data Quality	Process Efficiency	Development Overhead
• Collector/Feeder • Journal Reader			
• Web Service/RPC			
• HDR Extractor			
• HL7-Vitria-Oracle			

Results:  Excellent  Mediocre/Unknown  Non optimal