

VIReC Database & Methods Cyberseminar Series

# Extracting Data from the EHR Using CAPRI and VistAWeb

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# Topics

- What are VistAWeb and CAPRI?
  - Orientation and comparison
  - How to access
- Why use central chart review in research?
- Examples using VistAWeb and CAPRI for research
  - INSPIRE SDP (L. Williams, PI)
  - CARE TIME SDP (D. Bravata, PI)
  - Operational projects/Office of Clinical Analytics and Reporting
- Lessons learned
- Questions

Poll Question 1: I am interested in VA data primarily due to my role as \_\_\_\_\_.

- Research investigator
- Data manager
- Project coordinator
- Program specialist or analyst
- Other (specify)

## Poll Question 2: What is your previous experience using chart review for research?

- Never tried to do this before
- Used paper charts
- Used my local electronic health record only (CPRS)
- Used VistAWeb
- Used CAPRI
- Used both VistAWeb and CAPRI
- Used some other platform for central chart review

# VistAWeb

- A VA Intranet web portal
- Read-only access to EHR data for individual patient at all VA sites where they received care, shown chronologically
- Developed to facilitate sharing of individual patient data among patient's providers at other VAMCs

# CAPRI(Compensation and Pension Record Interchange)

- Requires installation of special software
- Read-only access to EHR data for individual patients at one specific site at a time
- Developed to facilitate coordination between the Veterans Benefit Administration (VBA) and the Veterans Health Administration (VHA) in the determination of Veteran benefits

**Both systems are useful and have unique strengths for VA EHR chart review studies**

# EHR Data Portals - Compensation & Pension Data Interchange (CAPRI) & VistAWeb

## CAPRI

Requires special software and access/verify codes

Data viewed from one healthcare site at a

I

Direct access to VistAWeb

## Both

Read-only access to EHR one patient at a time

Require real SSN

submit requests to DART

## VistAWeb

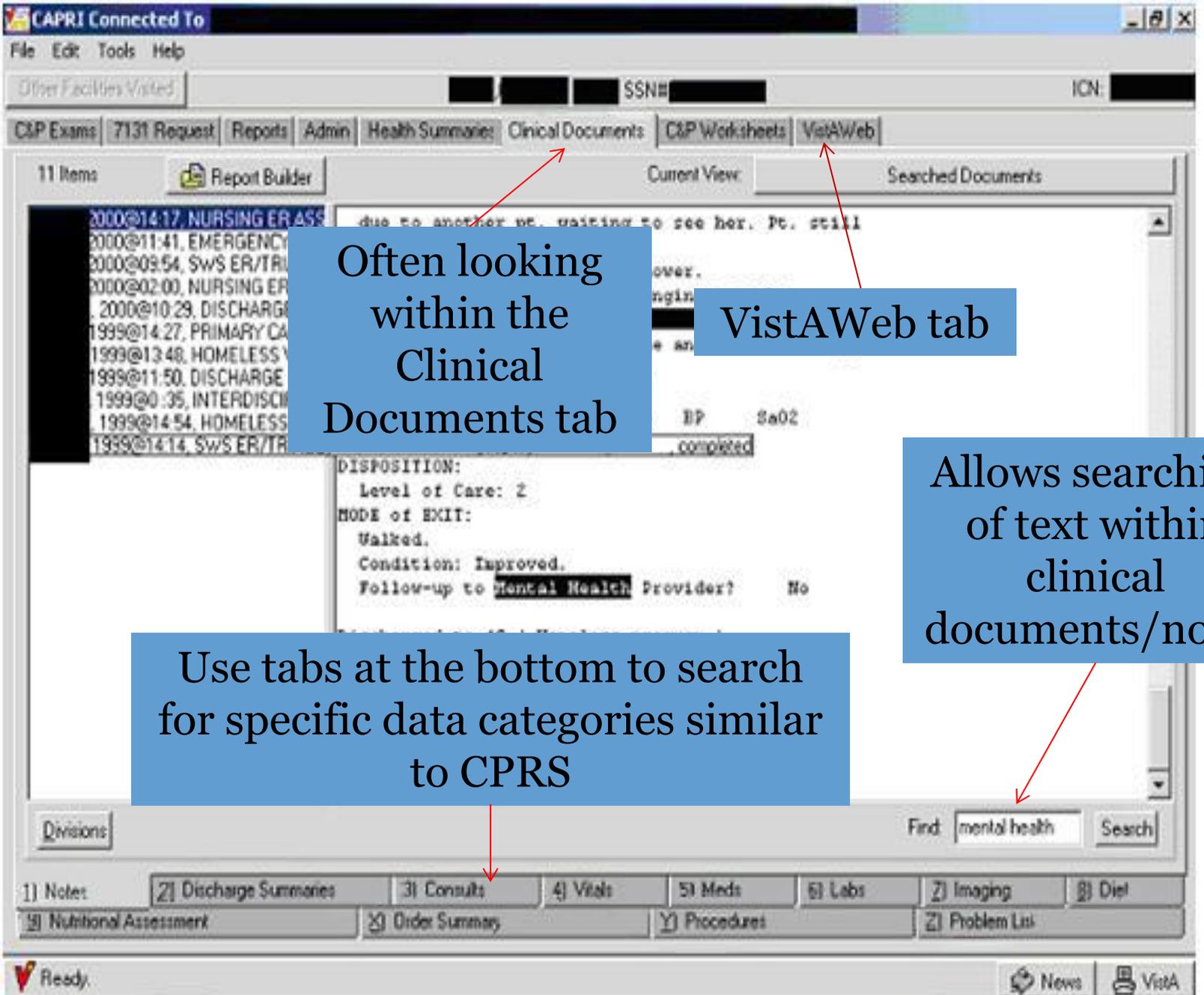
VA Intranet web portal accessed through local VistA

Data consolidated

available

**Recommendation:** Get both for maximum flexibility; no additional DART application required

Vista



Often looking within the Clinical Documents tab

VistAWeb tab

Allows searching of text within clinical documents/notes

Use tabs at the bottom to search for specific data categories similar to CPRS

- Logoff
- VTA
- Sites
- Care Team
- Allergies\*
- Appointment
- Patient Inform
- Visits/Admis
- Dietetics
- Consults and
- Consults (Do
- Discharge Su
- Laboratory †
- Anatomic Pat
- Medicine †
- Orders
- Outpatient En
- Pharmacy \*†
- Problem List
- Progress Not
- Other Notes
- Radiology †
- Surgery Rep
- Vital Signs\*†
- Health Summ only†
- Health Summ
- Health Summ
- Health Summ
- Refresh Pa
- \* - Pages with
- \* - Pages with

# Considerations using VistAWeb or CAPRI

- **VistAWeb**

- Shows patient data **across different facilities chronologically**
  - Must pay attention when separate locations share a single facility identifier
- **Text searching of some data**, e.g., orders, note titles, meds but not note text (available in CAPRI)
- Able to access some scanned documents

- **CAPRI**

- Data from **one single location shown at a time** (not a chronological record)
  - Option to link to VistAWeb
- **Enhanced search capabilities**, including text within notes

# VistAWeb shows note title and site of care:

**vistaWEB** medical record

Logoff This page uses pop-up windows  
[Click here for help on enabling pop-ups](#)

VTA  
 Sites  
 Care Team  
 Allergies\*†  
 Appointments  
 Patient Information  
 Visits/Admissions  
 Dietetics  
 Consults and Procedures‡  
 Consults (DoD Remote Data Only)  
 Discharge Summaries‡  
 Laboratory †  
 Anatomic Path Reports  
 Medicine †  
 Orders  
 Outpatient Encounters/GAF  
 Pharmacy \*†  
 Problem List†  
 Progress Notes‡  
 Other Notes  
 Radiology †  
 Surgery Reports‡  
 Vital Signs\*†  
 Health Summaries (Non-VA) for TREATMENT only†  
 Health Summaries (AHN)  
 Health Summaries (IND)  
 Health Summaries (NIN)

Refresh Patient Data

\* - Pages with HDR data  
† - Pages with Non-VA data

**Progress Notes**

Today  One Week  Two Weeks  One Month  Two Months  Six Months  One Year  Two Years  All Dates

Date Range: From: (mm/dd/yyyy)  To: (mm/dd/yyyy)

Maximum Number/Site: 50  All Reports

A maximum of 50 notes per site (plus associated addenda) will be displayed regardless of the number of notes available within the specified date range.  
[Print Report](#)

Title	Icon	AWTV	Date	Author	Location	Site
<a href="#">PODIATRY TECHNICIAN ASSESSMENT NOTE</a>					IN PODIATRY NAIL TECH	Indianapolis, IN
<a href="#">Addendum to PODIATRY TECHNICIAN ASSESSMENT NOTE</a>					IN PODIATRY NAIL TECH	Indianapolis, IN
<a href="#">PC PREVENTIVE HEALTHY [EDU]</a>					IN PURPLE MD	Indianapolis, IN
<a href="#">PC GERIATRIC NOTE</a>					IN PURPLE MD	Indianapolis, IN
<a href="#">Addendum to PC GERIATRIC NOTE</a>					IN PURPLE MD	Indianapolis, IN
<a href="#">PROSTHETICS/ORTHOTICS CONSULT RESULT</a>					IN PROS CLINIC - FITTER	Indianapolis, IN
<a href="#">NURSING OUTPATIENT NOTE</a>					IN PRC WILLIAMS-X	Indianapolis, IN
<a href="#">CBEC/HBPC COMMUNICATION NOTE</a>					IN HBPC RN/LPN	Indianapolis, IN
<a href="#">Addendum to CBEC/HBPC COMMUNICATION NOTE</a>					IN HBPC RN/LPN	Indianapolis, IN
<a href="#">CBEC/HBPC NURSING VISIT NOTE</a>					IN HBPC RN/LPN	Indianapolis, IN
<a href="#">CBEC/HBPC PHARMACY MEDICATION EVALUATION</a>					IN HBPC PHARMACY	Indianapolis, IN
<a href="#">PROSTHETICS/ORTHOTICS CONSULT RESULT</a>					IN PROS CLINIC - PEDORTHIST	Indianapolis, IN
<a href="#">CBEC/HBPC</a>					IN HBPC RN/LPN	Indianapolis, IN
<a href="#">CBEC/HBPC</a>					IN HBPC RN/LPN	Indianapolis, IN
<a href="#">CBEC/HBPC</a>					IN HBPC RN/LPN	Indianapolis, IN

**Notes are chronological from multiple sites**

# Notes from multiple care sites: VistAWeb

## HISTORY & PHYSICAL - INPATIENT

Site: Tennessee Valley HCS

Date: Author:

Location: 1A(MED)-MU

LOCAL TITLE: HISTORY & PHYSICAL - INPATIENT

STANDARD TITLE: PHYSICIAN H & P NOTE

DATE OF NOTE:

AUTHOR:

URGENCY:

Resident:

Intern:

CHIEF COMPLAINT: Left sid

HISTORY OF PRESENT ILLNESS

Patient is a MALE

CHF, obesity hyperlipidemi

Center in

administered by the family

patient had episodes of se

that the pain subsided and

the patient complained of

that he stopped breathing

The patient only stopped b

## NEUROLOGY GENERAL NOTE

Site: Tennessee Valley HCS

Date: Author:

Location: 2N-MED-NA

LOCAL TITLE: NEUROLOGY GENERAL NOTE

STANDARD TITLE: NEUROLOGY NOTE

DATE OF NOTE:

ENTRY DATE:

AUTHOR:

EXP COSIGNER:

URGENCY:

STATUS: COMPLETED

\*\*\* NEUROLOGY GENERAL NOTE Has ADDENDA \*\*\*

Chief Complaint: Acute stroke

HPI: This year-old MALE w/ hx HTN who started having difficulty talking and left sided weakness yesterday at about pm was brought to ER via ambulance. His initial SBP was which gradually went down at ER to He denied any trauma, headache, change in vision, LOC or seizure activity. On arrival to ER, his speech improved but left hand became heavy as per patient. Head CT was negative.

On initial exam, NIH stroke scale was 1, suggesting that he does not need thrombolytics.

# Admits at multiple care sites: VistAWeb

## Expanded ADT

Patient Selection

Date Range:  Today  One Week  Two Weeks  One Month  Two Months  Six Months  One Year  Two Years

From: (mm/dd/yyyy) To: (mm/dd/yyyy)

Print Report

Tennessee Valley HCS

### Tennessee Valley HCS

Printed for data from  
 \*\*\*\*\* CONFIDENTIAL SUMMARY pg. 1 \*\*\*\*\*  
 \*\*\*\*\*  
 DOB:

Eligibility: VERIFIED

Patient cared for at Nashville VAMC

NA-NEUROLOGY  
 2N-MED-NA

LOS: 3

Principal Diag: CRB EMB W/ CRB INF  
 Disposition Place: RETURN TO COMMUNITY-INDEPENDENT  
 Outpat. Treatment: YES

- Procedure DX ULTRASOUND-HEART
- Procedure PHYSICAL THERAPY NEC
- Procedure C.A.T. SCAN OF HEAD
- Procedure CONTR CEREBR ARTERIOGRAM
- Procedure MAGNET RESON IMAG BRAIN/BRAIN STEM
- Procedure C.A.T. SCAN OF HEAD

## Expanded ADT

medical

Patient Selection

Date Range:  Today  One Week  Two Weeks  One Month  Two Months  Six Months  One Year  Two Years  All Dates

From: (mm/dd/yyyy) To: (mm/dd/yyyy)

Print Report

Atlanta, GA Tennessee Valley HCS

### Tennessee Valley HCS

Printed for data from  
 \*\*\*\*\* CONFIDENTIAL SUMMARY pg. 1 \*\*\*\*\*  
 \*\*\*\*\*  
 DOB:

----- EADT - ADT History Expanded -----

Eligibility: SC LESS THAN 50% VERIFIED  
 Total S/C %: 30

20%	S/C
10%	S/C

ADM DIRECT

Patient cared for at Murfreesboro VAMC

MEDICAL STEP DOWN  
 PCU-MU  
 MU-ACUTE MEDICINE  
 1A (MED) -MU  
 MU-ACUTE MEDICINE

LOS: 7



# Example of notes and text Search Function within notes in CAPRI

As part of ongoing suicide prevention case management this writer reviewed veterans chart and treatment activity. Writer will remain available throughout the duration of the Category I PRF and address any needs that may arise and as requested by veterans treatment providers.

/es/ CHRISTINA L MCNEELY, MSW, LCSW  
 CLINICAL SOCIAL WORKER  
 Signed: 02/26/2014 12:19  
 Digital Pager: 310-4177 Office: 988-4327

- In the “Clinical Documents” view, click on the “Notes” tab at the bottom
- All notes from one facility are shown in chronological order

Search feature enabled within notes

File Edit Tools Help

Other Facilities Visited

C&amp;P Exams 7131 Request Reports Admin Health Summaries Clinical Documents VistAWeb

18 Items

Report Builder

Current View:

Searched Documents

**3.30. MENTAL HEALTH CONSULT**

014:27, CONSULT RESULT COMM  
15:12, BLOOMINGTON-CBOC NP I  
13:16, PV RESIDENT CLINIC NOTI  
12:19, PV LAB-CAROTID, RUTH M  
14:09, SPEECH PATHOLOGY NOTI  
15:08, BLOOMINGTON-CBOC NP I  
10:36, RECREATION THERAPY-D  
12:38, RITS/POLYTRAUMA DISCI  
09:53, SPEECH CONSULT RESUL  
08:16, RECREATION THERAPY C  
16:22, PHYSICAL THERAPY CON  
13:52, SICU INTERDISCIPLINARY  
11:38, SPEECH PATHOLOGY/MO  
15:26, SPEECH PATHOLOGY NOTI  
12:53, SICU INTERDISCIPLINARY I  
19:34, PHYSICAL THERAPY-PROG...

**4. OCCLUSION AND STENOSIS OF CAROTID ARTERY WITH CEREBRAL INFARCTION (ICD-9-CM 433.**

Using the search term  
“carotid” (bottom right  
corner) only notes  
containing this word are  
shown.

The word is highlighted  
within the note.

always his drink of choice when he drank, and he "always drank 2 beers."  
Despite this, he reports that he had one DUI in the past. He reported it was  
about 15 years ago, but his daughter states it was more like 30 years ago ("more  
than 15 years before he retired"). He denies any history of illicit substance  
use or of misuse of prescription medications. He denies history of tobacco use.

**PERTINENT FAMILY HISTORY**

- mother died at age 89 due to "mostly old age"
- Alzheimer's disease (brother)
- dementia (?) - sister
- much of family history is unknown, as Vet reports he has no contact  
with his father's side of the family.

**BEHAVIORAL OBSERVATIONS**

Vet was cooperative, pleasant, and appropriate throughout the interview, which  
was completed first. He then completed the RBANS with apparent reasonable  
effort and engagement, though he had difficulty following or remembering  
instructions at times. Upon finishing that test, he immediately asked if he was  
finished and expressed a desire to go home. He agreed to complete additional  
tests before leaving; he was initially presented with the Shipley-2 Vocabulary  
test and was asked if he could see and read it. He stated he could, but when

Divisions

Find: carotid

Search

1) Notes 2) Discharge Summaries 3) Consults 4) Vitals 5) Meds 6) Labs 7) Imaging 8) Diet 9) Nutritional Assessment U) Order Summary Y) Procedures Z) Problem List

Ready.

Division: INDIANAPOLIS VAMC

News

VistA

# How do I get access to VistAWeb and CAPRI?

- Must be on the VA Intranet
- Access via VIREC/VA Data Portal/Tools & Applications

<http://vaww.virec.research.va.gov>

The image displays two screenshots of VA-related websites. The top screenshot is the VIREC Intranet, featuring a search bar and a navigation menu with 'Tools & Applications' circled in red. The bottom screenshot is the VHA Data Portal, also with 'Tools & Applications' circled in red. The VHA Data Portal includes a 'Welcome to the VHA Data Portal' message, a 'New Data User' badge, and a 'Research' badge. The VHA Data Portal also features a 'Upcoming Events' section and a 'News' section.

# Information about VistAWeb and CAPRI

[Home](#)
[About Us](#)
[Contact Us](#)
[FAQ](#)
[Report Broken Link](#)

Department of Veterans Affairs  
**VHA Data Portal**

Data Sources	Data Access	Tools & Applications	Resources	Training	Policy & Agreements	Support
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## Welcome to the VHA Data Portal

The VHA Data Portal promotes a knowledge-sharing environment that supports the needs of VHA data users. The Portal aggregates information from multiple sources into a single location to create a comprehensive knowledge base and to facilitate a better user experience.

**The one-stop-shop for data users**

Our home page design has recently changed to provide you with the information you need. Each one of the badges below provides access information and other relevant resource information you need, or use the new top navigation menu to access resources by category. [Tell us what you think.](#)

**New Data User**

**Research**

**Operations & Quality Improvement**

**Access Policy &...**

### Upcoming Events

**Webinars**

- 1: Disseminating the Community Nursing Home Dashboard (Rudolph)
- 2: Extracting Data from the EHR Using CAPRI and VistAWeb (Williams)
- 3: Usability Evaluation of the Secure Messaging for Medication Reconciliation (SMMRT) Tool (Russ)
- 5: CBO-Purchased Care Contractor Data and Its Use in Research (Tenaya | Carey, Evan)

### VINCI Education

**VINCI Happy Hour - 3rd Wednesday Every Month at 1 PM MT**

VINCI in its continuing efforts to assist VHA data users will be holding its VINCI Happy Hour open question and answer forum every 3rd Wednesday of the month from 1:00PM to 2:00PM MT to field questions from our customers on a range of topics. Click [here](#) to join the Lync meeting and call 855-767-1051 code 22265684.

### News

**New VINCI Central Web Site!**

VINCI is proud to announce the launch of the new [VINCI Central web site!](#) The new site brings together all of your VINCI resources in a My VINCI Dashboard. It displays your VINCI projects, DART requests, databases, file shares, SharePoint sites, help requests, and virtual machines. New with the site is VINCI University for eLearning.

Tools Overview

- [CAPRI](#)
- [CPRS](#)
- [DART](#)
- [VistAWeb](#)
- [VINCI Collaboration Sites](#)
- [AITC Mainframe Workspace](#)
- [SAS Grid Application](#)
- [Server Workspace](#)
- [VINCI Workspace](#)
- [CDW Access Lookup Tool](#)

# To access VistAWeb and CAPRI, complete a DART request

The screenshot shows the VHA Data Portal website. At the top, there is a navigation bar with links for Home, About Us, Contact Us, FAQ, and Report Broken Link. Below this is the Department of Veterans Affairs logo and the text "Department of Veterans Affairs VHA Data Portal". A search bar is located to the right of the logo. Below the search bar is a horizontal menu with tabs for Data Sources, Data Access, Tools & Applications, Resources, Training, Policy & Agreements, and Support. The "Data Access" tab is selected, and the breadcrumb "Data Access > DART Request Process" is visible. The main content area is titled "Data Access Request Tracker (DART) Request Process". There is a "Launch DART Application" link. A blue callout box contains the text: "Download and submit a Special User Access form: [http://vaww.vhadataportal.med.va.gov/Portals/o/Forms/ResearchUser\\_AccessRequestForm.pdf](http://vaww.vhadataportal.med.va.gov/Portals/o/Forms/ResearchUser_AccessRequestForm.pdf)". Below this, there is an "Overview" section with a paragraph describing the DART process. A "Requesting Access Instructions" section follows, with a list of three steps: 1. Launch DART and follow the prompts for a Research Request. 2. Select the data source(s) and data tool(s) to be requested. 3. Complete and upload the required documents as listed in DART for the data source(s) or data tool(s) selected. Some of the following documents will be required: **Research Project Documents and Approvals**, including Research study protocol, Research and Development Committee Approval Letter(s), Institutional Review Board (IRB) Approval Letter(s), and IRB Approved HIPAA Authorization or Waiver of HIPAA Authorization.

Home About Us Contact Us FAQ Report Broken Link

Department of Veterans Affairs  
VHA Data Portal

Data Sources Data Access Tools & Applications Resources Training Policy & Agreements Support

Data Access > DART Request Process

**Did You Know?**  
Researchers can now request access to CAPRI, VistAWeb, and the Homeless Registry through DART.

**DART**  
Overview  
Operations  
Research  
Resources

**Tips for DART Users**  
VA Form 9957 is no longer required in DART. All information is now captured in the new Research Request Memo dated March 2015. The new memo will be required for all requests moving forward and should be signed by the facility ISO.

## Data Access Request Tracker (DART) Request Process

[Launch DART Application](#)

### Overview

The Data Access Request Tracker (DART) is a web-based tool for requesting access to data and guides documents submitted by the requester with links to the request to be reviewed. Notices from reviewers are sent automatically to the requester at each stage of the review process.

### Requesting Access Instructions

1. [Launch DART](#) and follow the prompts for a Research Request.
2. Select the data source(s) and data tool(s) to be requested.
3. Complete and upload the required documents as listed in DART for the data source(s) or data tool(s) selected. Some of the following documents will be required:
 

**Research Project Documents and Approvals**

  - Research study protocol
  - Research and Development Committee Approval Letter(s)
  - Institutional Review Board (IRB) Approval Letter(s)
  - IRB Approved HIPAA Authorization or [Waiver of HIPAA Authorization](#)

## Mention VistAWeb and CAPRI in your protocol submission

- The IRB approved protocol and HIPAA Waiver documents for requests for CAPRI or VistAWeb data are reviewed for explicit mention of use of national electronic health records.
- To reduce data access review delays, include the terms “VistAWeb,” “CAPRI,” or “**national** electronic health record” in your initial protocol or a later amendment.

# Why use central EHR-based chart review?

1. What about using notes in the CDW?
2. Cost/accuracy vs. local chart reviews
3. Confirm data in VA administrative datasets, e.g.:
  - Validate case ascertainment strategies
  - Assess clinical vs. administrative completion of an action
4. Capture data not available in VA administrative datasets, e.g.:
  - Scanned records
  - Some types of narrative data
    - Written orders
    - Comment fields

# Using CPRS TIU notes in the VA Central Data Warehouse (CDW)

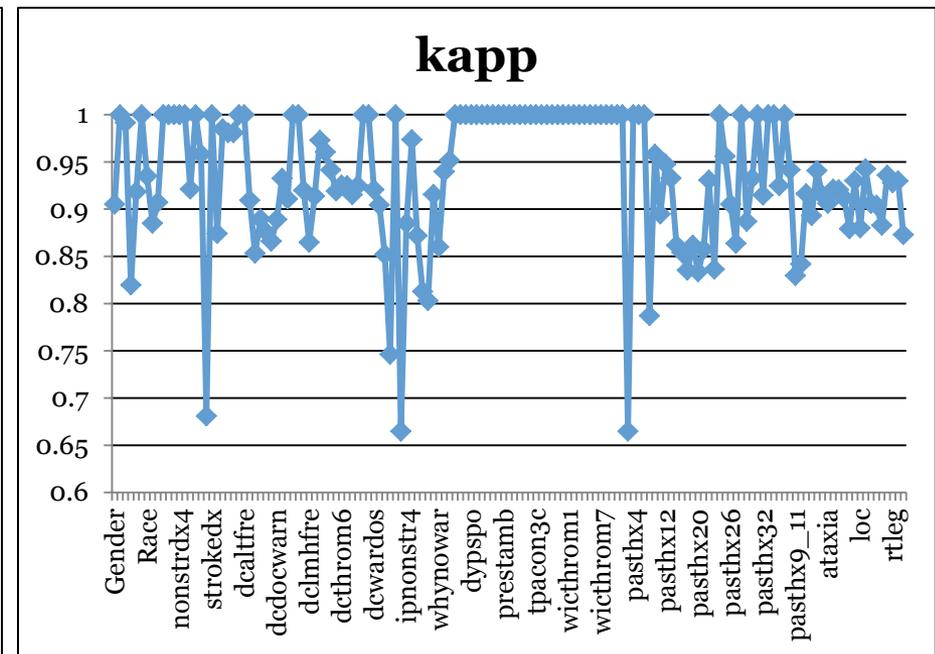
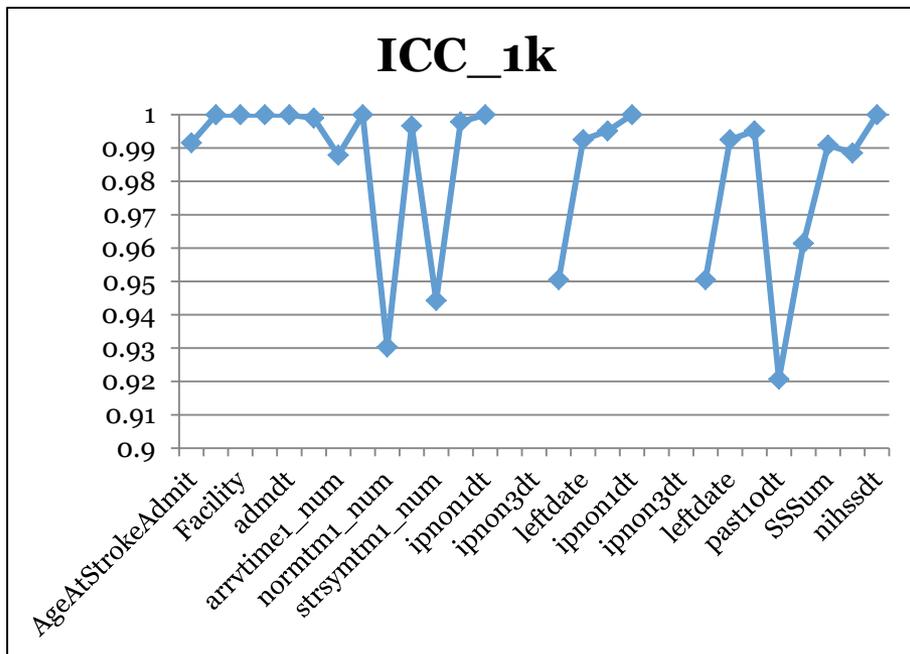
- TIU text notes are available in the CDW, but:
  - Review of bulk text notes not as user-friendly as the notes organized chronologically and/or by site in VistAWeb and CAPRI
  - Currently, date and time of note entry is stripped from the TIU notes in the CDW
  - Searching for specific text strings more straightforward in CAPRI and VistAWeb
    - NLP and text searching tools are being developed for use in VINCI
- All text elements may not be available in the CDW (e.g. narrative order text, scanned documents)

# Local vs. Central Chart Review?

- Expense, training, quality control often favor central EHR-based chart review over independent local reviewers in multi-site research studies
- INSPIRE SDP example
  - 11-site study comparing two methods of improving inpatient stroke quality indicators
  - Stroke admission defined using ICD9 discharge codes
    - Opened 2,305 charts
    - 1,600 full review
    - ~160 random 10% inter-rater reliability
  - 118+ variable chart review form, 11 quality indicators

# Central Chart Review Quality

- Data quality extremely high
  - 113/118 variables  $> 0.8$  ICC/kappa
  - QI result agreement (ineligible, passed, failed) excellent with kappas 0.84-0.96



# Chart review expense example

- 11-site study, reviewing 2.5 years of stroke admissions (approximately 2,300 charts)
  - Site level load is approximately 75 stroke cases per year
  - If prospectively reviewing cases, volume small
    - Difficult to find sites willing and able to hire some small % of a research assistant
  - If retrospectively reviewing cases, would still need central EHR review to assess local accuracy
  - Training, maintaining, retaining the off-site personnel over a 3-year study is not feasible

# Using central review to confirm data in VA administrative datasets

- Case ascertainment/cohort development
  - Is the administrative algorithm you have defined actually capturing the subjects, events, episodes of care that you intend?
- Validation of electronic measures of VA processes of care

# Case ascertainment: TIA

- TIA cohort identified by ICD-9 TIA code in ED or hospital discharge
- Minor stroke cohort identified by ICD-9 hospital discharge codes and other administrative data (clinical severity data not available)

Electronic Health Record Data	Chart Review Data			Total
	Minor Stroke	TIA	Not TIA or Stroke	
Minor Stroke	234	66	4	304 (39.8%)
TIA	19	436	4	459 (60.2%)
Total	253 (33.2%)	502 (65.8%)	8 (1.0%)	763 (100%)
	755 (99.0%)		8 (1.0%)	

# Using chart review for quality assessment: Constructing e-measures of TIA care

Measure	Measure Validation							Pass Rates			
	Denominator (N=528)			Numerator (for patients in both admin & chart denominator)				Admin Pass Rate		Chart Pass Rate*	
	Disagree	% Agree	% Valid Disagree	N	Disagree	% Agree	% Valid Disagree	Eligible	Pass Rate	Eligible	Pass Rate
Carotid Imaging	44	91.7%	100.0%	472	39	91.7%	23.1%	8325	51.4%	516	69.0%
Carotid Stenosis Management	10	98.1%	100.0%	8	0	100.0%	-	314	25.2%	12	33.3%
Antihypertensive Intensification	77	85.4%	100.0%	133	16	88.0%	0.0%	2781	27.0%	169	27.8%
Hypertension Control	60	88.6%	25.0%	384	41	89.3%	0.0%	18533	91.2%	431	67.7%
Lipid Measurement	33	93.8%	100.0%	485	50	89.7%	0.0%	8371	79.2%	529	79.6%
Cholesterol Lowering Medication	72	86.4%	100.0%	352	44	87.5%	13.6%	6647	75.3%	401	85.3%
Cholesterol Med Intensification	85	83.9%	82.4%	283	27	90.5%	14.8%	5016	27.5%	345	25.8%
Brain Imaging	59	88.8%	100.0%	453	22	95.1%	77.3%	8283	86.1%	497	98.4%
Holter Monitor	27	94.9%	100.0%	442	13	97.1%	0.0%	7271	4.8%	492	2.8%
Antithrombotics at Discharge	43	91.9%	97.7%	461	65	85.9%	32.3%	8019	82.3%	508	91.3%
Atrial Fibrillation: INR Ordered	25	95.3%	0.0%	36	1	97.2%	0.0%	723	82.6%	44	95.5%
Atrial Fibrillation: INR 2-3	21	96.0%	95.2%	29	2	93.1%	0.0%	593	28.8%	42	23.8%
HbA1c Measurement	40	92.4%	72.5%	184	7	96.2%	0.0%	3465	78.0%	207	79.2%
Speech Language Pathology	14	97.3%	-	394	32	91.9%	-	5727	35.1%	443	21.2%

# E-measurement example 2: Inhospital stroke Antithrombotic by hospital day 2

Local Chart			CDW Chart			Sources of Error	
<u>Denominator</u>							
EHR	Elig	Inelig	Total	Elig	Inelig	Total	<u>False Negative</u>
Elig	79	1	80	2010	65	2075	tPA not given = 12
Inelig	6	5	11	26	29	55	Comfort care = 5
Total	85	6	91	2036	94	2130	Elective carotid = 6
Sens	92.9%			98.7%			<u>False Positive</u>
Spec	83.3%			30.9%			tPA given = 15
PPV	98.8%			96.8%			Contraindication = 34
NPV	45.5%			52.7%			Comfort care = 12
<u>Numerator**</u>							
EHR	Pass	Fail	Total	Pass	Fail	Total	<u>False Negative</u>
Pass	80	0	80	1822	18	1840	Meds only documented in notes = 23
Fail	0	5	5	29	167	196	Others = 6
Total	80	5	85	1851	185	2036	<u>False Positive</u>
Sens	100.0%			98.4%			Med order/not given = 9
Spec	100.0%			90.3%			Subq heparin = 4
PPV	100.0%			99.0%			Others = 5
NPV	100.0%			85.2%			

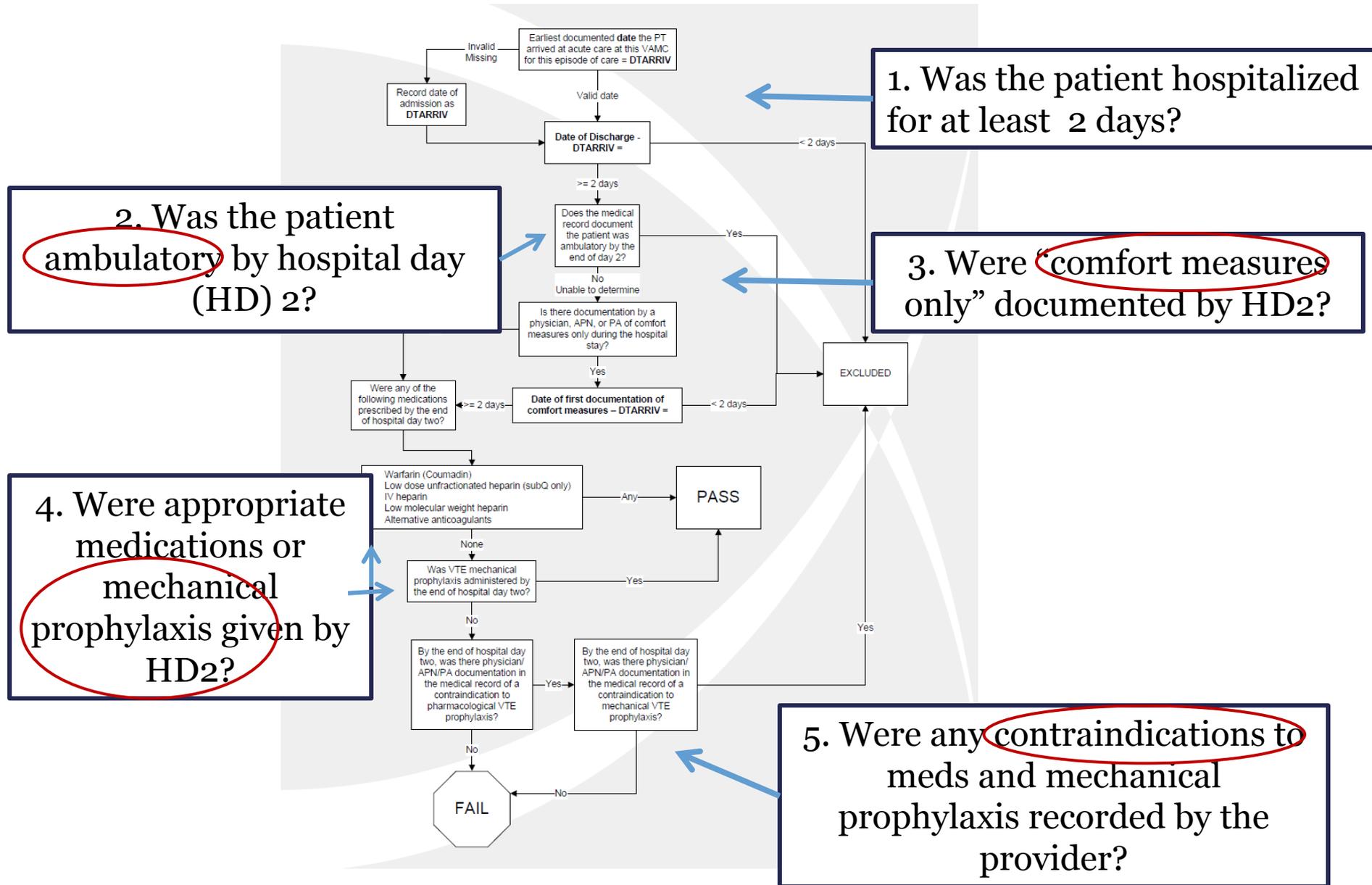
# Examples of discrepancies found via chart review: “False positives” in admin data

- Admission with stroke ICD9 primary discharge code in VA administrative data is actually for an episode of non-VA care paid for by the VA
- An inpatient consult electronically completed per administrative data states “patient discharged before being seen, will schedule as outpatient.”
- A medication noted as given in VA Bar Code Medication Administration (BCMA) data has a note entered that says “held, patient off floor.”
- An outpatient medication is not discontinued electronically but provider note records instruction to stop the medication

# Using chart review to capture data not in VA admin datasets

- Data elements that reflect complex aspects of care
  - Discussion of comfort care or advanced directives
  - Coordination of care between providers
- Data elements that reflect clinician judgment
  - Documentation of reasons not to provide an evidence-based treatment (patient declines treatment, ineligibility, etc.)
- Text-based data elements with high inter-site and intra-site variability (difficult to use text mining/NLP)
  - Different methods for conducting and documenting dysphagia screening
  - Different locations, providers, notes, language to document ambulatory status

# VTE prophylaxis flowchart



1. Was the patient hospitalized for at least 2 days?

2. Was the patient ambulatory by hospital day (HD) 2?

3. Were "comfort measures only" documented by HD2?

4. Were appropriate medications or mechanical prophylaxis given by HD2?

5. Were any contraindications to meds and mechanical prophylaxis recorded by the provider?

# TIA Guideline Concordant Care Components

Processes of Care		Specification
1a	Carotid Artery Imaging	Carotid imaging procedure within 2 days of index event
1b	Carotid Stenosis Management	Carotid stenosis procedure (endarterectomy or stent) within 14 days of index event
3a	Lipid Measurement	Fasting lipids measured within 2 days of index event or within the prior 180 days
3b	Lipid Management	Prescribed cholesterol-reducing therapy within 7
3c	Cholesterol Lowering Intensification	Intensification of cholesterol-reducing therapy within 7 days of discharge
4	Brain Imaging	Brain imaging (Brain CT or MRI) within 2 days of index event
5a	Electrocardiography	ECG within 2 days of index event
5b	<b>Telemetry</b>	Telemetry within 2 days of index event or admitted to ICU/CCU/SICU
5c	Holter	Holter as part of their index event or within 30 days
6a	Antithrombotics by Hospital Day 2	Antithrombotic therapy within 2 days of index event
6b	<b>Antithrombotics at Discharge</b>	Antithrombotic therapy within 2 days after discharge

- Telemetry a written order
- Telemetry results in scanned docs

- Aspirin not recorded as non-VA med
- Exclusions not in admin data

# Lessons learned about using VistAWeb and CAPRI for research

- **Optimal way to collect complex clinical chart-recorded data**
  - Consider complexity and data quality requirements
    - Chart review is not a simple process, and it can be hard to consistently do it with a high level of accuracy
  - Develop standard chart review manual and update with local examples as they are noted
    - Where key data elements are most often found in a given facility: Orders? Notes? Consults?
    - What note titles are most likely to have data you need
  - Standardize search features and terms

# Example of “live” chart review manual:

## Item “Was the patient screened for dysphagia before PO intake?”

**Coding instructions clearly documented**

**Dated so updates are tracked**

- Keep most current manual in working folder, all other versions in outdated folder

**Specific instructions for different sites are captured, sometimes with specific dates**

If a dysphagia screen completed, but the medical record does not provide a specific date/time of completion, **the date/time of signature** of the first note documenting the dysphagia screen should be used.

Do not consider the delivery of food, fluid, or medication via a nasogastric tube, orogastric tube, or percutaneous gastrostomy tube as intake by mouth (oral intake). Medications administered sublingually also count as intake by mouth.

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07/24/13

### INSPIRE Chart Abstraction Coding Manual

For Nashville Patients that transferred from Murfreesboro: Abstractor may pull this information from Murfreesboro notes for the episode of care being reviewed.

For Nashville Patients (2011-2012): Abstractors should check both the Notes and the Orders to determine if a dysphagia screen was completed. Please see Appendix G for an example of the Nashville dysphagia template.

For Birmingham Patients:

Nursing Admission Note Templates in Birmingham include a standardized dysphagia screen template. Standard text for *Part 1-Dysphagia Risk Factors*, *Part 2-Swallow Testing Procedure*, and *Part 3-When the Procedure is Completed* appear in **all** notes that use this template. Do not assume that either part was completed unless the nurse has entered specific text for that question. Please note: Part II (Bedside Swallow) will not be completed unless a risk factor is identified in Part I.

If Part I is left blank, the screen was not completed.

If Part I is marked “None,” the screen was completed and #61 (dyscrmtv) should be coded “1.”

**Inclusions:** Documentation by a VA provider of a dysphagia screen completed in an OSH “NPO-Place Dobhoff” except when PO meds were given prior to documentation

# Lessons learned about using VistAWeb and CAPRI for research:

- **Increase estimated time per chart review** from local CPRS by a small factor (10-15%) to take into account view switching and page loading issues
  - However, additional search features may end up saving time depending on what you are looking for

# Lessons learned about using VistAWeb and CAPRI for research

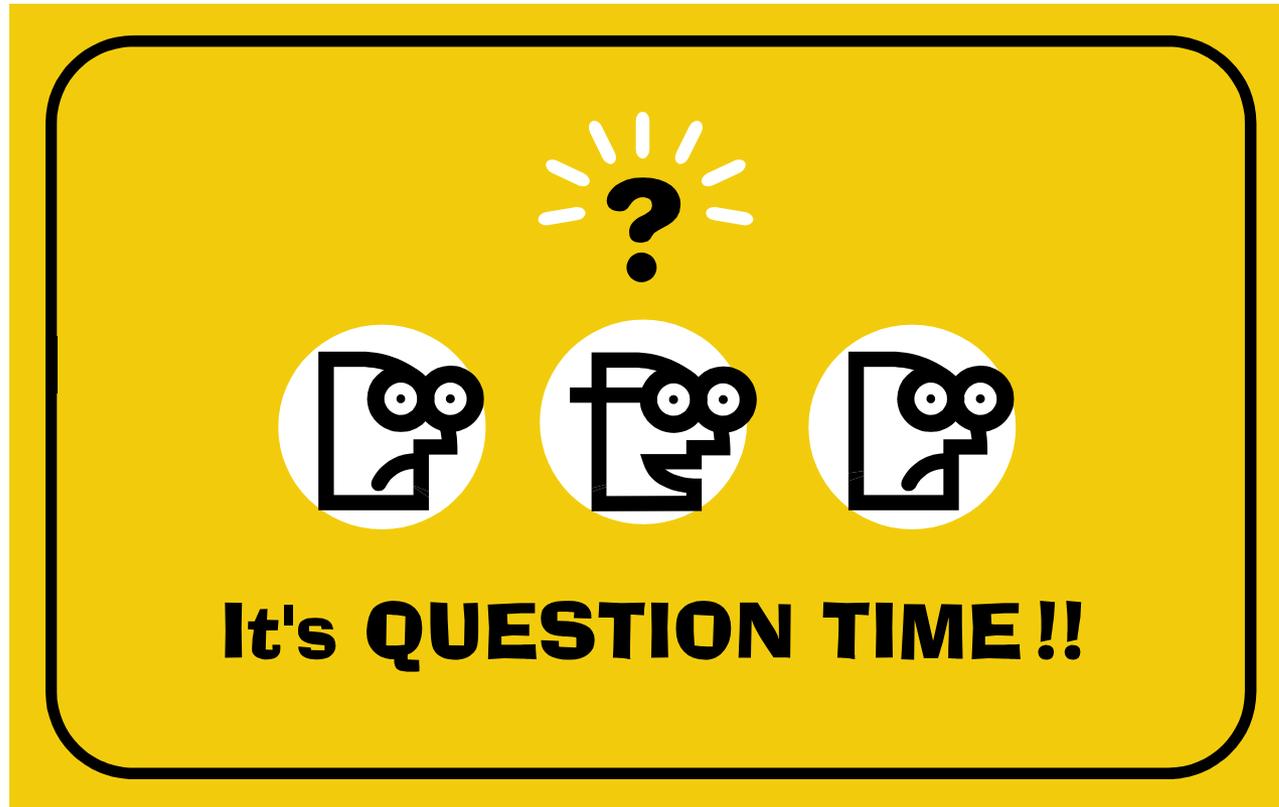
- **Surprising discrepancies between electronic and chart data**
  - This is key to helping others learn about the strengths and weaknesses of various data sources
  - Discrepancies can also suggest what data elements might be considered for standardization

# Lessons learned about using VistAWeb and CAPRI for research

- **Organization/administrative pearls:**
  - Designate one person from your study to submit and stay in communication via the DART process
  - A detailed chart review guide is the foundation to accurate and reliable data collection
- **Keep your chart reviewers happy!**
  - Breaks for other types of work
  - Shared positions if possible
  - Regular team meetings to discuss questions, resolve differences, update chart review manual
  - Prizes for “Best Story of the Week”

# Resources

- VHA Data Portal (VA intranet only)
  - <http://vaww.test.vhadataportal.med.va.gov/ToolsApplications/CAPRI.aspx>
  - <http://vaww.test.vhadataportal.med.va.gov/ToolsApplications/VistAWeb.aspx>
- VistA Documentation Library
  - <http://www.va.gov/vdl/default.asp>
- VIREC (VA intranet only)
  - <http://vaww.virec.research.va.gov/CAPRI-VistAWeb/CAPRI.htm>
  - <http://vaww.virec.research.va.gov/CAPRI-VistAWeb/VistAWeb.htm>
  - Comparing CAPRI & VistAWeb <http://vaww.virec.research.va.gov/CAPRI-VistAWeb/CAPRI-VistAWeb.htm>
  - Using VistAWeb for the First Time for Research <http://vaww.vhadataportal.med.va.gov/DataAccess/NewDataUser.aspx>



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