

Utilizing Veteran Health Data: Workshop for AZ Researchers and Clinicians

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 - Alnylam, Pfizer, AstraZeneca to ASU
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- Contents do not represent the views of the Department of Veterans Affairs or the United States Government.

Why is a VA Data Workshop Needed?

- America's largest integrated health care system
 - 1,321 health care facilities
 - 172 medical centers
 - 1,138 outpatient sites of care
 - Serving 9 million enrolled Veterans each year.

Overview

- Program Highlights
- Perspectives
 - Clinical
 - Research
 - Education
 - Industry
- Barriers and Opportunities

Program Highlights

- Working with VA and VA Data
 - Collaboration Pathways with VA
 - VA Data Resources (VINCI)
 - Understanding ARCHES/ MD Clone platform
- Voice of the investigators
 - ASU, VA, University of Arizona
- Partnering with Arizona VA Medical Centers for Research
- VA Data Resources - VIREC
- Planning for the Future of Arizona Clinical and Health Informatics Research and Training

Clinical Perspective

- Clinicians are naturally curious
 - Ability to rapidly ask questions and find answers
 - Last night: ‘How many VA patients nationally were ever prescribed treatment for hereditary polyneuropathy?’ Answer: Output after building query in 2 minutes
- Self-service model
 - ATM vs. bank teller
- Supports quality improvement, program building
 - Clinicians with access can iteratively build their ideas

Research Perspective

- Simpler to extract data
 - Do not need study extensive data dictionaries
 - However, understanding of health care data is still important
 - No database programming knowledge is required
- Good user support
- Functionalities are improving
- Approval process to access data is fast (post-IRB approval)
- However,
 - Link to other types of VA datasets (Medicare, progress notes) is not currently in place
 - Bring your own statistical software is a challenge (unless you use R)

VA ARCHES Can Support My Research Interests in Heart Failure with CDW Access

Clinical epidemiology

Outcomes – clinical

Disease prediction

Quality of care

Quality improvement interventions

Comparative effectiveness - drugs

Cost of care

VA Data Challenges



Overview

Challenges

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PREVIOUS PRECISIONFDA CHALLENGE

The Veterans Cardiac Health and AI Model Predictions (V-CHAMPS) Challenge

The Veterans Health Administration Innovation Ecosystem, the Digital Health Center of Excellence at FDA, the FDA Office of Digital Transformation's precisionFDA, and the UK Medicines and Healthcare products Regulatory Agency call on the scientific and data analytics community to develop and evaluate Artificial Intelligence and Machine Learning (AI/ML) models to predict cardiovascular health related outcomes in Veterans.

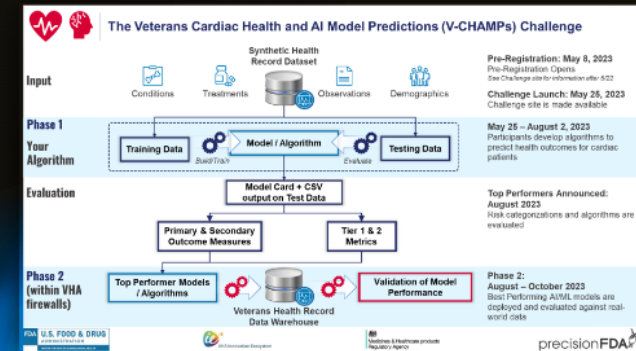
STARTS

ENDS

05/25/2023 07:48:00 MST

08/02/2023 14:00:00 MST

Ended



Education Perspective

- Students face shorter time horizon, limited data analysis skills, smaller team, less experience with VA IRBs
- With VA ARCHES, they can conduct impactful research and quality improvement
- If they have:
 - IRB support
 - Some statistical support
 - Credentialing support
 - Training on data platform

Industry Perspective

- Generating real world evidence
 - However, may need to link to Medicare data
 - Mostly limited to males
 - Great for diseases prevalent in males – prostate cancer, heart failure, etc.

Ability to Conduct Chart Review: Voogle

The screenshot displays the Voogle web application interface. At the top left is the Voogle logo. At the top right, it says "Welcome Back Leslie DeYoung" and includes "Help" and "Exit" links. The main area is divided into two sections: "Choose a Patient Index:" and "Concept Search:". Under "Choose a Patient Index:", there is a text box containing "Citizen, John Q - 1931-01-01" and two buttons: "Build Index" and "Check Build Status". Under "Concept Search:", there is a search input field with "diab" entered, a "Search" button, and a dropdown list of search results. The search results are as follows:

Search Result	Count
diabetes	{38}
diabetes mellitus	{17}
diabetes appointment	{2}
diabetes type 2	{2}
diabetic	{2}
diabetic neuropathy	{2}
significant diabetic neuropathy	{2}
type ii diabetes	{2}
type ii diabetes mellitus	{2}

Voogle

The screenshot shows the Voogle interface with the following components and annotations:

- Header:** "Voogle" logo, "Welcome Back Leslie DeYoung", "Help", and "Exit" buttons.
- Search Area:** "Choose a Patient Index:" dropdown (selected: "Citizen, John Q - 1921-01-01"), "Build Index" and "Check Build Status" buttons, "Concept Search:" input (containing "diabetes (26)"), and a "Search" button.
- Navigation Tabs:** "Search Results" (selected), "Similar Terms", "Negation", "Structured Data", and "Additional Details".
- Table:** A table with columns: Title, Term (freq), Ref Date, Serv. Section, Station, Text, and Actions. It displays 10 entries for "diabetes (26)".
- Annotations:**
 - "Click the tabs to view different types of information" points to the navigation tabs.
 - "Enter a term to filter the Search Results to display only notes that include that term; when you view the entire note text (click the eye), both the search and the filter terms are highlighted" points to the search input and the eye icon in the actions column.
 - "Click to view the Concept-Relation-Concepts (CRCs) for the individual note" points to the eye icon in the actions column.
 - "Negations are displayed in red" points to the word "not" in the text snippet of the first row.
 - "Search term is highlighted in each note snippet" points to the word "diabetes" in the text snippet of the first row.
 - "Click to view the entire note text" points to the eye icon in the actions column.
 - "Voogle Notes displays 10 notes per page; use the navigation tools to move between pages" points to the "Previous", "1", "2", and "Next" navigation buttons at the bottom.

Title	Term (freq)	Ref Date	Serv. Section	Station	Text	Actions
General Med Progress Note 10	diabetes (26)	2015-11-08 00:00:00	General Medical	530	... fasting insulin level was normal. Repeat nonfasting glucose was 109. She does not have history of diabetes. She does not exercise regularly and is not able to because of knee pain. She also has ...	
Fear and hand clamping	diabetes (26)	2015-09-19 00:00:00	Office Visit		... aged AIDS. He is considering resuming antiretroviral treatment. PAST MEDICAL HISTORY: He has diabetes, but this is well controlled. He also has hepatitis and HIV. CURRENT MEDICATIONS: H ...	
General Med Progress Note 11	diabetes (26)	2015-11-08 00:00:00	General Medical		... a 66-year-old female who presents with a 2-month history of irregular menses. She has a history of hypertension. While here she had a couple of miscarriages as well as ...	
Chronic Kidney Disease Followup 1	diabetes (26)	2015-01-28 00:00:00	Nephrology	530	CHIEF COMPLAINT: Chronic kidney disease PROBLEMS LIST: 1. Type 1 diabetes mellitus, insulin pump regulating. 2. Chronic kidney disease, stage III. 3. Siccar syndrome. 4. Hypertension. 5. Dyeal ...	
Bariatric Weight Loss 2	diabetes (26)	2016-06-28 00:00:00	Surgery	530	... The patient is a 100-year-old gentleman with multiple medical problems including hypertension, diabetes and dyslipidemia. He has been overweight most of his life. The patient was considering ...	
Bariatric Weight Loss 1	diabetes (26)	2016-06-28 00:00:00	Surgery	530	... been 55 pounds but always with weight regain. Now with comorbid conditions including sleep apnea, diabetes type 2, hypertension, past myocardial infarction. The patient is pursuing surgical welp ...	
Atrial Fibril - Progress Note	diabetes (26)	2016-06-09 00:00:00	Cardiology	530	... tentia, chronic obstructive pulmonary disease, BPH, atrial fibril, inferior vena cava filter, and diabetes. PHYSICAL EXAMINATION VITAL SIGNS: T-max 103. 2, blood pressure at this point is norm ...	
Arm Pain - Neuro Consult	diabetes (26)	2016-07-14 00:00:00	Neurology	530	... it quality of life, although he has a constant nagging pain. PAST MEDICAL HISTORY: He has had diabetes since 2009. He also has asthma, hypertension, and hypercholesterolemia. CURRENT MEDICO ...	
Anemia - Consult	diabetes (26)				...	

Chart Review: Compensation & Pension Record Interchange (CAPRI) Application

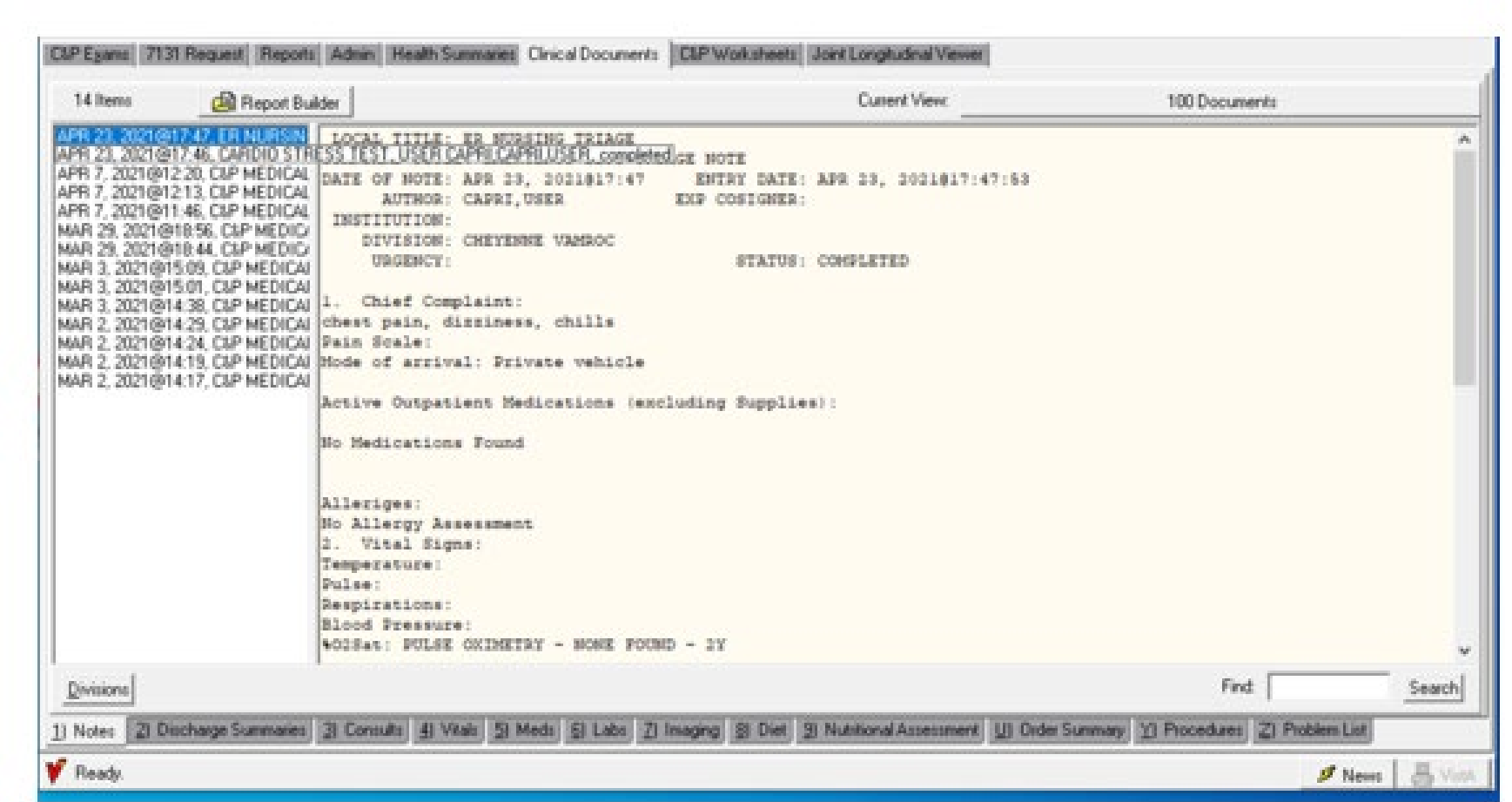


Figure 2-118. Clinical Documents Tab—Item View.

Barriers and Opportunities

■ Barriers

- Investment needed to support centralized resources to scale beyond individual researchers, students
- Regulatory approvals are challenging
- Credentials, training must be kept active
 - Some newly credentialed VA researchers will never conduct research

■ Opportunities

- Untapped data 'gold mine,' there is no cost to access data
 - Need more investigators
- Fills a genuine need for researchers, educators
- Massive scale: 25 million longitudinal complete EHR patient records
- Can be utilized for non-VA intramural research, i.e., NIH and industry research

Thank you

- Christine Talbot, IFH ASU
- ASU Enterprise Technology Live Events
- Speakers