

DATABASE & METHODS CYBERSEMINAR SERIES

FY24 Session #12:

Centralized Interactive Phenomics Resource (CIPHER): Phenotype Library and Tool Demonstration

September 9th, 2024

Hosted by 

Kelly Cho, PhD, MPH

Director, CIPHER & Million Veteran Program (MVP) Phenomics; Deputy Director, Cooperative Studies Program Epidemiology Center (CSPEC), Boston; Associate Professor of Medicine, Mass General Brigham, Harvard Medical School

Jacqueline Honerlaw, RN, MPH

Deputy Director, CIPHER

Ashley Galloway, MPH

Associate Director Strategic Partnerships and Outreach, CIPHER

VA Boston Healthcare System, Boston, MA



DATABASE & METHODS CYBERSEMINAR SERIES

Informational seminars to help VA researchers access and use VA databases.

Sessions cover...

- VA data sources & data access systems
- Application of VA data to research and quality improvement questions
- Limitations of secondary data use
- Resources to support VA data use



UPCOMING DATABASE & METHODS SESSIONS

First Monday of the month | 1:00pm-2:00pm ET

Date	Topic
10/7/24	Meet VIREC: The Researcher's Guide to VA Data
11/4/24	Navigating VA Data Sources: An Overview of Commonly Used Databases

Visit the [VIREC Database & Methods Cyberseminar](#) page for more information & registration links.

Visit [HSR's VIREC Cyberseminar Archive](#) page to watch previous sessions.

Where can I
download a
copy of the
slides?



SAMPLE EMAIL

A Practical Approach to Working with VA-Purchased Community Care Data

Thursday, October 13, 2022

2:00 PM | (UTC-04:00) Eastern Time (US & Canada) | 1 hr

Please download today's slides

~~Please click here for today's live captions~~

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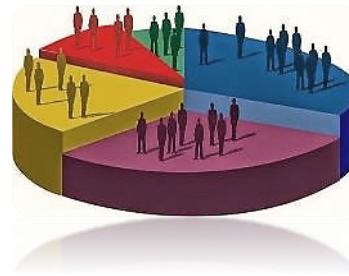
Ashley Galloway, MPH

Associate Director Strategic Partnerships and Outreach, CIPHER

Poll #1:

*What is your primary **role** in projects using VA data?*

- Investigator, PI, Co-I
- Statistician, methodologist, biostatistician
- Data manager, analyst, or programmer
- Project coordinator
- Other – please describe via the chat function



Poll #2:

How many years of experience working with VA data?

- None – I'm brand new to this!
- One year or less
- More than 1, less than 3 years
- At least 3, less than 7 years
- At least 7, less than 10 years
- 10 years or more

Session roadmap

- Introduction to phenotyping and CIPHER program
- CIPHER Online overview and live demonstration
- CIPHER VA Wiki overview and live demonstration
- Applications of CIPHER and future directions

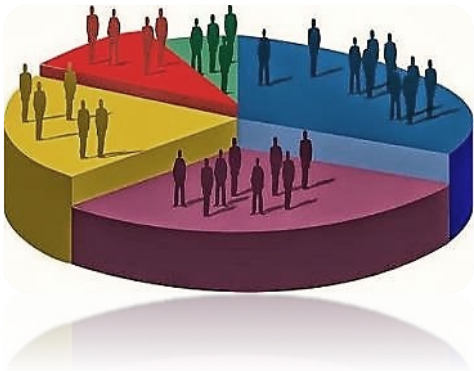
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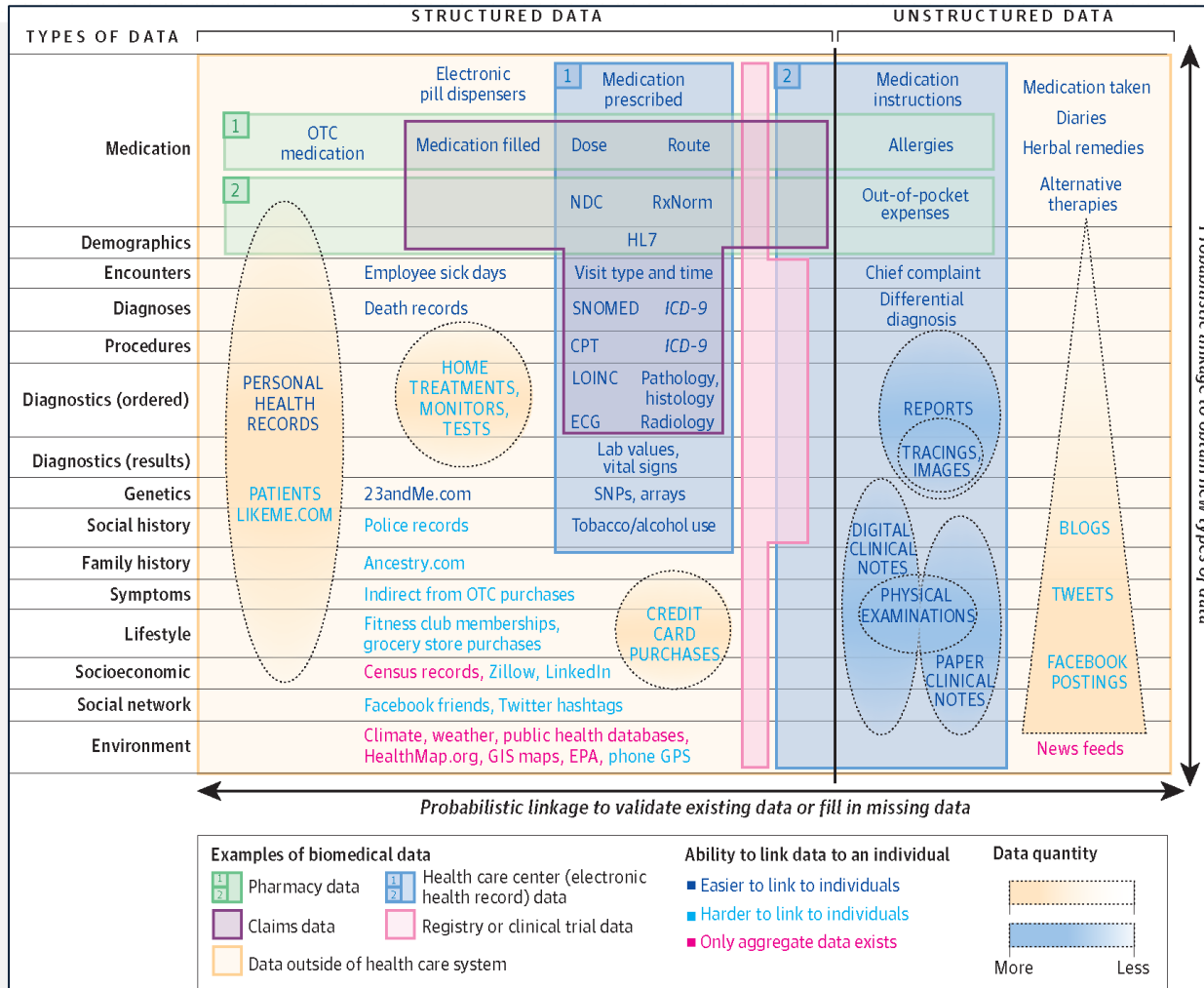
Poll #3:

Have you used electronic health records (EHR) data for your work?

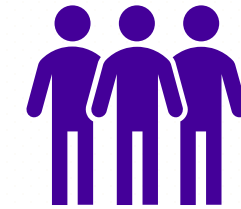


- Yes, for research
- Yes, for healthcare operations
- No, but I plan to
- No

EHRs are a rich resource for clinical research and healthcare operations



- Code curation
- Machine learning
- Other approaches



Heart failure



Diabetes



PTSD

Weber JAMA 2014

Phenotype development has its challenges



Institutional
knowledge



Computing
resources



Clinical
expertise



System specific
data variability

Centralized Interactive Phenomics Resource (CIPHER)



Mission: Accelerate health data innovation by providing an integrated and interactive knowledge sharing platform

CIPHER Online

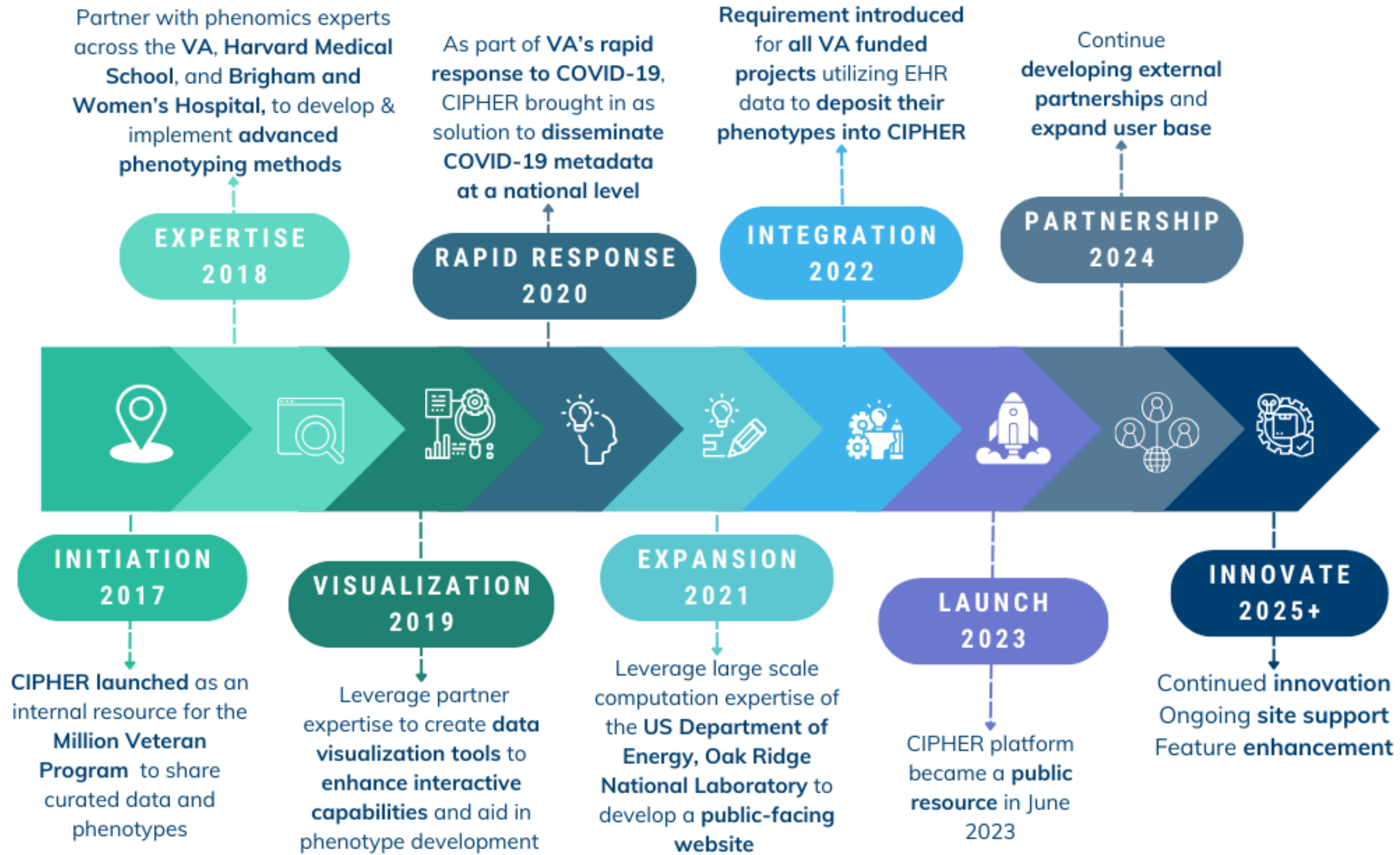
- A publicly accessible platform centralizing phenotype definitions and phenotyping resources

CIPHER VA Wiki

- A VA internal site with searchable data resources for the VA community

Funded by the US Department of Veterans Affairs, Office of Research and Development

CIPHER PROGRAM MILESTONES



CIPHER is integrated into the VA awards process

- VA awardees required to deposit phenotype definitions
- Successfully piloted with 12 projects and collected 46 phenotypes

All applications must be self-contained within the specified page limits (no URLs or video clips), URLs/hyperlinks and video clips are prohibited **except** in the *Biographical Sketch* and *Bibliography & References Cited* attachments.

CIPHER (Centralized Interactive Phenomics Resource)

Brief introduction to phenotyping and CIPHER

An electronic health records (EHR) based phenotype is a clinical condition or characteristic derived from EHRs and linked data sources. Some examples of phenotypes include age, diabetes, asthma medications and cardiovascular disease. Phenotypes have been used in case-control studies, cohort studies, genetic research, and clinical decision support. The [CIPHER \(Centralized Interactive Phenomics Resource\)](#) knowledgebase aims to make EHR-based phenotyping scalable and efficient by enabling reuse and facilitating collaboration. The CIPHER platform includes electronic health record (EHR)-based phenotype definitions, algorithms, performance metrics, metadata, and data visualization tools. Additionally, users can find a number of resources for phenotype development and VA data resources.

Objective

Applicants proposing to develop new phenotype definitions as part of their VA-funded research will be required to contribute their phenotyping algorithm metadata, programming code, and validation metrics to CIPHER. Researchers are also encouraged to browse CIPHER to see if a phenotype they need is already in the library, as it currently contains thousands of phenotypes at different stages of development. You can learn more about how to contribute to CIPHER [here](#).

Requirements

Applicants will be required to provide updates on the development of their phenotype in each Research Performance Progress Report (RPPR). Once the phenotype is finalized, it must be submitted to CIPHER, and the award number must be listed in the acknowledgement section of the phenotype page(s). Applications will also be required to include the link to their phenotype page(s) in section C. "Products of the RPPR" when it is completed or by the end of the award, whichever comes first.

[Requests for Applications \(RFA\) and Program Announcements \(va.gov\)](#)

CIPHER is integrated into the VA awards process

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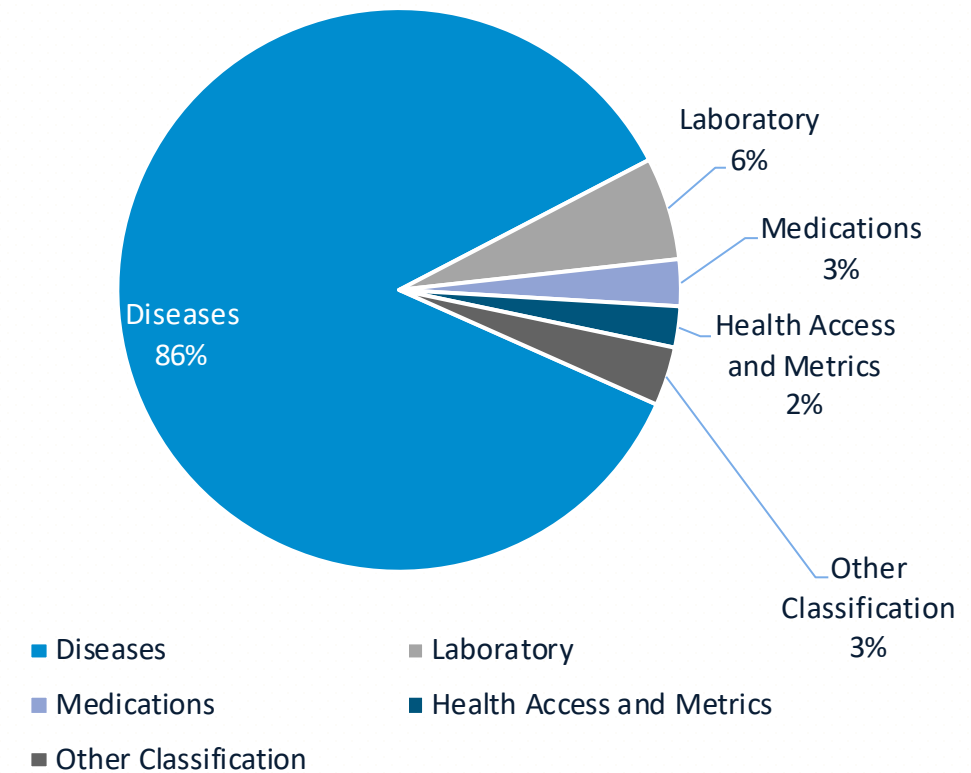
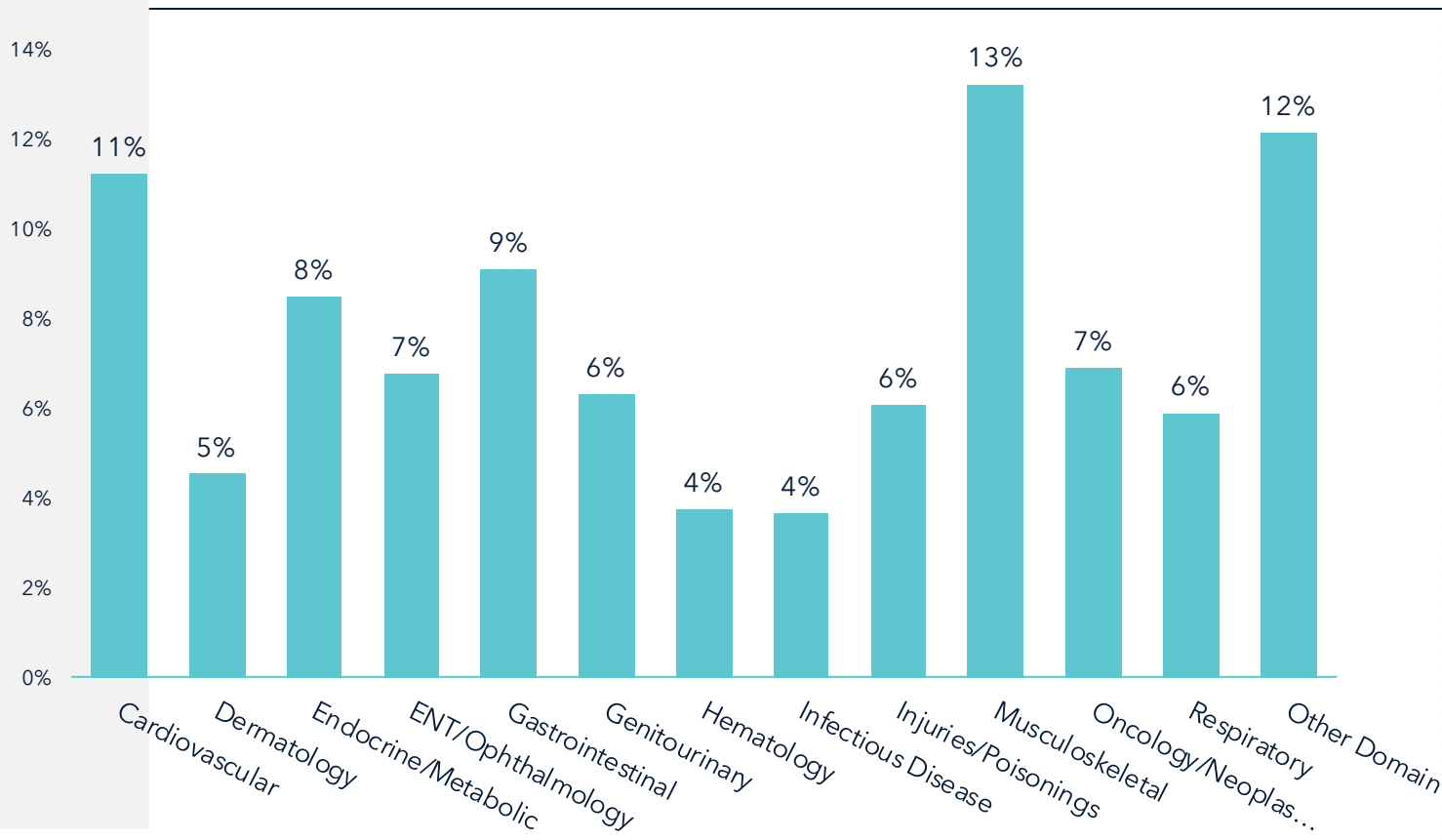
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Expanding CIPHER knowledgebase content

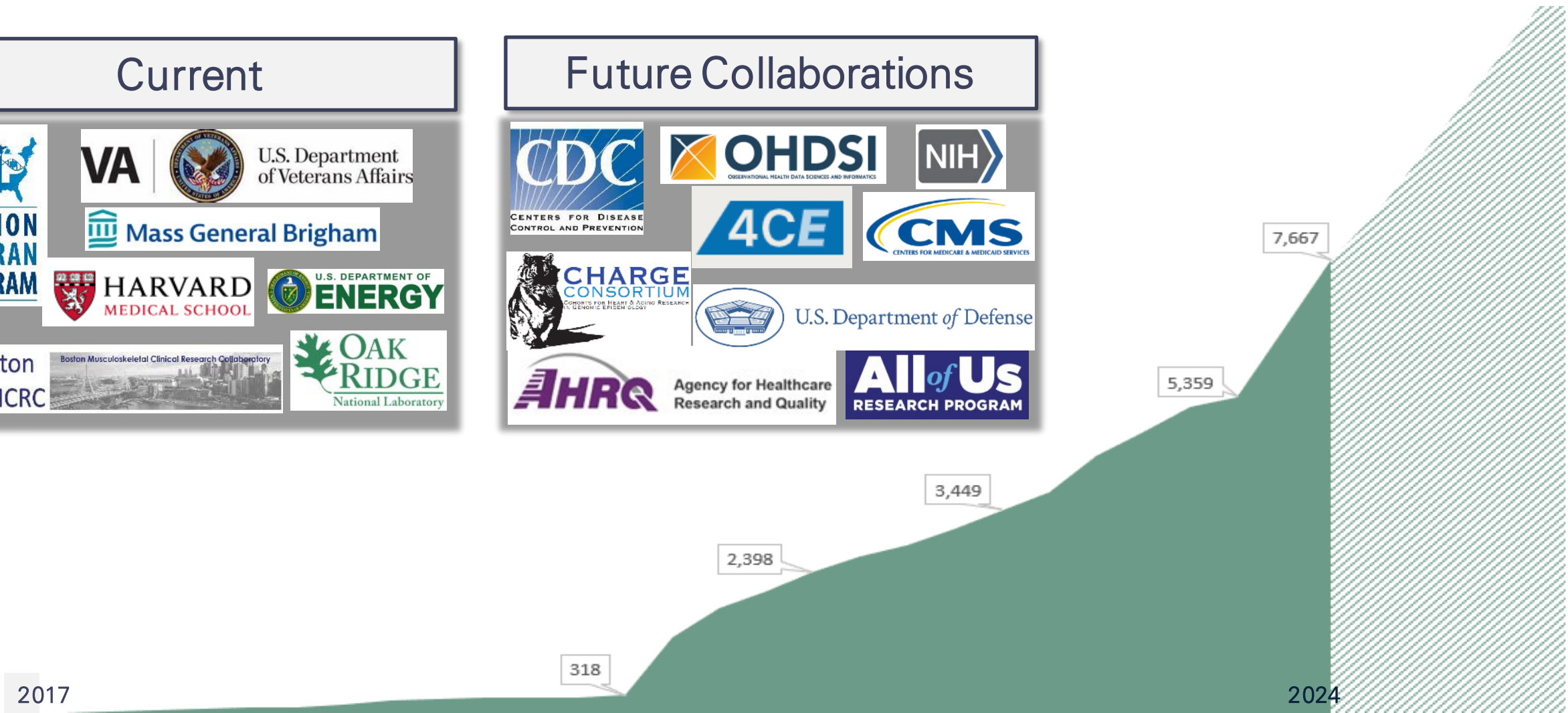
6,500+ Phenotypes



CIPHER's userbase continues to grow

Current

Future Collaborations



Session roadmap

- Introduction to phenotyping and CIPHER program
- **CIPHER Online overview and live demonstration**
- CIPHER VA Wiki overview and live demonstration
- Applications of CIPHER and future directions



VA U.S. Department of Veterans Affairs **CIPHER** [Login](#) [Need to register?](#)

[Home](#) [Getting Started](#) [Explore](#) [About](#) [Contact Us](#) [Compare](#)

Search Search Knowledgebase...

Phenotype Knowledgebase

Browse existing EHR phenotypes and metadata in our searchable online database.

CIPHER: CENTRALIZED INTERACTIVE PHENOMICS RESOURCE

Developed by the U.S. Department of Veterans Affairs (VA), CIPHER is an online knowledge-sharing platform that aims to optimize electronic health records (EHR) data for use in research and clinical operations. The CIPHER knowledgebase contains:

- EHR-based phenotype definitions
- Data mappings
- Programming code
- Tools for visualizing data and generating phenotypes

CIPHER Online

Public facing website

<https://phenomics.va.ornl.gov/>

Searchable database of phenotype definitions

CIPHER Online (Public)

A. Phenotype knowledgebase

B. Phenotype comparison tool

C. Phenotype collection workflows

D. Data visualization tools

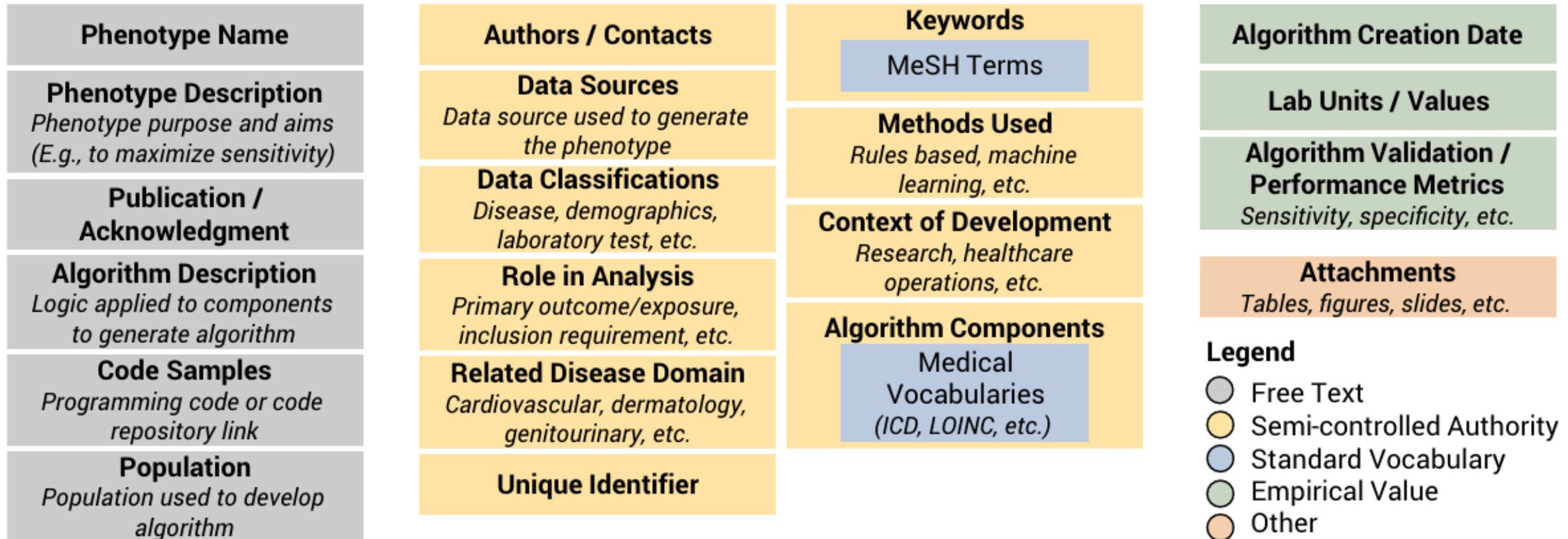
- Search using free text and filters
- View phenotype version history
- Unique URL for each phenotype
- Metadata stored using CIPHER standard

The screenshot displays the CIPHER web application interface. At the top, there is a navigation bar with the VA logo, U.S. Department of Veterans Affairs, and the CIPHER logo. A 'Login' button and a 'Need to register?' link are visible in the top right. Below the navigation bar, there are tabs for 'Home', 'Getting Started', 'Explore', 'About', and 'Contact Us'. The 'Explore' tab is active, showing a sidebar with various filters such as 'Data Classification', 'Related Disease Domain', 'Data Sources Used', 'Algorithm components', 'Role of phenotype in analysis', 'Date algorithm created', 'Author', 'Method used', and 'Publication'. The main content area shows a 'Knowledgebase Search' section with a search bar containing 'dementia'. Below the search bar, it displays 'Search results for: dementia' and a list of search results. The first result is 'Dementia, All Cause (MVP Cog Working Group)' with a 'Compare' button. The second result is 'Alzheimer's Disease, Non-specific Dementias (MVP Cog Working Group)' also with a 'Compare' button. The search results include author information, algorithm creation date, and a detailed description of the phenotype definitions.

<https://phenomics.va.ornl.gov/web/cipher/search>



CIPHER phenotype metadata standard



Honerlaw JAMIA 2023

Comparison of phenotype metadata

CIPHER Online (Public)



A. Phenotype knowledgebase

B. Phenotype comparison tool

C. Phenotype collection workflows

D. Data visualization tools

- Compare metadata across up to 7 phenotypes

[Dementia, Early Onset \(TORCH\)](#)   Compare

Author: The Trajectories of Resilience, Community, and Health Lab (TORCH), Identifying and Validating Complex Comorbidity Clusters in OEF-OIF Veterans. DHI 09-237

Algorithm Created: 10/23/2019

[View List](#)

VA U.S. Department of Veterans Affairs Home Getting Started Explore About Contact Us ← Compare

Phenotype Comparison

- [Dementia, Early Onset \(TORCH\)](#)
- [Dementia \(Gaziano\)](#)
- [Dementia, All Cause \(MVP Cog Working Group\)](#)

Highlight: Differences

	Dementia, Early Onset (TORCH)	Dementia (Gaziano)	Dementia, All Cause (MVP Cog Working Group)
Method Used	Rules-Based (i.e., only structured data were used)	Rules-Based (i.e., only structured data were used)	Rules-Based (i.e., only structured data were used)
Algorithm Description	Presence of any ICD code for Alzheimer's disease (AD) or Frontotemporal dementia (FTD)	1 inpatient or 2 outpatient ICD Codes	To quality as a case requires the presence of two or more ICD codes.
ICD-9 Diagnostic Codes	4 Total 331.0, 331.1, 331.11, 331.19	46 Total 42 Missing 046.1, 046.11, 046.19, 046.3, 290.0, 290.10, 290.11, 290.12, 290.13, 290.20, 290.21, 290.3, 290.40, 290.41, 290.42, 290.43, 290.8, 290.9, 291.2, 291.20, 291.21, 291.22, 291.23, 291.24, 291.10, 294.11, 294.8	27 Total 23 Missing 290.0, 290.10, 290.11, 290.12, 290.13, 290.20, 290.21, 290.3, 290.40, 290.41, 290.42, 290.43, 294.10, 294.11, 294.20, 294.21, 294.8
ICD-10 Diagnostic Codes	3 Total G30.9, G31.01, G31.09		20 Total 17 Missing A81.00, F01.50, F01.51, F02.80, F02.81, F03.90, F03.91, F10.96, G10., G20., G30.0, G30.1, G30.8

<https://phenomics.va.ornl.gov/web/cipher/search>

Standardized collection of phenotype metadata

CIPHER Online (Public)	
A.	Phenotype knowledgebase
B.	Phenotype comparison tool
C.	Phenotype collection workflows
D.	Data visualization tools

- Self-service phenotype submission & editing
- CIPHER can assist with automated entry of large number of definitions
- CIPHER quality review for completeness and clarity

<https://phenomics.va.ornl.gov/web/cipher/contribute>

Visualization tools connected to phenotype definition knowledgebase

CIPHER Online (Public)

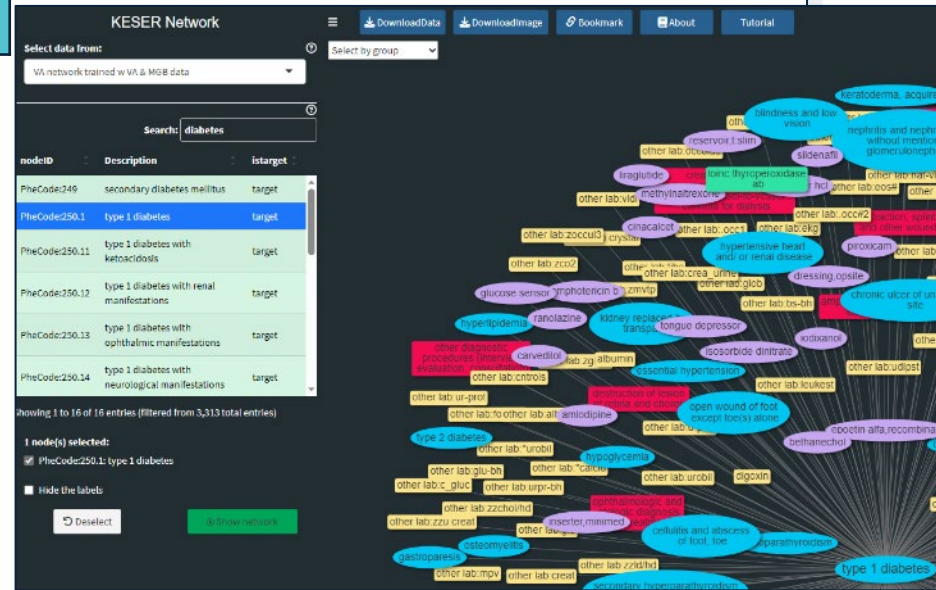
A. Phenotype knowledgebase

B. Phenotype comparison tool

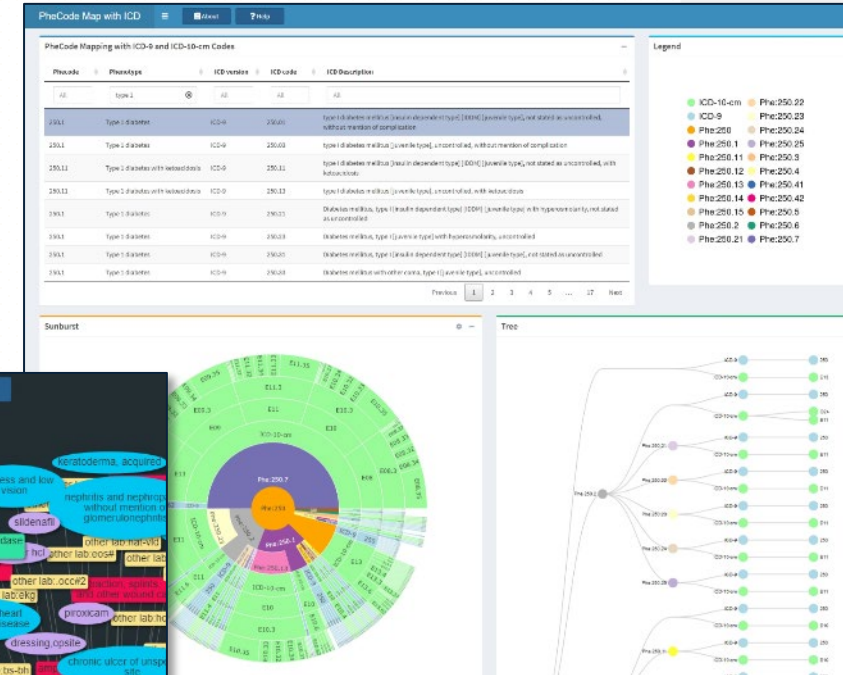
C. Phenotype collection workflows

D. Data visualization tools

- Provide interactive approach to exploring metadata
- Aid in phenotype development
- Linkage to definitions in phenotype knowledgebase



KESER creates a knowledge map to allow users to visualize relatedness among diseases, treatment, procedures, and laboratory measurements.



Phecode to ICD Map assists users in developing clinically meaningful disease phenotypes by enabling the user to visualize the relationships between various ICD codes and Phecodes.

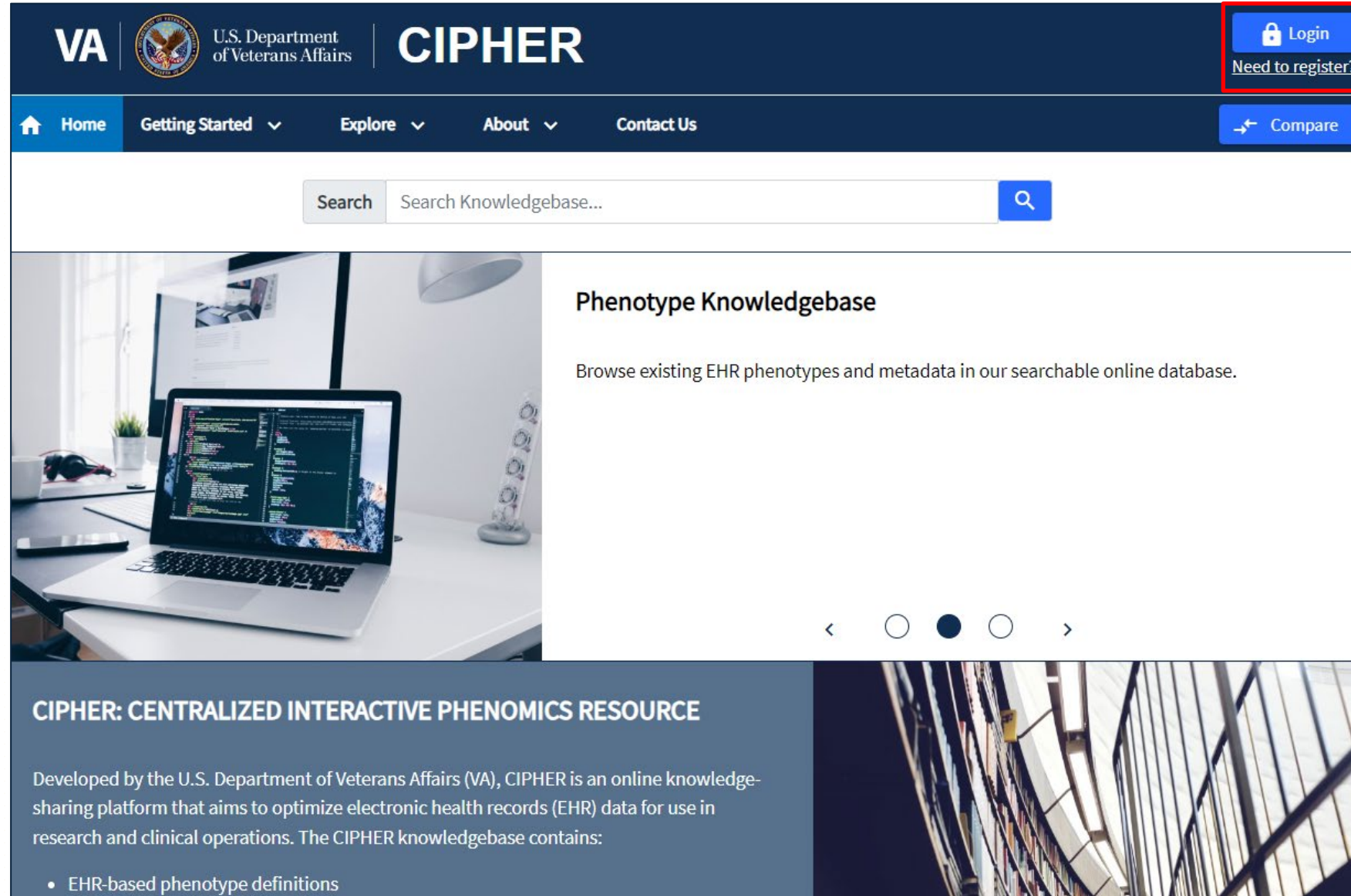
<https://phenomics.va.gov/web/cipher/vistools>

CIPHER Online Demonstration

<https://phenomics.va.ornl.gov/>

Live Demo: CIPHER navigation

- Public facing website
- Log-in not required to browse the site



The screenshot shows the CIPHER website homepage. At the top left, there is the VA logo and the U.S. Department of Veterans Affairs logo. The main header features the CIPHER logo. In the top right corner, there is a blue button with a lock icon and the text "Login" and "Need to register?". Below the header is a navigation menu with links for Home, Getting Started, Explore, About, and Contact Us. A search bar is located below the navigation menu with the placeholder text "Search Knowledgebase...". The main content area features a large image of a laptop displaying code on a desk. To the right of the image, the text reads "Phenotype Knowledgebase" and "Browse existing EHR phenotypes and metadata in our searchable online database." Below this text are navigation arrows. At the bottom, there is a dark blue section with the text "CIPHER: CENTRALIZED INTERACTIVE PHENOMICS RESOURCE" and a description of the platform. A list of features is shown below, including "EHR-based phenotype definitions".

VA | U.S. Department of Veterans Affairs | **CIPHER**

Home Getting Started Explore About Contact Us Compare

Search Search Knowledgebase...

Phenotype Knowledgebase

Browse existing EHR phenotypes and metadata in our searchable online database.

CIPHER: CENTRALIZED INTERACTIVE PHENOMICS RESOURCE

Developed by the U.S. Department of Veterans Affairs (VA), CIPHER is an online knowledge-sharing platform that aims to optimize electronic health records (EHR) data for use in research and clinical operations. The CIPHER knowledgebase contains:

- EHR-based phenotype definitions

Live Demo: Phenotype knowledgebase

- Search options
 - Free text
 - Filters
- Phenotypes do not need to be published or validated to be accepted
- Sharing programming code is encouraged but not required

The screenshot displays the CIPHER (Clinical Information Platform for Health Research) interface. The top navigation bar includes the VA logo, U.S. Department of Veterans Affairs, and the CIPHER logo. The main navigation menu has options for Home, Getting Started, Explore (selected), About, and Contact Us. A search bar is prominently featured, containing the text 'dementia'. Below the search bar, the results are displayed for 'dementia'. The search results include a single entry: 'Dementia, Early Onset (TORCH)'. The author information for this entry is: 'Author: The Trajectories of Resilience, Community, and Health Lab (TORCH), Identifying and Validating Complex Comorbidity Clusters in OEF-OIF Veterans. DHI 09-237'. The algorithm creation date is listed as '10/23/2019'. The abstract text describes the study: 'Presence of any ICD code for Alzheimer's disease (AD) or Frontotemporal dementia (FTD), Marceaux JC, Soble JR, O'Rourke JJF, et al. Validity of early-onset dementia diagnoses in VA electronic medical record administrative data. Clin Neuropsychol. 2020;34(6):1175-1189.doi:10.1080/13854046.2019.1679889, Dementia, Early Onset (TORCH), Dementia, Early Onset (TORCH).docx, Validating Cases of Dementia and Mild Cognitive Impairment in OEF/OIF Veterans 1I21RX002060, Utilized ICD 9 and ICD 10 codes in VA and DoD health system data for Veterans under the age of 65. The purpose was to examine the association of traumatic brain injury (TBI) with early onset dementia.' On the left side, a filter panel is visible, with the 'Author' filter expanded to show a list of authors and their associated counts: MVP Core (17), MVP Cognitive Decline and Dementia During Aging Working Group (5), Million Veteran Program (MVP) (5), eMERGE (5), and The Trajectories of Resilience, Community, and Health Lab (TORCH) (3).

Live Demo: Phenotype comparison

- Select up to 7 phenotypes to compare metadata
- Click “view list” or “compare” to view these phenotypes side-by-side

The screenshot displays the CIPHER (Clinical Information Processing and Health Evaluation Research) web application interface. The header includes the VA logo, U.S. Department of Veterans Affairs, and the CIPHER logo. A navigation bar contains links for Home, Getting Started, Explore (active), About, and Contact Us. A 'Login' button and a 'Need to register?' link are in the top right corner. A 'Compare' button with a red notification badge '3' is also highlighted in the top right.

The main content area shows a 'Knowledgebase Search' section with a search bar containing 'dementia'. Below the search bar, it indicates 'Search results for: dementia' with a red 'X' icon. The search results are displayed in a list format with pagination controls (1-10 of 37 items, 10 items per page). The first result is 'Dementia, Early Onset (TORCH)' with a 'Compare' button (checked) and a 'View List' button, both highlighted with a red box. The author information is 'The Trajectories of Resilience, Community, and Health Lab (TORCH), Identifying and Validating Complex Comorbidity Clusters in OEF-OIF Veterans. DHI 09-237'. The algorithm creation date is '10/23/2019'. The abstract text describes the study on the validity of early-onset dementia diagnoses in VA electronic medical record administrative data.

On the left side, there is a sidebar with a 'Clear Filters' button and an 'Expand' dropdown. Below this, there is a list of filter categories, each with a dropdown arrow: Data Classification, Related Disease Domain, Data Sources Used, Algorithm components, Role of phenotype in analysis, Date algorithm created, Author, Method used, Publication, Algorithm code, and Validated.

Live Demo: Phenotype comparison

- Use arrows to mark the “base” phenotype to use as basis for comparison (grey box)
- Highlight differences or commonalities
- May add/remove phenotypes from comparison

The screenshot shows the CIPHER web application interface for Phenotype Comparison. The interface includes a navigation bar with 'Home', 'Getting Started', 'Explore', 'About', and 'Contact Us'. A 'Login' button and a 'Need to register?' link are also present. A 'Compare' button with a notification badge is visible in the top right.

The main content area is titled 'Phenotype Comparison' and features a list of phenotypes for comparison:

- A** [Dementia, Early Onset \(TORCH\)](#)
- B** [Dementia, All Cause \(MVP Cog Working Group\)](#)
- C** [Dementias \(MAP\)](#)

Below the list is a comparison table with a 'Highlight' dropdown set to 'Differences'. The table compares the three phenotypes across ICD-9 and ICD-10 diagnostic codes. The 'Dementia, Early Onset (TORCH)' column (A) is highlighted in grey, indicating it is the base phenotype.

	A	B	C
	Dementia, Early Onset (TORCH)	Dementia, All Cause (MVP Cog Working Group)	Dementias (MAP)
ICD-9 Diagnostic Codes	4 Total 331.0, 331.1, 331.11, 331.19	27 Total 23 Missing 290.0, 290.10, 290.11, 290.12, 290.13, 290.20, 290.21, 290.22, 290.40, 290.41, 290.42, 290.43, 294.10, 294.11, 294.20, 294.21, 294.8 331.0, 331.1, 331.11, 331.19, 331.2, 331.5, 331.82, 332.0, 332.1, 333.4	29 Total 25 Missing 290.0, 290.00, 290.1, 290.10, 290.11, 290.12, 290.13, 290.2, 290.20, 290.21, 290.3, 290.4, 290.40, 290.41, 290.42, 290.43, 294.1, 294.10, 294.11, 294.2, 294.20, 294.21, 331.0, 331.00, 331.1, 331.11, 331.19, 331.2, 331.82
ICD-10 Diagnostic Codes	3 Total F30.9, G31.01, G31.09	20 Total 17 Missing A81.00, F01.50, F01.51, F02.80, F02.81, F03.90, F03.91, F10.96, G10., G20., G30.0, G30.1, G30.8 G30.0, G31.0, G31.01, G31.09, G31.1, G31.82, G31.9	22 Total 19 Missing F01, F01.5, F01.50, F01.51, F02, F02.8, F02.80, F02.81, F03, F03.9, F03.90, F03.91, G30, G30.0, G30.1, G30.8 G30.0, G31.0, G31.01, G31.09, G31.1, G31.82

Live Demo: Phenotype metadata

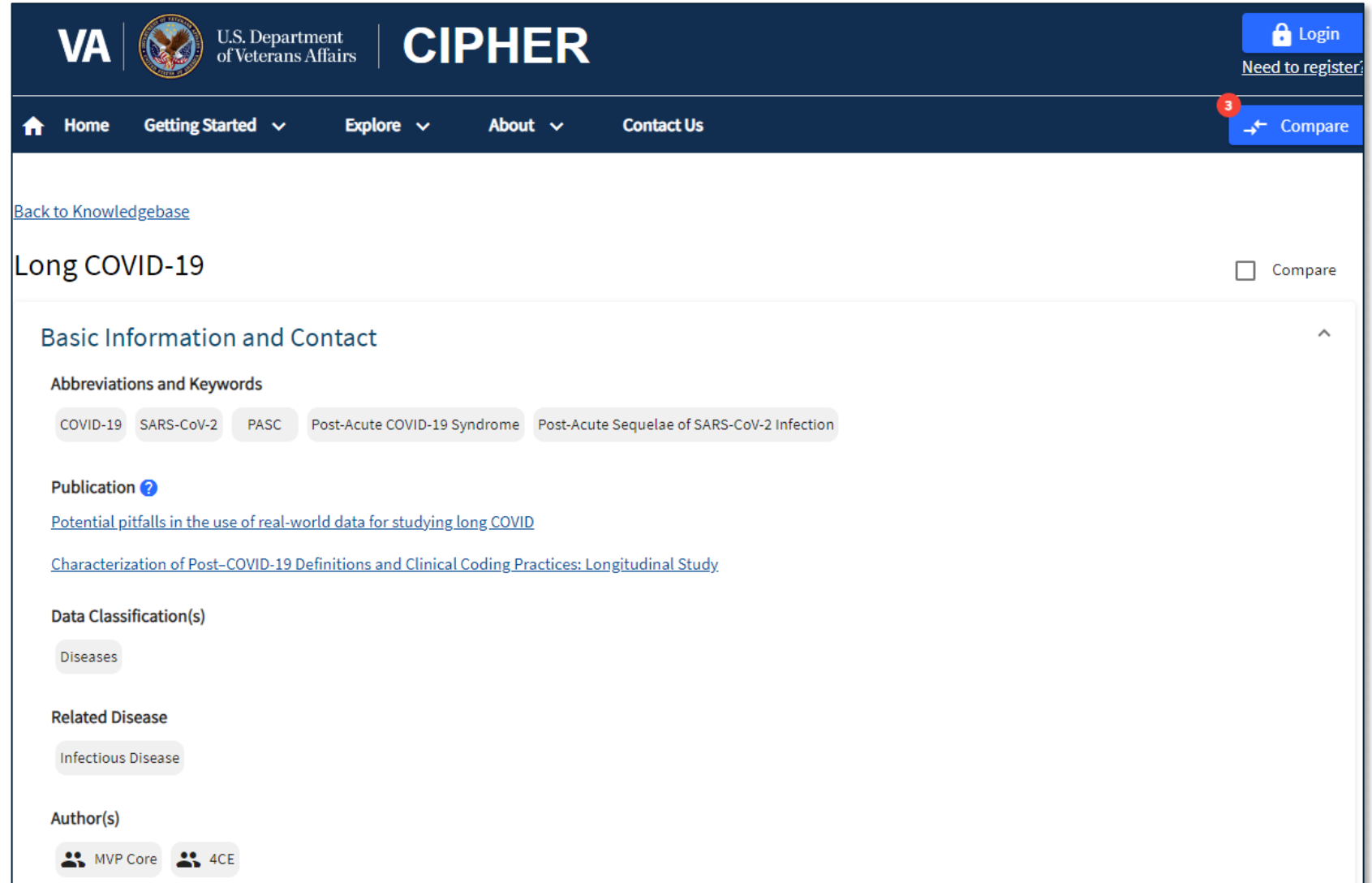
- Unique URL to enable sharing
- Programming code shared directly on CIPHER, but users may provide code repository link

The screenshot displays the CIPHER web application interface. At the top, there is a dark blue header with the VA logo, the U.S. Department of Veterans Affairs name, and the CIPHER logo. A 'Login' button and a 'Need to register?' link are in the top right. Below the header is a navigation bar with links for Home, Getting Started, Explore, About, and Contact Us, along with a 'Compare' button. The main content area shows a search result for 'Dementia, All Cause (MVP Cog Working Group)'. It includes a 'Back to Knowledgebase' link, a 'Compare' checkbox, and a 'Basic Information and Contact' section. This section contains 'Abbreviations and Keywords' (Alzheimer's Disease, Cognitive Decline), 'Publication' (Alzheimer's disease and related dementias among aging veterans: Examining gene-by-environment interactions with post-traumatic stress disorder and traumatic brain injury), 'Data Classification(s)' (Diseases), 'Related Disease' (Mental/ Behavioral Health, Neurology), and 'Author(s)' (MVP Cognitive Decline and Dementia During Aging Working Group, Million Veteran Program (MVP)).

[CIPHER - Dementia, All Cause \(MVP Cog Working Group\) \(orinl.gov\)](https://orinl.gov/CIPHER-Dementia-All-Cause-MVP-Cog-Working-Group)

Live Demo: Phenotype metadata

- Multiple sets of validation metrics may be added to a phenotype
- For example, this phenotype has validation metrics from application at 3 health systems
 - VA Healthcare System
 - Beth Israel Deaconess Medical Center
 - University of Pittsburgh Medical Center



VA | U.S. Department of Veterans Affairs | CIPHER

Home Getting Started Explore About Contact Us

Back to Knowledgebase

Long COVID-19 Compare

Basic Information and Contact

Abbreviations and Keywords

COVID-19 SARS-CoV-2 PASC Post-Acute COVID-19 Syndrome Post-Acute Sequelae of SARS-CoV-2 Infection

Publication [Potential pitfalls in the use of real-world data for studying long COVID](#)
[Characterization of Post-COVID-19 Definitions and Clinical Coding Practices: Longitudinal Study](#)

Data Classification(s)

Diseases

Related Disease

Infectious Disease

Author(s)

MVP Core 4CE

[CIPHER - Long COVID-19 \(ornl.gov\)](https://ornl.gov)

Live Demo: Contributing phenotypes

- Create an account to submit a phenotype through our webform
- User accounts are also needed for using Unified Medical Language System (UMLS) vocabularies
- A team can share an account to manage phenotypes together

The screenshot shows the CIPHER website interface. At the top, there is a navigation bar with the VA logo, U.S. Department of Veterans Affairs, and the CIPHER logo. A user profile icon labeled 'JH' is in the top right. Below the navigation bar, there are tabs for 'Home', 'Getting Started', 'Explore', 'About', 'Contact Us', and 'Admin'. A 'Compare' button is also visible. The main content area is titled 'How to Contribute' and 'Contributing Phenotypes'. It includes a paragraph about the process, a link to the 'How to Use CIPHER' page, and a list of 'Next steps to contribute a phenotype'.

How to Contribute

Contributing Phenotypes

We have an easy-to-use process and resources for contributing your phenotype to CIPHER.

You may start by visiting our [How to Use CIPHER](#) page, which gives an overview of phenotyping, how phenotypes are used, benefits of contributing your phenotype to CIPHER, and general tips for using the CIPHER website.

Next steps to contribute a phenotype:

- 1. Create a user account.** Navigate to the top right-hand corner of the screen and choose to register a new account. Please enter a valid email that you have access to. You will need this to verify your account.
- 2. Complete the Phenotype Entry Form.** Open the phenotype entry form by clicking [Create New Phenotype](#). You can also navigate to the form directly via the navigation bar at the top of the screen, under the Getting Started tab. You may save your work in progress and return to finish entering your phenotype at any time. To resume editing, please click on “My Phenotypes” under the “Getting Started” tab on the navigation bar.
 - a. Choose the type of phenotype you would like to submit (general, lab, or medication).
 - b. Follow the instructions in the online wizard to complete the form.
- 3. Submit your phenotype.** Once you have entered in all your phenotype details, you can review your entry and submit for review.
 - a. Once your phenotype is submitted it will be reviewed by the CIPHER team. If our team has any questions regarding the submission, we will reach out to the contact listed on the entry form. Once the phenotype entry is finalized by CIPHER it will be searchable within our [Phenotype Knowledgebase](#).
 - b. You can check the status of your submission by navigating to “My Phenotypes” on the navigation bar under the Getting Started tab.
 - c. Should you have any questions about your submission in the meantime, please contact CIPHER@va.gov.

<https://phenomics.va.ornl.gov/web/cipher/contribute>

Live Demo: Contributing phenotypes

Section 1: Basic Information and Contact

- Save and finish later
- May search against metadata already shared in the knowledgebase

VA | U.S. Department of Veterans Affairs | CIPHER

Home Getting Started Explore About Contact Us Admin Compare

General Phenotype

Please complete all fields below. You will have the opportunity to review all information at the final step. [Save and Finish Later](#)

1 Basic Information and Contact

Phenotype Name*:
What is the name of your phenotype?

Phenotype Name *
DEMO - Dementia, All Cause

Abbreviations and Keywords*:
What abbreviations or keywords can help users find your phenotype?

- Keywords will be used as search terms in the library.
- Use the search below to select keywords already stored in the CIPHER database.
- If the keyword is not yet stored, enter in your own and select the entry with the plus icon.
- To remove a keyword please click the "x" next to the word.
- We suggest utilizing [MESH](#) to find relevant keywords.

Keywords and Abbreviations *
AD Search Keywords and Abbreviations

Live Demo: Contributing phenotypes

Section 2: Algorithm Overview

- May list VA and/or non-VA data sources

The screenshot shows the CIPHER web application interface. At the top, there is a dark blue header with the VA logo, the U.S. Department of Veterans Affairs text, and the CIPHER logo. A navigation bar below the header contains links for Home, Getting Started (with a dropdown arrow), Explore (with a dropdown arrow), About (with a dropdown arrow), Contact Us, a settings gear icon, and Admin (with a dropdown arrow). A 'Compare' button with a double-headed arrow is on the right. The main content area is titled 'General Phenotype' and includes a 'Save and Finish Later' button. Below the title, a message states: 'Please complete all fields below. You will have the opportunity to review all information at the final step.' A progress indicator shows two steps: '1 Basic Information and Contact' and '2 Algorithm Overview' (which is highlighted). Under the 'Algorithm Overview' step, the section is titled 'Source of Phenotype Data*:' with the question 'What data sources were used to generate the phenotype?'. There are two sub-sections: 'VA Data' and 'Non-VA Data'. Under 'VA Data', there are six checkboxes: 'CDW (Corporate Data Warehouse)' (checked), 'CSDR (COVID-19 Shared Data Resource)', 'DoD (Department of Defense)', 'MVP (Million Veteran Program)', 'OMOP (Observational Medical Outcomes Partnership)', and 'Other (VA Data Source)'. The 'Non-VA Data' section is currently empty.

Live Demo: Contributing phenotypes

Section 3: Algorithm Components

- Search for code sets using standard vocabularies or enter custom fields
- Share code repository link

The screenshot shows the CIPHER web application interface. The header includes the VA logo, U.S. Department of Veterans Affairs, and the CIPHER logo. A navigation menu contains Home, Getting Started (selected), Explore, About, Contact Us, and Admin. A 'Compare' button is visible in the top right. The main content area is titled 'General Phenotype' and includes a 'Save and Finish Later' button. A progress indicator shows three steps: 'Basic Information and Contact', 'Algorithm Overview', and 'Algorithm Components' (the current step). Below the progress indicator, the 'Method Used*' section asks 'What logic was applied to the algorithm components to create this phenotype? (Select all that apply)'. The options are: Rules-Based (i.e., only structured data were used) (checked), Machine learning: Supervised, Machine learning: Semi-Supervised, Machine learning: Unsupervised, Machine learning: Other machine learning approach, and Other.

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Home Getting Started Explore About Contact Us Admin Compare

General Phenotype

Please complete all fields below. You will have the opportunity to review all information at the final step. [Save and Finish Later](#)

Basic Information and Contact

Algorithm Overview

3 Algorithm Components

Method Used*:
What logic was applied to the algorithm components to create this phenotype? (Select all that apply)

- Rules-Based (i.e., only structured data were used)
- Machine learning: Supervised
- Machine learning: Semi-Supervised
- Machine learning: Unsupervised
- Machine learning: Other machine learning approach
- Other

Live Demo: Contributing phenotypes

Section 4: Validation

- Add performance metrics (sensitivity, specificity)
- Store multiple validations

Section 5: Additional Information

- Add attachments

The screenshot shows the CIPHER web application interface. At the top, there is a dark blue header with the VA logo, the U.S. Department of Veterans Affairs logo, and the CIPHER logo. A user profile icon with the initials 'JH' is in the top right corner. Below the header is a navigation bar with links for Home, Getting Started (selected), Explore, About, Contact Us, and Admin. A 'Compare' button is also visible. The main content area is titled 'General Phenotype' and includes a 'Save and Finish Later' button. A progress indicator shows four steps: Basic Information and Contact, Algorithm Overview, Algorithm Components, and Validation (the current step). The 'Validation' section contains the text 'Algorithm Validation: Have you performed algorithm validation via gold standard chart reviews, replication of known associations, or another validation method?' and an 'Add Validation Section' button. At the bottom, there are 'Back' and 'Next' buttons.

Live Demo: My phenotypes

- Store drafts here until you are ready for submission
- View phenotypes pending review by CIPHER

The screenshot displays the CIPHER web application interface. At the top, there is a dark blue header with the VA logo, the U.S. Department of Veterans Affairs seal, and the text 'U.S. Department of Veterans Affairs' and 'CIPHER'. A user profile icon with the initials 'JH' is in the top right. Below the header is a navigation bar with links for Home, Getting Started (selected), Explore, About, Contact Us, and Admin. A 'Compare' button is also present. The main content area is titled 'My Phenotypes' and includes a 'Create New Phenotype' button. A toggle switch for 'My Assigned Phenotypes' is visible. Below this, there is a table with columns for Phenotype Name, Author, Last Modified, and Status. The table contains one entry: 'DEMO - Dementia, All Cause' by 'Million Veteran Program (MVP)' with a status of 'Draft'. The entry has edit and delete icons. Pagination controls show 'Items per page: 10' and '1 - 2 of 2'.

VA | U.S. Department of Veterans Affairs | CIPHER | JH

Home | Getting Started | Explore | About | Contact Us | Admin | Compare

Create New Phenotype

My Phenotypes

My Assigned Phenotypes

Items per page: 10 | 1 - 2 of 2 | < >

Phenotype Name	Author	Last Modified	Status
DEMO - Dementia, All Cause	Million Veteran Program (MVP)	just now	Draft

Live Demo: Visualization Tools

- Linkage from tool to phenotype definitions in CIPHER knowledgebase
- Instructional videos and use cases

U.S. Department of Veterans Affairs

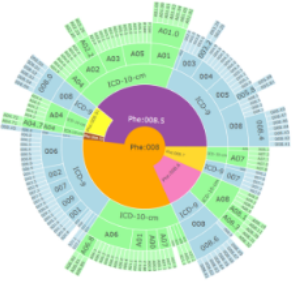
CIPHER


Home
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Explore ▾
About ▾
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Admin ▾

↔ Compare

Data Visualization Tools

This page contains tools to allow users to visualize data results as well as tools to help users in developing their phenotypes. A short description is provided for each tool. Please expand the details section under each instrument to learn more about that tool and its specific utility.





Phecode to ICD map

Visualize mappings from Phecode to ICD-9 and ICD-10 codes.

Overview	Uses	Author & Citation	Video
<p>Electronic health record (EHR)-based studies offer several advantages in research: they are cost efficient, allow for large scale longitudinal analyses, and provide the potential to analyze hundreds of human diseases, drug responses, and many observable clinical traits.</p> <p>Billing codes, or International Classification of Diseases (ICD) codes, are often leveraged to define a patient's phenotype in EHR-based studies. However, these are not always organized meaningfully for the purpose of high-throughput phenotypic analyses. PheCodes facilitate the use of ICD codes for research by regrouping ICD-9 and ICD-10 billing codes into clinically relevant phenotypes.</p>			

Live Demo: How to cite

When reusing a phenotype:

- Cite publication, if available
- Cite the unique URL

VA U.S. Department of Veterans Affairs [Home](#) [Getting Started](#) [Explore](#) [About](#) [Contact Us](#)

Using the CIPHER phenotype definition library

CIPHER collects phenotype metadata definitions using a standard approach developed with the VA phenomics community ([JAMIA 2023](#)).

- You can use our [smart search](#) to browse phenotype definitions and identify the most relevant definition for your use case.
- If you have feedback or questions on a phenotype definition, please email the contact listed at CIPHER@va.gov so that the entry can be updated with clarifications.
- If you deployed one of the phenotype definitions on your cohort and would like to share performance metrics, please email CIPHER@va.gov to update the phenotype page.

Guidelines for citations

Please use the following instructions for citing the use of CIPHER and any phenotypes utilized:

- **Citing the CIPHER Phenotype Library**
 - Please cite use of the CIPHER phenotype library by referencing the article below: Honerlaw J, Ho YL, Fontin F, Gosian J, Maripuri M, Murray M, Sangar R, Galloway A, Zimolzak AJ, Whitbourne SB, Casas JP, Ramoni RB, Gagnon DR, Cai T, Liao KP, Gaziano JM, Muralidhar S, Cho K. Framework of the Centralized Interactive Phenomics Resource (CIPHER) standard for electronic health data-based phenomics knowledgebase. J Am Med Inform Assoc. 2023 Mar 7:ocad030. doi: 10.1093/jamia/ocad030. Epub ahead of print. [PMID: 36882092](#).
- **Citing Specific Phenotypes**
 - If the phenotype has an associated publication listed on the phenotype page, please reference it.
 - If the phenotype does not include a publication, please follow the guidance in the acknowledgements section of the phenotype and/or cite the URL of the phenotype page used.

Contributing to the CIPHER phenotype library

[Navigate here](#) to contribute a phenotype to CIPHER.

Benefits of contributing your phenotype to CIPHER

- Increases the visibility of your publication, program, and/or project.
- Increases the reproducibility of your methods and the number of citations of your publications.
- Facilitates collaboration by sharing your work products, enabling collaboration requests, and opportunity to obtain feedback from the CIPHER user community.
- Provides opportunities to have your work featured in CIPHER newsletters and communications to the CIPHER user community.
- Affords you with a sharable platform to disseminate work products and supports compliance with the FAIR Data Principles.

Learn more about CIPHER Online





Journal of the American Medical Informatics Association, 30(5), 2023, 958–964
<https://doi.org/10.1093/jamia/ocad030>
 Advance Access Publication Date: 7 March 2023
 Brief Communication



CIPHER Metadata Standard

Brief Communication

Framework of the Centralized Interactive Phenomics Resource (CIPHER) standard for electronic health data-based phenomics knowledgebase

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 Monika Maripuri¹, Michael Murray¹, Rahul Sangar¹, Ashley Galloway¹,
 Andrew J. Zimolzak ^{2,3}, Stacey B. Whitbourne^{1,4,5}, Juan P. Casas^{1,4,5},
 Rachel B. Ramoni ⁶, David R. Gagnon^{1,7}, Tianxi Cai^{1,8,9}, Katherine P. Liao^{1,4,9,10},
 J. Michael Gaziano^{1,4,5}, Sumitra Muralidhar⁶, and Kelly Cho ^{1,4,5}

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Honerlaw JAMIA 2023 (PMID: 36882092)

Journal of the American Medical Informatics Association, 2024, 1–9
<https://doi.org/10.1093/jamia/ocae042>
 Research and Applications



CIPHER Design and Resources

Centralized Interactive Phenomics Resource: an integrated online phenomics knowledgebase for health data users

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 Su-Chun Cheng, ScD^{2,9}, Stacey B. Whitbourne, PhD^{2,10,11,12}, David R. Gagnon, MD, PhD^{2,13},
 Tianxi Cai, ScD^{2,9,14}, Katherine P. Liao, MD, MPH^{2,12,15,16}, Rachel B. Ramoni ¹⁷, DMD, ScD¹⁷,
 J. Michael Gaziano, MD, MPH^{2,10,11,12}, Sumitra Muralidhar, PhD¹⁷, Kelly Cho ¹⁸, PhD, MPH^{1,2,10,11,12}

¹Centralized Interactive Phenomics Resource (CIPHER), Office of Research and Development, Veterans Health Administration, Washington, DC 20002, United States, ²VA Boston Healthcare System, Boston, MA 02111, United States, ³Oak Ridge National Laboratory (ORNL), Oak Ridge, TN 37830, United States, ⁴Department of Computer Science, Landmark College, Putney, VT 05346, United States, ⁵VA Atlanta Healthcare System, Decatur, GA 30033, United States, ⁶Section of Rheumatology, Boston University Chobanian and Avedisian School of Medicine, Boston, MA 02118, United States, ⁷Center for Innovations in Quality, Effectiveness and Safety, Michael E. DeBakey VA Medical Center, Houston, TX 77030, United States, ⁸Department of Medicine, Baylor College of Medicine, Houston, TX 77030, United States, ⁹Department of Biomedical Informatics, Harvard Medical School, Boston, MA 02115, United States, ¹⁰Million Veteran Program (MVP) Coordinating Center, VA Boston, Boston, MA 02111, United States, ¹¹Division of Aging, Department of Medicine, Brigham and Women's Hospital, Boston, MA 02115, United States, ¹²Department of Medicine, Harvard Medical School, Boston, MA 02115, United States, ¹³Department of Biostatistics, Boston University School of Public Health, Boston, MA 02118, United States, ¹⁴Department of Biostatistics, Harvard T. H. Chan School of Public Health, Boston, MA 02115, United States, ¹⁵Division of Rheumatology, Inflammation, and Immunity, Brigham and Women's Hospital, Boston, MA 02115, United States, ¹⁶Department of Biomedical Informatics, Harvard Medical School, Boston, MA 02115, United States, ¹⁷Office of Research and Development, Veterans Health Administration, Washington, DC 20002, United States

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J. Honerlaw and Y.-L. Ho authors contributed equally.

Abstract

Honerlaw JAMIA 2024 (PMID: 38481028)



Session roadmap

- Introduction to phenotyping and CIPHER program
- CIPHER Online overview and live demonstration
- **CIPHER VA Wiki overview and live demonstration**
- Applications of CIPHER and future directions



CIPHER

Search VA Phenomics Libr

Getting Started ▾ CIPHER Online ▾ CIPHER VA Wiki ▾ Resources by Partner ▾

[Main Page](#) [Discussion](#) [Edit](#) [View history](#) [Delete](#) [Move](#) [Change protection](#) [Unwatch](#)

Centralized Interactive Phenomics Resource (CIPHER)

CIPHER has two platforms to aid in accomplishing our mission: to accelerate health data innovation by providing an integrated and interactive knowledge sharing platform.

CIPHER ONLINE
Publicly Accessible

- Phenotype library
- Compare phenotype definitions
- Electronic phenotype entry
- Data visualizations

CIPHER VA WIKI
VA Access Only

- Phenotyping resources
- Data source documentation
- Copy accessible behind VINCI firewall

CIPHER CENTRALIZED INTERACTIVE PHENOMICS RESOURCE

VA | U.S. Department of Veterans Affairs

CIPHER VA Wiki

VA internal website

<https://cipherwiki.va.gov/>

VINCI workspace link

<https://cipherdevwiki.va.gov/>

Resources for facilitating phenotype development

CIPHER VA Wiki (VA Internal)

A. Phenotyping resources

B. Data source documentation

- Phenotyping methods catalog
- Best practices for chart review

Resource	Shared by	Description
Code QC	Boston CSP Epidemiology Center	Quality control (QC) process that the Boston CSPEC uses when reviewing code prior to manuscript submission, along with links to resources that can be utilized during QC
TRACE	Million Veteran Program (MVP) Data Core	Microsoft Access based tool developed for the purpose of chart abstraction and review.
VINCI SOPs	VINCI	Programming code developed by VINCI for pulling CDW and Cerner data

[https://cipherwiki.va.gov/phenotype/index.php?title=Phenotyping Resources](https://cipherwiki.va.gov/phenotype/index.php?title=Phenotyping_Resources)

Catalogue of Phenotyping Methods

ARCH:Aggregated Narrative Codified Health

ARCH knowledge graph (KG) is a learning approach that provides a highly scalable method for effectively representing codified and narrative EHR concepts on a large scale, while recovering their network structure.

[Click to Expand](#)

Clustra:Multi-platform k-means clustering algorithm

Clustra is a package developed to use k-means clustering algorithm for analyzing longitudinal phenotypes using EHR data.

[Click to Expand](#)

(JSON)ize:Java script object notation

JSONize is a machine learning method to transform unstructured data to semi-structured documents.

[Click to Expand](#)

KOMAP:Knowledge-driven online multimodal automated phenotyping

KOMAP is a method that generates list of informative features by online narrative and codified feature search engine (ONCE), and enables the training of a multimodal phenotyping algorithm based on summary data.

[Click to Expand](#)

LATTE:Label-efficient incident phenotyping

LATTE is an algorithm developed to accurately annotate the timing of clinical events from longitudinal EHR data.

[Click to Expand](#)

Searchable data documentation

CIPHER VA Wiki (VA Internal)

A. Phenotyping resources

B. Data source documentation

Data dictionaries, trainings, tutorials, and programming code for:

- COVID-19 Shared Data Resource (CSDR)
- Million Veteran Program (MVP) Core Data
- VA Observational Medical Outcomes Partnership (OMOP)

MVP:Core Lifestyle (MVP Core Data)

Contents [\[hide\]](#)

- 1 Overview
- 2 Data Dictionary
- 3 View Definition
- 4 Example Query

Overview

Description: Lifestyle factors created by the MVP Data Analytics team. Reflects lifestyle factors at the time of completion.

View Name: [MVP].[CoreLifestyle_v23_1]

Contains data through: September 30, 2023

Data Dictionary

Column	Code or Value	Value Description	Definition
CoreLifestyleSID		MVP Core use only	
VINCI_ID		Identifier DACS team uses to assign a study mart ID in Genisis. Use this ID when querying for genetic analysis.	
MVPCore_id		Identifier assigned to MVP enrollees. This ID does not change over time, and can be used to identify a unique person.	

OMOP:Observational Medical Outcomes Partnership (OMOP)

Contents [\[hide\]](#)

- 1 VA OMOP Overview
 - 1.1 Rationale for a Common Data Model
 - 1.2 OMOP Data Model
 - 1.2.1 Basic OMOP Table Structure
- 2 Key Resources for VA Researchers
 - 2.1 Available OMOP Datasets
 - 2.1.1 CDW OMOP
 - 2.1.2 Millennium OMOP
 - 2.1.3 DaVINCI OMOP
 - 2.1.4 CMS OMOP
 - 2.2 Getting Access to OMOP Data
 - 2.2.1 Preparatory to Research Access
 - 2.2.2 Research Access
 - 2.2.3 National Operation Access
 - 2.2.4 Medicare OMOP
 - 2.3 VA OMOP Release Notes
 - 2.3.1 Vocabulary Releases
 - 2.3.2 Monthly Releases
- 3 OMOP Training Resources and Code Library

https://cipherwiki.va.gov/phenotype/index.php?title=Data_Source_Documentation



Access CIPHER VA Wiki from VINCI workspace

- Copy of Wiki sent to VINCI workspace monthly
- To access:
 - Login to your Development Workspace or Standard Workspace
 - Copy/paste the following URL into the browser:
<https://cipherdevwiki.va.gov/>



CIPHER VA Wiki Demonstration

<https://cipherwiki.va.gov/>

How do CIPHER platforms differ?

	CIPHER Online	CIPHER VA Wiki
URL	https://phenomics.va.ornl.gov/ Publicly accessible	https://cipherwiki.va.gov/ VA access only (NT account required)
Users	<u>All</u> health data users	<u>VA</u> health data user community
Scope	Public platform to develop, collect, store, and share computable phenotypes, metadata, and resources.	Platform with searchable resources for VA data users from priority initiatives; accessible on VINCI workspace.
Content	<ul style="list-style-type: none"> • Phenotype knowledgebase • Phenotype definition comparison • Phenotype entry form • Data visualization tools 	<ul style="list-style-type: none"> • Phenotyping resources (<i>programming code, best practices, and methods catalog</i>) • Data source documentation (<i>data dictionaries, trainings, and tutorials</i>)
VINCI workspace	Not accessible	Copy of Wiki accessible at: https://cipherdevwiki.va.gov/

Session roadmap

- Introduction to phenotyping and CIPHER program
- CIPHER Online overview and live demonstration
- CIPHER VA Wiki overview and live demonstration
- **Applications of CIPHER and future directions**



CIPHER use case: Million Veteran Program



MVP Data Sources



Survey Data



Electronic Health Record Data



Genetic Data



Linkage to Additional
Data Sources (NDI/CMS)

MVP Resources in CIPHER



Phenotype algorithms



Data Visualization Tools

- ❖ Phecode to ICD Map
- ❖ KESER Network
- ❖ PheWeb
- ❖ PheMEGA



Metadata and results



Searchable survey data

CIPHER use case: Phenotype sharing example

Development and validation of an electronic health record-based algorithm for identifying TBI in the VA: A VA Million Veteran Program study

[PMID: 39004925](#)

semi-supervised approach (PheCAP). Nat Protoc. 2019;14(12):3426–44.
doi:10.1038/s41596-019-0227-6.

[View](#) | [PubMed](#) | [Web of Science®](#) | [Google Scholar](#)

16. VA Cooperative Studies Program Epidemiology Analytics Resource (CSPEAR). Traumatic Brain Injury (CSPEAR). 2020. https://phenomics.va.ornl.gov/web/cipher/phenotype-viewer?uqid=9b5757e39c16429dee8e4a90762cfacc&name=Traumatic_Brain_Injury_CSPEAR
[Google Scholar](#)

17. MVP Data Core. Concussion (gwPheWAS). 2020. https://phenomics.va.ornl.gov/web/cipher/phenotype-viewer?uqid=62ecef229be54db9ae898523e163cdb&name=Concussion_gwPheWAS
[Google Scholar](#)

18. MVP Data Core. Intracranial hemorrhage (injury) (gwPheWAS). 2020. https://phenomics.va.ornl.gov/web/cipher/phenotype-viewer?uqid=62ecef229be54db9ae898523e163cdb&name=Intracranial_hemorrhage_injury_gwPheWAS
[Google Scholar](#)

Add URL & citation (if available) to manuscript or poster

"No TBI": Pr(having TBI) | calibrated to 0.000

Where "main_icd" is the count of ICD for concussion as defined by PheCode 817; "main_nlp" is the count of notes mentioning TBI as defined by CUI C0876926; "C0006107" is the count of notes mentioning brain concussion as defined by CUI C0006107, and "C0018674" is the count of notes mentioning Craniocerebral Trauma as defined by CUI C0018674.

These details will also be shared on CIPHER for use by the VA research community.

From the VA intranet, go to the following website to access the TBI-PheCAP phenotype:

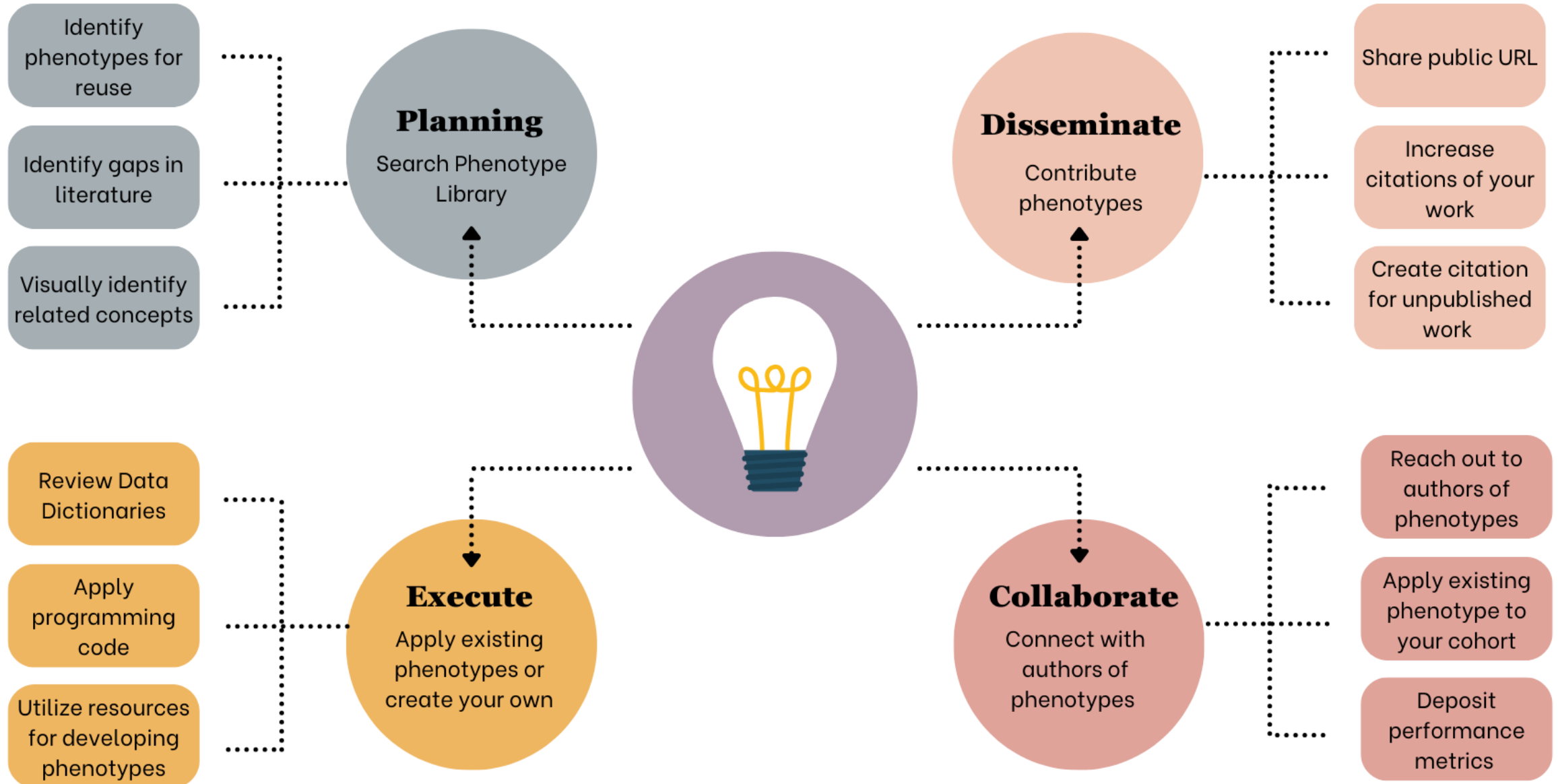
https://phenomics.va.ornl.gov/web/cipher/phenotype-viewer?uqid=1c0d8fe4617041cce5ac248d5c53a6d3&name=Traumatic_Brain_Injury_TBI-PheCap

Create phenotype in CIPHER

Add URL to manuscript or poster

Appendix 5. Guidelines for Applying the TBI-PheCAP Algorithm

CIPHER as part of the project lifecycle



Benefits of using CIPHER

Increase
visibility/citations
of work products

Cite unpublished
work

Evaluate
portability of
phenotypes

CIPHER VA Wiki

Access
programming
resources on
VINCI workspace

Facilitate
collaboration

Promotes
standardization

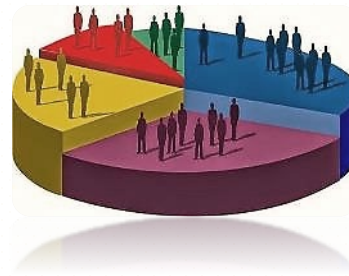
Provides solution
for internal
tracking &
replication

Allows for
sharing content
suitable for
internal VA
audience

Poll #4:

How do you plan to use CIPHER Online? (Select all that apply)

- Browse phenotypes
- Compare phenotypes
- Submit phenotypes
- Use visualization tools
- Browse MVP gwPheWAS resources
- I do not plan to use CIPHER Online



Poll #5:

How do you plan to use CIPHER VA Wiki? (Select all that apply)

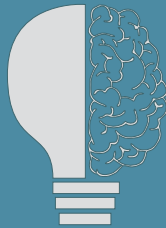
- Browse phenotyping resources
- Contribute phenotyping resources
- View OMOP, MVP, or CSDR documentation
- Access Wiki from within my VINCI workspace
- I do not plan to use CIPHER VA Wiki

Future directions

Enhance Site
Features



Expand
Knowledgebase



Integrate
Additional Tools



Expand Partners
and Contributors

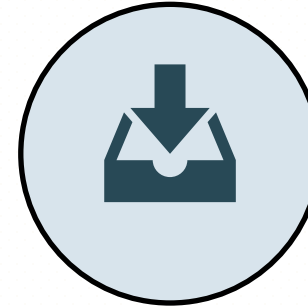


How to join the CIPHER community

- CIPHER is made possible by our collaborators.
- Here are some ways you can get involved and join the CIPHER community.



**Provide
Feedback**



**Contribute
your work**



**Subscribe to
our newsletter**



**Highlight
your work**



**Spread the
word!**



**Contact
Us**

Acknowledgements

CIPHER Team

- **Sumitra Muralidhar** – VACO Lead
- **Kelly Cho** – Director
- **Jackie Honerlaw** – Deputy Director
- **Anne Ho** – Director for Data Operations
- **Francesca Fontin** – Project Manager, VA Partnerships and User Experience
- **Ashley Galloway** – Associate Director, Strategic Partnerships and Outreach
- **Jeff Gosian** – Systems Support Librarian
- **Monika Maripuri** – Project Manager, Clinical Phenotype Validation
- **Michael Murray** – Lead Technical Architect
- **Rahul Sangar** – Data Services Specialist
- **Tiffany Sim** – Project Manager, CIPHER Online
- **Joanne Sordillo** – SME for Environmental Exposure Data Domain
- **Vidisha Tanukonda** – Project Manager, Clinical Adjudication
- **Edward Zielinski** – Database Manager
- **CIPHER Online ORNL Team** – David Heise, Laura Davies, Keith Connatser, Adrian Degraffenreidt
- **Environment and Infrastructure Partners** – VINCI (Scott DuVall); MVP (Mike Gaziano); ORNL-DOE (David Heise)
- **CIPHER Partners and Contributors**

Relevant Links

- [CIPHER VA Wiki](#) (VA Internal)
- [CIPHER Online](#) (Public)
- [CIPHER ORD Program](#) (Public)

References

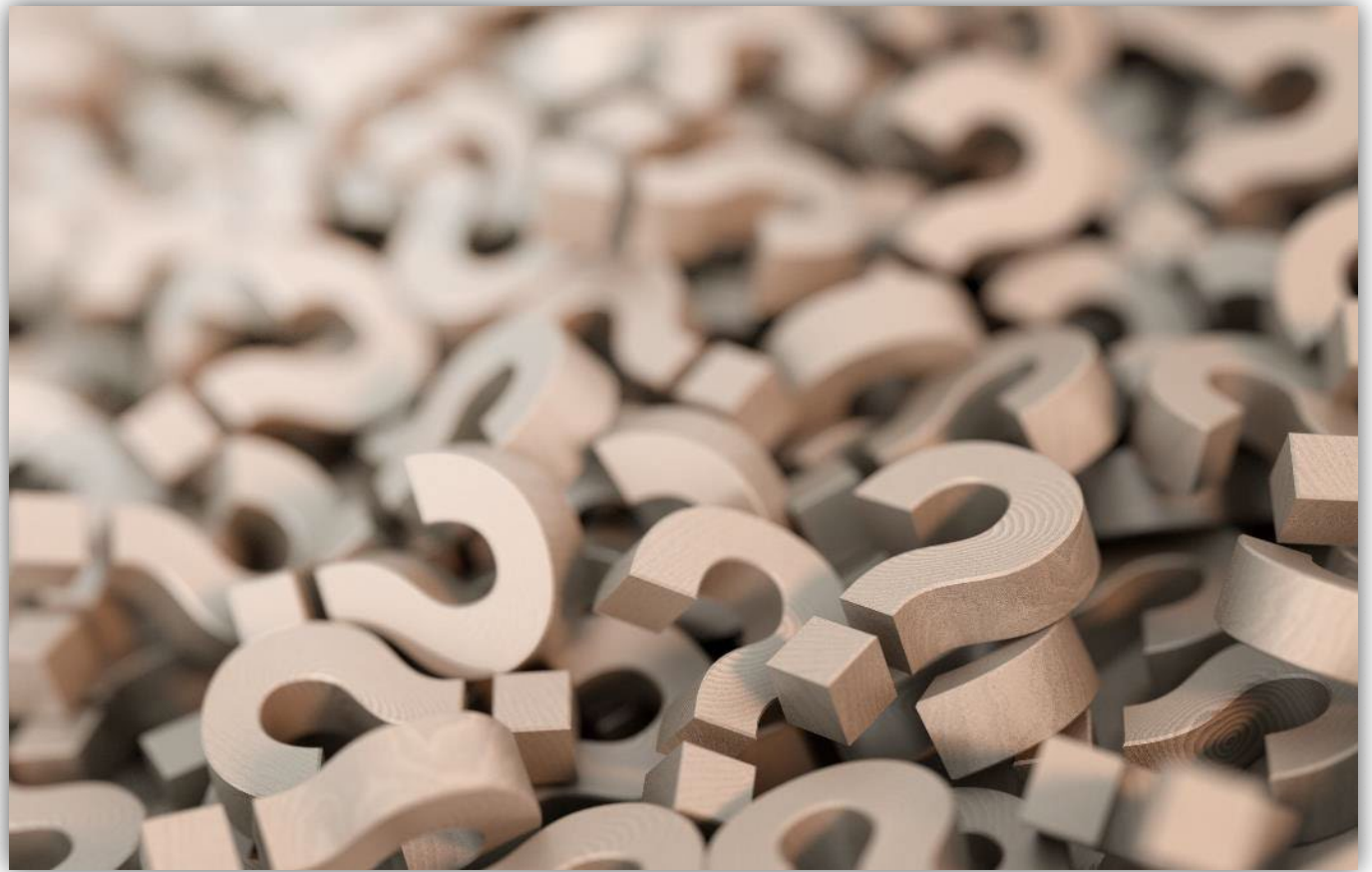
- Honerlaw J, Ho YL, Fontin F, et al. Framework of the Centralized Interactive Phenomics Resource (CIPHER) standard for electronic health data-based phenomics knowledgebase. J Am Med Inform Assoc. 2023;30(5):958-964. doi:10.1093/jamia/ocad030 ([link](#))
- Honerlaw J, Ho YL, Fontin F, et al. Centralized Interactive Phenomics Resource: an integrated online phenomics knowledgebase for health data users. J Am Med Inform Assoc. Published online March 13, 2024. doi:10.1093/jamia/ocae042 ([link](#))



Contact Us
CIPHER@va.gov

Please reach out to CIPHER to schedule a demonstration, refer us to health data users who are not part of the CIPHER community, or to receive summary slides to help us spread the word at conferences or other meetings.

THANK YOU!
Questions?



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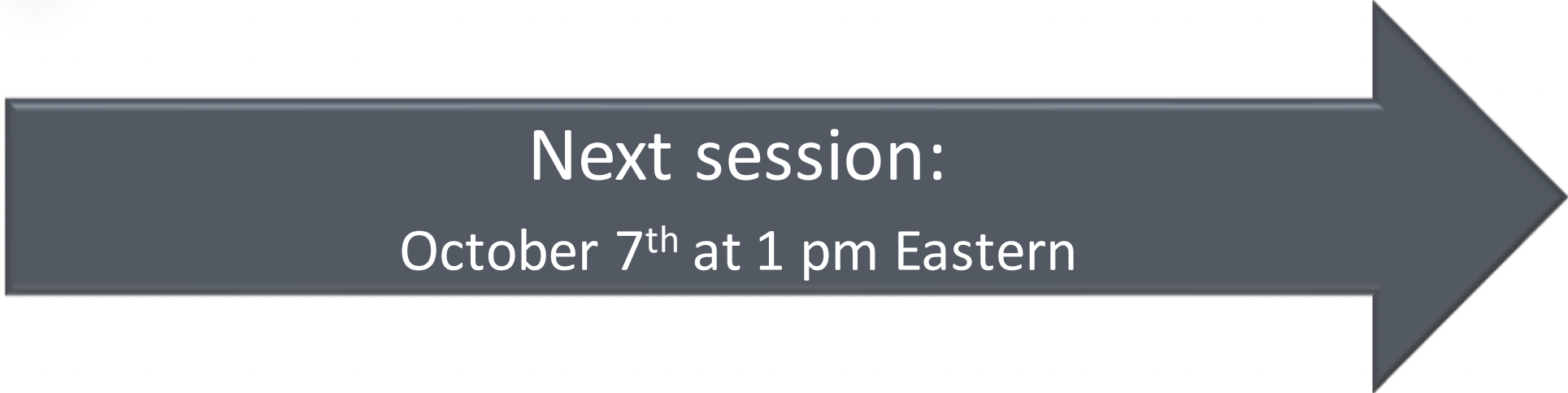
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 DATABASE & METHODS CYBERSEMINAR SERIES



Next session:
October 7th at 1 pm Eastern

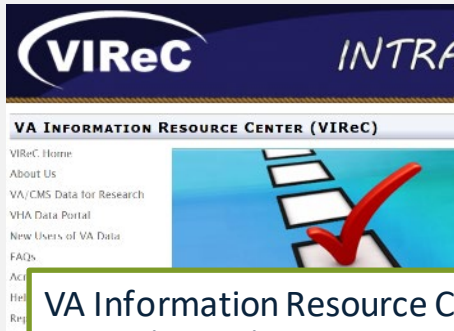
Meet VIREC: The Researcher's Guide to VA Data



Database & Methods
BONUS SLIDES

Resources for VA Data Users

Select image to visit page



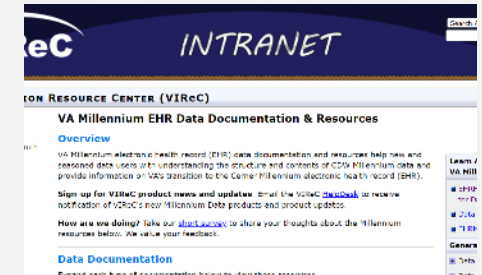
VA Information Resource Center (VIREc) (VA Intranet)



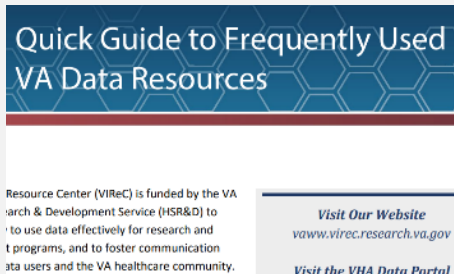
VHA Data Portal (VA Intranet)



VIREc Cyberseminars



VA Millennium EHR Data Documentation (VA Intranet)



Quick Guide: Resources for Using VA Data (VA Intranet)



VA Informatics and Computing Infrastructure (VINCI) (VA Intranet)



BISL/CDW (VA Intranet)



Health Economics Resource Center (HERC) (VA Intranet)



Questions about using VA Data?

HSRData Listserv

- Community knowledge sharing
- ~1,800 VA data users
- Researchers, operations, data stewards, managers
- Subscribe by visiting vaww.virec.research.va.gov/Support/HSRData-L.htm (VA Intranet)

VIREC HelpDesk

- Individualized support
- Request Form: varedcap.rcp.vaec.va.gov/redcap/surveys/?s=KXMEN77LXK (VA Intranet)

Examples of when to use CIPHER

CIPHER Online



Find a heart failure definition to use to invite patients to a clinical trial



Find EHR data elements that co-occur with Type 1 Diabetes



Track your own phenotype definitions and metadata

CIPHER VA Wiki



Learn how to query Cerner Data



Understand an MVP Lifestyle Survey data element



Refer to VINCI SOPs to query lab tests using best practices