

EMERSE Community Meeting



2025-Feb-10

<https://project-emerse.org>

Plan for today

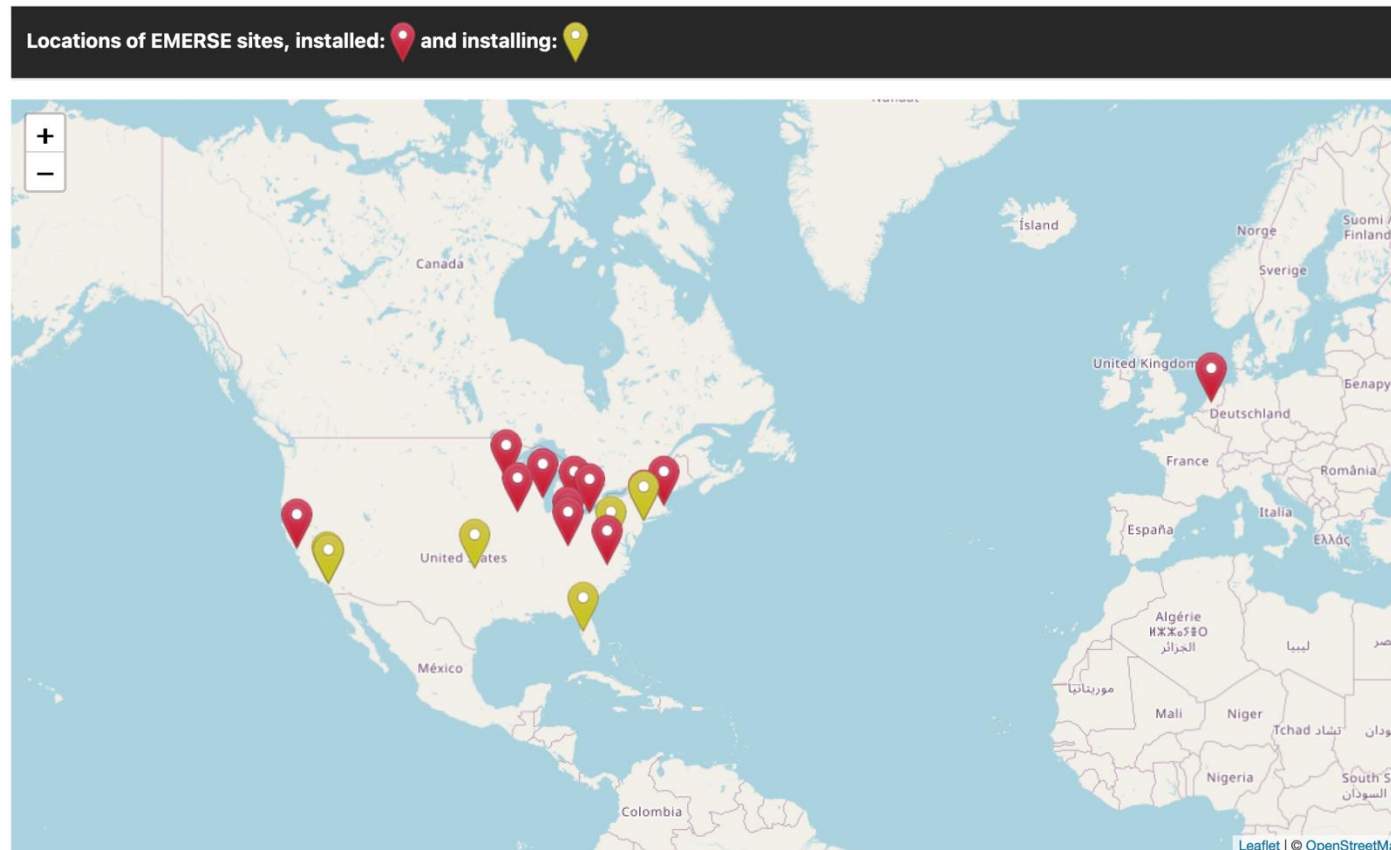
- Welcome and Housekeeping
- Announcements and Updates
- Brief Demo of upcoming changes
- Open Forum
- Adjourn

Housekeeping

- *Zoom Meeting*
 - More opportunities for interaction
- Please stay muted, unless you would like to ask a question or make a comment
- Feel free to use the chat function to type questions or provide comments
- We will answer questions throughout
- We will record this meeting; it will be available where prior recordings are located:
 - <https://project-emerse.org/presentations.html>
 - <https://project-emerse.org/community.html>

Community

- <https://project-emerse.org/community.html>



Acknowledgements

- EMERSE has been supported by:
 - NCI ITCR program
 - NCATS via MICHR CTSA
 - Michigan Medicine
 - Department of Learning Health Sciences
 - Office of Research
 - Health Information Technology & Services

Research Collaborative

- Initial research focus: pronoun usage in the EHR over time
 - Contributions from U Michigan, UCSF, U Virginia, U Cincinnati, U Iowa
 - Presented at the Nov 2024 AMIA Symposium in San Francisco
- Will likely move on to a new effort in the spring/summer
 - Stay tuned, David or Lisa will reach out
- If interested in participating, please contact EMERSE-team@umich.edu

Publications

586

Papers

93

Abstracts

20

Other

<https://project-emerse.org/publications.html>

Publications (new since last meeting)

- Smith JD, Darr OAF, Haring CT, Rosko AJ, Spector ME, Heft-Neal ME. Nerve dissection technique for excision of parotid tumors: Outcomes controlling for tumor size and location. *Am J Otolaryngol*. 2024 Dec 21;46(1):104582. doi: 10.1016/j.amjoto.2024.104582. Epub ahead of print. PMID: 39731964
- Lopez-Medina AI, Campos-Staffico AM, Chahal CAA, Jacoby JP, Volkers I, Berenfeld O, Luzum JA. Polygenic risk score for drug-induced long QT syndrome: independent validation in a real-world patient cohort. *Pharmacogenet Genomics*. 2025 Jan 1;35(1):45-56. doi: 10.1097/FPC.000000000000548. Epub 2024 Oct 8. PMCID: PMC11543509; PMID: 39470415
- Kochhar K, Priesand S, Yosef M, Schmidt BM. Diabetic foot infection severity as a predictor of re-ulceration following partial forefoot amputation. *J Foot Ankle Surg*. 2024 Oct 30:S1067-2516(24)00277-1. doi: 10.1053/j.jfas.2024.10.012. Epub ahead of print. PMID: 39486786
- Vielot NA, Ballard CAP, St Jean DT, Page S, Hammond K, Thompson P, Butler AM, Ranney LM. Documenting human papillomavirus vaccine refusal among adolescents in electronic health records: A mixed methods study. *Vaccine*. 2024 Dec 2;42(26):126467. doi: 10.1016/j.vaccine.2024.126467. Epub 2024 Oct 29. PMID: 39467411
- Co A, Kazaglis C, DeCamillo D, Haymart B, Rajakumar B, Barnes GD. Prevalence of discussions around left atrial appendage occlusion as a treatment option in patients on oral anticoagulation experiencing a major bleeding event. *Thromb Res*. 2025 Jan;245:109239. doi: 10.1016/j.thromres.2024.109239. Epub 2024 Dec 4. PMID: 39644619
- Noll A, Kawamoto KR, Dassanayake MT, Leuenberger L, Spehar SM, Wu J, Langen E, Davis MB. Breastfeeding in patients with peripartum cardiomyopathy: clinical outcomes and physician counseling. *Int Breastfeed J*. 2024 Oct 29;19(1):73. doi: 10.1186/s13006-024-00673-6. PMCID: PMC11523573. PMID: 39472928
- Stack TJ, McCain MN, Benaim EH, Dickerson TA, Mohammad I, Senior BA, Kimple AJ, DeMason C. Beyond Tobacco: Bridging Gaps in Social History Records for Tobacco-Free Nicotine Pouch Consumers. *OTO Open*. 2024 Nov 12;8(4):e70034. doi: 10.1002/oto2.70034. PMCID: PMC11555441. PMID: 39534855
- Mills JN, Gunchick V, Mague J, Qin Z, Kumar-Sinha C, Bednar F, Brown N, Shi J, Udager AM, Frankel T, Zalupski MM, Sahai V. Characterization of undifferentiated carcinomas of the pancreas with and without osteoclast-like giant cells. *JNCI Cancer Spectr*. 2024 Oct 3:pkae097. doi: 10.1093/jncics/pkae097. Epub ahead of print. PMID: 39363498
- Lotakis DM, Rubalcava NS, Lopyan NM, Heider A, Rabah R, Elizabeth Speck K, Jarboe MD, Ehrlich PF, Ralls MW. Clinical relevance of inflammation on rectal biopsy for Hirschsprung disease: An outcomes analysis. *J Pediatr Gastroenterol Nutr*. 2024 Jan;78(1):36-42. doi: 10.1002/jpn3.12047. Epub 2023 Dec 11. PMID: 38291694
- Koek AY, Darpel KA, Mihaylova T, Kerr WT. Myoclonus After Cardiac Arrest did not Correlate with Cortical Response on Somatosensory Evoked Potentials. *J Intensive Care Med*. 2024 Sep 30:8850666241287154. doi: 10.1177/08850666241287154. Epub ahead of print. PMID: 39344464

Publications (new since last meeting)

- Barlowe TS, Saxena-Beem S, Ishizawa RC, Herfarth H, Moon AM. Multiple gastrointestinal immune related adverse events from immune checkpoint inhibitor therapy. Clin Transl Gastroenterol. 2024 Sep 12. doi: 10.14309/ctg.0000000000000768. Epub ahead of print. PMID: 39264061
- Burgess HJ, Rizvydeen M, Huizenga B, Prasad M, Bahl S, Duval ER, Kim HM, Phan KL, Liberzon I, Abelson J, Klumpp H, Horwitz A, Mooney A, Raglan GB, Zalta AK. A 4-week morning light treatment reduces amygdala reactivity and clinical symptoms in adults with traumatic stress. Psychiatry Res. 2024 Sep 21;342:116209. doi: 10.1016/j.psychres.2024.116209. Epub ahead of print. PMID: 39316998

EMERSE version 7

- Version 7
 - Released Oct 2024
 - Positive feedback from users so far
 - NLP-enabled (negation, named entity recognition, and more)
 - Unclear if any other sites have completed an upgrade
 - Contact us for questions, help
 - Let us know if you have installed it or are working on it
 - Let us know if you have concerns about upgrading

Work in progress: Collapsible Nav Panel

- Navigation Panel will be collapsible
 - Save space on smaller screens
 - Reduce distractions
 - Allow for more of the screen to show the note itself

Work in progress: Collapsible Nav Panel

Current:

some useful info is shown, but not always needed

toggle is here

options displayed vertically

wasted spaced

The screenshot displays the EMERSE web application interface. At the top, a dark blue header contains the EMERSE logo on the left and the user name 'David Hanauer' on the right. Below the header, a light gray navigation bar shows 'Patients' and 'Temporary List (1,633)'. A vertical sidebar on the left lists options: 'Temporary Terms', 'Saved Terms', 'Advanced Terms', and 'Synonym Preferences'. The main content area is divided into two columns. The left column has a 'Terms' section with 'echo' and 'chest pains' buttons, and 'Results' buttons for 'HIGHLIGHT DOCUMENTS' and 'FIND PATIENTS'. The right column shows 'Active Terms/Phrases' with a search logic dropdown and two active terms: 'echo' (cyan) and 'chest pains' (yellow), each with a 'SYNONYMS' button and a character set 'C N S U H P F E X W'. A red circle highlights an upward arrow icon in the top right corner of the main content area. Red arrows point from the text annotations to the header, the 'echo' button, and the upward arrow icon.

Work in progress: Collapsible Nav Panel

New:

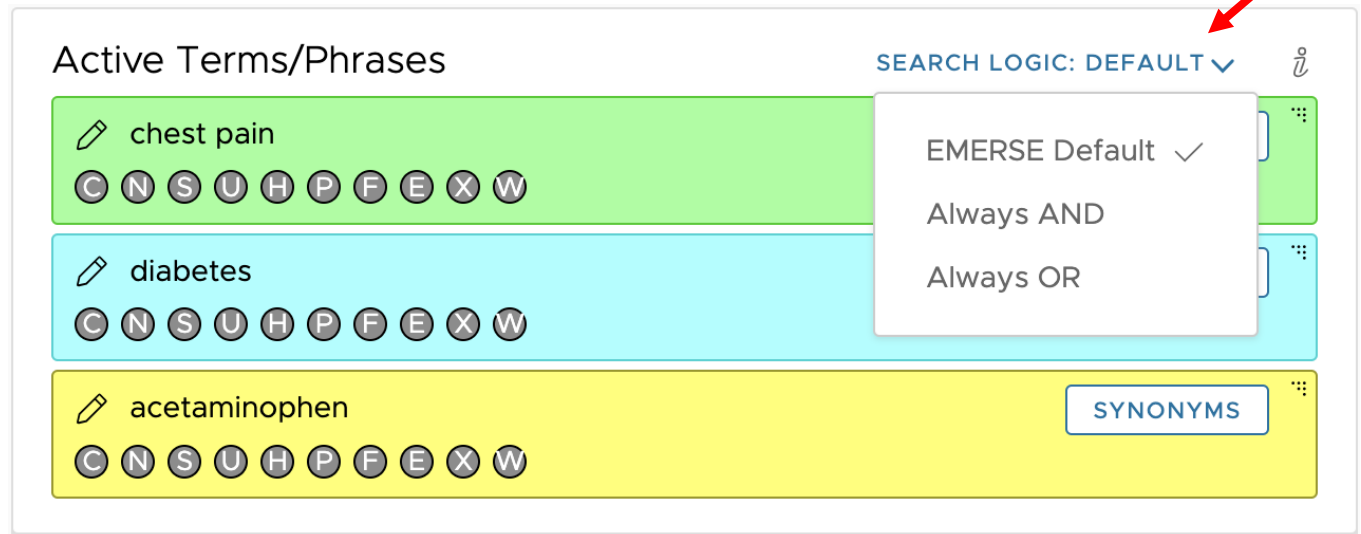
options
displayed
horizontally

toggle is here

The screenshot displays the EMERSE web application interface. At the top, there is a dark blue header with the EMERSE logo on the left and the user name 'David Hanauer' on the right. Below the header is a navigation bar with tabs for 'Patients', 'Filters', 'Terms', and 'Results'. The 'Terms' tab is currently selected. To the right of the navigation bar are two buttons: 'HIGHLIGHT DOCUMENTS' and 'FIND PATIENTS'. Below the navigation bar is a sub-navigation bar with tabs for 'Temporary Terms', 'Saved Terms', 'Advanced Terms', and 'Synonym Preferences'. The 'Temporary Terms' tab is selected. On the left side of the main content area, there is a vertical sidebar with a list of options: 'Name/Description', 'Edit', 'Share', 'Save', 'Clear/Delete', 'Export', 'Bulk Upload', and 'Query Details'. The 'Edit' option is highlighted. The main content area is divided into two sections. The left section is titled 'Enter Terms/Phrases (one at a time)' and contains a text input field with an 'ADD' button, a color palette, and a 'USE THE NEXT AVAILABLE COLOR' button. The right section is titled 'Active Terms/Phrases' and contains two entries: 'echo' and 'chest pains'. Each entry has a 'SYNONYMS' button and a set of letters in a box. A red circle highlights a dropdown arrow in the top right corner of the navigation bar, with a red arrow pointing to it from the text 'toggle is here'. A red double-headed arrow points from the text 'options displayed horizontally' to the vertical sidebar.

Work in progress: Boolean settings

- Change to Boolean search options
- Current:
 - Search across all patients: same color = OR, different color = AND
 - Search across patient list: all terms are OR, regardless of color
- New (options)
 - Default: Same as above
 - Always AND
 - Always OR
- Saved along with terms



The screenshot displays the 'Active Terms/Phrases' section of a software interface. It features three rows of search terms, each with a unique background color and a set of circular icons below it. The first row is green and contains the term 'chest pain'. The second row is light blue and contains 'diabetes'. The third row is yellow and contains 'acetaminophen'. To the right of the terms, there is a dropdown menu for 'SEARCH LOGIC: DEFAULT'. A red arrow points to this dropdown menu, which is open and shows three options: 'EMERSE Default' (selected with a checkmark), 'Always AND', and 'Always OR'. A 'SYNONYMS' button is visible next to the 'acetaminophen' term.

Work in progress: Boolean settings

- Also available on the Query Details Page

Patients chest pain patient list (225) ^

Filters

Terms chest heaviness chest pressure chest pain diabetes acetaminophen

Results HIGHLIGHT DOCUMENTS FIND PATIENTS

Temporary Terms Saved Terms Advanced Terms Synonym Preferences

Temporary Terms

Name/Description

Edit

Share

Save

Clear/Delete

Export

Bulk Upload

Query Details

Term Text Only

SEARCH LOGIC: DEFAULT v

Terms below may not appear in the same order they were entered.

FIND DOCUMENTS THAT CONTAIN

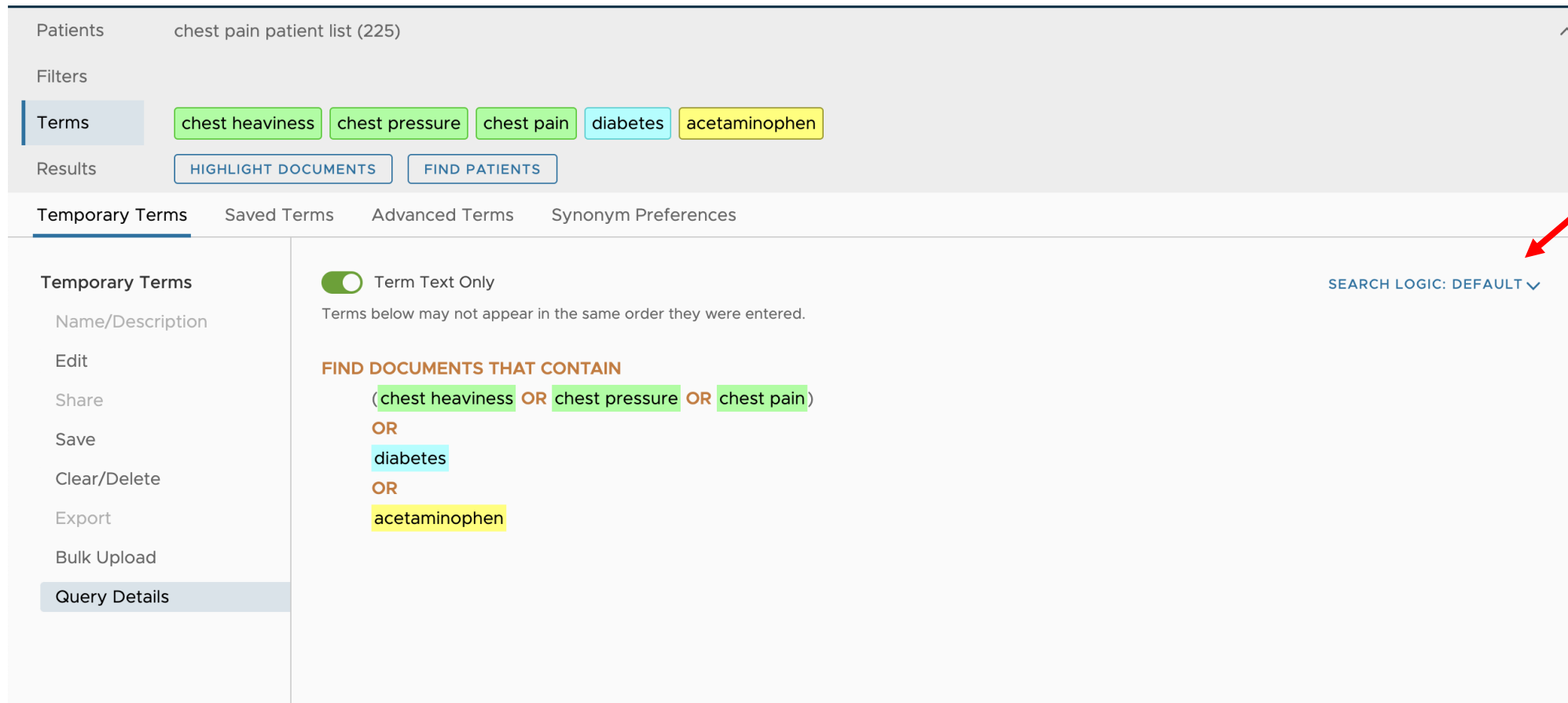
(chest heaviness OR chest pressure OR chest pain)

OR

diabetes

OR

acetaminophen



Work in progress: Boolean settings

- Also available on the Query Details Page

Patients chest pain patient list (225) ^

Filters

Terms chest heaviness chest pressure chest pain diabetes acetaminophen

Results HIGHLIGHT DOCUMENTS FIND PATIENTS

Temporary Terms Saved Terms Advanced Terms Synonym Preferences

Temporary Terms

Name/Description

Edit

Share

Save

Clear/Delete

Export

Bulk Upload

Query Details

Term Text Only
Terms below may not appear in the same order they were entered.

FIND DOCUMENTS THAT CONTAIN

(chest heaviness OR chest pressure OR chest pain)

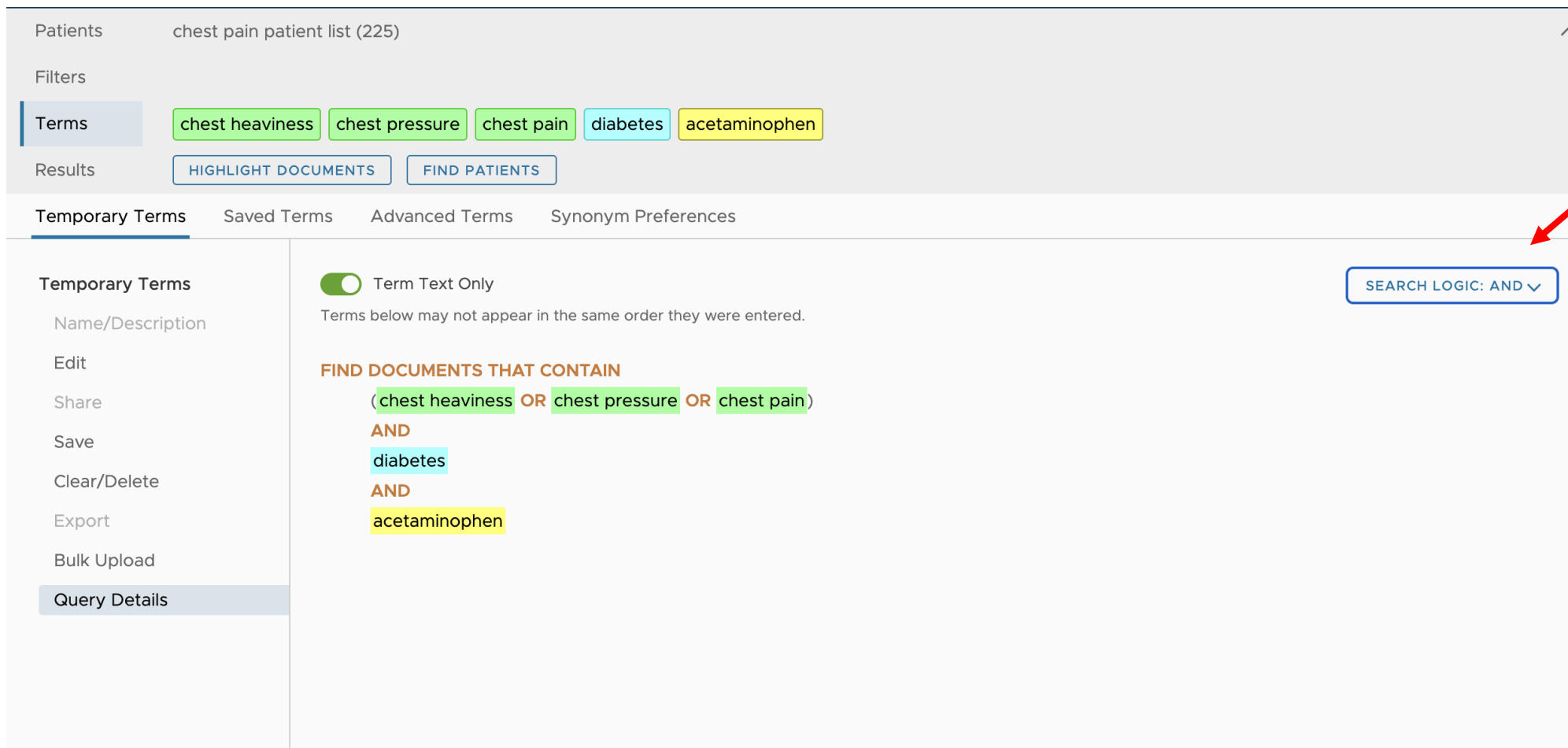
AND

diabetes

AND

acetaminophen

SEARCH LOGIC: AND v



Work in progress: Boolean settings

- Implications of this feature
 - Almost no need anymore for the Advanced Terms
 - Advanced Terms cannot take advantage of the NLP components
 - Main thing still possible with Advanced Terms, not possible elsewhere, is nested Booleans, for example:

(a AND b) or (b AND (c OR d))

- Still possible to get similar behavior by running several searches in a row
- We might consider removing Advanced Terms at some point

Work in progress: OCR

- Optical character recognition (OCR)
 - Recognition of text within scanned documents
 - Want it to be fully integrated into rest of system
 - Should support NLP components, UI features,
 - Working on things like misspellings due to misidentification of characters
 - Seems to be working well so far
 - Images (pages) will be stored in the document index, so the index will get *much* larger

Work in progress: OCR

gene related impairments

hospitalization

psychological and speech evaluations

alcoholism

drug abuse

HIGHLIGHT DOCUMENTS

FIND PATIENTS

Summaries

Document

1 of 6 < Patient > 1 of 1 < Document >

AUTHORIZATION TO DISCLOSE INFORMATION TO THE SOCIAL SECURITY ADMINISTRATION (SSA)

**** PLEASE READ THE ENTIRE FORM, BOTH PAGES, BEFORE SIGNING BELOW ****

I voluntarily authorize and request disclosure (including paper, oral, and electronic interchange):

OF WHAT All my medical records; also education records and other information related to my ability to perform tasks. This includes Specific permission to release:

- All records and other information** regarding my treatment, **hospitalization**, and outpatient care for my impairment(s) including, and not limited to:
 - Psychological, psychiatric or other mental impairment(s) (excludes "psychotherapy notes" as defined in 45 CFR 164.501)
 - **Drug abuse**, **alcoholism**, or other substance abuse
 - Sickle cell anemia
 - Records which may indicate the presence of a communicable or noncommunicable disease; and tests for or records of HIV/AIDS
 - **Gene-related impairments** (including genetic test results)
- Information about how my impairment(s) affects my ability to complete tasks and activities of daily living, and affects my ability to work.**
- Copies of educational tests or evaluations, including Individualized Educational Programs, triennial assessments, **psychological and speech evaluations**, and any other records that can help evaluate function; also teachers' observations and evaluations.**
- Information created within 12 months after the date this authorization is signed, as well as past information.**

FROM WHOM

THIS BOX TO BE COMPLETED BY PROVIDER

Work in progress: Query Writer

- Inspired from the work done with the EMERSE Research collaborative
 - Table of data, each cell in the table required manually updating the search criteria, running the search, and copying down the result
 - Time intensive
- Query Writer
 - Simple interface to build a table of results based on overall counts
 - Similar to a SQL editor
 - Technical complexity: medium

Work in progress: Query Writer

- Format example:

```
Location = 1,1  
Text = Acetaminophen use 2014
```

location in the output table is defined as row, column

label text can be added to a cell to make the output easier to interpret

```
Location = 2,1  
query = acetaminophen  
noteFilter = ENCOUNTER_DATE: [2014-01-01T00:00:00Z TO 2014-12-31T00:00:00Z]  
patientFilter = SEX_CD: "F"
```

the text query goes here

filters based on the patient go here

filters based on notes go here

- Output:

Acetaminophen use 2014
4056

Work in progress: Query Writer

Query Writer



With Query Writer you can create multiple queries to run sequentially in order to obtain patient counts using various terms and filtering parameters. For more details, see the [EMERSE User Guide](#)

Location = 1,1

Text = Acetaminophen use 2014

Location = 2,1

query = acetaminophen

noteFilter = ENCOUNTER_DATE: [2014-01-01T00:00:00Z TO 2014-12-31T00:00:00Z]

patientFilter = SEX_CD: "F"

Current line 1

1 of 10,000 lines used

RUN

COPY CURRENT QUERY

Work in progress: Query Writer

Query Writer

With Query Writer you can create multiple queries to run sequentially in order to obtain patient counts using various terms and filtering parameters. For more details, see the [EMERSE User Guide](#)

```
Location =  
query = echo AND "chest pain"  
noteFilter = ((*.* OR NOT SOURCE: "MICHART") OR SVC: "Anatomic Pathology") AND (SOURCE: "MICHART")  
patientFilter = SEX_CD: "F"
```

Current line 4

4 of 10,000 lines used

RUN

COPY CURRENT QUERY

● — Click the 'Copy Current Query' button to pull in the query from the main user interface. It can then be further edited if needed.

Work in progress: Query Writer

- Brief Demo of Query Writer

Demo System

- Demo system is online and available for anyone to test
- Contact us for an account
- These new features in progress are not yet on the demo system

Further out: LLMs

- Large Language Models (LLMs) like ChatGPT
- We hope to start exploring some options soon
- If you are interested in providing your thoughts, or if you think you would like to help us survey the users at your site, please contact us.

Open Forum & Wrap-up

- Questions/Comments/Discussion
- Thanks for attending!
- Next Meeting: TBD (May/June 2025)
- Please complete meeting survey:

