

EMERSE Community Meeting



2025-May-14

<https://project-emerse.org>

Plan for today

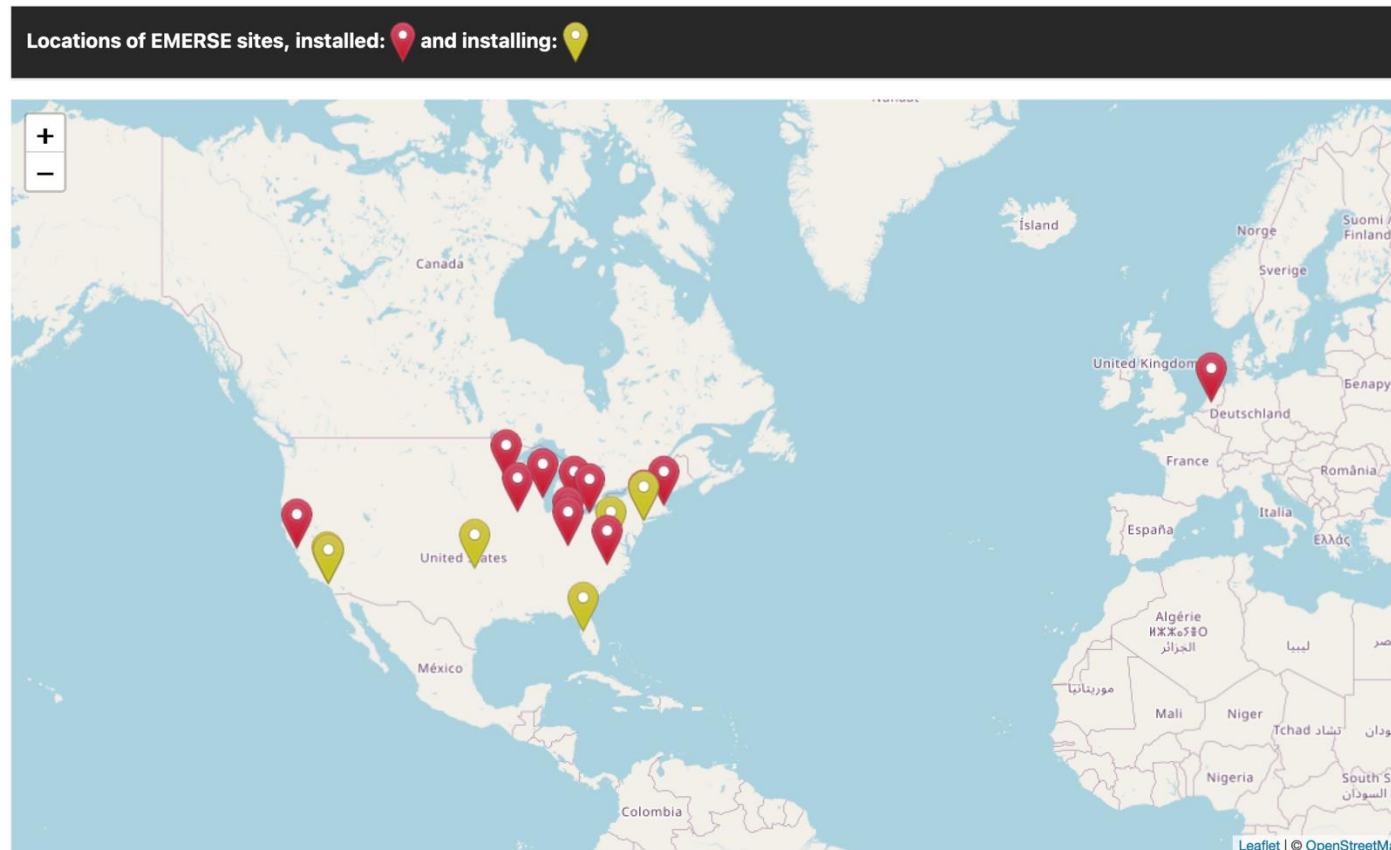
- Welcome and Housekeeping
- Guest Speaker
- Announcements and Updates
- Brief Demo of upcoming changes
- Open Forum
- Adjourn

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>

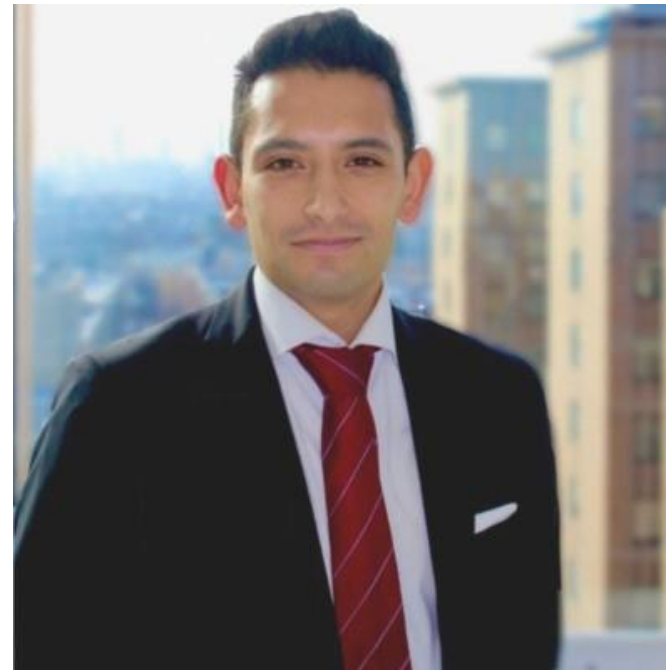


Acknowledgements

- 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
 - Rogel Cancer Center

Guest Speaker

- Erik Harden, BA, MA
 - DrPH candidate, GWU Milken Institute School of Public Health
 - Administrator and Senior Clinical Research Manager, Columbia University Irving Medical Center





USING EMERSE TO FIND PATIENTS FOR A COLORECTAL CANCER PREVENTION STUDY

Erik Harden, MA, DrPH Student

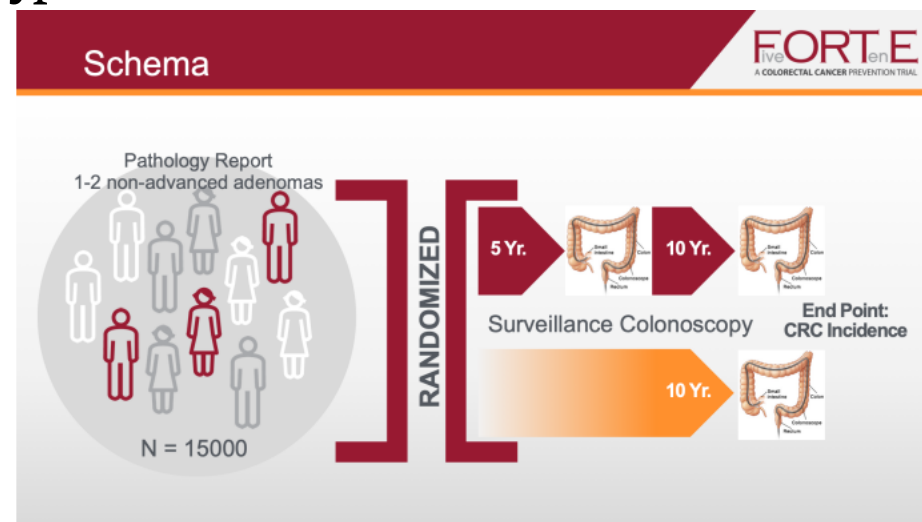
FORTE: Five- or Ten-Year Colonoscopy for 1-2 Non-Advanced Adenomatous Polyps

About FORTE

- A national colorectal cancer prevention study sponsored by the National Cancer Institute (NCI)
- Focuses on patients with 1-2 small, non-advanced adenomas (polyps) found during colonoscopy
- Study hopes to answer if people who had one 1 or 2 polyps removed during colonoscopy, should repeat colonoscopy exam at 10 years or should they have their repeat exams at both 5 years and at 10 years?

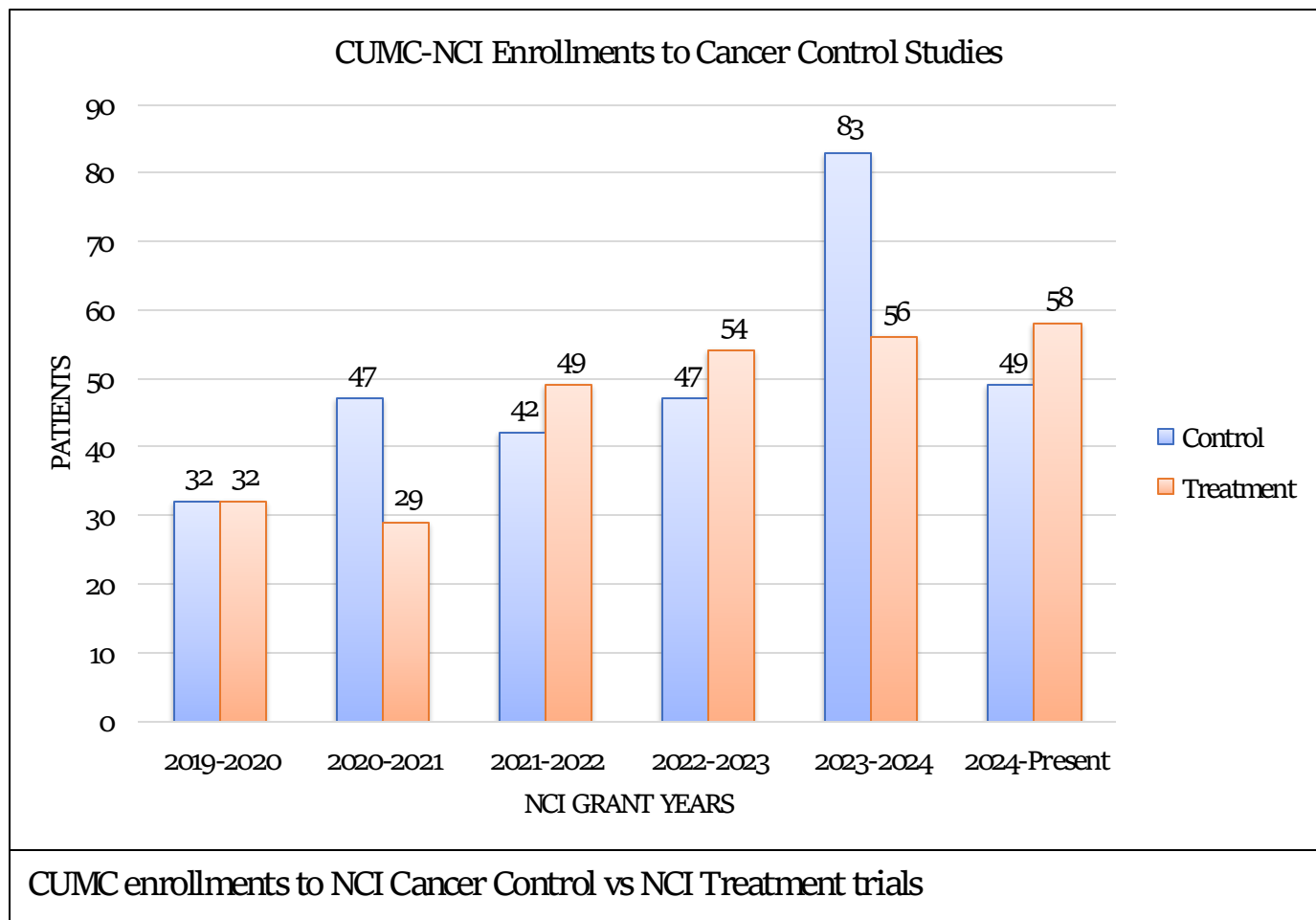
Who qualifies for FORTE

- Adults 45-70
- Had a screening colonoscopy in the last 4 years.
- Found to have 1 or 2 small, non-advanced polyps



FORTE at Columbia University Medical Center (CUMC)

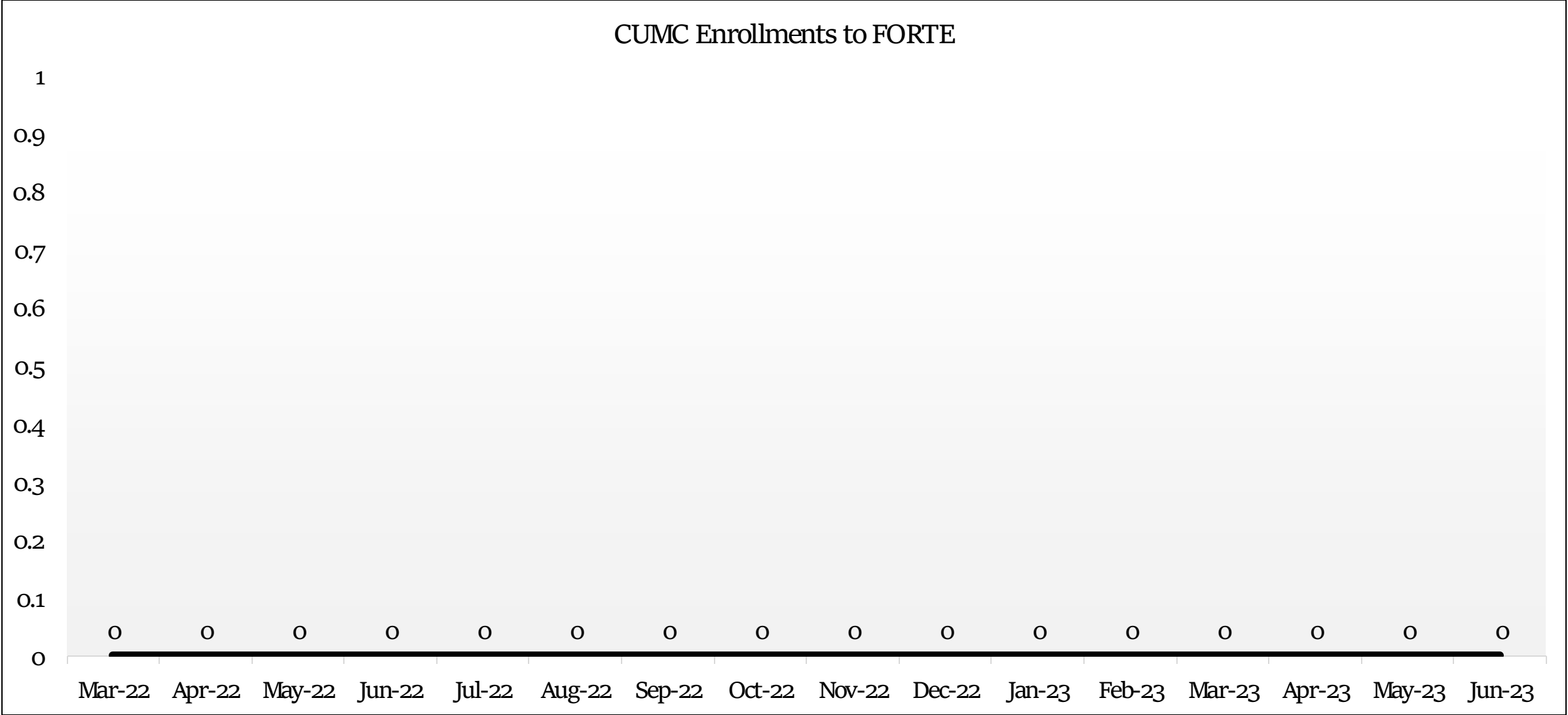
- In 2021 CUMC chose to open the FORTE trial – currently there are 500 other hospitals participating in FORTE
- FORTE is classified as a cancer control trial (a clinical trial focused on improving cancer prevention, early detection, and management, with a particular emphasis on reaching underserved populations)
- CUMC has a strong history of successful enrollment for cancer controls studies



Pre-EMERSE Workflow

- FORTE-Columbia team initially wanted to query their electronic medical record (EMR) around FORTE eligibility to produce a patient report, however the Principal investigator wanted to pull colonoscopy reports from Tableau that were used by CUMC gastroenterologist to house colonoscopy data
- Tableau is a visualization platform that helps users connect to, analyze, and visualize data from various sources.
- Based on our previous history of enrolling well to NCI Cancer Control studies + Tableau, we were confident and ready to enroll to FORTE ...

But then...



The Issues:

- The Tableau reports produced during MAR 2022 - JUN 2023 contained more than 5,000+ patients
- The FORTE-CUMC Clinical Research Coordinator would select MRN's that had the most recent colonoscopies and enter them into our EMR to verify they were eligible for the study
- For every patient 50 patients, 1 was found to be eligible for the FORTE study
- This was extremely time -consuming process
- We went back to the drawing board with our Principal Investigator...

[illegible]

Tableau Report with 5000+ patients

Next Steps:

- The FORTE-Columbia study team decided to then query their electronic medical record (EMR) around FORTE eligibility to produce a patient report. The query included:
 - Patients 45-75 with colonoscopies at Columbia in the last 4 years
 - Patients with colonoscopy pathology reports available in their chart
 - No active cancer diagnosis
- This patient report continued to produce many patients - about 1200-1,500
- Issue with our patient reports can only pick up structured data meanwhile our colonoscopy reports are free text notes, and the 1-2 polyps became a key eligibility point in screening
- In speaking with our Cancer Center System Analysts, they recommended a program called EMERSE

mrn	pat_nam	birth_da	num_col	first_col	last_col	colonsc	num_col	most_recent_outpatient_appt
			4				1	VC 2 INTERNAL MEDICINE(FOLLOW UP ACN): 06/21/2023
			3				0	HVMG MOB NEUROLOGY(TRANSITION ESTABLISHED NYPMG): 11/08/2024
			3				1	WCH 2649STR VASCULAR SURGERY(FOLLOW UP CUIMC): 01/22/2025
			4				1	HVMG 2649STR GASTROENTEROLOGY(GI NEW PATIENT NYP): 08/01/2024
			4				0	MAN 516W168 NP GROUP(FOLLOW UP CUIMC): 03/27/2024
			4				0	HIP 6 COL CARDIO MED(FOLLOW UP CUIMC): 02/29/2024
			4				1	HIP 8 COL DIG LIVER DIS(CONSULT CUIMC): 11/29/2022
			4				0	ALN 3 COL NEUROSURGERY(VIDEO VISIT POST OP CUIMC): 02/04/2025
			3				0	HRK 9 COL GI CONTRACT GREEN(GI FOLLOW UP CUIMC): 10/29/2024
			5				0	MAN 51W51 340 PRIM CARE(PRIMARY CARE FOLLOW UP CUIMC): 01/13/2025
			4				0	VC 15 COL DERMATOPATHOLOGY: 09/23/2024
			1				1	HRT 4 COL CARDIO MED: 02/03/2025
			4				1	HRK 9 COL GI CONTRACT LEWIS(VIDEO VISIT NEW PATIENT CUIMC): 12/21/2022
			5				0	HRK 9 COL GI CONTRACT GREEN(NEW PATIENT CUIMC): 06/04/2024
			4				0	HIP 11 COL UROLOGY(FOLLOW UP CUIMC): 01/09/2025
			3				2	HVMG 2649STR GASTROENTEROLOGY(GI NEW PATIENT NYP): 02/04/2025
			4				0	VCL 7INTK COL DENTAL URGENT & EMER(EMERGENCY CUIMC): 12/10/2024
			10				1	BMH EMERGENCY: 02/05/2025
			3				1	HVH EMERGENCY: 07/05/2024
			4				0	HRK 9 COL GI CONTRACT LEWIS(NEW PATIENT CUIMC): 10/20/2021
			3				1	HVMG 1985CROM GASTROENTEROLOGY(NEW PATIENT NYPMG): 03/30/2022
			5				1	MAN 51W51 360 DIG LIVER DIS(GI CONSULT CUIMC): 10/01/2024
			5				1	BRX 3050CORL CARDIO CMG(CARD NEW PATIENT CUIMC): 01/28/2025
			3				1	MAN 601W113 INTERNAL MED(PRIMARY CARE EST ANNUAL PHYSICAL CUIMC): 1
			3				0	HRK 9 COL GI CONTRACT GREEN(VIDEO VISIT GI FOLLOW UP CUIMC): 09/18/202
			3				1	WCH 1985CRPD COLORECTAL(NEW PATIENT CUIMC): 08/23/2021
			4				0	MAN 51W51 360 DIG LIVER DIS(VIDEO VISIT FOLLOW UP CUIMC): 09/27/2021
			4				0	WCH 155WPLN 100 DERM(DERM FOLLOW UP CUIMC): 10/31/2024
			1				0	STR ANATOMIC PATHOLOGY: 11/04/2024
			4				1	WCH 1985CRPD COLORECTAL(FOLLOW UP CUIMC): 02/03/2025
			4				0	PBY 8 COL ALLERGY(VIDEO VISIT FOLLOW UP CUIMC): 02/06/2025
			3				1	HVMG MOB HEMATOLOGY ONCOLOGY(CONSULT NYPMG): 01/28/2025
			4				1	HVMG 1985CROM GASTROENTEROLOGY(GI NEW PATIENT NYP): 11/26/2024
			4				1	HVMG 211SDIV INTERNAL MEDICINE(PRIMARY CARE EST PATIENT NYP): 02/04/2

FORTE-CUMC Patient Report

EMERSE Workflow

- Around July 2023 CUMC Cancer System Analysts exported our patient reports into EMERSE
- As mentioned previously, over the course of screening eligible patients for this trial, we found that 1-2 polyps became the key eligibility point in including or excluding patients to contact for FORTE
- The FORTE-CUMC team asked EMERSE to include patient's whose pathology notes mentioned "tubular adenomas" or "TA"
- We asked EMERSE to exclude all patient charts that mentioned "sessile serrated adenoma" and "hyperplastic adenoma"

Asking EMERSE to only include patient charts that include the terms "TA" and "Tubular Adenoma"

The screenshot displays the EMERSE web application interface. At the top, a red arrow points to the header 'CUMC Patient Report Uploaded to EMERSE'. Below this, the 'Patients' section shows 'RITM0469723_data_20250130 (1,406)'. The 'Filters' section includes a 'Terms' filter with a dropdown menu showing 'ta' and '"tubular adenomas"'. A red circle highlights the 'FIND PATIENTS' button. To the right, a red arrow points to the text 'Could then ask EMERSE to find patients based upon entered criteria'. The main content area is titled 'Temporary Terms' and includes a 'Manage Terms' section. A large red circle highlights the 'Terms to include' section, which contains a text input field and an 'ADD' button. Below this, the 'Included terms' section lists 'ta' and '"tubular adenomas"' with 'SYNONYMS' buttons. At the bottom, a red arrow points to the text 'Prompting EMERSE to look for terms that would narrow down patients truly eligible for FORTE'.

Prompting EMERSE to look for terms that would narrow down patients truly eligible for FORTE

EMERSE Continued:

EMERSE

Erik Harden

Patients

RITM0469723_data_20250130 (1,406)

Filters

Terms

Results

ta

"tubular adenomas"

HIGHLIGHT DOCUMENTS

FIND PATIENTS

Temporary Patient List

Saved Patient Lists

All Local Patients

Network

NEW PATIENT LIST

COMPARE PATIENT LISTS

Name	Description	Owner	Created	Modified	Last Used	Patient Count
RITM0469723_data_20250130	RITM0469723_data_20250130	Janie Weiss	01/30/2025	01/30/2025	05/14/2025	1,406

Original CUMC Patient Report had 1406 patients

EMERSE

Erik Harden

Patients

RITM0469723_data_20250130 (1,406)

Filters

Terms

Results

ta

"tubular adenomas"

HIGHLIGHT DOCUMENTS

FIND PATIENTS

Summaries

Demographics

Trends

370 patients matched the search criteria within the patient list "RITM0469723_data_20250130"

TOP 100 MATCHING DOCUMENTS

TO REVIEW THESE PATIENTS IN MORE DETAIL, MOVE TO A TEMPORARY PATIENT LIST AND THEN CLICK THE HIGHLIGHT DOCUMENTS BUTTON.

TAG PATIENTS IN LIST

MOVE TO TEMPORARY PATIENT LIST

EMERSE was able to narrow list down from 1406 patients to 370 patients

EMERSE Continued:

Exported 370 potentially eligible patients to a separate list

The screenshot displays the EMERSE application interface. At the top, the EMERSE logo is on the left, and the user name 'Erik Harden' is on the right. Below the header, a navigation bar shows 'Patients' and 'Temporary List (370)'. The 'Temporary List (370)' tab is highlighted with a red circle. Below this, there are filters and search options. The search bar contains the term 'tubular adenomas'. Below the search bar, there are buttons for 'HIGHLIGHT DOCUMENTS' and 'FIND PATIENTS'. The main content area is titled 'Temporary Patient List' and includes a 'CONVERT TO SAVED PATIENT LIST' button. A sidebar on the left contains a 'Temporary List' section with options like 'Name/Description', 'Add/Upload Patients', 'View Patients' (highlighted), 'Patient Demographics', 'Sharing', 'Clear', and 'Export'. The main area displays a table with columns: MRN, Name, Birth Date, Age, and Action. The table contains 10 rows of data, all of which are redacted with a black box. The 'Action' column for each row contains a 'Remove' link. At the bottom right, there is a pagination control showing 'Patients per page: 50' and '1 - 50 of 370 patients'.

EMERSE Continued:

We could ask EMERSE to “highlight documents” that had the words “TA” and “Tubular Adenoma”

EMERSE Erik Harden

Patients Temporary List (370)

Filters


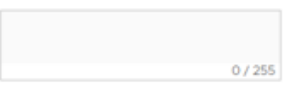
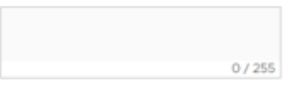
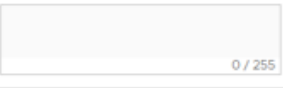
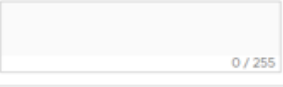
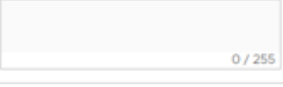
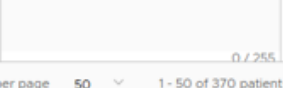
Terms ta "tubular adenomas"

Results HIGHLIGHT DOCUMENTS FIND PATIENT

Overview

Sorted by: Insert Order Ascending

Numbers Grayscale Mosaic

MRN	Name	Epic HNO Notes	Radiology	Pathology	Pre-Epic Notes	Pre-Epic Op Notes	Comment	Tag
		1 of 173		3 of 43	63 of 883		 0 / 255	<input type="checkbox"/>
		11 of 344	1 of 116		50 of 1,993		 0 / 255	<input type="checkbox"/>
		11 of 190			27 of 81		 0 / 255	<input type="checkbox"/>
					31 of 401		 0 / 255	<input type="checkbox"/>
		2 of 79			27 of 1693		 0 / 255	<input type="checkbox"/>
					28 of 680		 0 / 255	<input type="checkbox"/>

Patients per page 50 1 - 50 of 370 patients 1 / 8

For this patient, EMERSE highlighted 3 mentions of the word “TA” and “Tubular Adenoma” in this patient's chart

EMERSE Continued:

Could then click on notes that EMERSE flagged mentioning the words “TA” and “Tubular Adenoma” terms

The screenshot shows the EMERSE interface with a search for "tubular adenomas". The left sidebar shows filters for Epic HNO Notes (1 of 173), Radiology, Pathology (3 of 43), Pre-Epic Notes (63 of 883), and Pre-Epic Op Notes. The main area displays a list of patient records. A red circle highlights a patient record with a summary mentioning "tubular adenomas".

Summary	MRN	Report Id	Provider	Date of Service	Last Updated	Report Date	Viewed
...history of hyperplastic polyps and tubular adenomas in the colon and rectum... Status post colectomy for multiple tubular adenomas with focal high-grade dysplasia...		CqM6wn+VylJMSr3QGSuZqQ==		12/15/2016	12/15/2016	12/15/2016	N
...resection , , A. Colon, colectomy: - Multiple tubular adenomas (IP 50) with focal high...		lcrhtdJC7XQWN51XH51Kkw==		05/22/2012	05/22/2012	05/22/2012	N
...biopsy , Colon, rectosigmoid, polyps, biopsies: Tubular adenomas, multiple with focal high...		NMg/pyAqTuYXW+N5ffvUFQ==		05/04/2012	05/04/2012	05/04/2012	N

FORTE excludes patients diagnosed with previous polyps so this patient would be ineligible for FORTE

EMERSE Continued:

After renaming the exported 370 list, we could then flag patients as either eligible or ineligible based upon our review in EMERSE

EMERSE

Erik Harden

Patients

FORTE (370)

Filters

Terms

ta "tubular adenomas"

Results

HIGHLIGHT DOCUMENTS

FIND PATIENTS

Overview

Sorted by: Insert Order

Ascending

Numbers

Grayscale

Mosaic

MRN	Name	Epic HNO Notes	Radiology	Pathology	Pre-Epic Notes	Pre-Epic Op Notes	Comment	Tag
<div></div>		1 of 173		3 of 43	63 of 883		<div>Exclude</div> <div>8 / 255</div>	<input checked="" type="checkbox"/>
		11 of 344	1 of 116		50 of 1793		<div></div> <div>0 / 255</div>	<input type="checkbox"/>
		11 of 190			27 of 813		<div></div> <div>0 / 255</div>	<input type="checkbox"/>
					31 of 401		<div></div> <div>0 / 255</div>	<input type="checkbox"/>
		2 of 79			27 of 1693		<div></div> <div>0 / 255</div>	<input type="checkbox"/>
					28 of 680		<div></div> <div>0 / 255</div>	<input type="checkbox"/>

Patients per page

50

1 - 50 of 370 patients

<

>

1 / 8

>

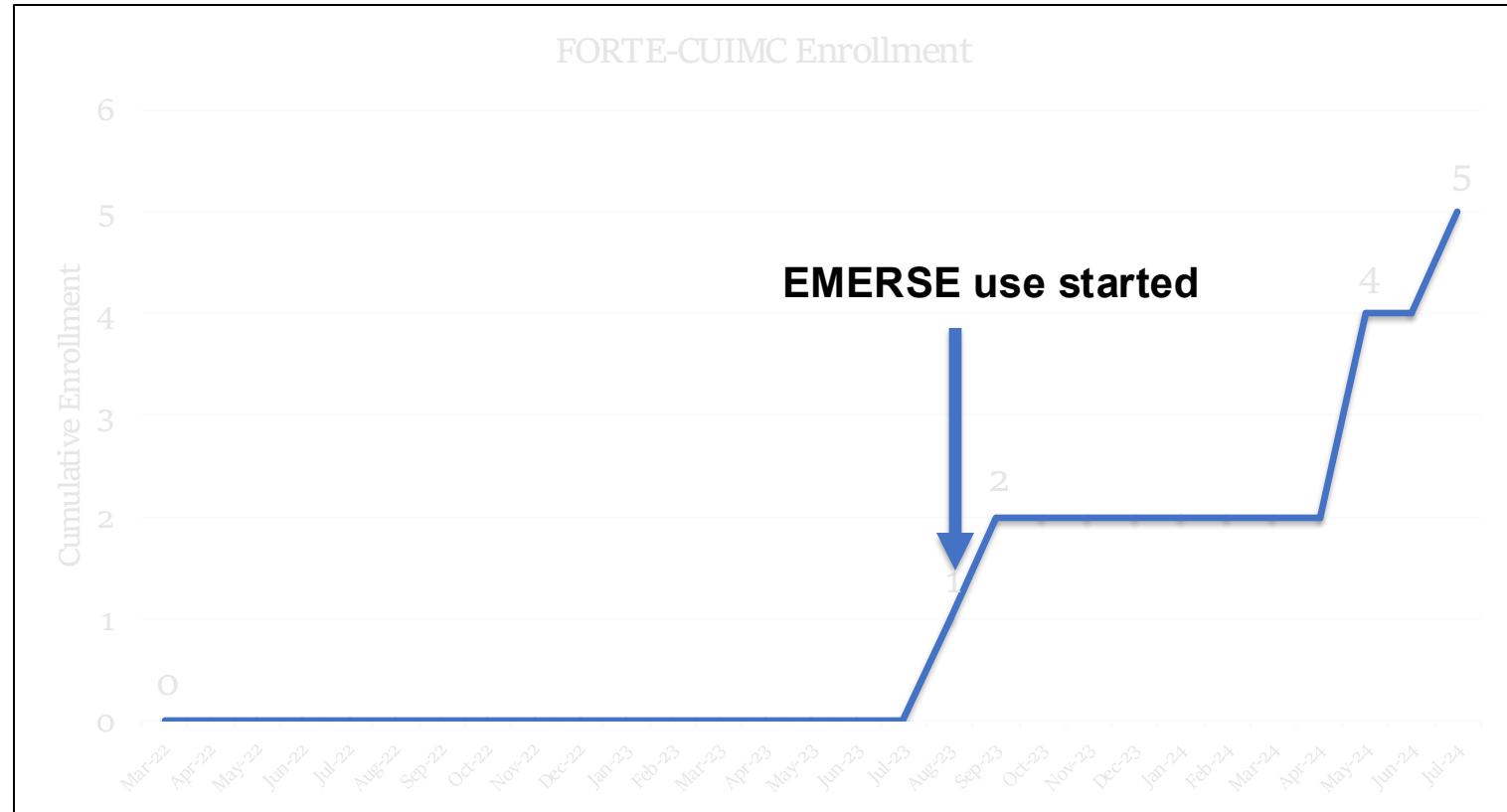
>

Flagging patient with previous history of polyps as ineligible

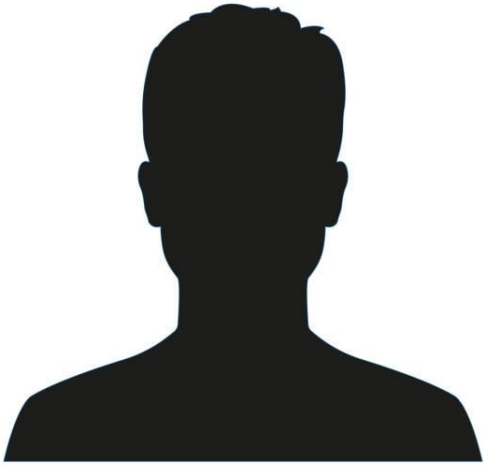
EMERSE Continued:

- We were able to enroll patients!

- Note:
While CUMC rolled out the EMERSE workflow for FORTE, we were also simultaneously testing reaching out to EMERSE identified FORTE patients over MyChart to introduce the FORTE study to patients



EMERSE Anecdote from FORTE-CUMC Team



EMERSE has been vital to our teams' effort to screen patients for the FORTE trial. The sheer volume of patients that the program is able to screen for us drastically increased our efficiency and ability to extend clinical trial opportunities to patients. What is normally a tedious process is significantly less cumbersome when utilizing EMERSE.

- Finn, FORTE-CUMC Coordinator/EMERSE User

FORTE Post EMERSE

- Continue to use EMERSE to screen for the FORTE study at CUMC
- In the last 2 months we opened the FORTE study at one of CUMC community affiliate, located 1-hour north of CUMC, and rolled out FORTE-CUMC workflow there as well
- Have not enrolled a patient at CUMC community affiliate ... yet, however, we have reached out to patients identified via EMERSE at CUMC affiliate and have interested patients

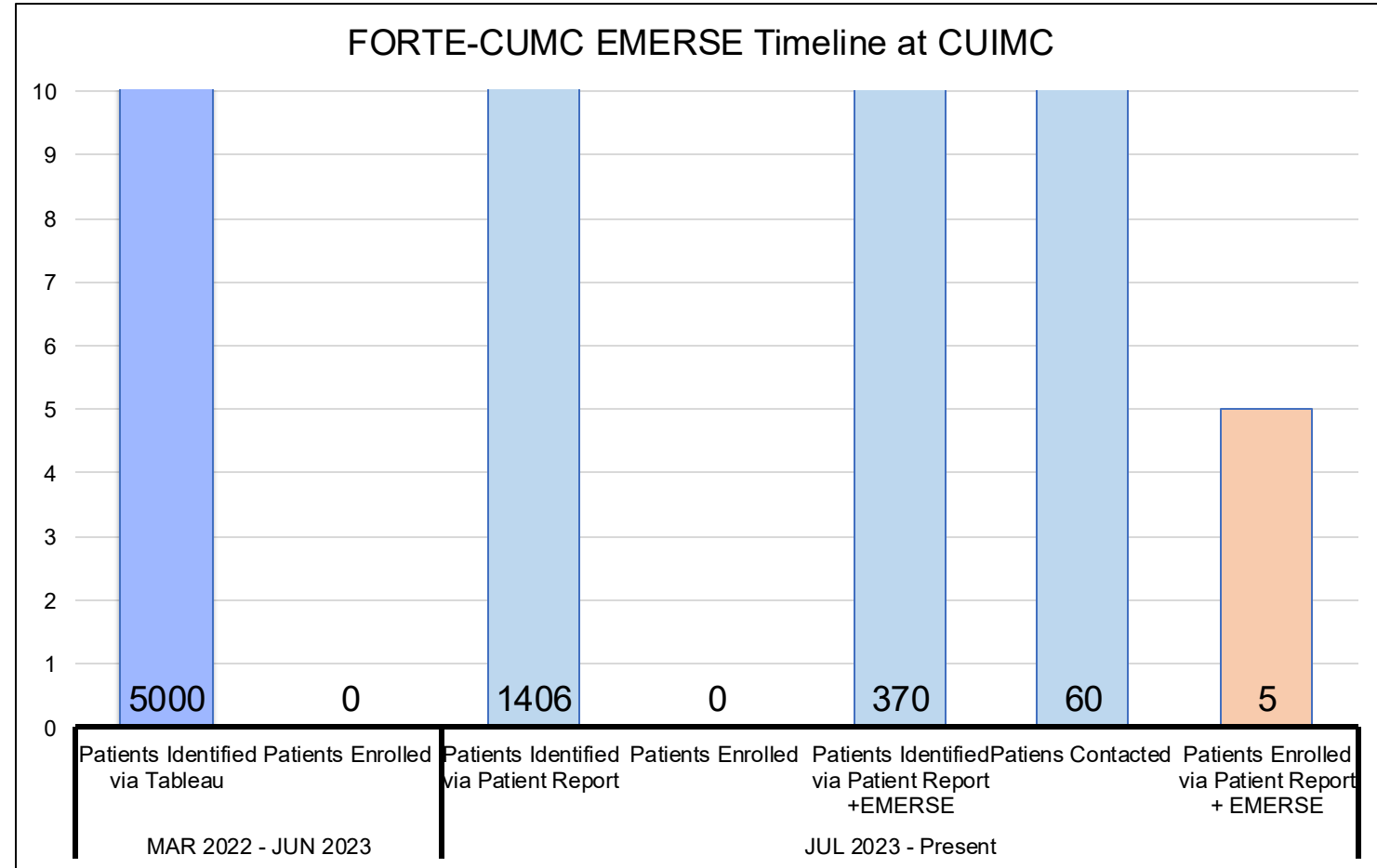
Using EMERSE, our team is able to easily identify patients across CUIMC's affiliate hospitals. The tag tool was especially effective in filtering large lists, allowing us to screen records for multiple providers dating back four years. This dramatically reduced screening time and led to a notable increase in eligible candidates across all sites. This allowed us to focus on patient outreach, which has increased engagement in our clinical trial.

- Mariana, FORTE-CUMC Affiliate Coordinator/EMERSE User



EMERSE Conclusions

- EMERSE helped narrow down our patient reports to help identify truly eligible patients for FORTE
- Decreased staff's time screening patient eligibility for FORTE
- Very easy to use
- Combining EMERSE with other electronic methods has helped us (CUMC patient reports + EMERSE + MyChart Outreach) enroll patients to the FORTE study



EMERSE version 7.1

- Released internally at U of Michigan in April 2025
- Plan for broader release in about a month
- New features:
 - A few bug fixes
 - Synonyms counting in background
 - Collapsible navigation panel
 - Query Writer
 - Control over Boolean (AND/OR) options
 - Searches without terms

Demonstration of features in 7.1 release

- Demo system is online and available for anyone to test
- Contact us for an account
- New features are in demo system

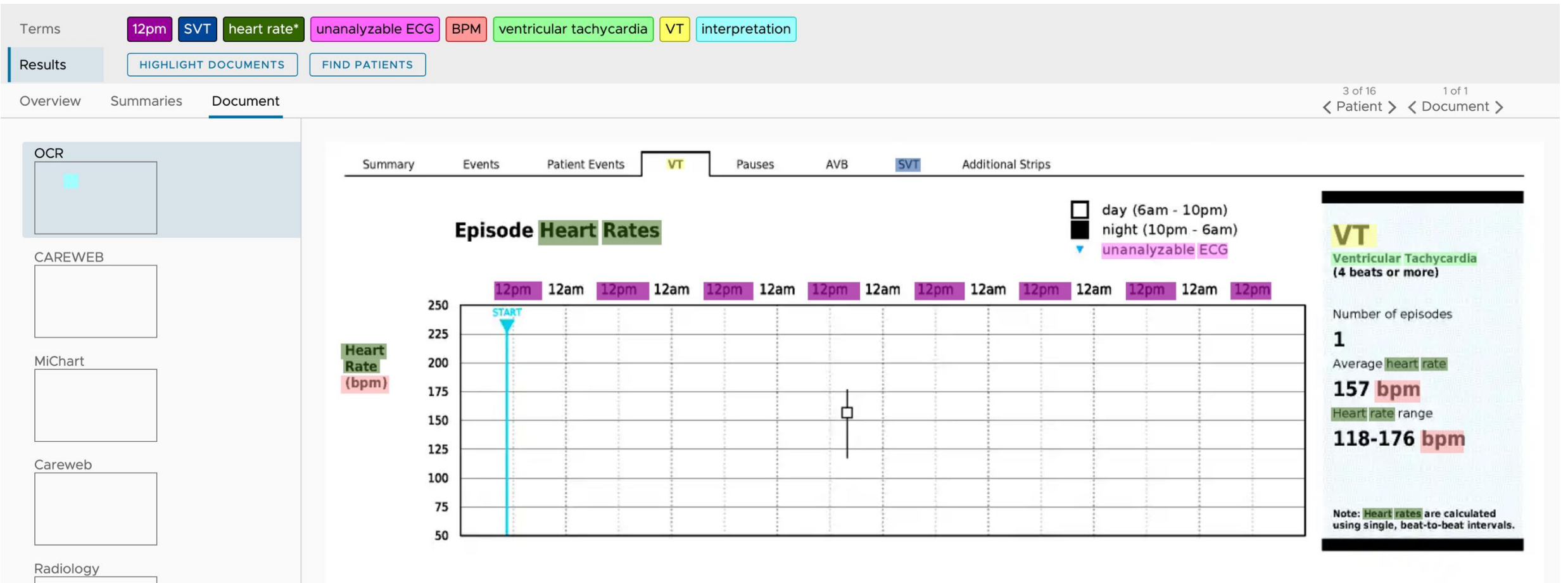
Work in progress: UI Framework

- Updating backend UI framework
 - Removing Clarity UI (not Epic Clarity)
 - Will allow us to update Angular, reduce potential security issues
 - May speed up the interface
 - Lots of work, but will be mostly invisible to the users

Work in progress: OCR

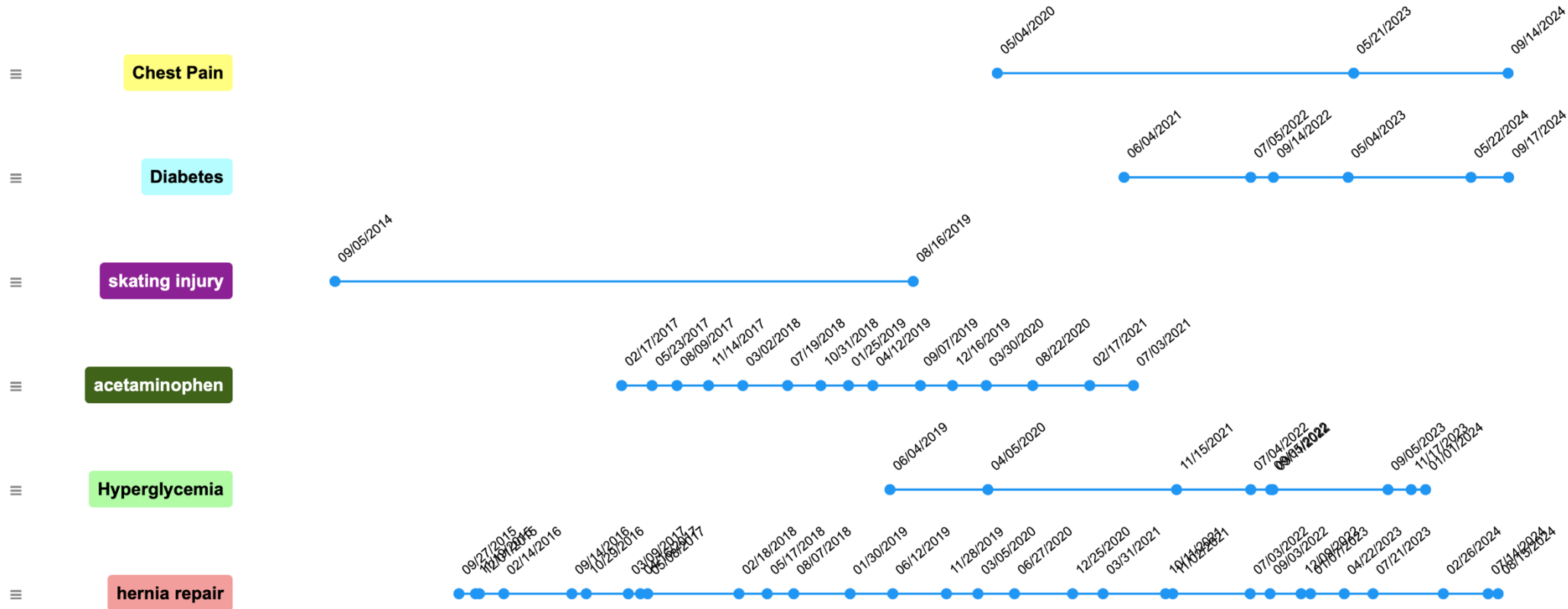
- Optical character recognition (OCR)
 - Still testing various technologies
 - Determine how to store data
 - Should be able to handle multiple image formats and PDFs
 - PDFs would be converted to images
 - Highlighting terms within documents
 - Looking into pros/cons of spelling correction

Work in progress: OCR



Work in progress: Timelines

- Show terms on a timeline, linked to note dates



Open Forum & Wrap-up

- Questions/Comments/Discussion
- Thanks for attending!
- Next Meeting: TBD (Fall 2025)
- Please complete meeting survey:
<https://bit.ly/emerse-may-2025>

