

Leveraging Epic for Research: Training Topics Overview

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Patients and Providers are actively engaged with Epic Helping us bring research studies to all!

Epic EHR

- Our Epic EHR is a common element across all sites and clinics
- Our investment in the Epic EHR will grow
- Our goal is to bring clinical trials to all

MyMountSinai (Epic MyChart) website & app

- 1.4M total MyMountSinai accounts
- ~370k patients use MyMountSinai every month
- 61.4% of patients seen in the last month have an account

Patients on Clinical Trials

- 69.1% of patients participating in clinical trials have an account
 - Reference: 60% average across Epic academic organizations

Mount Sinai Health System (MSHS): OneEpic

Increasing opportunities for patient recruitment

TODAY

	2022				2023				2024				2025			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Queens 200 beds	Aug 2022 ★															
Morningside & West 600 beds			Aug 2023 ★													
Mount Sinai Hospital, Beth Israel & Brooklyn 1,400 beds							May 2024 ★									
South Nassau 500 beds											June 2025 ★					

2,700 beds in total

Epic Research features already available at MSHS

Epic Features	Audience	Academic Medical Centers Adoption (n-418)
Automatically process research-specific claims	Research team	77%
Indicate an encounter as a research encounter	Research team	54%
Notify research staff of research patient appointment/admission/demise	Research team	58%
Enable research billing review	Research team	45%
Indicate an order as related to research	Research team	68%
Associate oncology research studies with study protocols	Research team	63%
Enable best practice advisories to identify potential research patients	Research team	27%

2023 plans: raise awareness through announcements and training

Epic Research features already available at MSHS

Epic Features	Audience	Academic Medical Centers Adoption (n-418)
Show current research studies in MyMountSinai	Participants	45%
Patient opt in/out of research recruitment via MyMountSinai	Potential participants	34%
Send MyMountSinai messages to recruit participants	Research team	37%

2023 plans: raise awareness through announcements and training

Research Study Record

- This is the foundation of Epic Research
- Research studies must be created in Epic in order to effectively use Research features
 - Alternative is labor intensive one off's



Research Study Record



Creating the Research Study Record in Epic

- Before a patient is enrolled in a Research Study in Epic, a request to create the study record must be submitted in ServiceNow
- This should be placed once the Study Code/GCO is available
- Basic information is collected such as NCT#, IRB Approval # and Principal Investigator
- This request should also be used for study record updates and to close the study

[Epic Research Study Record \(RSH\) - Mount Sinai Health System \(service-now.com\)](https://service-now.com)

* Short Study Name (Is used to uniquely identify protocol. The name cannot be numeric characters)

* Brief Description of Study

* Study Code (GCO#) (standard format XX-XXXX 6-digit Numeric)

* NCT# (National Clinical Trial Number)

* IRB Approval #

* Principal Investigator (Name) ⓘ
Provide full name and title, e.g. John Smith, MD ✖

* NPI for Principal Investigator

* Research Study Coordinator (Name)

* EMP/NETWORK ID

* Additional Study Coordinator (If applicable): Name and EMP/Network ID

Additional Details

Epic for Research Features and Functionality

Enrolling a Patient in a Research Study

- The patient's enrollment status and additional information is entered in the **Research Studies** activity to allow staff to track patients part of a study
 - Statuses manually updated by research staff:
 - Active Statuses: Enrolled & Consent Signed
 - Pre-Consent Statuses: Waiting for consent, Identified, Interested & Eligible
- A Research banner appears for patients **enrolled** in research studies
- Viewed from the Story Board banner

The screenshot displays a patient's medical record interface. On the left is a patient profile card for 'Epictwo Zztest', a 69-year-old male with MRN EE7908. The 'Research Participant' status is highlighted with a red box. On the right, the 'Research Studies' section shows a table for 'Mount Sinai Million' with one entry: 'Enrolled' on 9/17/2023. This entry is also highlighted with a red box. Below the table, 'Study Details' are visible, including the study code, IRB#, and NCT#.

Status	Status Effective Date
Enrolled	9/17/2023

Active Start Date	Active End Date
9/17/2023	—

Indicate an Encounter as Research Encounter

Scheduling, Registration and Clinical Staff can link encounters to research studies:

- Scheduling– via the Appointment Desk
- Registration – via the Research Encounter Association
- Clinical Staff – via the Research Studies activity

The association can be viewed in:

- Scheduling Activities
 - Only at sites with Epic Scheduling and Registration
 - Mount Sinai Hospital Article 28 will be going live in May 2024
- Chart Review

Indicate an Encounter as Research Encounter

Scheduling:

The screenshot shows the 'Appointment Desk' interface. At the top, there's a navigation bar with options like 'Book It', 'One Click', 'Walk In', 'Request', 'Reports', 'Patient Optgs', and 'Printing'. Below this is the 'Patient Summary' for 'Zztest, Epictwo (69 yrs)'. The summary includes fields for DOB (9/8/1954), Registration Status (Elapsed), Mobile, E-mail, SSN, Preferred Language (English), and Home. A 'Preventive Care' link is visible. A 'Link to Research Study' dialog box is open, showing details for 'Mount Sinai Million' with an 'Enrolled' status, Study Code, IRB#, and Principal Investigator. A red box highlights the 'Link encounter' button in the dialog. A red arrow points from this button to the 'Has Linked Appt?' column in the appointment table below. The table has columns for Len, Dept, Provider, Visit Type, Notes, Rescheduled, Referral, and Has Linked Appt?. The first row shows a 'FOLLOW UP [1080]' appointment with a 'Has Linked Appt?' icon. The second row shows a 'NEW PATIENT [2252]' appointment with 'Yes' in the 'Has Linked Appt?' column.

Registration:

The screenshot shows the 'Check In' interface. At the top, there's a navigation bar with options like 'Documents', 'Patient Refund', 'Outside Records', 'Room', 'Pat Guar and Cvg', 'Infection Screening', 'Appt Desig', 'Claim Info', 'MSPG', 'View MSPG', 'Referrals', 'Auth/Cert Linkage', and 'More'. Below this is the 'REGISTRATION INFO' section, which includes 'Demographics', 'Additional Pat Info', 'ID Maintenance', 'Appt Details', 'Care Teams', 'Enc Guar & Cvgs', 'Payments', 'Verify Rx Benefits', 'Additional Items', 'Documents', and 'Hospital Info'. A 'Research Encounter Association' dialog box is open, showing details for three research studies, each with an 'Enrolled' status and a 'Link encounter' button. A red box highlights the 'Link encounter' button in the dialog. A red box also highlights the 'Research Assoc...' button in the 'SPECIALTY BILLING' section of the 'Check In' interface. The dialog box also has 'Previous' and 'Next' buttons at the bottom right.

Notify Research Staff of Research Patient Appointment/Admission/Demise

- Research staff can receive automatic notifications via Epic InBasket when:
 - Appointment is canceled, missed or changed
 - Patient is admitted, transferred or discharged
 - Patient is marked as deceased

The screenshot displays the Epic InBasket interface. On the left, the 'My Messages' sidebar lists various message types, with 'Appointment Notification' (39/41) and 'Research ADT Event Notification' (2/14) highlighted with a red box. A red annotation 'In Basket Message Types related to research' points to these items. The main content area shows a list of 'Appointment Notification' messages with columns for Status, Sent Date, Patient, and Action. A red box highlights the 'Research Studies' button in the top navigation bar. Another red annotation 'Additional information on the Research Study' points to the 'Research Info' button in the message header. The right pane displays details for a 'Pfizer PF-06801591 BCG 3 Arm' study, including its status (Enrolled), linkage history, and a summary of the study.

Status	Sent Date	Patient	Action
New	06/09/2022	Leary, Brough...	Appointment Ch...
Read	06/16/2022	Leary, Brough...	Appointment Cha...
New	06/16/2022	Leary, Brough...	Appointment Ch...
New	06/24/2022	General, The...	Appointment Ch...
Read	06/24/2022	General, The...	Appointment Cha...
New	06/30/2022	General, The...	Appointment Ch...
New	07/22/2022	General, The...	Appointment Ch...
New	07/22/2022	General, The...	Appointment Ch...

Linkage History	Date and Time	Action	Protocol	Treatment Day	User
	06/23/2022 07:28 AM	Linked			Diamond, Lindsay

Research Billing

- Research Billing can be done through Epic
 - Encounter needs to be linked to a research study

Example of a Research Billing activity:

The screenshot displays the Epic EMR interface for a patient encounter. At the top, the patient name is "Follow Up Visit at Mount Sinai Queens - Family Health with Walt Whitecoat, MD". The date is "06/13/22" and the encounter is "Study-Related". The hospital account is "Hospital Account 8371158" and the insurance is "Outpatient | BILLED CIGNA COMMERCIAL - CIGNA PPO".

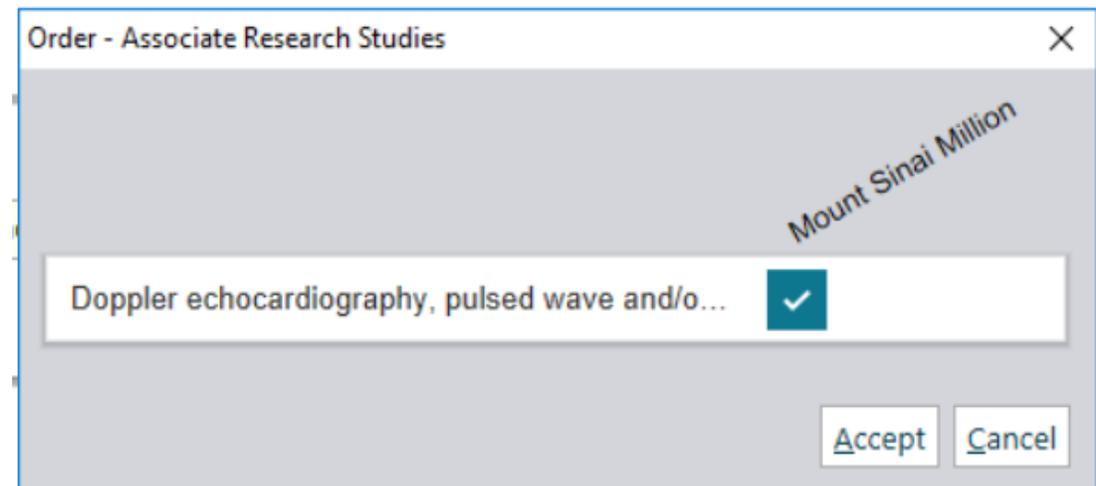
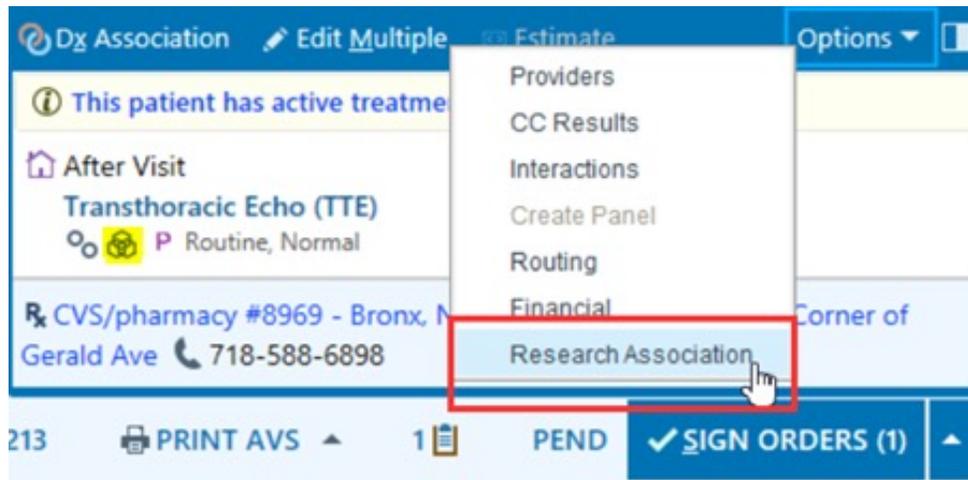
Below the patient information, there are tabs for "Charges" and "Encounters". A red box highlights a "Research Correct" button, which is used to correct research-related charges.

The "Non-Study Charges" section is visible, with options to "Itemized Charges", "Select All", and "Deselect All". A table lists the charges with columns for "Study Rvw", "Svc Date", "Post Date", "Code", and "Procedure". Three rows are shown, each with a checked checkbox in the "Study Rvw" column, indicating they are research-related charges.

Study Rvw	Svc Date	Post Date	Code	Procedure
<input checked="" type="checkbox"/>	06/13/2022	06/13/2022	95811	9209581101-HC POLYSMNOGRPHY,SLP W/4+PAR,CPAP
<input checked="" type="checkbox"/>	06/13/2022	06/13/2022	80061	BL80061001-HC LIPID PANEL
<input checked="" type="checkbox"/>	06/13/2022	06/13/2022	85027	10385027-HC CBC PLUS PLATELET

Indicate an Order as Related to Research

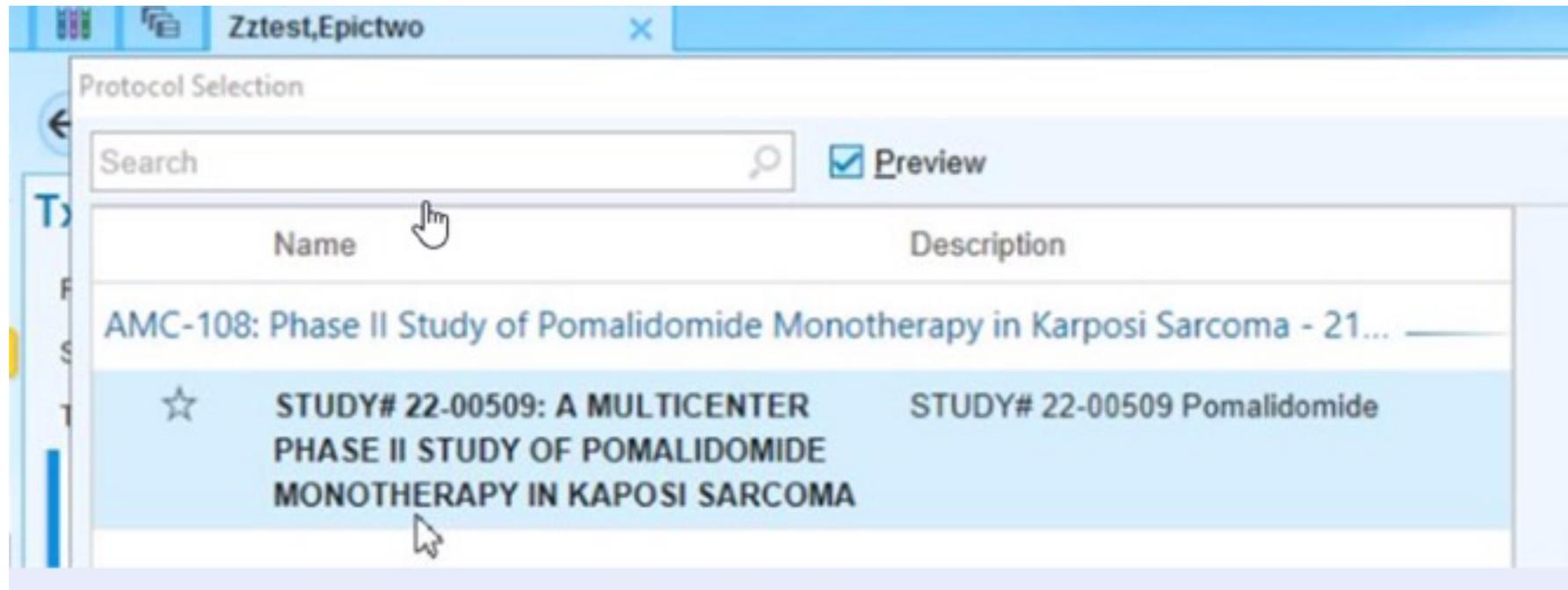
- Clinicians and credentialed Research Staff can associate orders with research studies



- Currently this tool is limited to certain Oncology departments but looking to expand to other specialties

Associate Oncology Research Studies with Study Protocols

- Can associate a research study with one or more Beacon treatment protocols
- Can also send Epic InBasket messages to research staff when clinicians create treatment plans from protocols not approved for a study



Epic Research Accruement

Clinical Trial Recruitment Alerts at Point of Care

- Best Practice Advisories (BPAs) can appear in clinical workflows if a patient meets initial screening and eligibility criteria.
- Within the BPA, clinicians can:
 - Indicate a patient's interest
 - Send a recruitment request through MyChart
- Ability to send an InBasket message when clinicians select certain association statuses

Research (1) 

 This patient is a candidate for RESEARCH STUDY 12-1809: "Panobinostat and Ruxolitinib in Myelofibrosis (Prime Study)-Phase I/II Study of Combination Oral JAK2 Tyrosine Kinase Inhibitor (JAK2-TKI) and Histone Deacetylase Inhibitor". If this patient is interested please select "Is Interested" below and forward an in-basket message to the Principal Investigator for study recruitment.

Enact	Ignore	Yes, patient is interested.
Enact	Ignore	No, patient is not interested.

The following actions have been applied: _____

✓ Sent:  In-Basket Message to Research Coordinator for enrollment assessment.

 Accept  Dismiss

 Drug-Drug Interaction Alert

The patient is enrolled in a clinical trial in which the study agent (GCO# 22-2122 S-217622 Ensitrelvir) has many **drug-drug interactions**. Initial interactions may persist 29 days after initial dosing.

If you are **prescribing** or **refilling** any medication you **must contact Dr. Sean Liu** via Epic chat or Phone (212)241-2724 and email IDSAnnenberg@mountsinai.org.
If unable to reach Dr. Liu please call Pharmacy - (212)241-7714

[Protocol Reference](#)

 Acknowledge Reason _____

 Acknowledge

Patient Opt In/Out of Research Recruitment via MyMountSinai

- Patients indicate whether they are willing to be contacted about research studies on MyMountSinai
- A link is included for patients to learn more information: [Mount Sinai Research](#)

This is a non-production environment. If you are a patient, please call 1-855-343-3478 to report this issue. [X]

MyMountSinai

MyChart by Epic | Log out

Your Menu | Appointments & Visits | Messages | Test Results | Ask a Question | Janet Switch

Research Studies

Participation Preferences ^

Your answer here will tell us if we can send notifications to you here in MyMountSinai about research participation opportunities. Your care at Mount Sinai Health System will not be affected by your answer. You will not be obligated to participate in any research study. If you answer "no" here, we won't send you opportunities via MyMountSinai, though it is possible that opportunities may be provided to you by your care team or through other sources. For more information on research please [click here](#).

Are you interested in being contacted through MyChart about research studies suggested by information in your own electronic health record?

You can choose how to be contacted in [Communication Preferences](#).

Last updated: Sep 13, 2023 11:21 AM

Update your profile to let us know the types of research you may be interested in.

Last updated: Sep 12, 2023 4:52 PM

Participation Preferences

Your preferences will help us let you know about research opportunities that might interest you. Your care team might discuss additional opportunities with you.

Related Links

Specify how you would like to receive MyMountSinai notifications for research

Allow Patients to Complete a Research Preference Profile in MyChart

- Patients indicate which types of studies they might be interested in participating
- Responses can then be used for research recruitment outreach

The screenshot shows the MyChart interface for a patient named Janet. The main heading is "Research Preference Profile". The first question is "Would you consider participating in research studies as a healthy volunteer?" with a subtext: "Many studies also need healthy volunteers for comparison purposes, so you don't necessarily have to have a condition to help researchers." There are "Yes" and "No" buttons. The second question is "Which areas of research would you be interested in?" with a subtext: "Select all that apply." A list of research areas is shown in a scrollable box: Allergies & Immune System, Blood, Heart, & Circulation, Bones, Joints, & Muscles, Brain & Nervous System, Cancer, Child Health, Diabetes, Digestive System & Liver, Drug/Alcohol/Substance Dependence, and Ears, Nose, & Throat. At the bottom are "Continue" and "Cancel" buttons. On the right side, there is a "Participation Preferences" section with a bell icon and a "Related Links" section with a bell icon and text: "Specify how you would like to receive MyMountSinai notifications for research".

Show Current Epic Research Studies in MyMountSinai

- November launch
- Display information about research studies a patient is or has been involved in

The screenshot shows the MyMountSinai interface. At the top, there is a blue header with the MyMountSinai logo on the left and MyChart by Epic, a user profile 'J', a 'Switch' dropdown, and a 'Log out' button on the right. Below the header, the main content area is divided into two columns. The left column has a 'Research Studies' section with a printer icon, a 'Participation Preferences' dropdown, and an 'Active Studies' section. Under 'Active Studies', there is a card for the 'Smoking Cessation Study' with the status 'Enrolled'. The card contains a table with two columns: 'Principal Investigator' (Janice Gabrilove, MD) and 'Description' (We are investigating the occurrence of exercise-induced pulmonary hypertension in patients with sickle cell anemia, and its relationship with clinical and echocardiographic variables. For more info, visit our website for this study.). The right column has a 'Participation Preferences' section with a paragraph explaining that preferences help inform about research opportunities, and a 'Related Links' section with a bell icon and text about receiving notifications for research.

MyMountSinai

MyChart by Epic J Switch Log out

Research Studies

Participation Preferences ▾

Active Studies

^ **Smoking Cessation Study** Enrolled

Principal Investigator	Description
Janice Gabrilove, MD	We are investigating the occurrence of exercise-induced pulmonary hypertension in patients with sickle cell anemia, and its relationship with clinical and echocardiographic variables.

For more info, [visit our website for this study.](#)

Participation Preferences

Your preferences will help us let you know about research opportunities that might interest you. Your care team might discuss additional opportunities with you.

Related Links

Specify how you would like to receive MyMountSinai notifications for research

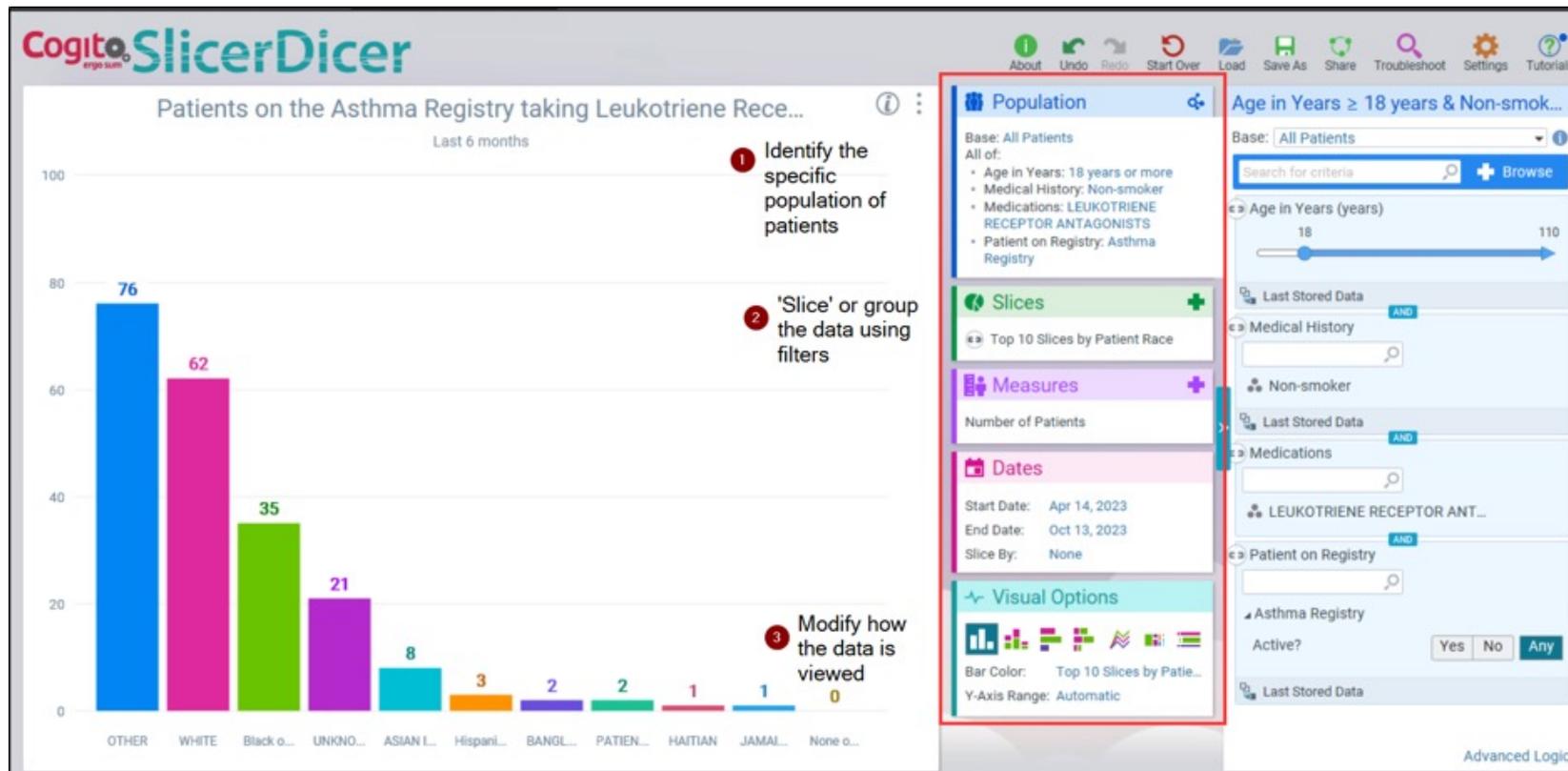
Send MyMountSinai Research Messages to Recruit Participants

- November launch
 - This feature may not be available/appropriate for all studies
- Use MyChart to find out whether potentially eligible patients are interested in participating in a study
 - Patients receive an email/text when they have a research message

The screenshot displays the MyMountSinai MyChart interface. At the top, the MyChart by Epic logo and a 'Log out' button are visible. Below the header, a navigation bar includes 'Your Menu', 'Appointments & Visits', 'Messages', 'Test Results', and 'Ask a Question'. The main content area is divided into two columns. The left column features a 'Research Studies' section with a 'Participation Preferences' dropdown and 'Available Studies'. A specific study, 'Proof Of Concept Study', is highlighted, showing the Principal Investigator (Steve Smith, MD) and Study Coordinators (Test Provider, MD Gabriela). The study description states: 'We are investigating the occurrence of exercise-induced pulmonary hypertension in patients with sickle cell anemia, and its relationship with clinical and echocardiographic variables.' At the bottom of this study card are two buttons: 'I'm interested' and 'No, thank you'. The right column contains 'Participation Preferences' and 'Related Links', including a notification bell icon and text: 'Specify how you would like to receive MyMountSinai notifications for research'.

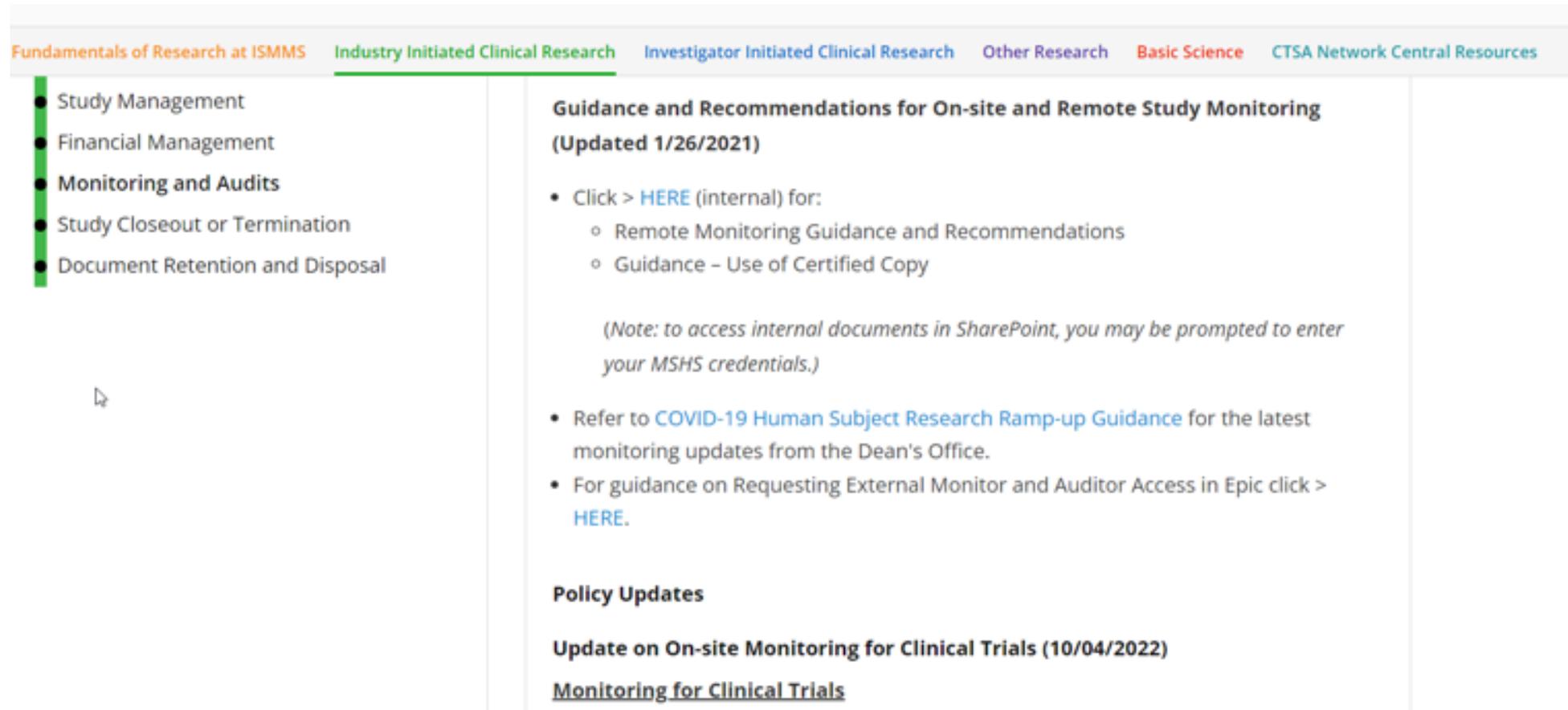
SlicerDicer

- Deidentified data for research feasibility
- Appropriate security is needed to use SlicerDicer



Epic Research Monitors

Granting Access to Epic for Study Monitors



The screenshot shows a navigation bar with the following items: Fundamentals of Research at ISMMS, Industry Initiated Clinical Research (highlighted in green), Investigator Initiated Clinical Research, Other Research, Basic Science, and CTSA Network Central Resources. Below the navigation bar is a sidebar menu with the following items: Study Management, Financial Management, Monitoring and Audits (highlighted in green), Study Closeout or Termination, and Document Retention and Disposal. The main content area displays the following text:

Guidance and Recommendations for On-site and Remote Study Monitoring (Updated 1/26/2021)

- Click > [HERE](#) (internal) for:
 - Remote Monitoring Guidance and Recommendations
 - Guidance – Use of Certified Copy

(Note: to access internal documents in SharePoint, you may be prompted to enter your MSHS credentials.)

- Refer to [COVID-19 Human Subject Research Ramp-up Guidance](#) for the latest monitoring updates from the Dean's Office.
- For guidance on Requesting External Monitor and Auditor Access in Epic click > [HERE](#).

Policy Updates

Update on On-site Monitoring for Clinical Trials (10/04/2022)

[Monitoring for Clinical Trials](#)

- More information available on the Research Roadmap:

[Monitoring and Audits | Research Roadmap \(mssm.edu\)](https://mssm.edu)

Next Steps

Training

- End-user training: first quarter 2024
- Training will be in PEAK: first quarter 2024

Development

- Hired full time Epic research analyst (thank you, CTSA)
- Will prioritize new features in conjunction with CTSA and TCI

Digital Concierge Service

Digital Concierge Service is held **every Wednesday from 3:30 pm – 4:30 pm (Eastern Time)** **plus** an extra day (not Wednesday) once a month to accommodate users who cannot attend on Wednesdays. To attend to get help with any of the services below, people should register in advance [at this link](#).

- **NEW: Epic for Research**
 - Leverage Epic for Research by utilizing features to recruit study participants, track patient enrollment, send consents via MyChart, receive notifications for research patient admissions and appointment changes, etc.
- **Minerva High Performance Computing (HPC)**
 - Minerva is comprised of over 2 petaflops of computational power and 32 petabytes of storage
- **Data Ark Data Commons**
 - Data Ark consists of public and Sinai-specific data sets located on Minerva
- **Mount Sinai Data Warehouse (MSDW) and Self-service Cohort Query Tools**
 - MSDW provides access to clinical and operational data collected from Mount Sinai's Epic Electronic Health Records
- **REDCap**
 - REDCap (Research Electronic Data Capture) is a secure, interactive web application for building and managing online surveys and databases
- **eRAP Electronic Data Capture**
 - eRAP is a secure, interactive web application for rapid database customization for single and multi-site studies
- **Library Resources and Services**
 - Use Library resources to find and manage evidence, data, and measurement instruments. Guidance on publication analysis and research impact, evidence synthesis, reference management, and data sharing.
- **DTP Academic Technology**
 - DTP Academic Technology provides support for computer-related issues, software questions, and IT concerns.
- **DTP Cybersecurity**
 - Protect your data, laptop and other digital resources

Thank You/Any Questions?

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