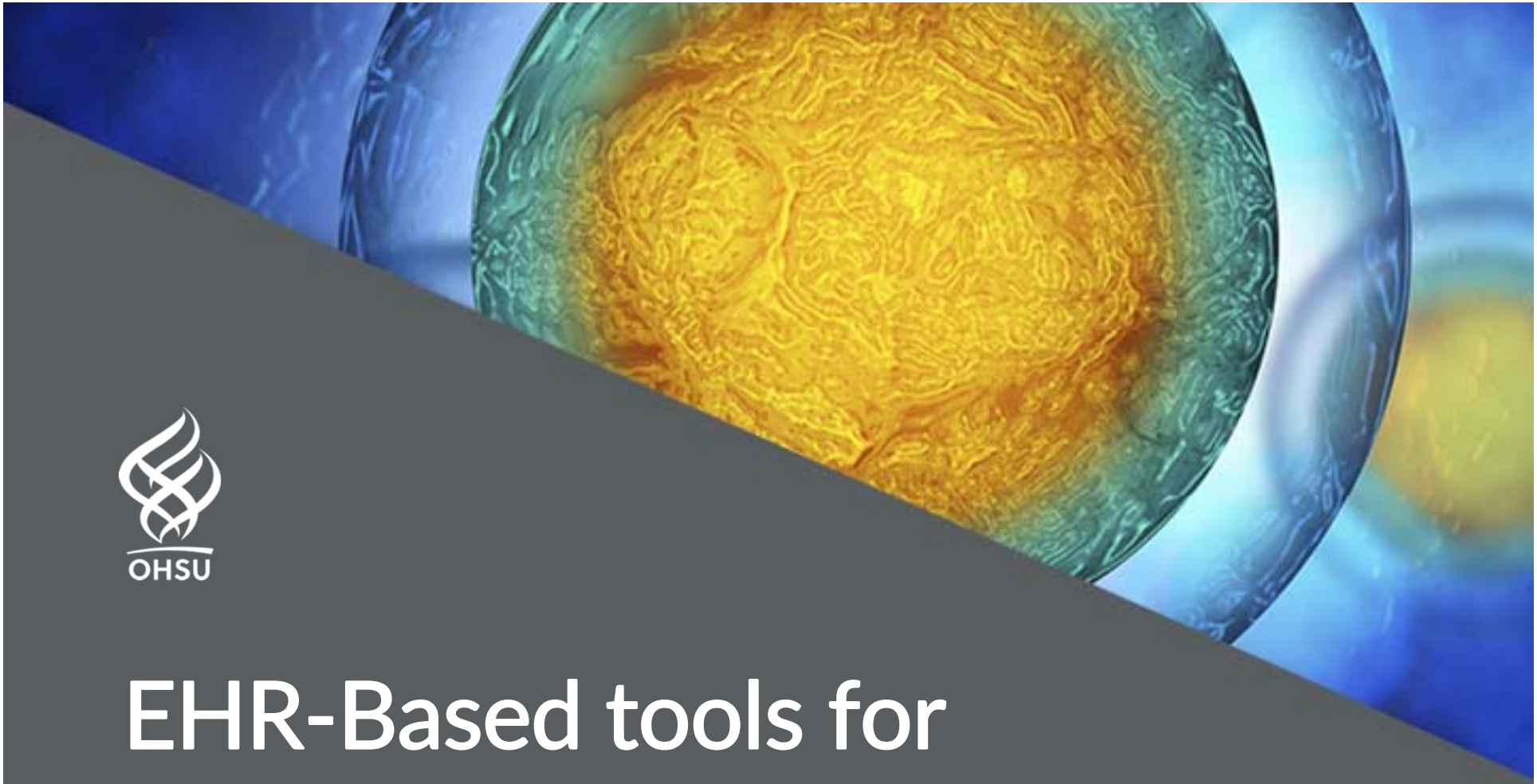

EHR-Based tools for Recruitment

OCTRI Research Forum

DATE: February 26, 2019 PRESENTED BY: Robert Schuff, Director, Clinical Research Informatics, OCTRI

Overview

- What tools are available?
- When is a given tool best to use?
- How to access these tools and costs
- Where to go for more help
- Q & A

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Available Tools

- Within Epic
  - Reporting Workbench
  - Best Practice Advisories
  - MyChart
- Outside of Epic
  - OCTRI Research Data Warehouse (RDW)
  - OCTRI Cohort Discovery

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Recruitment:

Epic tools that can be used for study recruitment are -

- **MyChart:** Invite potentially qualified patients to participate in a study by sending a MyChart message.
- **Best Practice Advisories (BPAs):** Real-time notifications when a patient may be eligible for a study, triggered by specific actions/criteria within a patient encounter.
- **Reporting Workbench:** self-service tool for running simple, real-time queries on patient data.
  - Small subsets of recent data, simple criteria
  - Can replace the tedious task of "schedule scanning" to look for potential subjects.

All options require IRB approvals!

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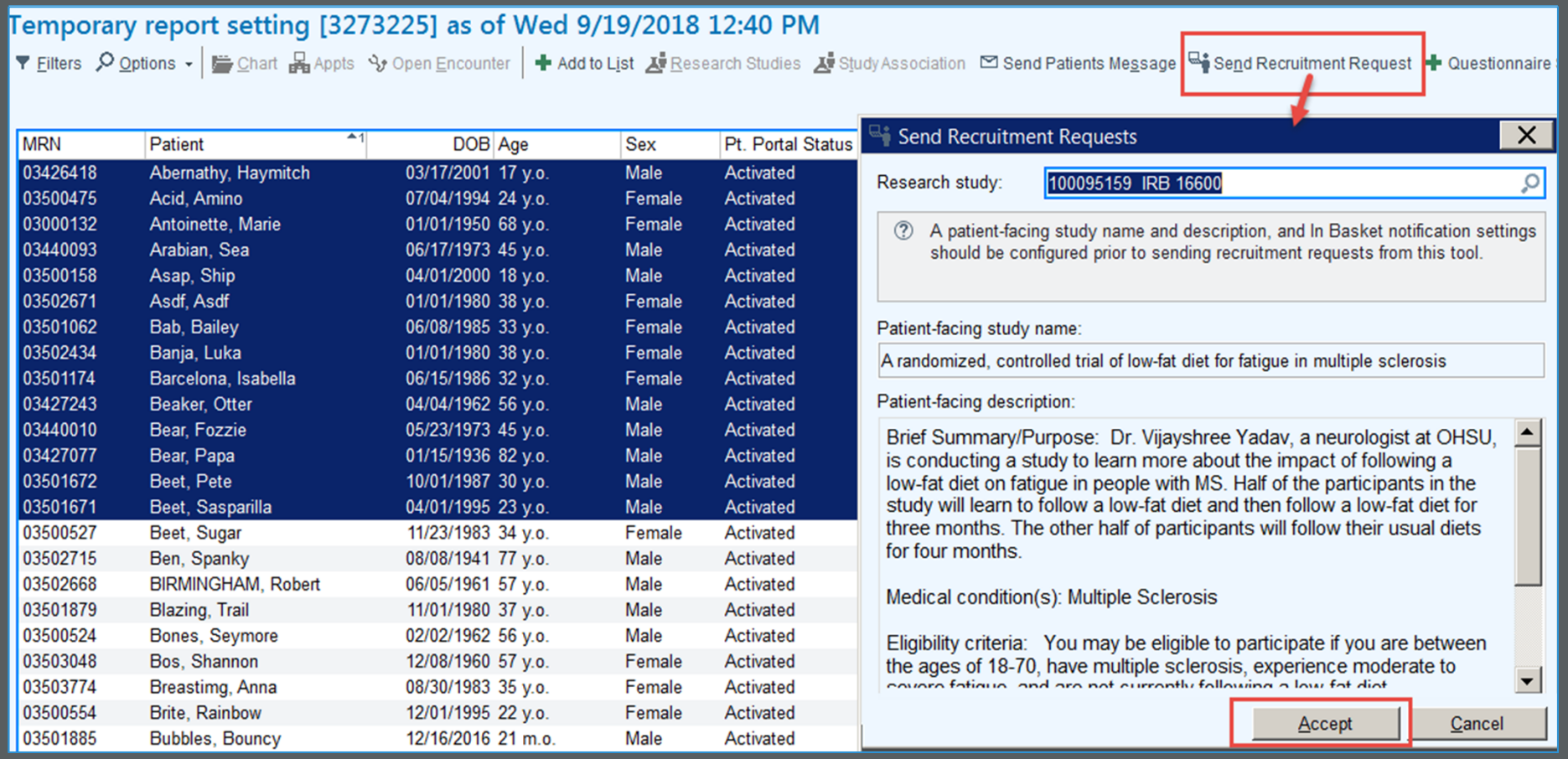
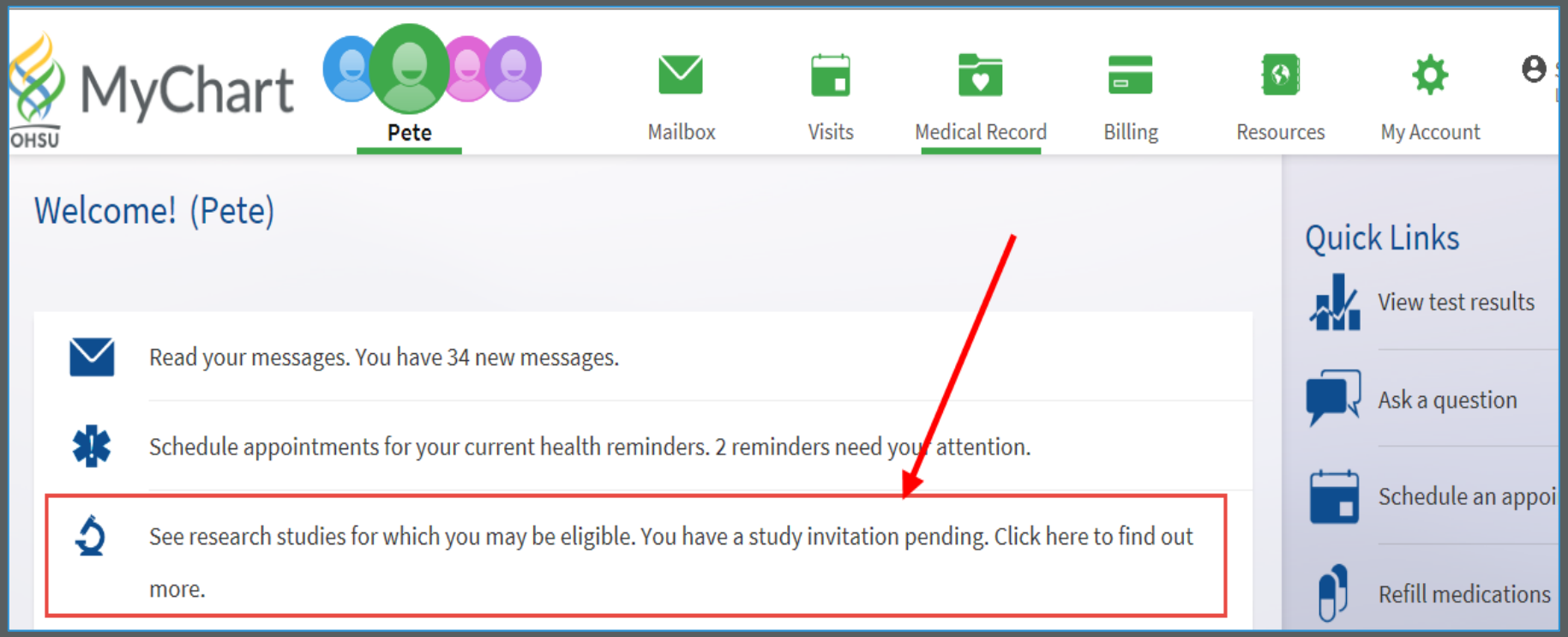
Using MyChart for Recruitment into Clinical Research Studies

- Epic and/or RDW team work with research staff create query based on study-specific criteria
- IRB reviews and approves MyChart message to send directly to potential research subjects identified by query
  - Message indicates that the subject may be eligible for a research study
  - May include a short questionnaire and/or link to an IRB-approved survey or website
  - Subjects may opt out of all future MyChart contact for research studies

Recruitment: MyChart



Recruitment: MyChart



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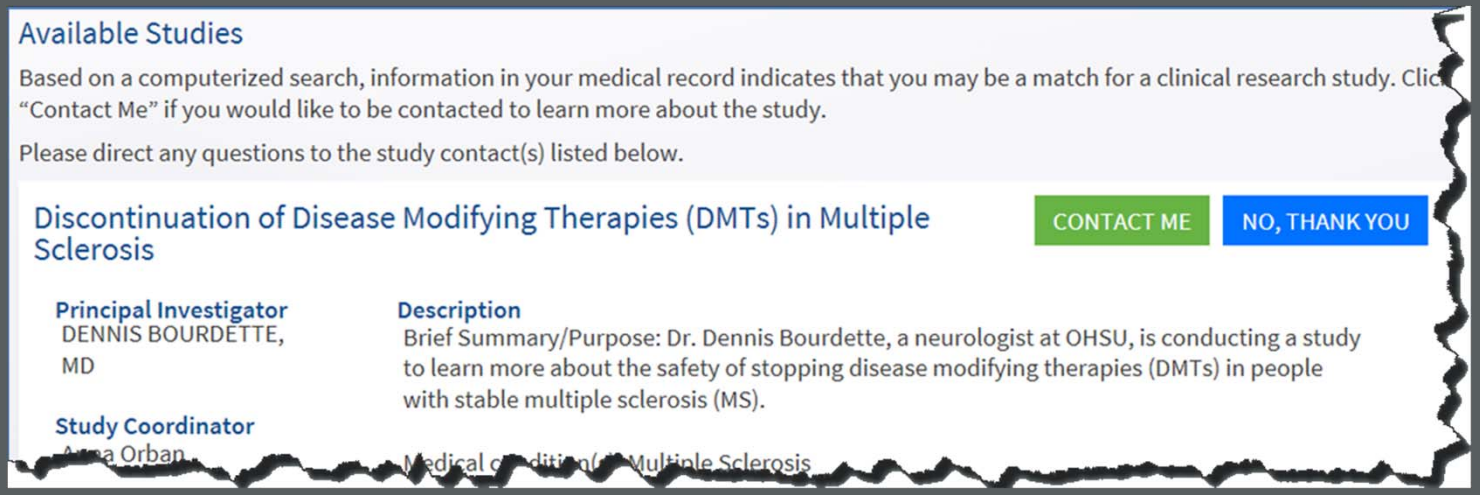
Recruitment: MyChart



Recruiting Healthy Subjects into Registry using MyChart

- CTRC-based Research Volunteer Registry (RVR) with names, contact information, medical information (n > 400), and biorepository of stored samples (n > 130)
- Randomized trial of traditional methods vs. MyChart message for RVR recruitment
  - 858 OHSU patients identified via Epic with active MyChart accounts who were “healthy” by exclusion of most ICD-10 codes and meds
  - Excluded patients seen in Family Medicine clinics
  - Randomly assigned to receive identical MyChart message, letter, or phone call (4:2:1) (482:237:139)
  - No further contact to MyChart recipients; f/u phone call to patients who did not respond to initial letter (n=227); 2 f/u phone calls to patients who did not respond to initial phone call (n=139 and 117)

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Method of contact	# Messages sent	Subjects enrolled into RVR	Subjects donated samples	Subjects opted out of MyChart	Hours of effort per enrolled subject
MyChart	482	23 (4.8%)	7 (1.5%)	10 (2.0%)	3.0
Letter	237	14 (5.9%)	1 (0.04%)	NA	17.3
Phone	139	12 (8.6%)	2 (1.4%)	NA	13.6

- Overall recruitment rates are low
- Recruitment may be higher by phone contact, but much more labor intensive
- Costs of recruitment much higher for letter and phone calls than MyChart

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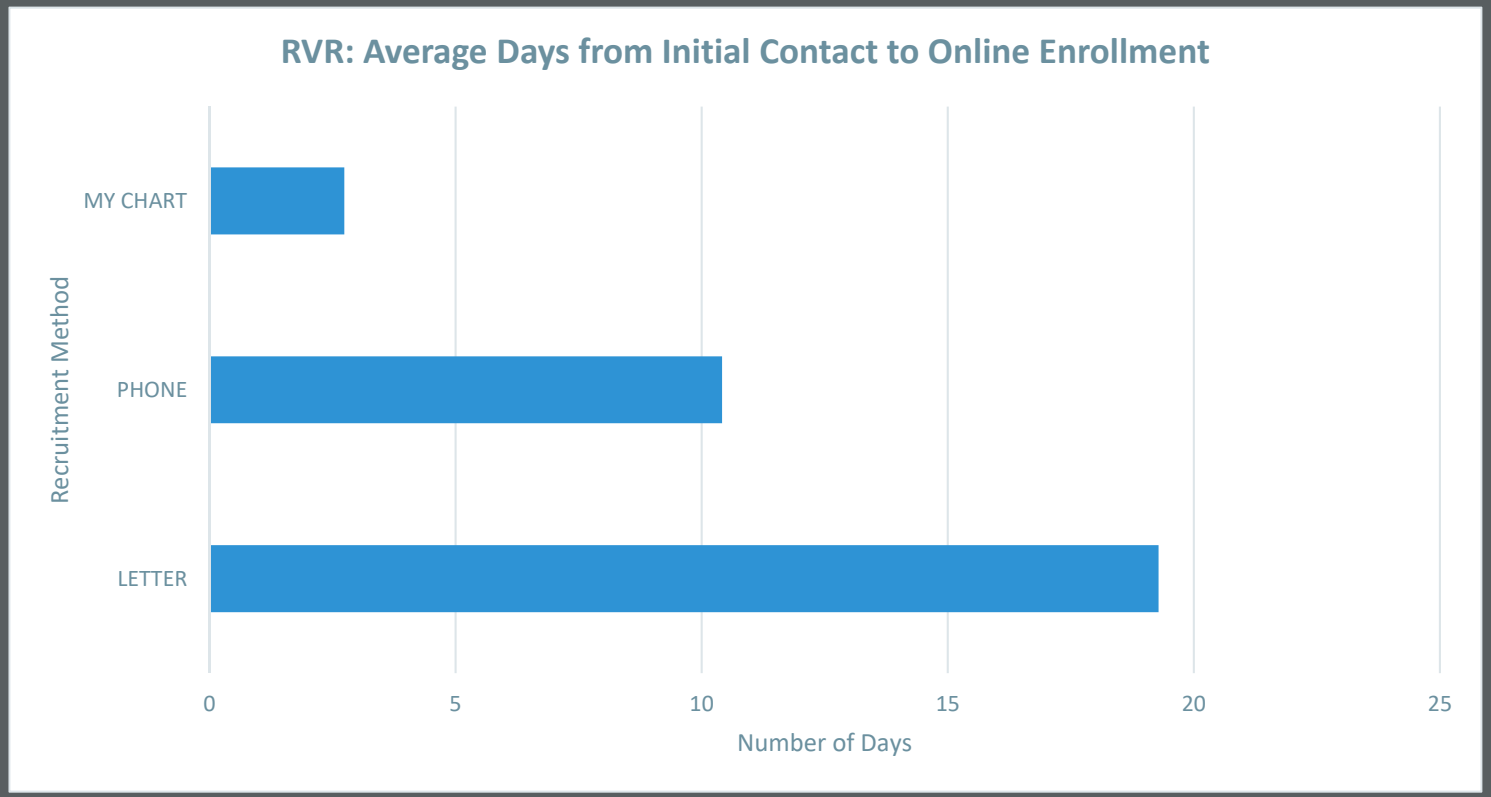

Recruitment rate much faster with MyChart

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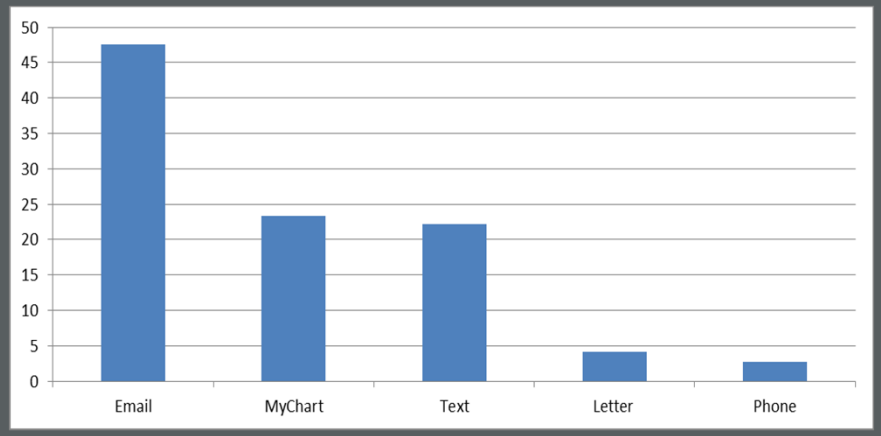
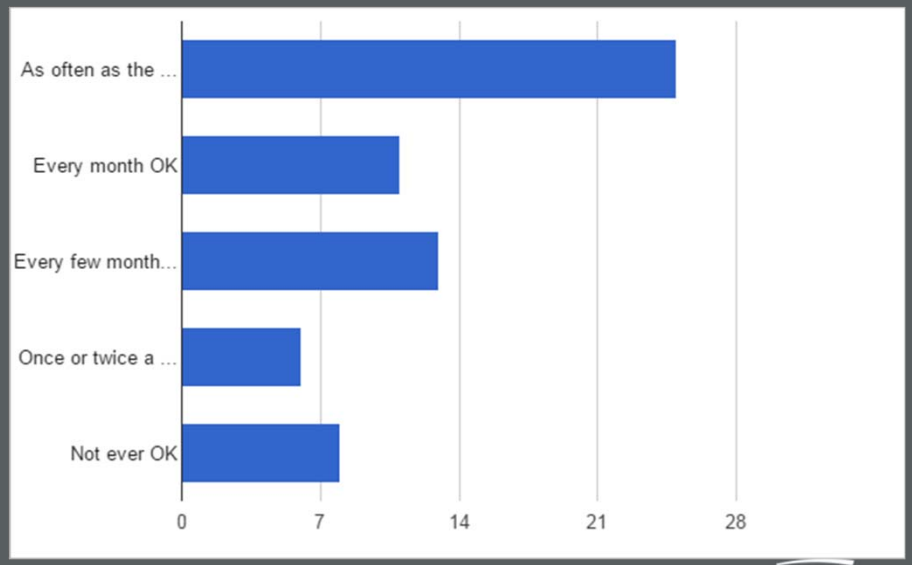
F/u survey 1 month later via same methods asking about acceptance of method for contacting patients:

Original method of contact	Response rate to f/u survey	Acceptable to be contacted via MyChart for research studies	Not acceptable to be contacted via MyChart for research studies	Not sure	Don't use MyChart
MyChart	20 (4%)	86%	0%	9%	5%
Letter or phone call	39 (11%)	57%	17%	7%	19%

Preferred method (top 2 choices):



How often OK to contact:



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Study Conclusions

- MyChart is an acceptable method of contact for research studies for almost all patients
- Recruitment rates are low for all methods, especially for intensive or invasive studies
- Lower cost for MyChart recruitment tool compared to traditional recruitment methods
- MyChart recruitment is faster than traditional methods

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Recruitment: MyChart

Recent example:

Study: Neurology, MS low fat diet study
Message send date: 9/12/18
Number of patients: 1057

In first 24 hours:

172 patients read the invitation (16%)
107 patients responded (10%):
-41 interested
-66 declined

After one week:

Read – 251 (24%)
Responded – 149 (14%)
Interested - 56

More Information about MyChart Recruitment

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When to use MyChart

- You want to reach a large number potential participants quickly
- Your eligibility criteria are specific and translate well to query specifications
- Eligible patients are not Family Medicine patients
- You have sufficient budget for query development

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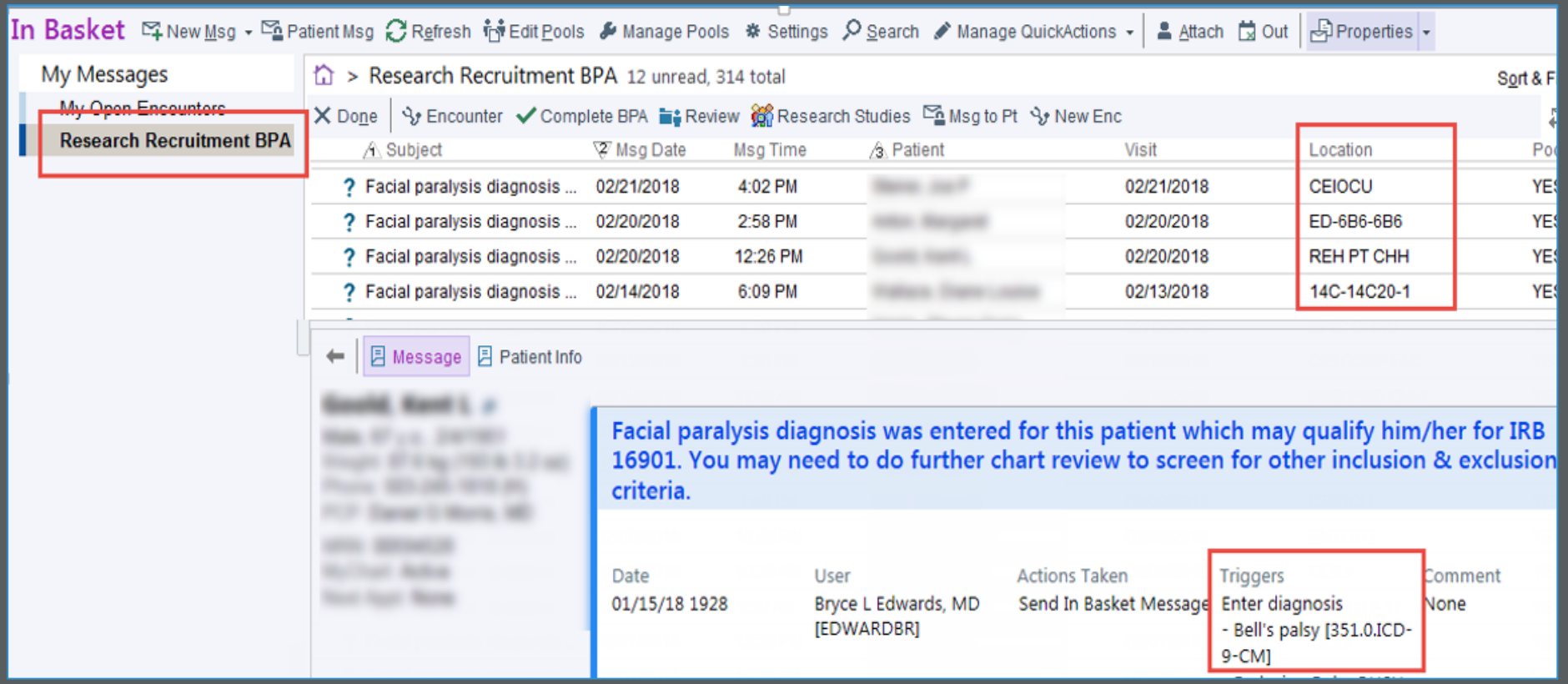
Recruitment: BPA's



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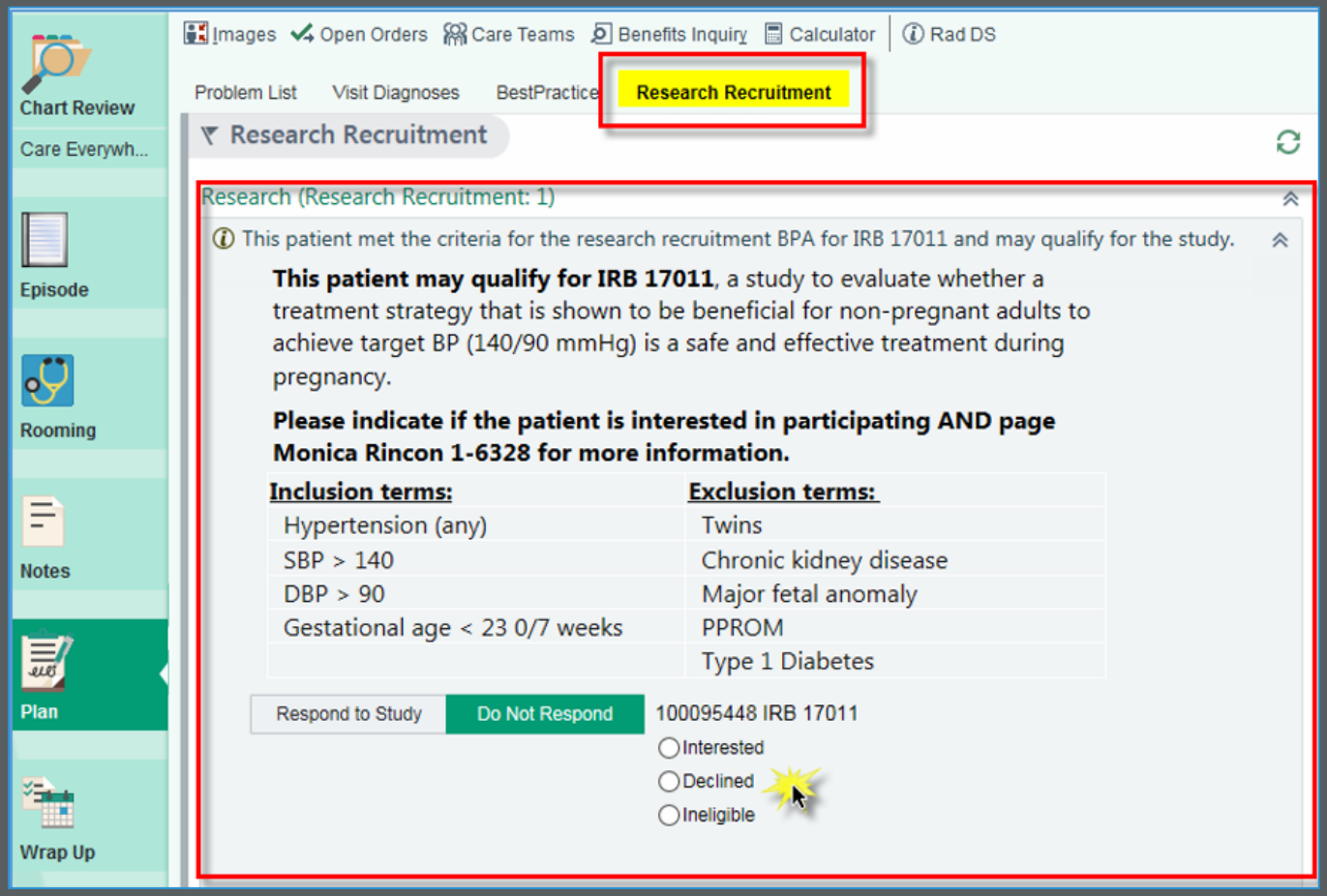
Recruitment: BPA's



[More Information about Recruitment BPAs]

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When to use BPAs

- Your protocol has narrow windows of opportunity. For example:
  - Enroll before any treatment for a condition has commenced
  - You need to collect a placenta specimen
- You have very specific eligibility criteria
- For passive alerts, you have provider buy in
- You have sufficient budget for Epic system programming

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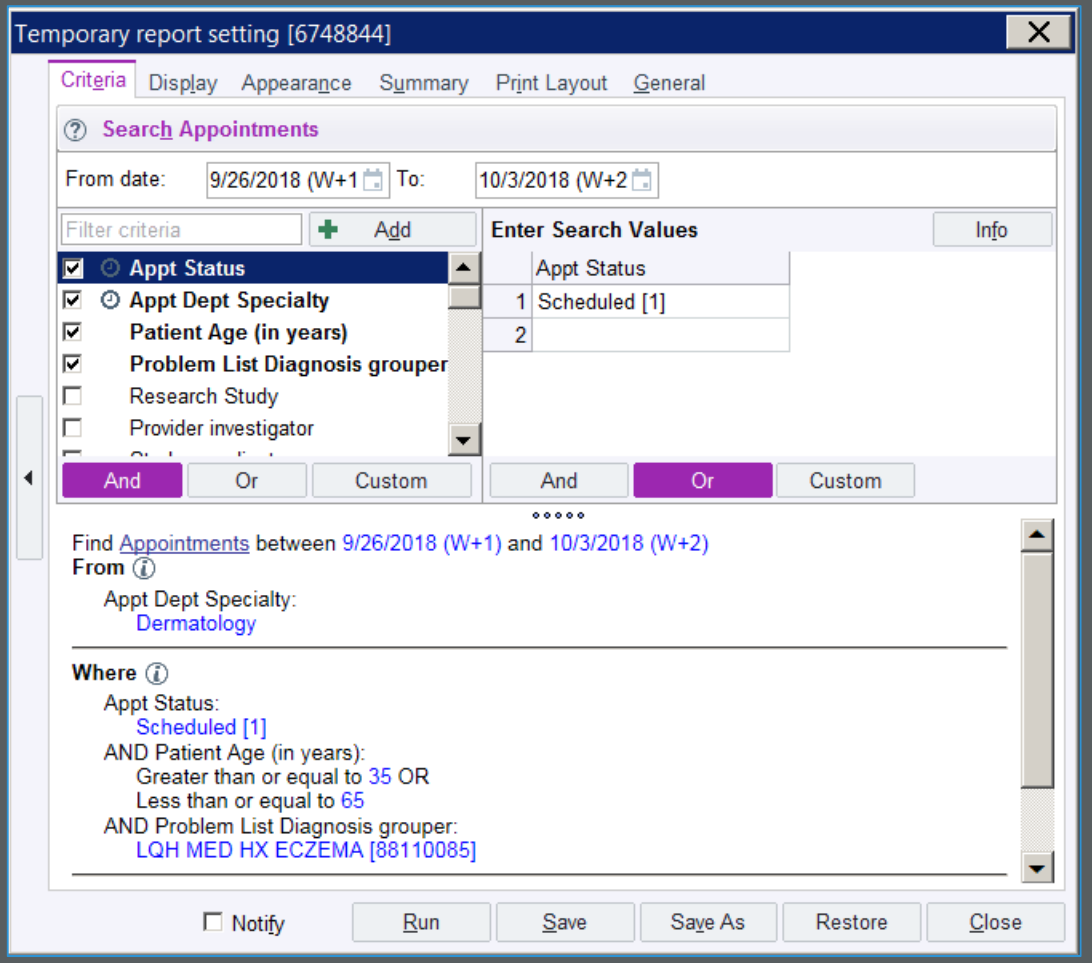
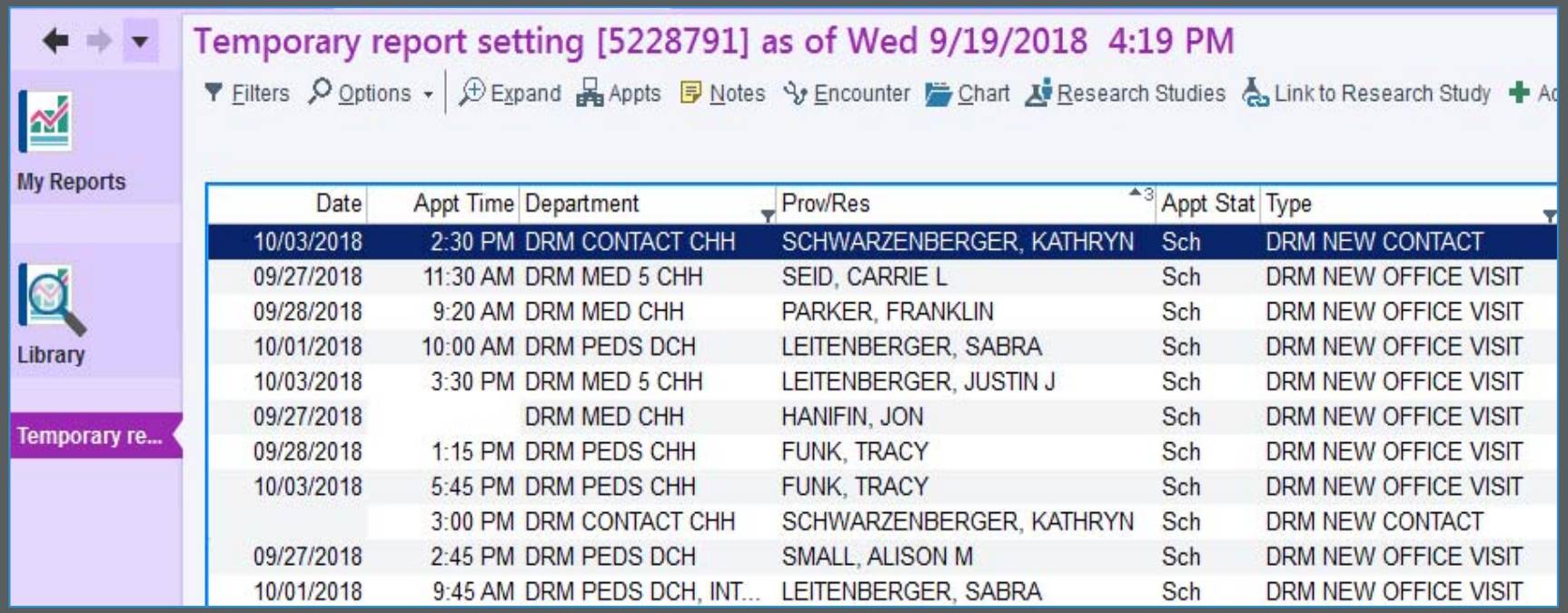
Recruitment: Reporting Workbench

- Specify date range and search criteria
- "Save As" for a custom report that can be run anytime and shared with other users



Recruitment: Reporting Workbench



Date	Appt Time	Department	Prov/Res	Appt Stat	Type
10/03/2018	2:30 PM	DRM CONTACT CHH	SCHWARZENBERGER, KATHRYN	Sch	DRM NEW CONTACT
09/27/2018	11:30 AM	DRM MED 5 CHH	SEID, CARRIE L	Sch	DRM NEW OFFICE VISIT
09/28/2018	9:20 AM	DRM MED CHH	PARKER, FRANKLIN	Sch	DRM NEW OFFICE VISIT
10/01/2018	10:00 AM	DRM PEDS DCH	LEITENBERGER, SABRA	Sch	DRM NEW OFFICE VISIT
10/03/2018	3:30 PM	DRM MED 5 CHH	LEITENBERGER, JUSTIN J	Sch	DRM NEW OFFICE VISIT
09/27/2018		DRM MED CHH	HANIFIN, JON	Sch	DRM NEW OFFICE VISIT
09/28/2018	1:15 PM	DRM PEDS CHH	FUNK, TRACY	Sch	DRM NEW OFFICE VISIT
10/03/2018	5:45 PM	DRM PEDS CHH	FUNK, TRACY	Sch	DRM NEW OFFICE VISIT
	3:00 PM	DRM CONTACT CHH	SCHWARZENBERGER, KATHRYN	Sch	DRM NEW CONTACT
09/27/2018	2:45 PM	DRM PEDS DCH	SMALL, ALISON M	Sch	DRM NEW OFFICE VISIT
10/01/2018	9:45 AM	DRM PEDS DCH, INT...	LEITENBERGER, SABRA	Sch	DRM NEW OFFICE VISIT

[More Information about Reporting Workbench]

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When to use Reporting Workbench

- You have straightforward eligibility criteria that can be searched.
  - e.g. “show me all patients in my clinic that…”
- and … you need to manually review chart in Epic

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Research Data Warehouse (RDW)

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What is the RDW?

- IRB-approved repository of clinical and research data created and maintained by OCTRI ***specifically for research purposes***
- Contains Epic data as primary data source
  - Also includes Pathology, Cancer Registry
  - Integrates eIRB and opt-out data to facilitate compliance
- Organized to allow aggregation across millions of patient records quickly

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RDW -Research Activities Supported

- **Preparatory to Research**
  - Feasibility (counts and aggregates)
  - Cohort identification

- **Conduct of Research Protocol**
  - Patient lists for recruitment
  - Data extracts chart review, safety monitoring, registries etc.
  - Large dataset extraction (e.g. epidemiology, notes for NLP projects)

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What types of data are available?

- Demographic information
  - gender, race, ethnicity, preferred language, employment status
- Provider, insurance coverage
- Birth history
  - date of birth, gestation, birth weight
- Vitals
  - blood pressure, weight, height, pain ratings
- Contact and census information
  - Addresses, phone, census information
- Lab orders and results
- Diagnoses, problem lists, medical history (ICD-9, ICD-10)
- Hospital encounter information
- Medication lists and orders
- Ambulatory encounter information
  - clinic date, provider, department/clinic, PCP, chief complaint, cancel reason
- Procedures
- Surgeries
- Insurance coverage for patient encounter
  - benefit plan, insurance class, co-pay

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Accessing the RDW

- Data released to investigators in three ways
  - **Counts** - no IRB required.
  - **De-identified** - IRB determination of “non-human subjects research”
  - **Fully identifiable** - requires IRB approved study

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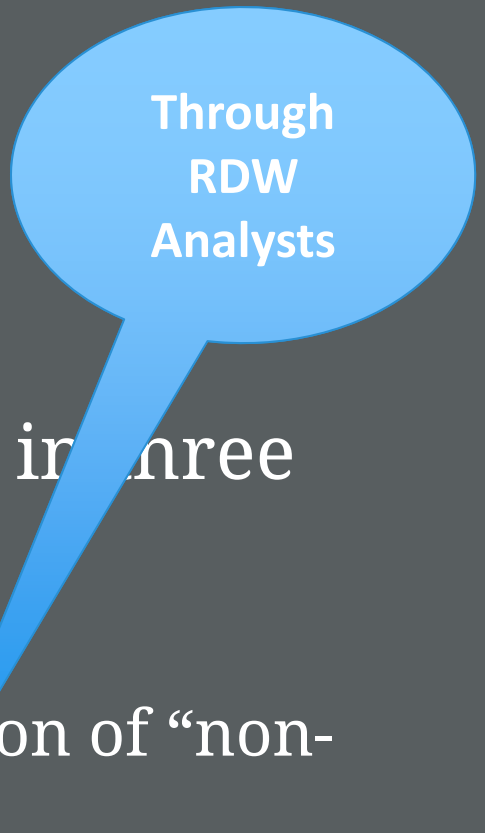

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Cohort Discovery

Self-service RDW queries for patient counts

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Cohort Discovery - Purpose

Provide researchers with a self-service web-based tool to determine study feasibility or discover patient cohorts during the “preparatory to research” phase by obtaining counts of patients based upon specified inclusion and/or exclusion criteria

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Cohort Discovery - Query Workflow

* Optional

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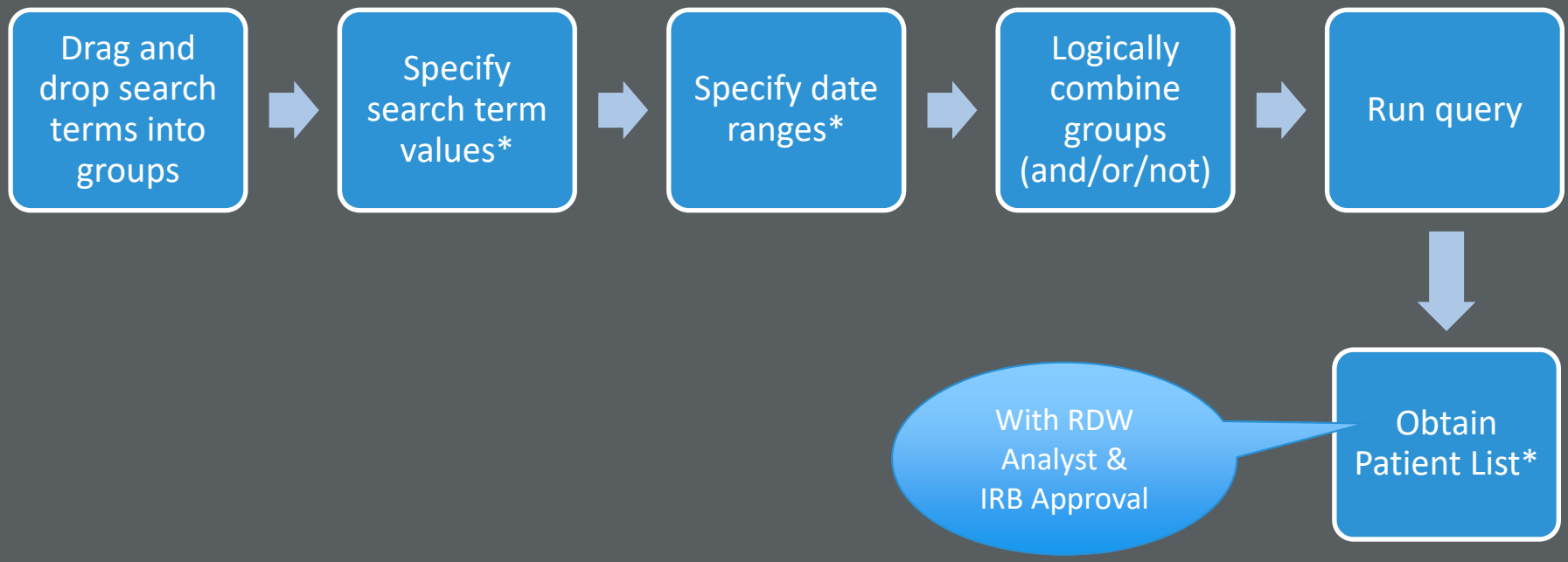
Cohort Discovery - Query Workflow



* Optional

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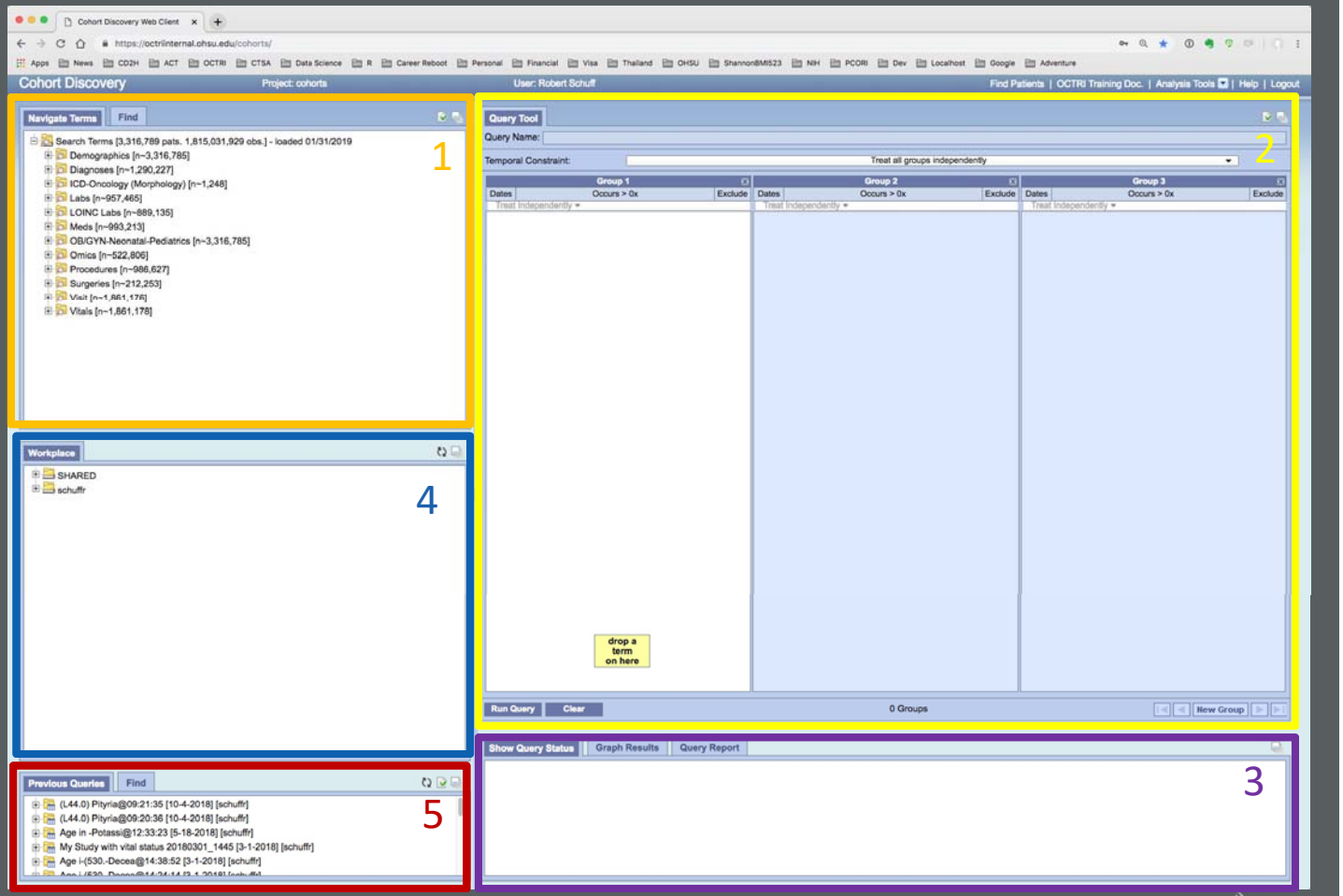
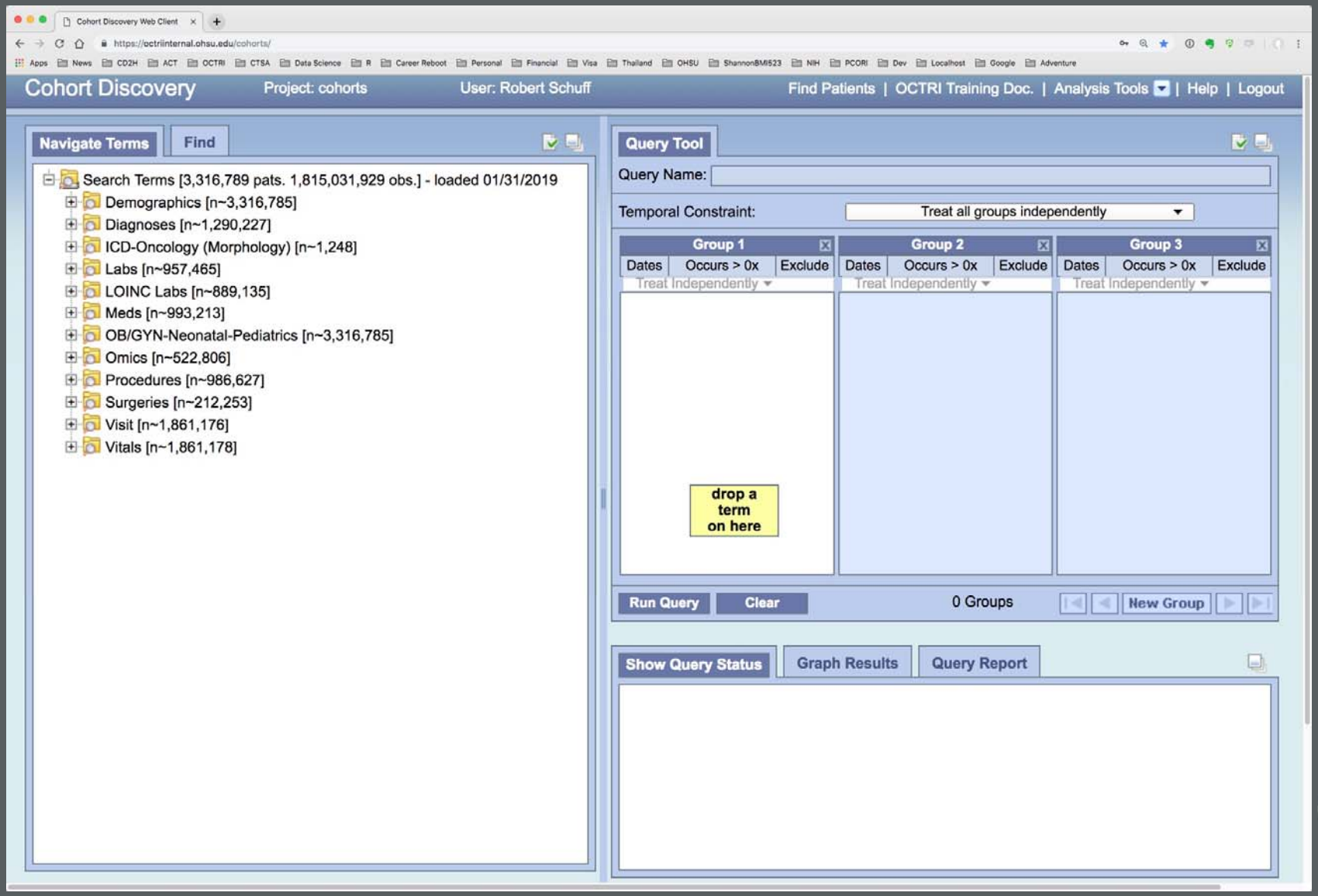
Cohort Discovery - Screen

1. **Navigate/Find Terms** used to find and select concepts to include in query
2. **Query Tool** area where queries are built and specified
3. **Query Status** query results displayed
4. **Workplace** used to save queries to your private or a shared area for collaborative development
5. **Previous Queries**



Cohort Discovery Screen



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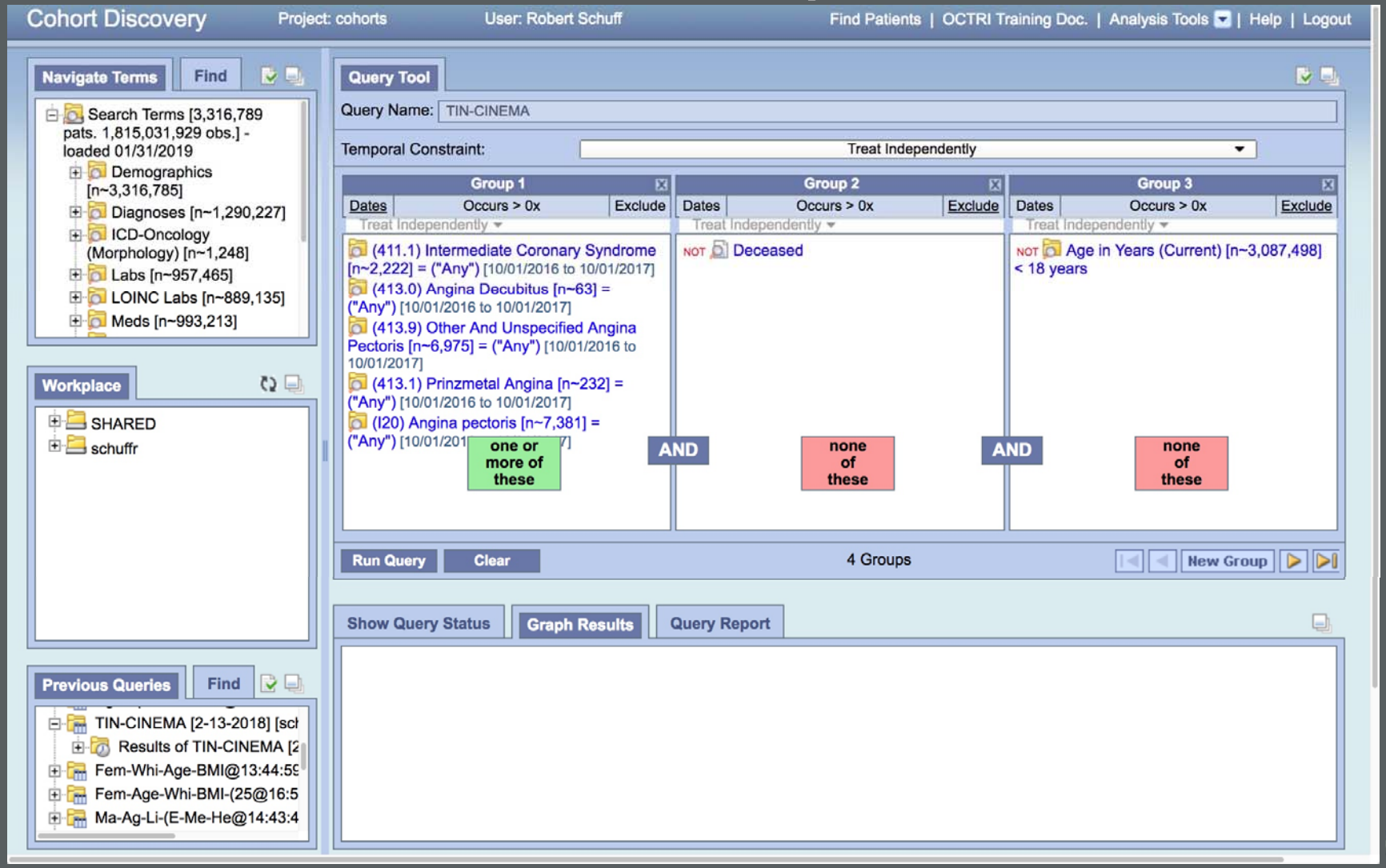
Cohort Discovery Screen



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Protecting Patient Privacy

- Data are de-identified before being loaded
  - Surrogate patient identifiers
  - All dates associated with a given patient are shifted by a random amount at least +/- 15 days
  - Patients older than 89 are all recorded as 90 yo
- True patient counts are obfuscated
  - Returned count is perturbed by up to +/- 3 each time the query is invoked
  - If the true count is less than 10 the returned result is “Less than 10”
- Accounts locked if activity is suspicious

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When to use RDW & Cohort Discovery

- **Before you begin your project to assess study feasibility**
- **To start your recruitment planning process**
  - Do we potentially have enough patients?
  - How many patients like this do we have each year?
- **You may benefit from an RDW analyst's expertise when:**
  - You have eligibility rules that include temporally related criteria/events
  - There are only markers for eligibility criteria in Epic
    - e.g. chronic medication use
  - You need a more efficient way to perform review of notes or unstructured data (e.g. path reports)

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How much do these recruitment tools cost?

- Cohort Discovery
  - Usage is free of charge, self-service
  - Patients lists *generally* free of charge
- RDW query
  - Fee for service at OCTRI Informatics hourly rate
- Reporting workbench
  - Self-service, free of charge
- BPAs
  - Fee for service at ITG Epic Research Team rates
- MyChart
  - Fee for service at ITG Epic Research Team rates and OCTRI Informatics hourly rate

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OCTRI Recruitment Services

Through OCTRI Recruitment Services, we aim to equip and support the research community at OHSU with the tools they need for successful study recruitment and retention:

- Recruitment Consultations
- Recruitment Navigation
- Recruitment Toolkit – ***Epic document releasing in March!***

For more information, additional resources, or to request a recruitment consultation, please email octrirecruitment@ohsu.edu or visit our website at https://www.ohsu.edu/octri

Have more questions?

- "OCTRI Research Navigator"
  - octri@ohsu.edu

- "OCTRI Recruitment"
  - octrirecruitment@ohsu.edu
- "OCTRI Informatics Research Support"
  - octrihlp@ohsu.edu
- "Epic Research Team"
  - EpicResearchTeam@ohsu.edu

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Thank You!