

ICTR Recruitment Tools Presented by: Cassie Lewis-Land

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RIU Team

- Jeanne Charleston, RN, BSN
- Casey Overby, PhD
- Daniel Mullin, PhD
- Kelly Gleason, PhD, RN
- Hailey Miller, RN, BSN
- Monica Guerrero Vazquez, MS
- Community Partners
- Administrative Coordinator: Mary Thomas
- Program Manager: Cassia Lewis-Land, MS
- Deputy Director: Cheryl Dennison Himmelfarb, PhD, RN







RIU Aims

The RIU aims are to:

- Establish a comprehensive <u>suite of customizable services, tools, and training</u> to promote efficient and effective local recruitment and retention;
- Develop innovative and <u>scalable informatics approaches</u>, including computational phenotyping, that more accurately identifies and engages potential study participants and helps research teams manage tradeoffs between sensitivity and specificity to better target those who are eligible; and
- Advance recruitment science by rigorously engaging our CTSA community and <u>testing innovative recruitment strategies</u> that can be implemented locally and shared nationally.



Services and Tools

- Needs Assessment
- Study Design Assessment
- Pre-screening / Cohort Discovery
- Recruitment Feasibility Survey / Focus Group
- Outreach to Stakeholder Partners
- Customized Recruitment and Retention Plans
- Recruitment and Retention Troubleshooting
- Community Research Advisory Council (C-RAC)





The MyChart Recruitment Service

- We established the MyChart Recruitment Service in 2017
- MyChart Recruitment Service uses computable phenotyping with Epic to identify study specific eligible patients and patient portal messaging to recruit eligible participants
- To date the service has been utilized by 17 research teams studying various populations and topics of interest



Overview

MyChart Recruitment Service is a multi-stage process with collaborations between:

- Core for Clinical Research Data Acquisition (CCDA)
- Program to Accelerate Clinical Research using Epic (PACE)
- Recruitment Innovation Unit (RIU)

• MyChart Recruitment Team meets with the study team to discuss project details and determine fit for the service

•Data Analytics manager meets with study team to determine feasibility of inclusion criteria

• After IRB and committee approval, the analytics team creates a query for computational phenotyping of the target population

• Analytics team sends the database query to the EMR team

• EMR team member applies the database query to create a report of eligible patients

- Service staff use the EMR report to send messages to the eligible patients identified through the query
- Interested patients contact the study team to pursue participation in the study



MyChart User Representativeness

Characteristic	Johns Hopkins Health System*+	Active MyChart Users		
Total N (%)	1,308,820 (100)	519,800 (40)		
Sex				
Female	746,027 (57)	313,888 (60)		
Male	562,792 (43)	205,890 (40)		
Race				
Black	327,205 (25)	97 100 (19)		
White	772,204 (59)	355,134 (68)		
Asian	65,441 (5)	33,414 (b)		
Other	143,970 (11)	41,714 (8)		
Ethnicity				
Not Hispanic or Latino	1,164,850 (89)	475,779 (92)		
Hispanic or Latino	78,529 (6)	22,094 (4)		
Unknown/Patient refused	65 <i>,</i> 441 (5)	20,975 (4)		
Age in Years				
0-17	217,590 (17)	37,182 (7)		
18-39	327,600 (25)	134,972 (26)		
40-59	343,160 (26)	156,917 (30)		
60-79	333,590 (25)	144,021 (28)		
80+	86,900 (7)	26,880 (5)		

MyChart User Representativeness:

- 40% of JHHS patients were active MyChart users.
- Similar to JHHS population in terms of age and sex.
- More likely to be white and non-Hispanic.



*Includes individuals that have had at least one diagnosis, medication order, laboratory result, OR procedure since 9/1/2016.

⁺Data in JHHS column do not include individuals greater than 90.

MyChart Recruitment Messaging and Study Characteristics

Study Cł	naracteristics		Messaging C	haracteristics		Recruitment Efficacy N (%)			
Population Age	Health Concern	Report Size	Message Batch Size	Frequency	Duration (in mos.) *	Response Rate*	Eligibility Rate*	Enrollment Rate*	
			Сотр	leted Recruitme	nt				
70+	Vitamin D and Falling	6896	250-1000	Bimonthly	5	116 (1.7)	49 (0.7)	12 (0.2)	
<1	Peanut Allergies	409	Variable	Monthly	3	16 (4.3)	11 (3.0)	10 (2.7)	
>18	Atrial Fibrillation	1303	303-1000	Monthly	2	127 (9.7)	127 (9.7)	127 (9.7)	
50-90	Type II Diabetes	1382	250	Monthly	6	34 (2.5)	1 (0.07)	0	
18-45	Asthma	1599	200	Monthly	7	44 (3.1)	9 (0.6)	9 (0.6)	
>18	Diet and Gout	1229	250-500	Bimonthly	3	53 (4.1)	20 (1.6)	9 (0.7)	
Suspended Recruitment					nt				
>40	COPD	14336	250-1000	Variable	16	84 (1.5)	2 (0.03)	2 (0.03)	
3-13	Brain and Appetite	3719	250-500	Bimonthly	4	48 (1.8)	16 (0.6)	12 (0.4)	
18-80	COPD	1171	200	Monthly	5	43 (4.1)	-	0	
	Active Recruitment								
<1	Peanut Allergies	2083	200	Variable	11	7 (0.3)	4 (0.2)	3 (0.1)	
13-22	Weight Loss	9978	150-1000	Monthly	17	135 (0.9)	44 (0.3)	44 (0.3)	
>18	Mood Disorders in Pregnancy	1868	350	Monthly	9	116 (5.0	56 (2.4)	21 (1.0)	
4-17	Mood Disorders	15709	250-1000	Bimonthly	10	66 (0.5)	-	0	
>18	Anemia	9096	500	Bimonthly	8	166 (2.4)	1 (0.00)	1 (0.00)	

Note: *Data is current as of 05/10/2019, Please see extra slides to find definitions of report size, batch size, response rate, eligibility rate, and enrollment rate

Messaging Characteristics:

- Frequency of messaging ranged from weekly to monthly
- The average active messaging period was 6 months

Efficacy Rates:

- The average response rate was 3%
- The average eligibility rate was 1.6%
- The average enrollment rate was 1.13%



Research Messaging Opt In





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MyChart Messaging Template

Hello,

In addition to providing high-quality medical care, Johns Hopkins facilitates distinguished research with the ultimate goal of improving health.

I am reaching out today regarding a research study that may be of interest to you. This research study aims to: *This is where you can include title, purpose of the study/why it is necessary, etc.* A computer search of information in Johns Hopkins medical records found you might be eligible for this study. Specifically we are looking to identify people who XXXX and were seen at Johns Hopkins facility in the past year.

Other factors that might make you qualify to participate in this study include:

Participation in this study is voluntary. If you decide not to be part of this study, it will not change the medical care you receive.

If you are interested in participating, please contact our study team at **email** or **phone** and one of our team members would be glad to speak with you and answer any questions you may have. You may also complete this short survey and a member of our research team will contact you [here will be inserted a unique REDCap study specific link for tracking of participant interest and follow-up]

Sincerely,

PI Name

IRB Number

Mandatory signature of Dr. Ford

Daniel E. Ford, MD, MPH Vice Dean for Clinical Investigation Director, Institute for Clinical and Translational Research ICTR Research Recruitment Office

Mandatory language required

Participation in this study is voluntary. If you decide not to be part of the study, it will not change the medical care you receive. For more information and frequently asked questions (FAQs) related to research recruitment through MyChart, visit



Report Display in Epic

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Library		Overby Taylor IRB00107475 RWB Survey Report Ready to view - 1504 results Bennett IRB00174516 Patient Recruitment Outreach	Earley IRB00103955 Patient Recruitment Outreach Ready to view - 18952 results Magge IRB00178127 Patient Recruitment Outreach	Eakin IRB00091482 Patient Recruitment Outreach Ready to view - 2297 results	Heller NA_00070373 Patient Recruitment Outreach Ready to view - 1918 results	
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Selecting Eligible Patents

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				05/24/1935	84 years	F	Black or African American	Not Hispanic or Latino [1]	Alive	Activated	(None)	Email,MyChart,	04/01/2019	Patient Portal Message	
				12/16/1938	80 years	F	White or Caucasian	Not Hispanic or Latino [1]	Alive	Activated	(None)	Email,MyChart	08/06/2018	Patient Portal Message	
				07/04/1943	77 years	F	Black or African American	Not Hispanic or Latino [1]	Alive	Activated	(None)	Email,MyChart	06/06/2019	Patient Portal Message	
				08/22/1944	75 years	F	Black or African American	Not Hispanic or Latino [1]	Alive	Activated	(None)	Email,MyChart,	06/10/2019	Patient Portal Message	
				09/09/1942	79 years	М	White or Caucasian	Not Hispanic or Latino [1]	Alive	Activated	(None)	Mail,MyChart	08/14/2018	Patient Portal Message	
				01/25/1949	71 years	М	Black or African American	Not Hispanic or Latino [1]	Alive	Activated	(None)	Mail,MyChart	09/24/2018	Patient Portal Message	
				04/13/1919	99 years	F	White or Caucasian	Not Hispanic or Latino [1]	Alive	Activated	(None)	Mail,MyChart	08/14/2018	Patient Portal Message	
				12/01/1942	77 years	М	Black or African American	Not Hispanic or Latino [1]	Alive	Activated	(None)	Email,MyChart	06/06/2019	Patient Portal Message	
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Sending the Message

		Bulk Communication	L. C.		×
1. Mail (0 patients) 2	2. Phone (0 patients) <u>3</u> . MyChart ((18 patients)			
Subject:		A	Reply	Options	
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Message Center in Patient Portal



Example of MyChart Message





What happens when a patient responds?

- We recently created a REDCap link that can be personalized to each study
- These links are embedded into the message for interest patients to complete
- After completion, the study coordinator is notified
- An affiliated link is sent to the research coordinator to follow up on patient eligibility and enrollment status
- These surveys track basic demographics, including race, age, ethnicity and gender



Barriers and Strategies for Improvement

Identified Barriers	Strategies for Improvement
Study team's intake capacity	 Customized scheduling Controlled batch sizes REDCap survey link
Saturation of frequently targeted populations	 Controlled batch sizes Strategic messaging schedule Adding eligibility criteria
Low response rates for general populations	1. Adding eligibility criteria to create more specific phenotypes
Limited representativeness for specific populations within MyChart	 Research consults TriNetX exploration Multiple recruitment methods



Is MyChart Right for your Team/Project ?

Some things to think about are:

- 1. Your target population
 - − Are they in Epic? \rightarrow Run a report on TriNetX
- 2. Are they represented among MyChart Users?
 - Review the demographics of MyChart users
- 3. Can your eligibility criteria be identified within the EMR?
 - Keep in mind that certain data elements are more difficult/costly to query due to time requirements, such as:
 - o flowsheet values (devices, lines/drains, vitals),
 - o imaging results and pathology reports contained in semi-structured notes, and
 - socioeconomic indicators such as education level, median household income, homelessness, and whether or not the patients speak English fluently
 - Keep in mind that reports with fewer eligible patients will have a high cost per person
- 4. Are you using other recruitment methods in tandem to MyChart?
- 5. Do you have the staff members available to be attentive to inquiries following messages being sent?



The responsibilities of the Study Team when using MyChart for recruitment





Other Recruitment Tools

REDCap

REDCap is a secure web application for building and managing online surveys and databases

Both surveys and databases can be built:

- By an online method from a web browser using the "Online Designer"
- By an offline method by constructing a 'data dictionary' template file in Microsoft Excel, which can be later uploaded into REDCap
- By a combination of the online and offline methods

Features:

- Automated export procedures for seamless data downloads to Excel and common statistical packages (SPSS, SAS, Stata, R)
- A built-in project calendar
- A scheduling module
- Ad hoc reporting tools
- Advanced features, such as branching logic, file uploading, and calculated fields.



ICTR Informatics Core (I2C) / EPIC for Research

1. Inbox notification that a study participant is in a Johns Hopkins ED or has been admitted as an inpatient at Johns Hopkins

- 2. SlicerDicer * for:
 - i. Generating patient counts
 - ii. Accessing identifiable data (only available for patients under an investigator's care)
- 3. Epic reports to support research (the approval of the Epic Research Request Review Committee)
- 4. TriNetX *:
 - i. Find patient counts for a study cohort
 - ii. Run analysis tools to examine demographics, labs, meds, and diagnoses for a study cohort
 - iii. Examine the effect that inclusion and exclusion criteria may have on narrowing a study cohort
- * Denotes a self-service tool



Epic for Research

Questions about this resource including information about current pricing for custom programming work can be directed to :

- Diana Gumas <u>dgumas@jhmi.edu</u> Senior Director of Clinical Research IT 410-614-7004
- Benjamin Smith <u>bsmi</u> EPIC Application Lead (PACE) 410-234-9549

<u>bsmit159@jhmi.edu</u> 34-9549

 Thomas Grader-Beck, MD EPIC Clinical Lead (PACE) tgb@jhmi.edu 410-550-2039



Questions and Contacts

ICTR MyChart Recruitment Service 410-361-6467 <u>Research recruitment@jhmi.edu</u>

Hailey Miller: <u>hmille45@jhmi.edu</u> Cassie Lewis-Land: <u>clewis4@jhmi.edu</u>

<u>https://ictr.johnshopkins.edu/programs_resources/programs-resources/research-participant-recruitment-and-retention/my-chartepic-based-recruitment/</u>



Key Definitions

<u>Report Size</u>: total number of patients that were identified through the computable phenotype criteria as eligible for a given report

<u>Batch Size</u>: total number of patients that are messaged each time messages are distributed

<u>Response Rate</u>: total number of interested patients who inquired with the respective study team following receiving a message divided by the total number patients who received a message for that respective study

<u>Eligibility Rate</u>: total number of patients who qualified as eligible for the respective study after responding to a message divided by the total number of patients who received a message for that respective study

Enrollment Rate: total number of patients that enrolled in the respective study after receiving a message divided by the total number of patients who received a message for that respective study MOPKINS