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Patient portal messaging for research participant recruitment: A valuable tool in the recruitment toolbox

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The authors declare no conflicts of interest

The authors have no disclosures

By the end of this presentation, the learner will be able to:

1. Describe 2-3 benefits of using the electronic medical record and patient portal to identify and recruit research participants.
2. Describe the representativeness of populations recruited through patient portal messaging.
3. Describe the effectiveness of using patient portal messaging for recruitment across different patient populations and clinical profiles.

- Electronic Medical Records (EMRs) are beginning to be utilized for research purposes.
- Patient portal messaging (PPM) allows investigators to securely connect and engage with potential participants.
- Preliminary data shows that PPM can be an effective method for research recruitment.
- Johns Hopkins initiated the MyChart Recruitment Service in 2017.

Irizarry et al. (2015); Otte-Trojel et al. (2015); Gleason et al. (2018)

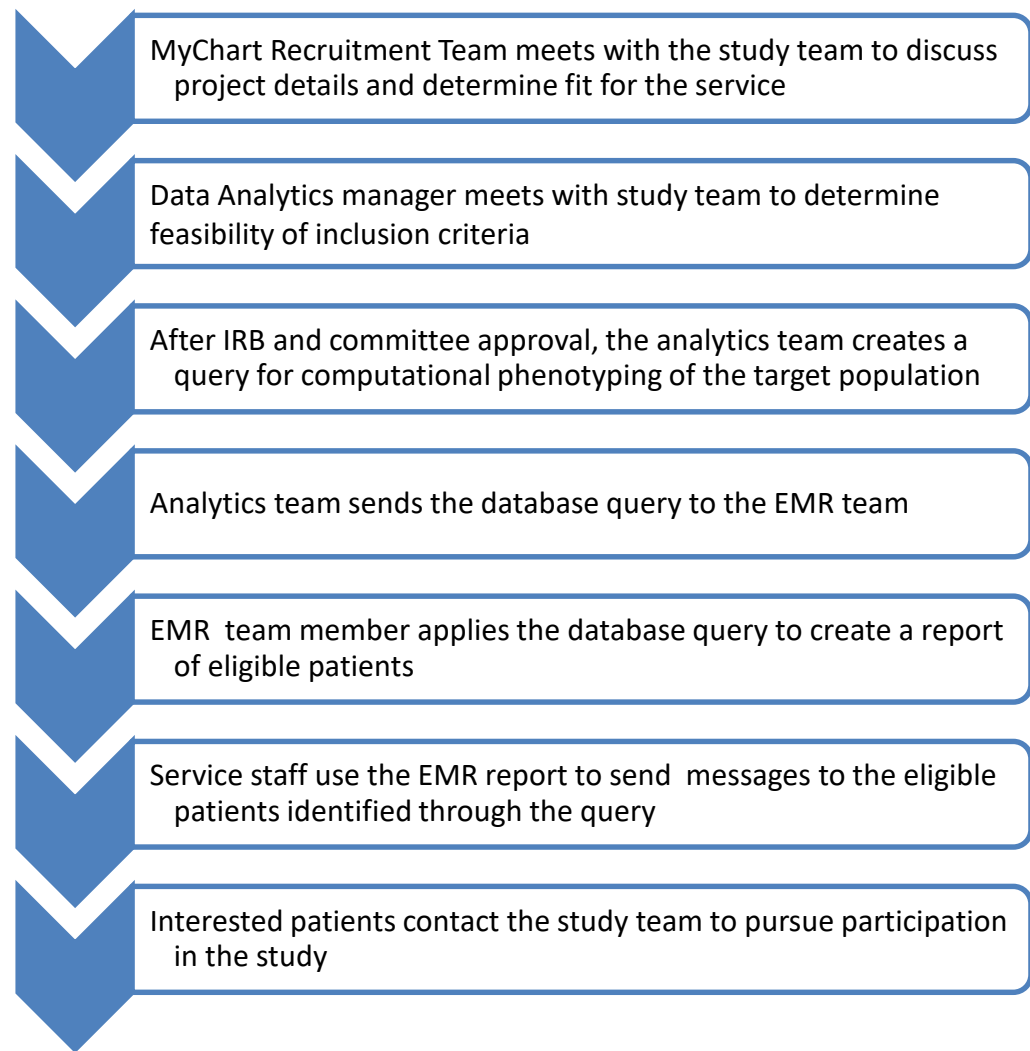


The purpose of this presentation is to

1. Describe an institution-wide patient portal recruitment service and
2. Report our preliminary findings of the recruitment method's efficacy.

MyChart Recruitment Service:

- Multi-stage process
- Collaboration between data analysts, experts in recruitment methods, and clinical researchers



To monitor the representativeness and efficacy of the service, we examined:

1. Sociodemographic characteristics of active MyChart users compared to all patients within the health system EMR.
2. Messaging response and enrollment rate among 13 study teams.
3. Satisfaction with messaging among a subsample of patients who received PPM.

PPM Active 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.

Characteristic	Johns Hopkins Health System**	Active PPM 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 (6)
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	65,441 (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)

*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.



Results: PPM Characteristics and Efficacy

Study Characteristics		Messaging Characteristics				Recruitment Efficacy		
Population Age	Health Concern	Report Size	Message Batch Size	Frequency	Duration (in mos.) *	Response Rate*	Eligibility Rate*	Enrollment Rate*
<i>Completed Recruitment</i>								
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)
<i>Suspended Recruitment</i>								
>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
<i>Active Recruitment</i>								
<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 Disorder in Pregnancy	1868	350	Monthly	9	116 (5.0)	56 (2.4)	21 (1.0)
4-17	Mood Disorder	15709	250-1000	Bimonthly	10	66 (0.5)	-	0
>18	Anemia	9096	500	Bimonthly	8	166 (2.4)	1 (0.00)	1 (0.00)

*Data current as of 5/10/19

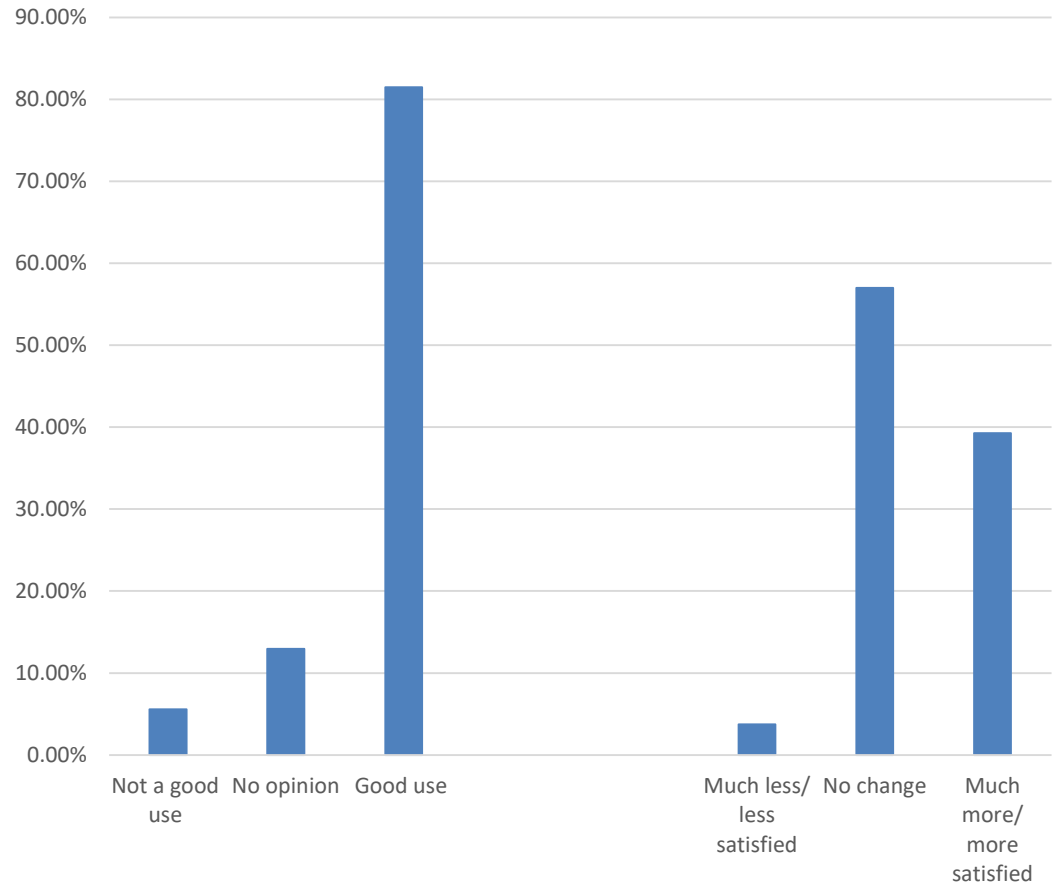


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- 6 teams have completed recruitment
- Average response was 4.2%
- Average enrollment rate was 2.3%
- The study that allowed full online completion had the highest response and enrollment rate (9.7%)

PPM Satisfaction:

- 220 patients completed the survey
- 39% reported that the service improved their satisfaction with being a patient
- 81% reported that recruitment messaging was a good use of MyChart



Feelings toward using MyChart
for research recruitment

How did receiving a research message
in MyChart change your satisfaction of
being a patient at Johns Hopkins?

Expanded use of the service has shown several challenges:

- Study team's capacity for follow-up with interested patients
- Saturation of frequently targeted populations
- Low response rates for general populations, and
- Limited representativeness for specific populations within MyChart



Conclusions

- PPM is a promising tool to support patient engagement and research recruitment.
- Ongoing, iterative evaluation is needed to optimize aspects of the service including target population selection, computational phenotyping, and message frequency.
- Research to compare PPM effectiveness with traditional recruitment approaches is needed.

- National Center for Advancing Translational Sciences grant # UL1 TR001079
- National Institute for Nursing Research grant # P30NR018093
- National Institute for Nursing Research grant # T32NR012704
- Beth Israel Deaconess Medical Center grant # 5K23HL135273
- Health Research Services Administration grant #T32HP10025B0
- National Heart, Lung, and Blood Institute grant # 2T32HL007180-41A1
- National Institutes on Aging grant # U01AG047837

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Questions?