

Patient portal messaging for research recruitment in the era of COVID-19

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BACKGROUND

- Researchers have had to explore new modes of patient identification and recruitment due to the restrictions and resource limitations caused by the COVID-19 pandemic
- Electronic health record (EHR)-based participant identification and recruitment through patient portal messaging offer potential solutions to help researchers meet recruitment goals without the additional risk of in-person interaction
- The purpose of this poster is to report the efficacy of a patient portal recruitment messaging service at a large academic health network with a particular focus on messaging done during the COVID-19 pandemic

METHODS

- The MyChart Recruitment Service is a collaboration between data analysts, experts in recruitment methods, and clinical researchers
- Teams utilizing the service gain approval from the IRB as well as the MyChart Recruitment Council (Figure 1)
- To inform the process, we examined the sociodemographic characteristics of active MyChart users compared to all patients within the JHHS EMR (Table 1)
- Response rates were calculated by the total number of people messaged divided by the total number of responses

Figure 1. MyChart Recruitment Service Workflow

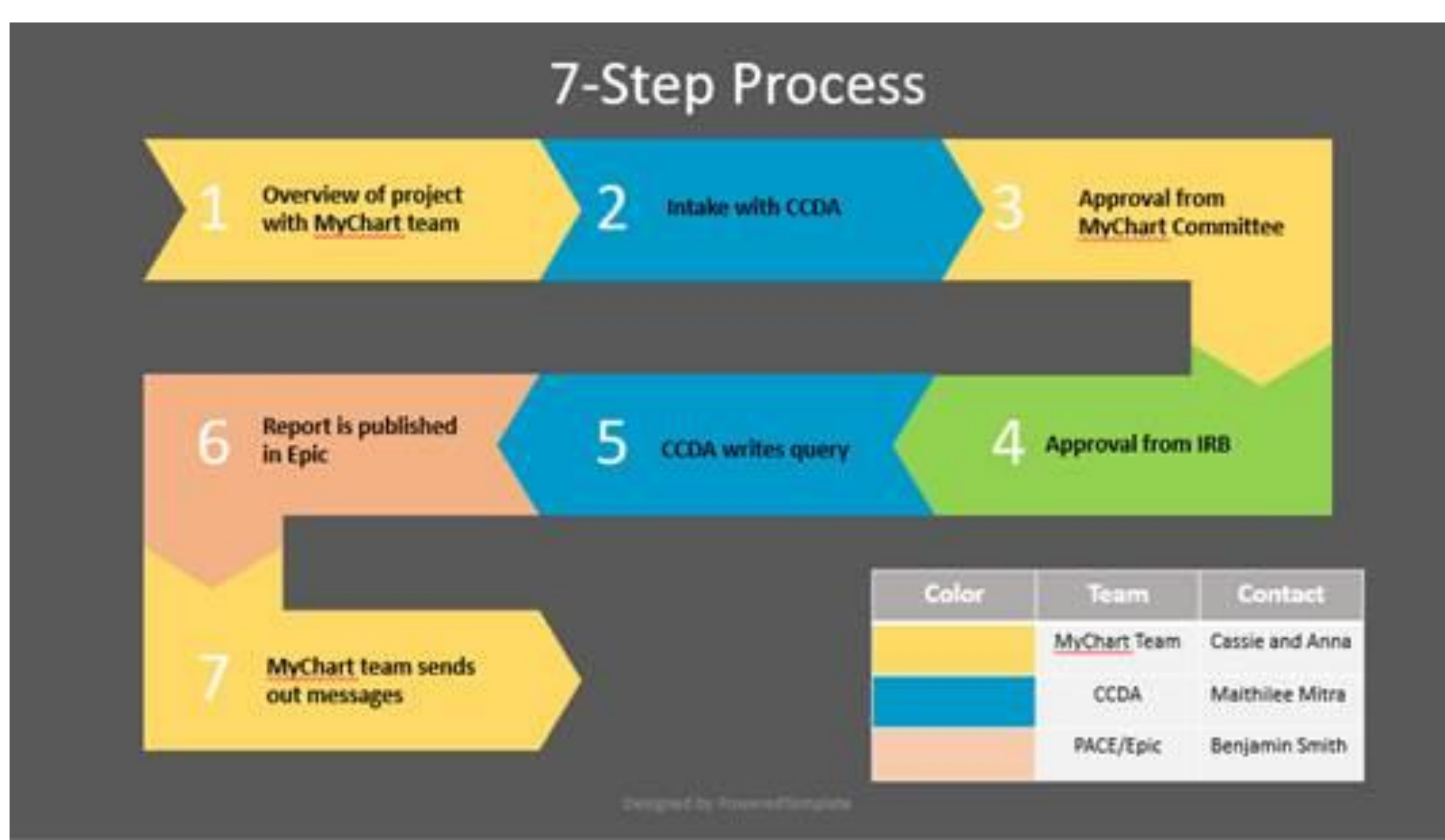


Table 3. Study Characteristics

	Number of Studies (%) N=66
Study Timing	
Pre-COVID	18 (27.3)
Post-COVID	49 (74.2)
Target Population	
Age 0 - 18	14 (21.2)
Age 18 to 65	61 (92.4)
Age 65 and older	43 (65.2)
Females only	10 (15.2)
Males Only	2 (3.0)
Disease/Condition specific	63 (95.5)
Healthy Volunteers	3 (4.5)
Study Format	
Entirely Remote	10 (15.2)
In-person component	56 (84.8)

RESULTS

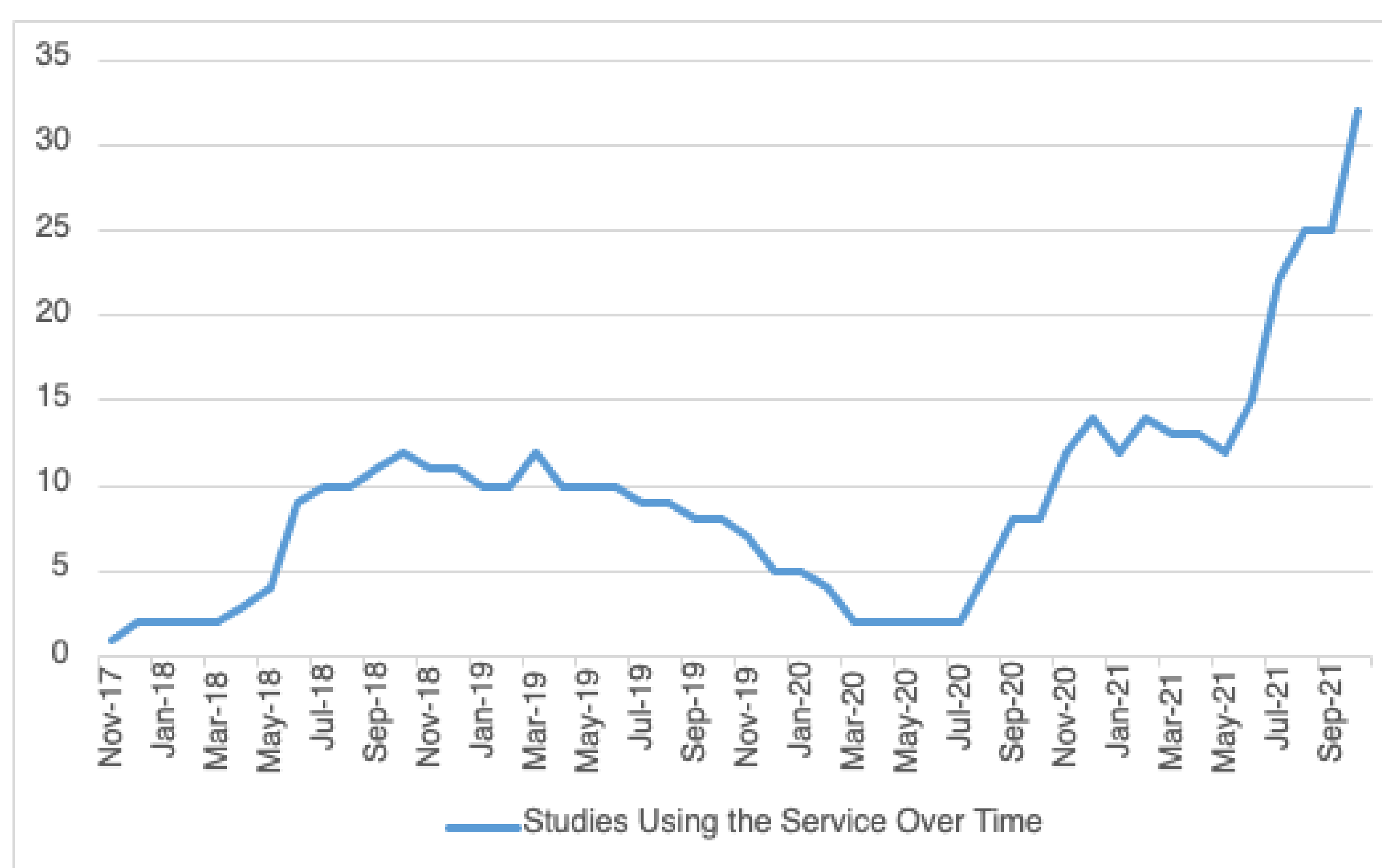
- Message batch sizes range from 1 to 1,000 messages
- The average overall response rate is 6.13%. The response rate was 1.87% prior to March 2020 and 7.10% after March 2020
- The frequency of messaging ranged from daily to monthly
- The response rate among entirely online studies was 8.66%
- The response rate for studies recruiting healthy volunteers was 2.60%.

Table 1. Demographic Comparison of JHH System Patient and MyChart Users

Characteristic	Health System	Active MyChart Users
Total N (%)	1,771,070 (100)	950,459 (53)
Sex		
Female	991,799 (56)	571,296 (60)
Male	779,271 (44)	378,946 (40)
Race		
Black	442,768 (25)	189,978 (20)
White	1,027,221 (58)	617,697 (65)
Asian	88,553 (5)	67,359 (7)
Other	212,528 (12)	101,329 (11)
Ethnicity		
Not Hispanic or Latino	1,558,542 (88)	853,050 (89)
Hispanic or Latino	123,975 (7)	53,795 (6)
Unknown/Patient refused	88,553 (5)	43,614 (5)
Age in Years		
0-17	269,330 (15)	102,520 (10)
18-39	465,450 (26)	265,721 (28)
40-59	459,240 (26)	264,931 (28)
60-79	452,060 (26)	273,037 (29)
80+	125,010 (7)	44,236 (5)

- 53% of JHHS patients had an active MyChart account
- Active MyChart users were representative of the JHHS population in terms age, but were more likely to be female, white, and non-Hispanic

Figure 2. Number of Studies Sending Messages



- The MyChart Recruitment Service has grown substantially over time (Figure 2)
- The number of studies using the service dropped at the beginning of the COVID-19 pandemic when clinical research declined
- The number of studies using the service quickly grew after July 2021 when clinical research began to resume and study teams began expanding their cohort identification and recruitment strategies to include remote interaction

Table 2. MyChart Recruitment Response Rates

Description	Age Group	Start Date	End date	Number of Messages Sent	Responses	Response Rate
Infant Peanut Allergy	0 - 8 years	12/4/2017	1/14/2020	409	17	4.16%
Teen Weight Loss	13 - 22 years	11/28/2017	6/24/2019	15030	172	1.14%
Pregnant with Mood Disorder	18 and older females	4/25/2018	10/14/2019	3550	165	4.65%
Mood Disorders in adolescents	4 - 17 years	5/1/2018	6/25/2019	13812	66	0.48%
Fall Prevention in Older Adults	70 and older	6/13/2018	5/20/2019	4355	116	2.66%
Asthma	11 - 45 years	6/18/2018	11/25/2019	3533	65	1.84%
MCI and hyperglycemia	50 - 90 years	6/18/2018	11/19/2019	1382	37	2.68%
COPD	18 - 80 years	6/20/2018	12/3/2018	1030	43	4.17%
Gout	18 years and older	6/20/2018	3/11/2019	1397	53	3.79%
COPD	40 years and older	7/16/2018	8/14/2018	4250	84	1.98%
Iron Deficiency Anemia	18 and older	9/24/2018	2/25/2020	12531	242	1.93%
Children's eating habits	3 - 13 years	10/1/2018	2/18/2019	2700	43	1.59%
COPD Medication Adherence	40 years and older	3/6/2019	9/3/2020	2215	99	4.47%
Cardiometabolic health in teens	12 - 21 years	3/20/2019	8/19/2019	520	10	1.92%
Neurodevelopmental disorders	8 - 12 years	7/8/2019	2/25/2020	6738	57	0.85%
ED Visits	18 and older	7/23/2019		1303	127	9.75%
Pre-COVID Totals				74755	1396	1.87%
ED Visits	18 and older	1/14/20		2929	194	6.62%
COVID-19	18 and older	8/4/20		139,601	12016	8.61%
Chronic Pain	18 and older	8/10/20	9/11/20	11258	1066	9.47%
Chronic Hives	18 and older	8/18/20		3,362	92	2.74%
Ulnar Nerve Injury	18 and older	9/14/20	2/23/21	9	2	22.22%
COPD Medication Adherence	40 years and older	9/16/20	3/23/21	3316	155	4.67%
Perceptions of Opioids	18 and older	9/22/20	11/30/20	4306	151	3.51%
BDPP with MCI	50 - 90 years	10/6/20	3/9/21	1876	90	4.80%
Pregnant with Mood Disorder	18 and older	10/6/20		30	10	33.33%
Gyn Cancer Detection	30 - 80 females	11/4/20	12/13/20	1800	104	5.78%
Weight Loss after Cancer	18 and older	11/17/20		4934	416	8.43%
Chemotherapy-induced mucositis	15 - 39 years	11/18/20	1/6/21	5665	144	2.54%
Iron Deficiency Anemia	18 and older	11/30/20		10934	117	1.07%
Oral HPV	30 and older males	12/8/20		15250	416	2.73%
Ob/Gyn Obesity Survey	30 - 65 females	12/22/20	12/31/20	3328	400	12.02%
COVID-19 and young children	0 - 5 years	12/31/20	1/11/21	4266	94	2.20%
Cardiometabolic health in teens	12 - 21 years	2/2/21		5537	537	9.70%
COVID-19 and supplements	18 and older	2/3/21	2/9/21	2177	533	24.48%
HPV Vaccine Focus Groups	10 - 17 years	2/7/21	5/25/21	1501	75	5.00%
Pain Management for Knee OA	18 - 91 years	2/24/21		2500	336	13.44%
HIV/AIDS	18 - 65 years	3/23/21	4/9/21	701	32	4.56%
Multiple Sclerosis	18 and older	4/5/21	4/15/21	2590	212	8.19%
Frailty and heart failure	50 and older	4/13/21		3779	320	8.47%
Cerebral Palsy	8 and older	6/2/21	8/17/21	287	32	11.15%
Birth Control Implant	18 - 35 females	6/3/21		213	11	5.16%
BP cuff size	18 - 80 years	6/18/21	7/6/21	200	3	1.50%
Communication in cancer care	50 and older	6/22/21		3450	165	4.78%
Pregnancy and antidepressants	18 and older females	7/6/21	8/24/21	200	5	2.50%
Vascular health	4 - 21 years	7/6/21	10/4/21	236	15	6.36%
Microbiome	18 - 65 years	7/14/21		163	18	11.04%
Anorexia Nervosa	13 - 26 females	7/14/21	8/31/21	77	22	28.57%
Polycystic Ovarian Syndrome	18 - 40 females	7/14/21		6600	348	5.27%
Pancreatic Tumor Registry	18 - 60 years	7/20/21		1500	71	4.73%
Yellow Fever Vaccine	19 - 100 years	7/14/21		22869	721	3.15%
Brain imaging in HIV	30 - 80 years	8/17/21		1200	70	5.83%
Sleep and low back pain	21 - 60 years	8/23/21		2100	60	2.86%
Brain imaging in psychosis	18 - 35 years	8/25/21		1600	95	5.94%
Brain imaging in MCI	60 - 85 years	8/26/21		1100	82	7.45%
Suicidal thoughts in Black men	18 - 35 males	9/27/21		150	6	4.00%
Alzheimer's	55 - 85 years	9/27/21		400	31	7.75%
Cardiovascular disease	18 and older	9/28/21		306	20	6.54%
Hypertension	18 and older	9/28/21		22100	1748	7.91%
Diabetes Prevention Intervention	18 - 75 years	10/1/21		500	44	8.80%
Peanut allergy	18 and older	10/7/21		7100	194	2.73%
Zika viruses for vaccine research	18 - 40 females	10/7/21		7300	75	1.03%
Long COVID-19	18 and older	10/18/21		250	33	13.20%
Allergies in newborns	18 and older females	10/19/21		200	8	4.00%
Dengue vaccine	18 - 50 years	10/20/21		100	1	1.00%
Mood and chronic pain	50 and older females	10/25/21		100	4	4.00%
Post COVID Totals				296900	21079	7.10%
Overall Totals				363614	22291	6.13%

CONCLUSIONS

- The MyChart Recruitment Service has sent patient portal recruitment messages on behalf of 66 teams
- Patient portal messaging has been particularly effective for research teams recruiting for entirely online studies
- In the context of the COVID-19 pandemic when many research activities have been moved to online and remote platforms, EHR cohort identification and patient portal recruitment messaging can help research teams meet recruitment goals

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