

Prehab Pal: A Digital, Interdisciplinary Geriatric Surgery Wellness Program

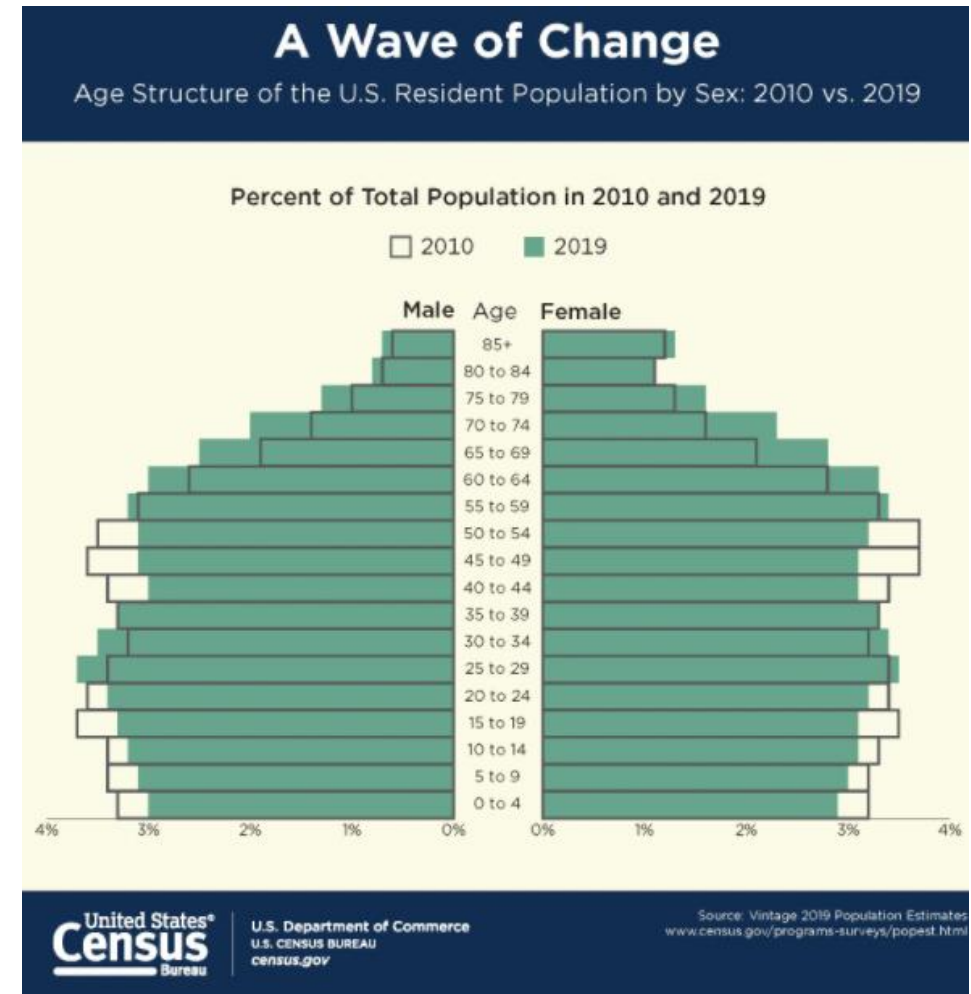
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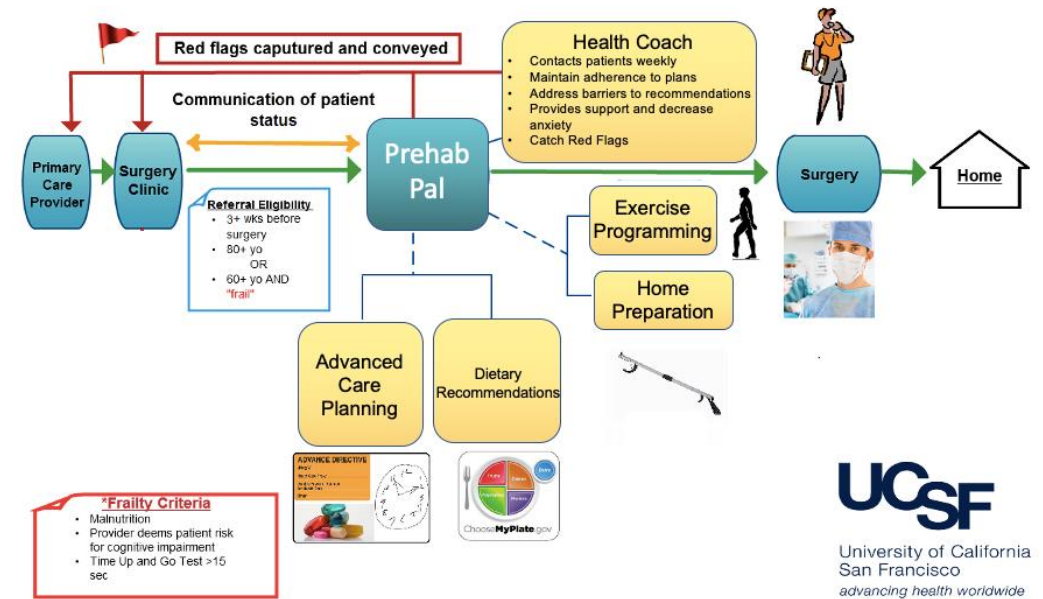
Background

- The United States population is rapidly aging^{1,2,3}
- Older individuals are estimated to account for more than half of the procedures performed in the United States
 - Of those aged 70 and older who undergo major surgery, more than half are considered frail^{4,5}
- Frailty puts patients at increased risk for adverse outcomes
- Multimodal rehabilitation has been shown to mitigate frailty-associated surgical risk^{6,7}
- The Surgery Wellness Program (SWP) at UCSF demonstrated the feasibility and effectiveness of a pre-operative rehabilitation program
 - Despite positive patient response, 30% of referred patients were unable to participate due to transportation burdens and conflicting preoperative appointments.
- **The goal of our project was to make surgery preparation available to all seniors through a remote digitally-based program**



Project Goals

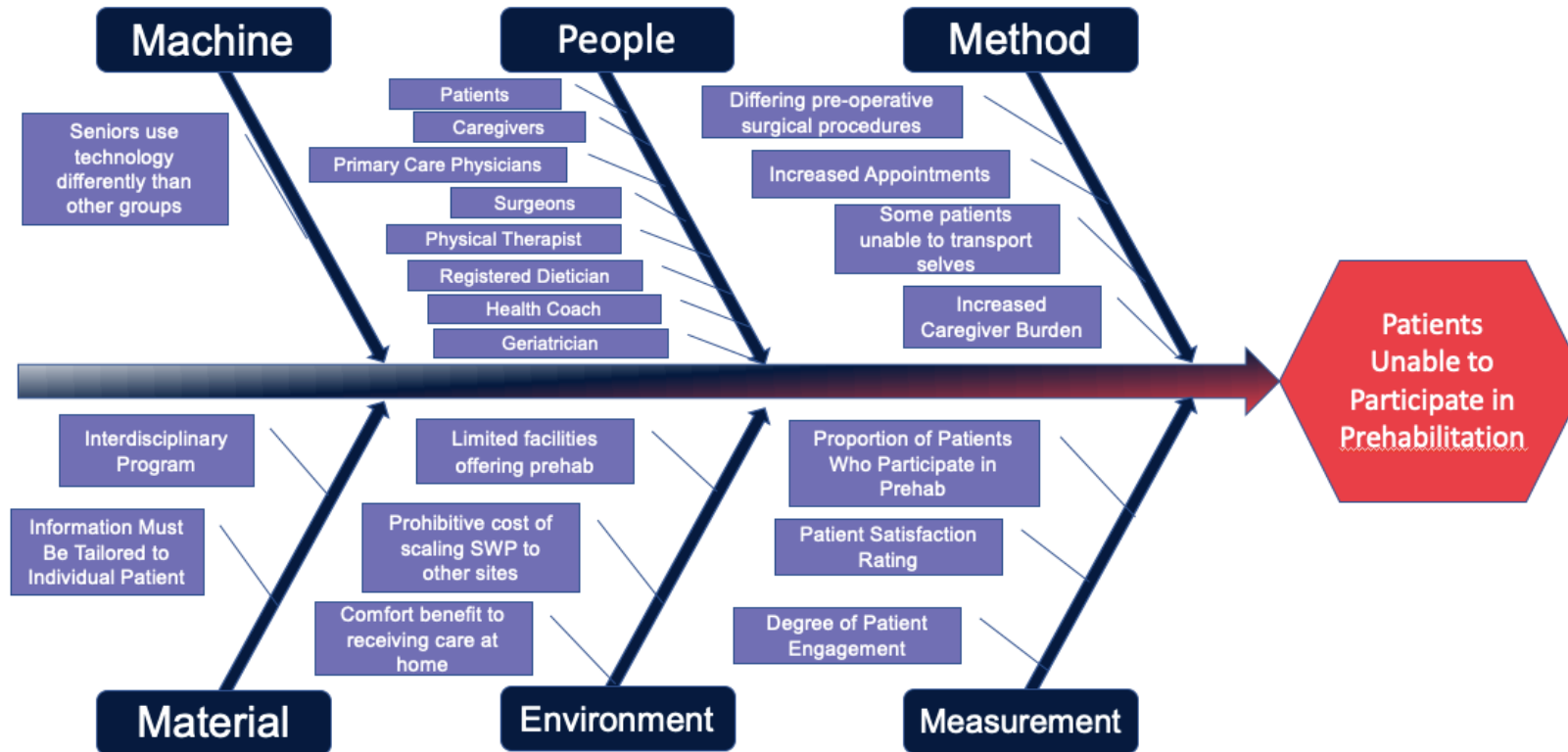
- To develop a usable, satisfactory digital tool to engage older patients in pre-operative multimodal prehabilitation that targets mediators of adverse outcomes
- Overcome barriers encountered with Surgical Wellness Program (SWP) in UCSF clinics
 - SWP model relies on additional in-person visits before surgery
 - Time and cost intensity resulted in SWP maximum capacity of 8 patients
 - With this novel digital health tool for surgical prehabilitation, we aimed to create satisfactory, scalable tool such that:
 - Average patient engagement of those who complete the program is at least 2 weeks (14 days)
 - Ability to accommodate at least 16 patients at a time (200% SWP capacity) in the pilot phase



	SWP	Prehab Pal
Comprehensive in-person evaluation	Yes	No
Can be performed at home	No	Yes
Geographically Unlimited	No	Yes
Inexpensive	No	Yes
Patient Self-Initiated	Less So	More So
Non-English Language	Yes	No

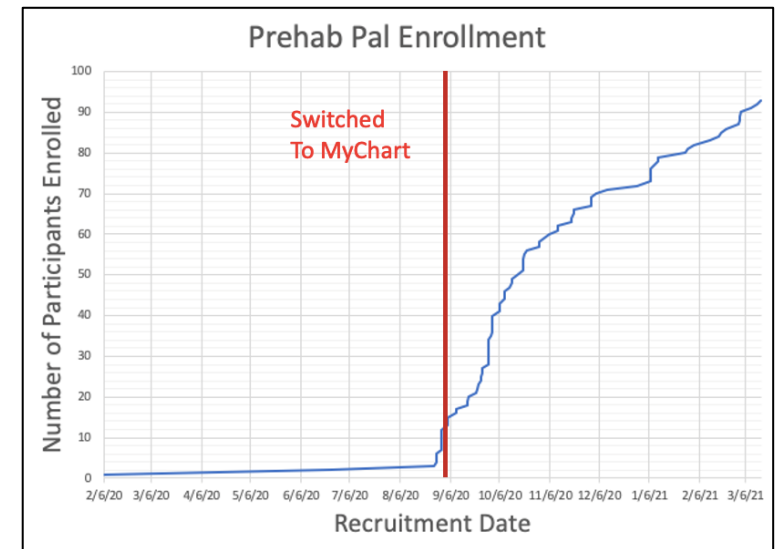
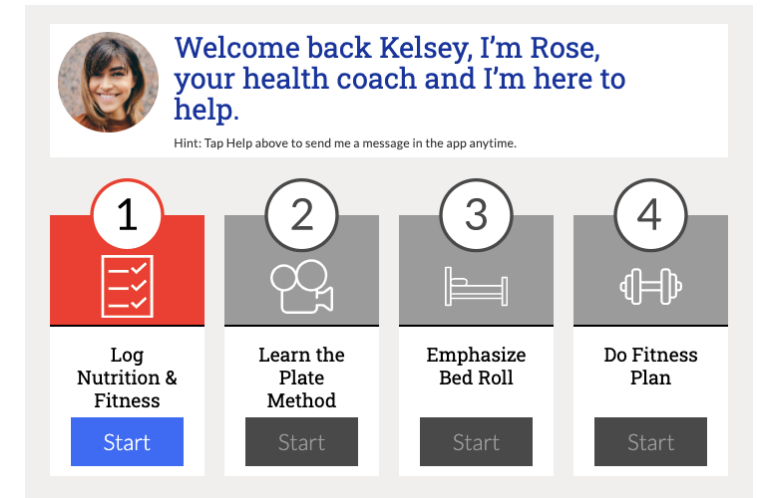
Gap Analysis

- The pilot program, The Surgical Wellness Program (SWP), allowed our team to explore the various complexities and limiting factors to patients enrolling and completing a pre-operative surgical prehabilitation program, as illustrated in our diagram below.



Project Plan & Interventions

- The multidisciplinary nature of the prehabilitation program makes it complex
- The ways in which seniors use technology are still being understood⁸
- We employed a patient centered design, optimizing our interface for older populations based on patient feedback and preferences,
 - **Ordered, labeled activities whose progression is triggered , simplifying the workflow**
 - Multiple modules that patient can revisit **anytime**
 - One-click access to **directly message their personal health coach**
- As this is a new, remote-based program, enrollment is outside of the existing clinic workflow
 - Direct coach enrollment first through telephone, and then through **MyChart to validate program legitimacy and UCSF connection**
 - Have standardized onboarding outreach language and consistent coaching messaging to maximize patient enrollment, engagement, and satisfaction
 - Satisfaction Surveys administered following patient enrollment to gain real-time feedback
 - Have an app partner to mediate and trouble shoot non-app clinical concerns

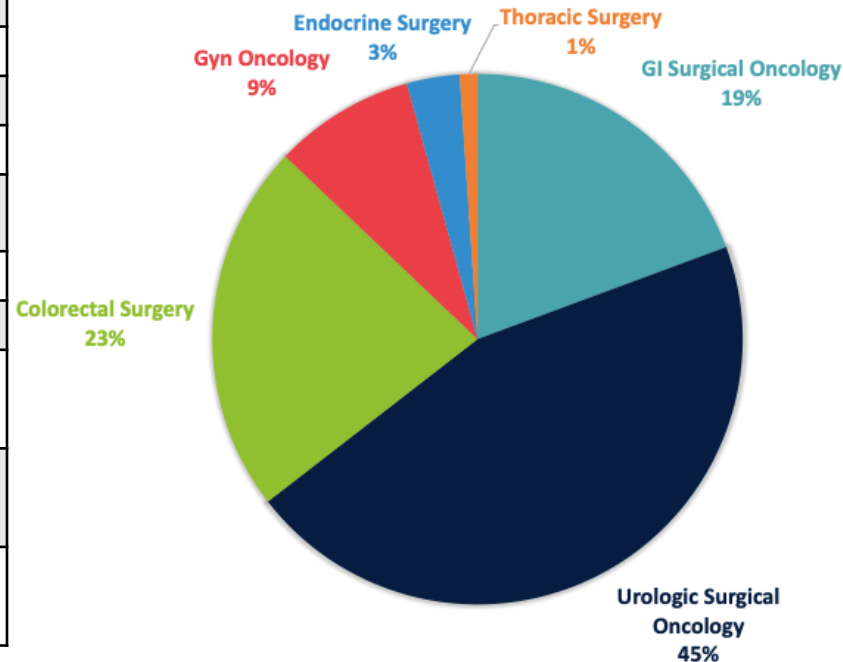


Project Evaluation & Impact

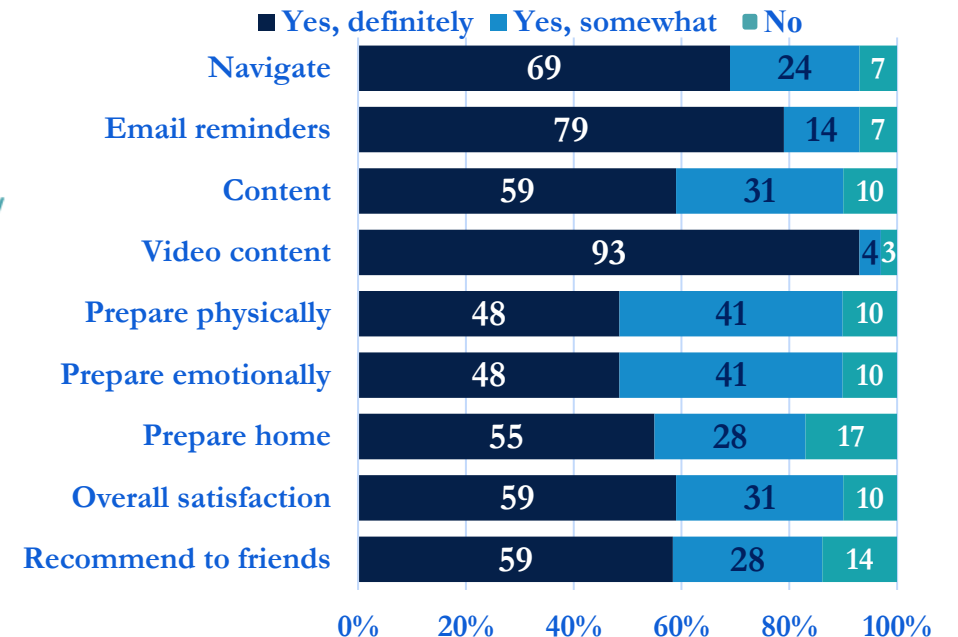
Enrolled Patient Characteristics

	Participants (n=93)
Mean Age (Years)	71.1
% Female	36.6
Race (%)	
White	74.2
African American	2.2
Asian	7.5
Latinx	2.2
Declined to State or Missing	14.0
Median Distance from UCSF (Miles) (21.4 – 119.0)	49.4
Median Days Enrolled in Prehab Pal	15

Enrollment By Surgical Specialty



Satisfaction with PrehabPal Website



Examples of Patient Feedback:

"I was a little skeptical of how the exercises would help. After surgery there were things which were more difficult to do than I expected. The exercises helped"

"I really liked the multi level approach of physical & mental preparation. "

Next Steps & Lessons Learned

Next Steps:

- Increase access to surgical prehab care by expanding to other languages (Spanish and Cantonese) with a culturally informed expansion of the app
- Plan to expand to include more surgical services
- Perform a surgical outcomes analysis

Lessons Learned:

- While a small portion of patients (7.5%, High Coach Utilization, HCU) relied heavily on the health coaches with continued interactions and questions, **most older adults engage with the web app without coaching support** (Low Coach Utilization, LCU)
 - **The average age of both groups was approximately 71 years old**
 - Of those who utilized the coaches, majority of interactions were via telephone
- Challenging to embed new technology in existing clinic workflow, and using some of existing technology helps
- Strategies of digital engagement in older patients widely applicable to other digital health projects targeted at geriatric patients

	High Coach Utilization (n=7)	Low Coach Utilization (n=86)
Total # of Interactions	33	100
Mean # of Interactions /Participant	4.7	1.2

