California Health Improvement Project (CHIP)
Physical Therapy On Demand:
Web Based Rehabilitation for the Connected Surgical Patient

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Problem Statement

As many as 70% of doctor visits are un-necessary*. Unfortunately no-one knows which 30% are appropriate. This problem extends to physical therapy (PT) after surgery. Every patient is prescribed PT even though not everyone needs it or needs the same amount. Further, it is difficult for patients to get to the therapists for in-person visits. “Live” video visits have proven to be problematic alternatives (bandwidth, quality, acceptance) creating an ongoing need for models that deliver patient care, such as PT, more efficiently to the right patient at the right time.

*Wellness Council of America

Project Description

50 patients will participate in a randomized control trial (RCT) comparing traditional in-person *synchronous* physical therapy (patient and therapist exchanging information at the same time) with a web based app that enables *asynchronous* care (patient and therapist exchanging information at different times). The study group receives an iPod with CaptureProof® software. After watching exercise videos, the patients upload videos of themselves doing the exercises to a secure website. The PT views the video at a later time and provides feedback. Patients in the trial can access traditional care at any time. We will compare clinical outcomes, resource utilization and participant satisfaction data collected a) before and b) three months after surgery.

Goal and Objectives

Goals: Determine to what extent asynchronous video tools can replace in-person outpatient visits such as PT following total knee replacement while lowering costs, optimizing resource allocation, and maintaining quality outcomes.

Output-oriented Objectives:

- Within one month of inception, complete the design of a RCT to measure how effectively the intervention can achieve its goals.
- Obtain all necessary leadership approvals and contracts to allow the study to proceed within 3 months of inception.
- Develop infrastructure necessary for RCT to proceed within 2 months of leadership approval.
- After approvals reached recruit 50 total knee patients aged <= 75 with internet access to participate in the RCT by June 1, 2014.

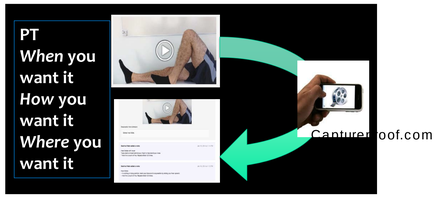
Outcome-oriented Objectives:

- When comparing the intervention group to standard care at 90 days following surgery:
  - Decrease by 80% the average number of outpatient visits (Resource Utilization –cost);
  - decrease the total PT time required to manage patients by 66% (Resource allocation- access);
  - Match or exceed both objective and subjective clinical treatment outcomes (Quality measure).

Outputs & Outcomes

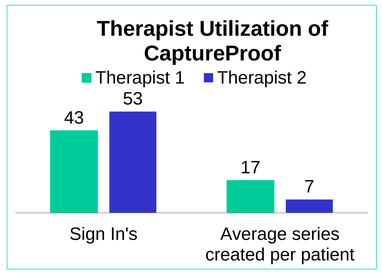
Outputs Achieved

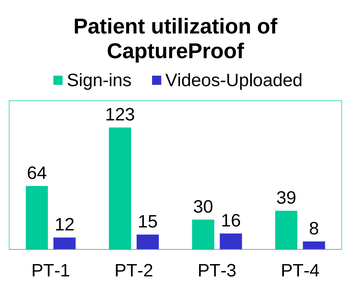
- Designed a research protocol for an RCT based on the use of CaptureProof software. The protocol was modified and approved by all stakeholders (2 months following inception).
- Obtained leadership approval for the pilot and fulfilled requirements set forth by the legal department of The Permanente Medical Group (TPMG) which in turn allowed a contract to be signed (12 months following inception).
- Developed workflows, 23 separate PT videos, recruitment letters, consent forms, randomization packets, and a validated clinical outcomes tool for baseline and follow up data. (2 months)
- Enrolled 20 patients by August 18th of which 12 have been randomized and 6 have completed the study.

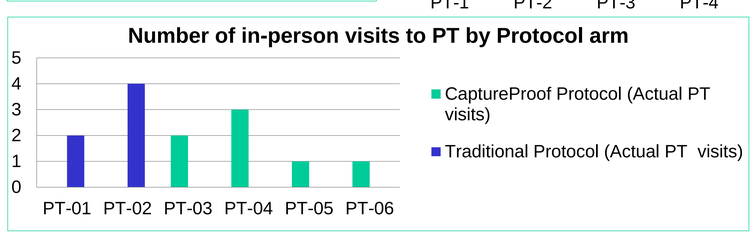


Outcomes Achieved

- 6 patients completed the study: 4 females, 2 males, the avg. age is 64 (range:69-51)
- 4 participants have successfully uploaded 51 videos (**avg= 13**, median 13) and signed in 256 times (**avg=64**, med= 52)
- The therapists have signed in 96 times and initiated multiple exercises per patient (“series” in chart below)
- The number of outpatient visits is low (one is required) for both groups (more data points are needed).







Lessons Learned

- **Concerns about data collection and privacy (HIPPA)** delayed final approvals by almost one year. Every level of management required their specific boss’s approval to move forward.
- **A project manager** or equivalent resource with dedicated time for data collection and patient management would have been very helpful (example: half of all patients recruited were lost to follow up).
- **Younger patients want this yesterday** and are truly disappointed if randomized out of the intervention group. Too busy for “PT”.
- **Older patients are intrinsically doubtful** of its success and, if retired, fear the loss of the “social visit” that is therapy with other patients. A social networking aspect to these tools might be important.
- **Fear of loss of employment prevents adoption** by providers. One group of therapists were so concerned with this that another, with fewer resources and more demand on their time, had to be approached.
- **Asynchronous Technology** that enables HIPPA compliant health care delivery is a viable alternative to the in-person visit and is readily accepted by patients (exceeded expectations!).

Unexpected Outcomes Achieved

- Asked to present our pilot at the 2014 *Health 2.0* conference
- The existence of a TPMG pilot has created a level of “social acceptance” that has enabled CaptureProof to start several other clinical studies thus amplifying the CHIP’s impact.

About My Organization

Kaiser Permanente is a large, integrated, health care delivery system that cares for 6.5M people in California and 9M nationally. KP performs approximately 10,000 total joints a year in the state, almost all of which will receive post operative outpatient PT visits. KP is widely perceived as being at the forefront of healthcare delivery and technology thanks to the long term integration of electronic records and their use in prevention and care programs for at risk populations. KP is well positioned to lead the way in the adoption of new technology designed to change the delivery care model to meet the goals of the triple aim.

****CaptureProof.com** is a start-up company whose platform enables patients to collect video and still images and securely communicate them to their providers anywhere at anytime. The platform is free to patients and is HIPAA compliant.

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CHCF HEALTH CARE LEADERSHIP PROGRAM

To learn more about CHCF go to: http://futurehealth.ucsf.edu/