Getting to the 'P' in PDSA

Using human-centered design creates rich inputs for LEAN improvement

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Background

The Zuckerberg San Francisco General Hospital (ZSFG) is a level 1 trauma center and safety-net hospital in San Francisco. The elective general surgery clinic at ZSFG is an extremely busy and dynamic clinic that provides service to patients are on public health insurance and non-English speaking, and many are homeless, require social service support and suffer from multiple chronic physical and mental conditions. At the start of this project, the clinic had an exceptionally high no-show rate at 28%, translating to an average of 96 patients who don't show up to their scheduled visit. We also found that that the average cycle time for a patient from check-in to departure is approximately 2 hours, oftentimes for a simple follow-up appointment. The clinic faces significant issues with access and throughput, which most importantly affects the experience of care provided and received by patients, providers and staff. This project therefore sought to take a 360 view to deeply understand users' unmet needs and identify the system challenges in order to develop innovative, human-centered solutions to improve the experience for patients, providers and staff of the elective general surgery clinic at ZSFG.

What is HCD?

Human-centered design (HCD) is a process and set of techniques used to create innovative solutions for ill-defined, complex problems. The process aims to characterize and design for the needs of the people impacted by the problem. The 5 stages of HCD are: **Empathize, Define, Ideate, Prototype and Test.** Techniques from the Empathise stage are used in this project. `

Project by Numbers

HCD Investigation

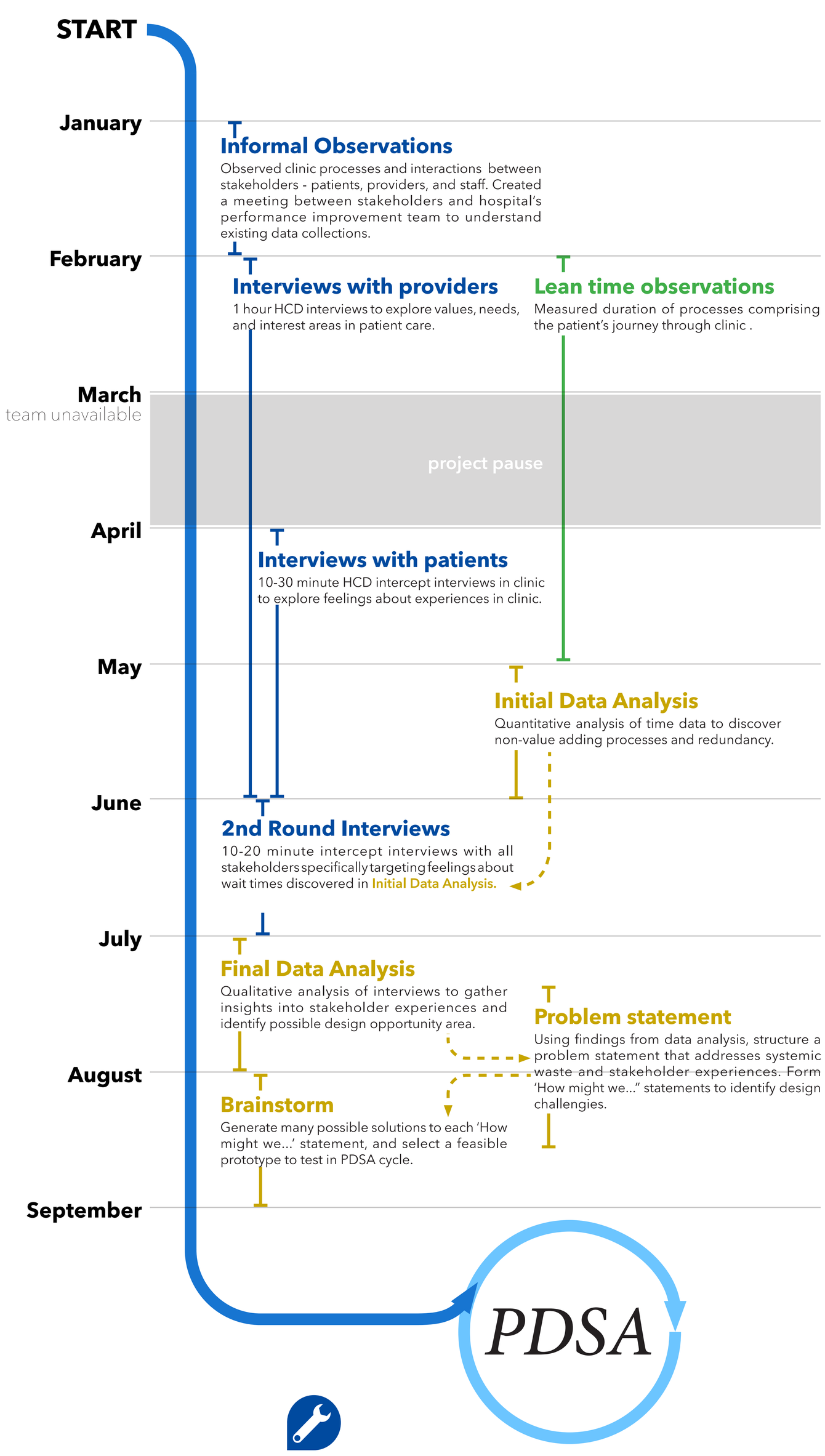
31 patient interviews
5 provider interviews
14 staff interviews
6 hours of informal observations of clinical spaces

LEAN Investigation

40 hours of time-tracking
116 patient encounters

Project Timeline

We spent over **7 months** investigating the processes that occur in a surgical outpatient clinic using a combination of data collection methods inspired by HCD and LEAN approaches. We captured insights from human experiences and identified systemic waste through identification of non-value added time.



What is an empathy interview?

Empathy interviews develop a deep understanding of the problems and realities of the people for whom you are designing. Questions are open-ended, and interviews explore stakeholder values, thought processes, and decisions. Unstructured observations examine stakeholder interactions and behaviors within the environment that must be accounted for in a successful solution.

What is time tracking?

Data collector time stamps processes that comprise the patient's journey through clinic to measure duration of the following variables:

- check-in process
- idle wait times
- collection of vital signs
- provider visit
- any additional staff visits
- entire clinic visit

Data were collected in an Excel sheet that utilized a circular formula to quickly time stamp each activity.

Findings

HCD Findings

Waiting is expected, and transparency around cause decreases frustration.

- "Waiting is the worst part...but that's just life"
- "Wait time is long but I can't complain, there's a reason why"

Tolerance for inefficiency and poor experience is high.

- "If they keep my lower intestine from popping out, I'm happy, none of this [bad experience] matters"
- "I'm here because it's either be here or be in pain… I wouldn't come if I had to wait this long and my leg didn't hurt"

Patients face different types of challenges getting to clinic.

- "I drove starting at 3 AM to get here today"
- "I had to fight to get this appointment"

Patients develop workarounds to improve experiences of clinic.

- "You wait a long time here...I got here early hoping they might be able to see me earlier"
- "I got things to do...what's the point in scheduling if they're always late? Sometimes I come late on purpose."

LEAN Findings

Waiting is non-value added time and constitutes the majority of patients' time in clinic.

- Spend 19% of total visit time idly waiting in waiting room.
- Spend 38% of total visit time idly waiting in exam room

Patients spend only 8.4% of their time in clinic with an MD.

Conclusion:

We spent approximately 7 months in the need-finding phase developing a comprehensive understanding of clinic issues before planning our first PDSA. This time was spent building empathy and developing a deep and multi-dimensional understanding of the issues facing patients, providers and staff in a surgical outpatient clinic. While performing ethnographic interviews and observations, we also used the LEAN methodology to guide and focus our interviews. Through initial quantitative analysis of time observations, we identified that patients spent most of their time in clinic waiting to see a provider or staff member. Informed by those insights, we re-focused our empathy interviews to understand stakeholders' pain points related to waiting times so that we could brainstorm innovative and human-centered solutions to test during PDSA. This synergy between LEAN and HCD is one demonstration of how the two approaches can synergize to develop a more patient-centered PDSA.

Next Steps:

Informed by the insight that transparency is important to patients and their families during wait times, our first PDSA tested a 'waiting time board' that would provide patients with an estimate of how long they would be waiting to be called for their appointment. We created a paper prototype that provides a with bucketed estimate for a patient's wait time: <30 minutes, 30-60 minutes, and 60+ minutes. We tested this prototype in one afternoon clinic and iterated once based on qualitative feedback from patients and staff.

The Better Lab is a UCSF research center based out of ZSFG that combines human-centered design and health services research to design solutions and rigorously study their outcomes.

What is a PDSA?

Step 1: Plan
Plan a test or observation, including a plan for collecting data.

Step 2: Do
Carry out the test on a small scale.

Step 3: Study
Set aside time to analyze the data and study the results.

Step 4: Act
Refine the plan based on what was learned from the test.