Clinical Ethnography in Cardiology: Identifying a Primary Innovation Target

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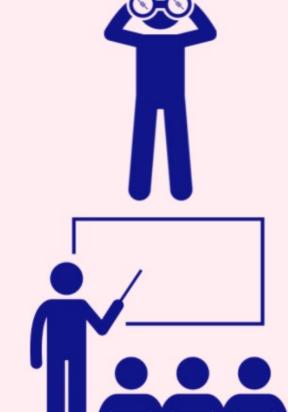Sling Health Summer Biodesign Program

SLING HEALTH UCLA

Abstract

Training and engaging in the biodesign process empowers medical students and clinicians to take action to address the shortcomings they encounter in daily clinical practice. I was trained in biodesign through the Sling Health Summer Biodesign Program and acted as a clinical ethnographer, seeking to find the most pressing unmet clinical needs within outpatient cardiology at the UCLA Specialty Clinic in Santa Clarita. I worked under the mentorship and supervision of Dr. David Cho. Needs were discovered through a combination of clinical observation, didactic instruction, stakeholder interviews, and literature review. Subsequently, needs prioritization, needs selection, needs statement development, value proposition, solution landscaping, and solution development were performed. Through this process, I identified that the high volume of the physician EMR inbox was the primary innovation target. After validating this need through iterative interviews, a preliminary solution concept was developed, which involves AI-powered predictive text and message content identification/sorting.
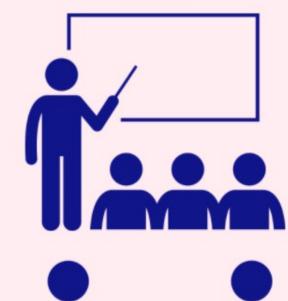
Acknowledgements

Methodology

Clinical observation
8 hrs x 6 weeks

Didactic instruction
2 hrs x 6 weeks

Stakeholder interviews
~3/week x 6 weeks

Needs prioritization
~200 → 3 → 1

Validation interviews
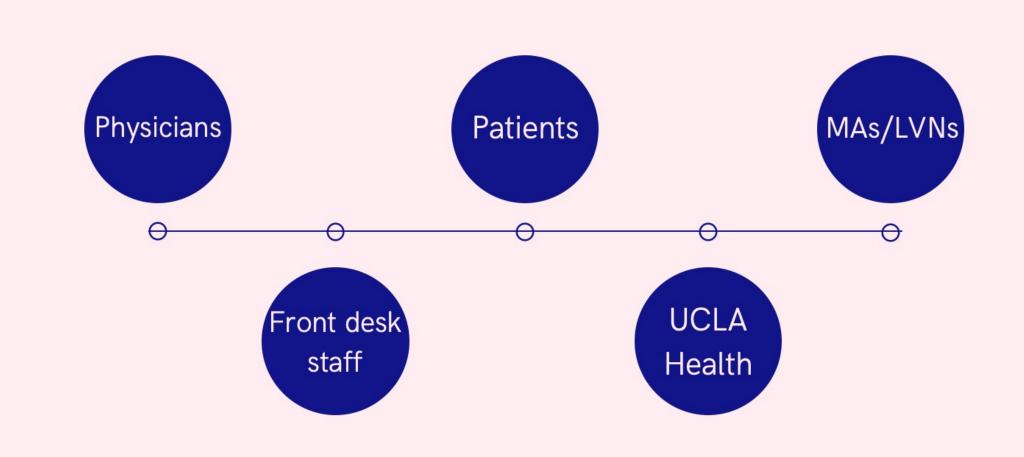with MD and LVN

Literature review & quantifying impact

Development

01 Clinical setting

- RVU model of compensation
- shared office with urology pulmonology endocrinology
- Outpatient cardiology
- next door to Henry Mayo hospital
- Santa Clarita
- works ~M-F 8AM-5PM
- sees 15-22 patients per day
- Dr. Cho
- non-interventional cardiologist
- does ~1 wk of call per month @ Henry Mayo

02 Stakeholders

- Physicians
- Patients
- MAs/LVNs
- Front desk staff
- UCLA Health

03 Needs statements

Physicians working in outpatient settings need a way to reduce the amount of time spent answering messages in their inbox in order to prevent burnout, have increased time to spend with patients, and more quickly and effectively answer urgent and complex inbox messages.

Patients and physicians need a way to increase the amount of eye contact during outpatient medical appointments in order to improve the patient-physician relationship and improve patient satisfaction.

Patients need a way to manage their medication lists and medical information which is simpler and more user-friendly than the EMR/portal in order to reduce wasted time during the medical visit and empower them to more fully participate in their own medical care.

Assessment

04 Top need

Physicians working in outpatient settings need a way to reduce the amount of time spent answering messages in their inbox in order to prevent burnout, have increased time to spend with patients, and more quickly and effectively answer urgent and complex inbox messages.

05 Discovery of top need

"in between appointments, we don't have much to do"
MAs/LVNs

"[the inbox] is what causes burnout"
MDs

06 Validation of top need

- **MA/LVN interviews** They are open to increased inbox management
- **Patient interviews** Patients highly value access to their care teams
- **MD interviews** They feel many of their messages don't require MD management
- **Literature review** This is not an isolated issue, there is ongoing investigation

Outcomes

07 Value proposition

reducing the physician's burden of inbox management improves physician satisfaction and increases time available for other tasks creates value for…

outpt physicians	LVNs/MAs	the clinic	patients
• fewer uncompensated hours of work	• able to work to the top of their license	• no longer paying MD $ for non-MD work	• urgent/acute messages more consistently responded to immediately
• increased % of time spent with patients	• have less down/slow time	• getting more output from MAs/LVNs that are already being paid	• quicker response rate overall
• increased time to provide high quality responses	• increased involvement in patient care	• increased #/day or quality of patient visits	• higher quality inbox responses
• improved work/life balance	• improved rapport with physicians	• reduced MD turnover	• happier physicians will likely provide better care

08 Potential size of impact

"Physicians spent an average of **5.9 hours** out of an 11.4-hour workday working in the EHR

That consisted of 4.5 hours during clinic times and **1.4 hours** after work

Inbox management took up **24 percent of family physicians' [EMR] time**" [3]

5.9 x 0.24 = 1.4 hr/day on inbox tasks
1.4 hr/day x ~262 work days/yr =366.8 hrs/yr
assuming ~1/3 of messages could be handled by non-MD

~122.2 hrs/yr x ~$100/hr [4] = $12,220 wasted per year, per MD

27652 outpatient clinics [1]

209,000 primary care MDs/DOs [4]

1. https://askwonder.com/research/normal-ambulatory-outpatient-non-hospital-medical-clinics-us-ufzdagkt3
2. https://www.ahrq.gov/research/findings/factsheets/primary/pcwork3/index.html#:~:text=The%20U.S.%20primary%20care%20workforce%20includes%20approximately%20209%2C000%20practicing%20primary,care%20professionals%20(Table%201).
3. https://www.ama-assn.org/practice-management/digital/family-doctors-spend-86-minutes-pajama-time-ehrs-nightly
4. https://www.ziprecruiter.com/salaries/What-Is-the-Average-Primary-Care-Physician-Salary-by-State

09 Solution concept

Bring EMR inbox messaging to the 21st century by incorporating AI in multiple ways

- predictive text to assist physicians/MAs/LVNs in responding to similar messages
- upon selecting to forward messages to the physician, AI could detect the potential for MAs/LVNs to answer the question themselves
- AI sorting similar messages to allow for rapid responses
- AI bringing up relevant portions of the chart according to message content (e.g., the last A&P or order)