Human-centered Design of Quality Improvement Projects in a Department of Medicine

Megan Mahoney, MD

Dr. Paul Heidenrich, ELAM Primary Mentor and Dr. Linda Boxer, ELAM Institutional Mentor

Presented at the 2020 ELAM® Leaders Forum

BACKGROUND

- The Improvement Capability Development Program (ICDP) is annual incentive program for clinical departments to develop and execute yearlong improvement projects. Each department is responsible for identifying at least 2 new ICDP projects every year.
- Quality and wellness leaders were engaged in a design thinking process to identify Department of Medicine's ICDP project ideas for FY21.
- Human-centered design is an empathy-driven process, responsive to "user" diversity, though it is limited by the lack of rigorous application of implementation science principles. The Stanford Presence 5 team merged Human-centered Design with the more rigorous principles of Implementation Science to develop the Approach to Human-centered, Evidence-driven Adaptive Design (AHEAD) framework.

PURPOSE

- Apply human-centered design approach to the development of department-wide QI initiatives for FY21.

METHODS

- Quality directors (n=10) representing each division in the Department of Medicine were interviewed using a semi-structured tool.
- Interviews were transcribed using Rev.com and codes were analyzed using Dedoose software.
- Three rounds of ideation and prototype testing were conducted in focus groups of quality and wellness leaders (n=13).

OUTCOMES

Figure 1. Approach to Human-centered, Evidence-driven Adaptive Design (AHEAD)

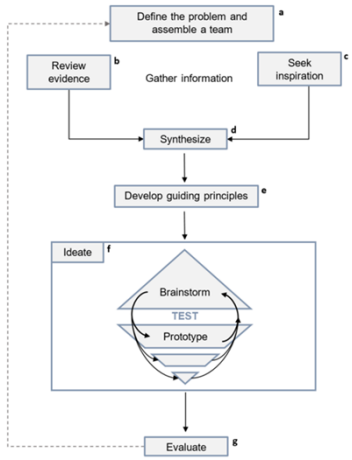

Figure 1. After defining a problem and assembling an interdisciplinary team (a), information gathering activities draw on evidence (b) and inspiration (c) to generate a preliminary knowledge base for synthesis (d). In the design phase, teams establish guiding principles (e) and ideate (f), which involves rapid iterations through brainstorming, prototyping, and testing to develop an intervention that is subjected to rigorous evaluation (g).

Fischer M, Safaeinili N, Haverfield MC, Brown-Johnson CG, Zionts D, Zulman DM. Approach to Human-centered, Evidence-driven Adaptive Design (AHEAD) for health care interventions: A narrative review and proposed framework. Under Review.

Step 1 Define Problem and Assemble Team: After defining the purpose, i.e. to design FY21 ICDP interventions, the multidisciplinary team of quality directors was assembled.

Step 2 Review Evidence: A literature review was conducted to understand barriers to created an integrated health system, and applied to the development of the interview tool.

Step 3 Seek Inspiration: Information was systemically gathered via qualitative 1:1 interviews, using a semi-structured interview tool. Rev.com was used to transcribe the audio recordings and codes were analyzed using Dedoose software. Interview key stakeholders (department chair, senior associate dean for finance, chief financial officer, chief medical officer, vice dean for faculty affairs) were completed as well.

Step 4 Intervention Design: Findings from the interviews were integrated into three rounds of ideation and prototype testing sessions conducted in focus groups of quality and wellness leaders (n=15) which led to the develop of two ICDP projects.

Step 5 Evaluate: Evaluation plan were developed to measure effectiveness during implementation.

The human-centered design process led to an additional intervention - a mentorship program for clinically active faculty in Department of Medicine.

TABLE 1. Characteristics of Quality Directors Interviewed (n=10)
Department of Medicine Divisions represented
Endocrine (1)
Pulmonary (1)
Nephrology (1)
Infectious Disease (1)
Gastroenterology (1)
Palliative Care (1)
Primary Care and Population Health (1)
Rheumatology (1)
Cardiology (1)
Oncology (1)
Faculty Rank
Clinical Assistant (7)
Clinical Associate (1)
Professor (2)
Years at Stanford
< 5 (3)
5-10 (3)
Greater than 10 (4)
Gender
Women (7)
Men (3)
Race/Ethnicity
African-American (1)
Asian/Pacific Islander (4)
Caucasian (5)
LatinX (0)

TABLE 2. Pain Points identified	N	F
EHR–related burden	10	55
Team Communication	10	48
Navigation of Complex System to Coordinate Care	9	47
Decision-Making Process in Hospital Administration	9	43
Feeling Siloed	9	40
Unclear career path for Clinically-Oriented Faculty	8	38

TABLE 3. New ICDP Interventions for F21
Deploy a non-MD multidisciplinary team to support Epic inbasket tasks
Launch communications and teamwork training, based on TEAMSTEPPS

TABLE 4. Proposed Institutional Initiative
Mentorship Program for Clinically Active Faculty (>0.40 cFTE) • Quarterly workshops: Session 1: Careers Reflections in Academic Medicine Session 2: The Organizational Workshop Session 3: Information Systems Session 4: Health Care Finance, Payment, and Policy • Individual mentor-mentee meetings, at least 3 times a year • 1:1 consultation with an Academic Research Coach

DISCUSSION

- To my knowledge this is the first implementation of the AHEAD framework in the real world outside of the Stanford Presence 5 group.
- The AHEAD framework integrated design thinking principles and practices with evidence-grounded research methods to engage diverse faculty in the department and achieve
- **The human-centered design process led to an additional "out-of-the-box" intervention - a mentorship program for clinically active faculty in Department of Medicine.**

SUMMARY

- Human-centered design involves interdisciplinary teams that harness expertise from diverse fields to provide a range of perspectives allowing design teams to identify unique possibilities and creative solutions.
- Human-centered design approach was an engagement tool in the development of department-wide QI initiatives, in addition to providing a framework for the creation of the "The Mentors Lab" for the department.
- Future efforts include evaluating the effect of this adapted design thinking approach on engagement during The Mentors Lab pilot in FY12.

ACKNOWLEGMENTS

Cati Brown-Johnson, PhD
Lauren Meyer, BA
Sara Singer, PhD
Maryam Asgari, MD
Susan Pollart, MD