# Veterans' Preferences for a Remote Monitoring Tool for PTSD

**INDUSTRIAL** & SYSTEMS **ENGINEERING** 

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#### 1. BACKGROUND

### **Post-traumatic Stress Disorder (PTSD)**

- Occurs after experiencing traumatic event
- Characterized by intrusion of negative thoughts, feelings, avoidance, hyperarousal
- Veterans particularly susceptible (APA, 2013)

## **Veteran Experience of PTSD**

- Comorbidities: anxiety, depression, emotional distress, social isolation, physical disabilities (Plach et al., 2013; Yarvis & Schiess, 2008)
- Higher suicide rate than general population (U.S. Department of Veterans Affairs, 2019)

#### **PTSD Treatment**

- Pharmacotherapy: taking medications
  - Downsides: Forgetfulness or refusal to take medicine (Zullig et al., 2015)
- Psychotherapy: talking to clinician, reflections
  - Downsides: Unwillingness to talk, stigma of therapy (Stecker et al., 2013)
- Both lack monitoring patient between sessions

## **Monitoring Technology**

- Monitoring tool compensate for in between sessions
- Previous work done in monitoring chronic illnesses (Franklin et al., 2003)
- Need for discrete method for monitoring for PTSD veterans (Rodriguez-Paras et al., 2017)

## Critical Need: Identify key requirements for a monitoring tool for PTSD veterans

 Veteran-centered for maximum adoption and use

## 2. DATA COLLECTION

#### **Interviews with PTSD veterans**

- 50 veterans recruited from a bike-riding program across several states
- Interviews transcribed and validated
- Participants compensated for participation
- IRB approval obtained

## 3. INTERVIEW ANALYSIS

#### Code **Development**

Review protocol **→** and create codes based off themes and topics

4. RESULTS

that nobody else could

#### **Initial Coding** Categorize

into codes Create new codes as necessary

segments of text

#### **Focused Coding** Review initial

 $\Rightarrow$ codes Create more specific subcodes

#### **Code Discussion** Discuss code

creation and coding process ← |. Discuss thematic

elements

# **Report Results** Create visualizations

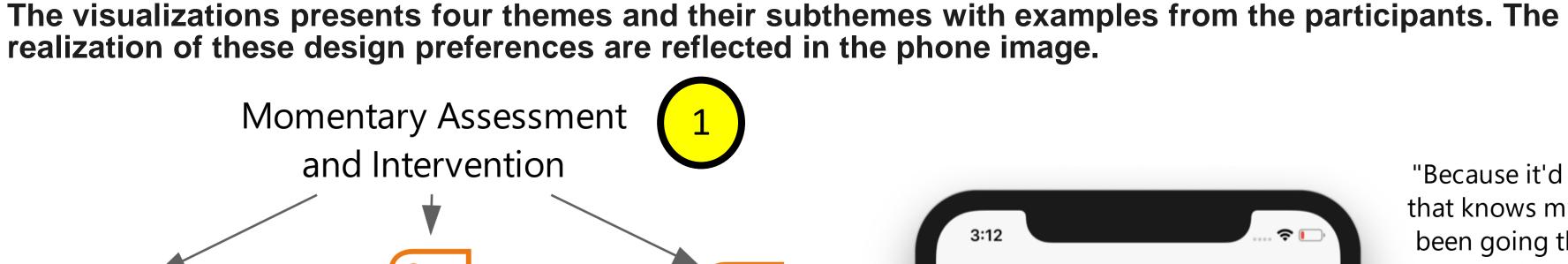
based off of relations between codes, quotes and themes

# 5. IMPLICATIONS & WORK IN PROGRESS

- Personal requirements would allow for greater freedom in personalizing the tool.
- Short term help is focused on immediate needs.
- Long term help aims to change behavior.
- Connectivity allows vets to communicate better.

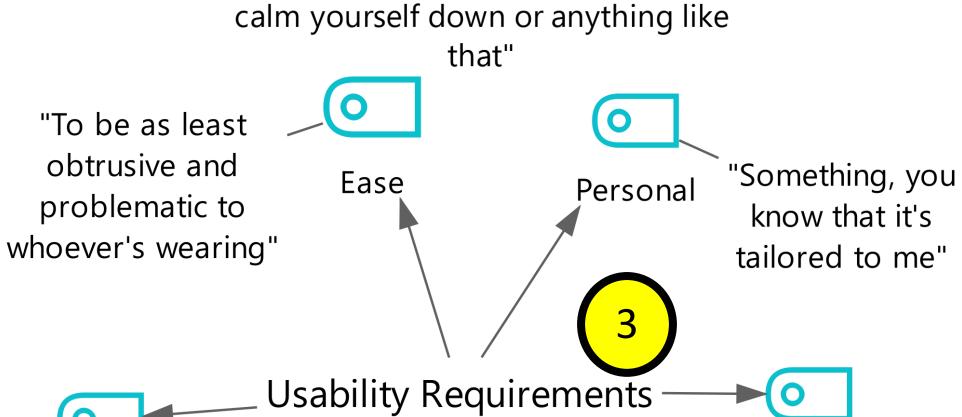
## **Work In Progress**

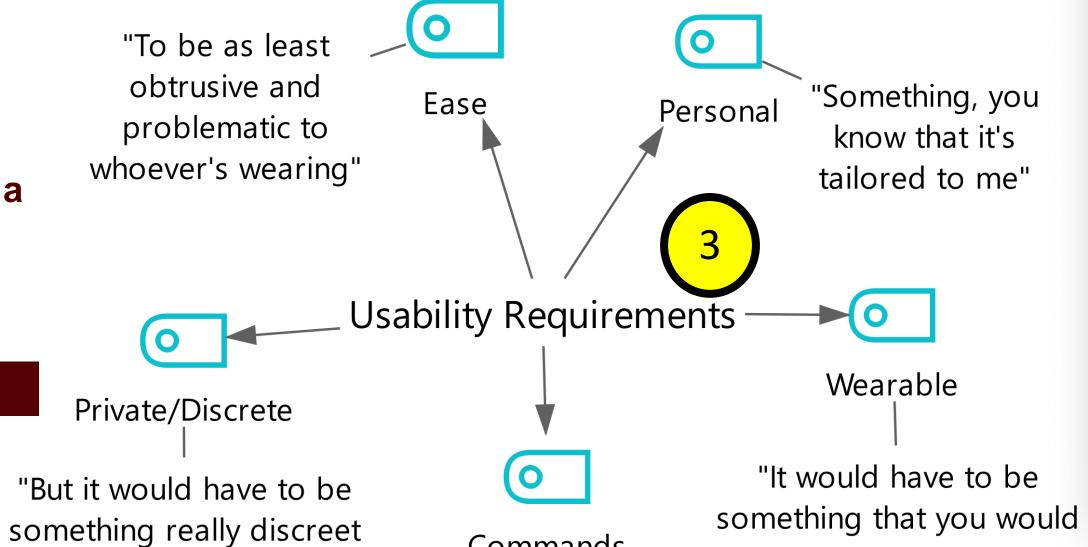
- Smartwatch and phone app developed
- Undergoing usability testing and evaluation





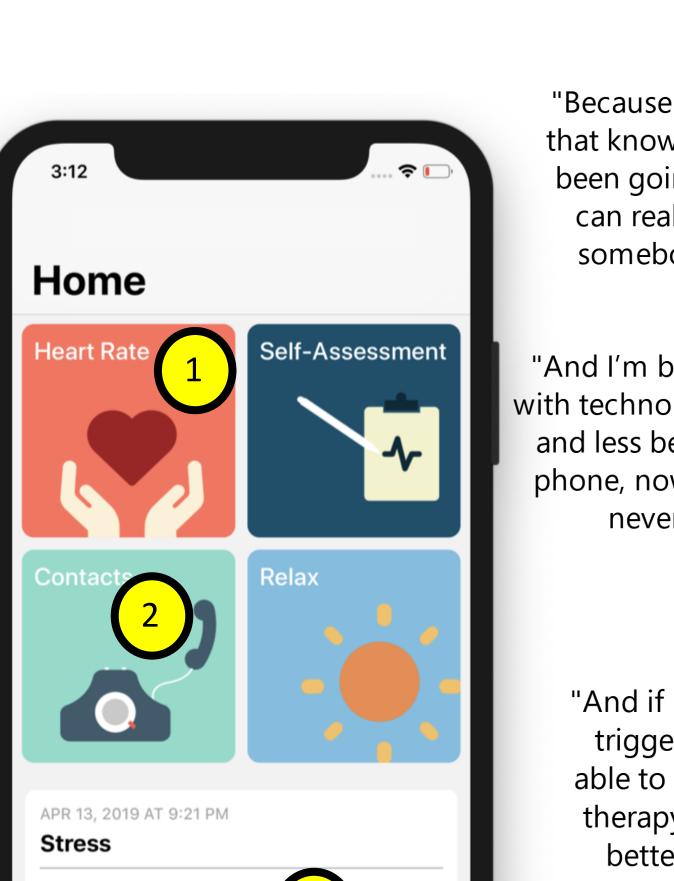
like a quick technique of how to



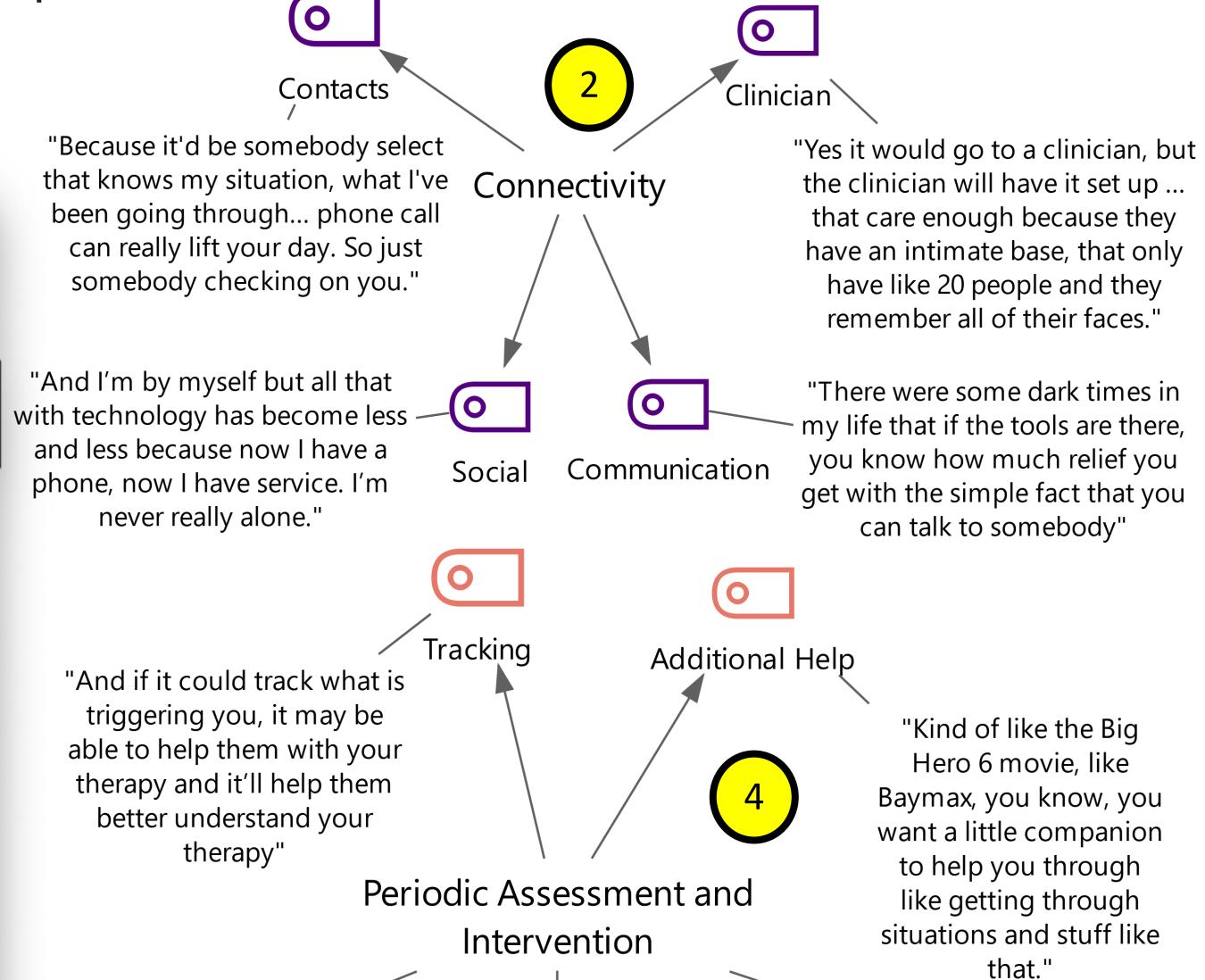


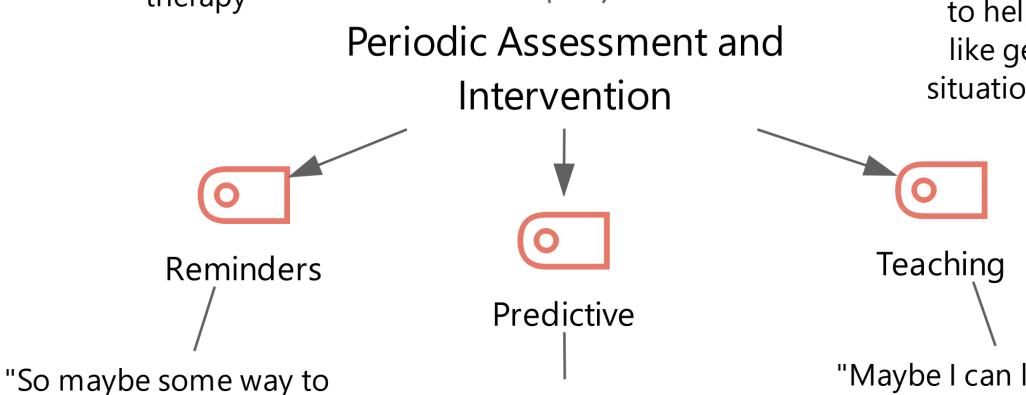
"Like do this, or do that. They are gonna do it. Then that would be great. And if you wanna really get ... customize it, have it talk in the voice, or sound, like their loved one."

Commands



iPhone Xs — 12.2





"Let me know in advance make notes. Cause like for before I even recognize it. That [an] occurrence is down it never happened." about to happen."

me, if it's not written

"Maybe I can learn to notice what my triggers are and what's the best way to counter

trigger[s]"