



Eliza's Watch

Keeping People, Recovery, and Hope Alive

A proposal to help bridge the gap between relapse and recovery



June 13, 2022

Opioid use disorder (OUD) is characterized by a vicious cycle of relapse and recovery. The 'gap' between relapse and recovery is plagued by overdose. The absence of support during overdose can lead to death.

Eliza's Watch will meet the needs of people using drugs where they are—and make a call for help when they cannot.

Eliza's Watch functions as a simple non-identifying, non-stigmatizing watch. Prior to drug use, the wearer enables "Eliza's Watch" mode. This starts a background timer that resets with purposeful motion. If the wearer should become motionless, the watch sends increasing alerts. If the wearer remains unresponsive, it sounds a public alarm. The watch can also trigger a call via linked cellphone, giving location and time of the incident to trusted contacts and/or EMS.

Our Research

We interviewed 100 people including those with OUD, family members, recovery coaches, doctors, clinicians, and professionals. Our research shows that people are primarily using to attempt to feel 'normal' again, to be able to function. These people do not want to die and often practice innovative harm-reduction techniques. 97% of people interviewed approved the concept of Eliza's Watch. 87% of people interviewed with OUD said they would use this device if it were provided to them. 100% of the families interviewed said they supported this device and would pay any amount of money for it.

Application Development

We have deployed a beta release of Eliza's Watch v.2.0. It is currently installed on multiple smartwatches and is undergoing face validity testing with key stakeholders. While the platform of a smartwatch lends itself to development, it is not the ultimate distribution platform, due to their high street value.

Distribution

Our goal is to make Eliza's Watch available to every person in Massachusetts that is suffering from opioid use disorder. It can be most effectively distributed through established channels, such as those providing Narcan, fentanyl test-strips and clean needles. They should similarly be available at doctors' offices, pharmacies, hospitals, and all other available outlets.

Next Steps

Our path forward is broken into the three following phases:

R&D

- 6-8 months
- \$250k
- One on one and focus group interviews with people with OUD
- Determine the acceptance rate of this simpler, less expensive approach
- Research the most effective alarm sound and decibel level to attract help
- Research Smartphone application interfaces
- Research build partners

Build

- 12 months
- \$1.1m
- Build 200 units based on the information from R&D phase
- Get 100 watches on 100 wrists in Boston and Western Massachusetts
- Collect datapoints to identify trends and prove efficacy

Rollout

- 6-8 months
- \$1.25m
- Create 20,000 watches and make them available to every person in Massachusetts with OUD

Research Partners:

HEALing Communities: heal.nih.gov/research/research-to-practice/healing-communities

Tapestry Health: tapestryhealth.org/

Hampshire Hope: hampshirehope.org/

Opioid Task Force of Franklin County and the North Quabbin Region: opioidtaskforce.org/

Baystate Medical Center

Boston Medical Center

Team Technical Competence and Research Experience



Dan Harper is a senior software engineer with 25 years of experience building web applications and supporting IT infrastructure at the University of Massachusetts Amherst. He has owned and operated a restaurant, a computer consulting company and built applications for the iPhone and Apple Watch. He is a member of Learn to Cope, the Opioid Task Force of Franklin County and the North Quabbin Region and sits on Massachusetts Attorney General Maura Healy's Family Advisory Committee on OUD. His daughter, Eliza, died of an opioid overdose in 2018 and is the inspiration behind Eliza's Watch. Dan is Founder and Director of Eliza's Watch.



Dr. William Soares, MD, MS is an Emergency Medicine physician and Director of Harm Reduction Services at Baystate Medical Center in Springfield Massachusetts. He is also an NIH funded researcher who has worked on multiple qualitative projects evaluating the impact of state legislation and medication and harm reduction treatment strategies for people with OUD. Dr. Soares will serve as the principal investigator for all research related activities.



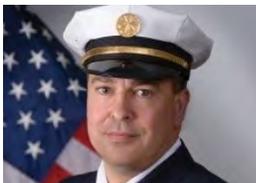
Dr. Dane Scantling, DO, MPH is an Assistant Professor of Surgery at the Boston University School of Medicine and a trauma and acute care surgeon at Boston Medical Center, a hospital at the epicenter of the opioid epidemic in Boston. He has developed opioid minimizing surgical programs and has additional research interest in healthcare outcomes, access to care and interpersonal violence. Dr. Scantling has worked as a paramedic and firefighter in multiple underserved communities since 2005 and is familiar with technologies associated with first responder alert systems. Dr. Scantling will serve as co-principal investigator at Boston Medical Center for the concurrent research.



Liz Whynott, MPH, is the Director of Harm Reduction at Tapestry Health Systems in Western Massachusetts. She directs several programs with the goal of improving the health of people who use drugs, which includes reducing fatal and non-fatal overdoses. She is deeply connected to the drug using community who will be invited to participate in the study. Liz will not only serve in a distribution advisory capacity, but also in an advocacy role. She will help facilitate peer research groups and one-on-one interviews.



Jim Ayres has over 30 years of experience in research administration at the University of Massachusetts, University of Toronto, and Harvard Medical School. He most recently served as Director of The Office of Pre-Award Services at UMass Amherst. Jim will oversee the budget and serve as business manager.



Jeff Olmstead is the Assistant Fire Chief at the Amherst Massachusetts Fire Department. He oversees Emergency Medical Services operations and has been a paramedic for over 26 years. Jeff has expertise in first responder healthcare delivery issues and alert system standards and compliance. Jeff will direct the communications between Eliza's Watch and the EMS systems so a call or text for help is accurately and promptly delivered.



Dr. Ruth Potee, MD is a board-certified family physician and addiction medicine physician in western Massachusetts. She is the Medical Director for the Franklin County House of Corrections, the Director of Addiction Services for Behavioral Health Network, the Medical Director for the Pioneer Valley Regional School District as well as the Co-Chair of the Healthcare Solutions Committee of the Opioid Task Force of Franklin County and the North Quabbin Region. Dr. Potee has extensive relationships with legislative groups that would help to support, promote, and expand Eliza's Watch. Dr. Potee has been involved in Eliza's Watch since its inception. She will remain as an advisor to the project, a mentor to the team and a champion for Eliza's Watch.

Prototype (Apple iOS v. 7.6.2)



Functions as standard watch



User 'opts In'



Watch will alert/call for help



Example of a similar looking product

The Watch

- Non-identifying – We don't want the watch identifying someone as having OUD
- Non-stigmatizing – similarly, we do not want the person to associate negative feelings with wearing the watch
- Look and feel of a 'Fit-Bit' fitness tracker
- Has Bluetooth radio
- Has haptic (vibration) motor
- Has alarm speaker (personal alarm)
- Has PASS alarm (95+ decibel alarm to summon help)
- Switch - either digital or analog
- Battery – built in
- Charging port

How it Works

- I wear it all day – it ONLY tells time
 - If I am going to use, I “opt-in” by activating Eliza’s watch mode
 - If I become motionless for *one minute, watch activates haptic (vibration)
 - If I am still motionless for *30 seconds, watch sounds personal alarm (think alarm clock)
 - If I remain motionless for *30 seconds, watch sounds alert alarm—summoning help from people within earshot (think car alarm)
 - The watch also sends out a Bluetooth signal to a pre-configured smartphone
 - I download and pre-configure the Eliza’s Watch App on the smartphone. It will call trusted contacts and/or 911 giving location and time.
- Other app functionality:
- On-scene instructions for rescue breathing and Narcan administration
 - Building social network among the using community

**actual times to be determined from research*

How you can help

We are looking for funding

- \$250k Get the research started and the ball rolling
- \$1.3m Get the research done, and the prototype built
- \$2.5m Get 20,000 watches on 20,000 wrists in Massachusetts

We are looking for mentorship/partnership

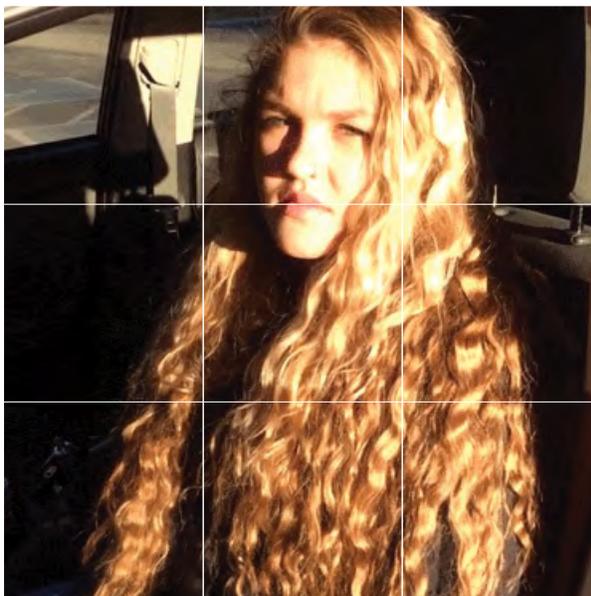
We are open to teaming up with other research initiatives in this space.

Federal funding

I can imagine the federal government will be interested in this product after we prove its efficacy in lowering the fatal opioid overdose rate of Massachusetts.

Sackler remediation fund

I can not think of a more appropriate use of the ill-gotten Sackler fortune than to help those people left to suffer in their wake.



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Contact:

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Proposed Budget

JUNE 13, 2022

	6 mos PHASE 1	12 mos PHASE 2	6 mos PHASE 3	TOTAL
Salaries				
Project Director (DH)	\$62,500	\$125,000	\$62,500	\$250,000
Software Engineer	\$58,000	\$116,000	\$29,000	\$203,000
Business Manager	\$12,990	\$25,980	\$12,990	\$51,960
Subtotal	\$120,500	\$241,000	\$91,500	\$453,000
Fringe (Health Insurance only)	\$12,050	\$24,100	\$9,150	\$45,300
Subcontracts				
Digital foundry—build	\$-	\$250,000	\$-	\$250,000
Digital foundry—production	\$-	\$10,000	\$1,000,000	\$1,010,000
Baystate Medical Center (Soares)	\$-	\$236,325	\$1,500	\$237,825
Boston Medical Center (Scantling)	\$-	\$230,252	\$1,500	\$231,752
Consultants				
Potee, Whynott, Olmstead, Sullivan	\$10,000	\$10,000	\$10,000	\$30,000
W. Soares, Baystate Medical Center	\$20,000	\$-	\$-	\$20,000
Boston Medical Center M.D. (TBD)	\$20,000	\$-	\$-	\$20,000
Legal counsel	\$-	\$20,000	\$20,000	\$40,000
Marketing consultant	-	-	\$12,000	\$12,000
Equipment				
2 high powered Macs (for engineer & PD)	\$5,400	\$-	\$-	\$5,400
Other				
Participant Support Costs	\$25,000	\$25,000	\$-	\$50,000
Hosted Relay Server	\$2,500	\$5,000	\$2,500	\$10,000
Space Rental	\$7,500	\$7,500	-	\$15,000
TOTAL COST	\$235,940	\$1,085,157	\$1,161,140	\$2,482,237

PHASE 1: 6 months

PHASE 2: 12 months

PHASE 3: 6 months

Budget Explanation

JUNE 13, 2022

SALARIES

- 1) Project Director, Dan Harper, Principal of Eliza's Watch. Will lead all aspects of the project. 100% level of effort
- 2) Software Engineer (TBD). 100% effort in Phases 1 & 2; 50% Phase 3
- 3) Business Manager. Hourly - paid as needed - 10 hours per week budgeted. Any unspent funds will be rebudgeted to other project needs

Fringe – health insurance only

SUBCONTRACTS

Digital Foundry (TBD) - references for digital foundries were provided by Forge Mass. Quotes obtained from Senso-Medical, EmpireGroup, Goddard, and Bayard Design.

Costs ranged from \$150,000 build/\$100 unit to \$250,000 build/\$50 unit.

Phase 1: none

Phase 2: 100 watches to be tested by human subjects at two sites: Boston and Western Mass (50 watches each site)

Phase 3: 20,000 watches - production

Baystate Medical Center - Dr. Bill Soares, Principal Investigator and overall project research leader (all sites) Will lead research effort in Western Mass including overseeing the human subject participation; IRB coordination; coordinate with Boston and Project Director (Harper). *See below for budget.*

Boston Medical Center - led by a researcher TBD. Will lead research effort in the Boston area including overseeing the human subject participation; IRB coordination; coordinate with overall research PI (Soares) and Project Director (Harper). *See below for budget.*

CONSULTANTS

Liz Whynott, MPH, Director of Harm Reduction at Tapestry Health Systems in Western Massachusetts

Dr. Ruth Potee, board-certified Family Physician and Addiction Medicine physician in western Massachusetts

Jeff Olmstead, Assistant Fire Chief at the Amherst Massachusetts Fire Department

Cherry Sullivan, Program Coordinator, Hampshire Hope

William Soares, M.D., Baystate Medical Center - Phase 1 (subcontractor thereafter)

Researcher at Boston Medical Center (TBD) - Phase 1 (subcontractor thereafter)

Legal consultant; all phases

Marketing consultant; Phase 3

EQUIPMENT

2 - MacBook Pro laptops: 10-Core CPU, 16-Core GPU, 16GB Unified Memory, 1TB SSD Storage. For Project Director and Software Engineer

Source: <https://www.apple.com/shop/buy-mac/macbook-pro/16-inch-space-gray-10-core-cpu-16-core-gpu-1tb>

OTHER

Participant Support Costs

Phase 1: Interviews only. 50 participants with OUD in Boston area; 50 in Western Massachusetts

Phase 2: Human subjects participants; 50 in each region (Boston and W. Mass) to test most current prototype

Space Rental

4 or 5 meetings per cohort Phases 1 & 2; 3 cohorts - Hampshire Hope, Tapestry, Boston

Hosted Relay Server

monthly; all phases