



Patient Initiated Controlled Analgesic Recording Dispenser

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Why is it a **Crisis?**

Addictive
Accessible
Lethal



THE OPIOID EPIDEMIC BY THE NUMBERS



70,630

people died from drug overdose in 2019²



10.1 million

people misused prescription opioids in the past year¹



1.6 million

people had an opioid use disorder in the past year¹



2 million

people used methamphetamine in the past year¹



745,000

people used heroin in the past year¹



50,000

people used heroin for the first time¹



1.6 million

people misused prescription pain relievers for the first time¹



14,480

deaths attributed to overdosing on heroin (in 12-month period ending June 2020)³



48,006

deaths attributed to overdosing on synthetic opioids other than methadone (in 12-month period ending June 2020)³



SOURCES

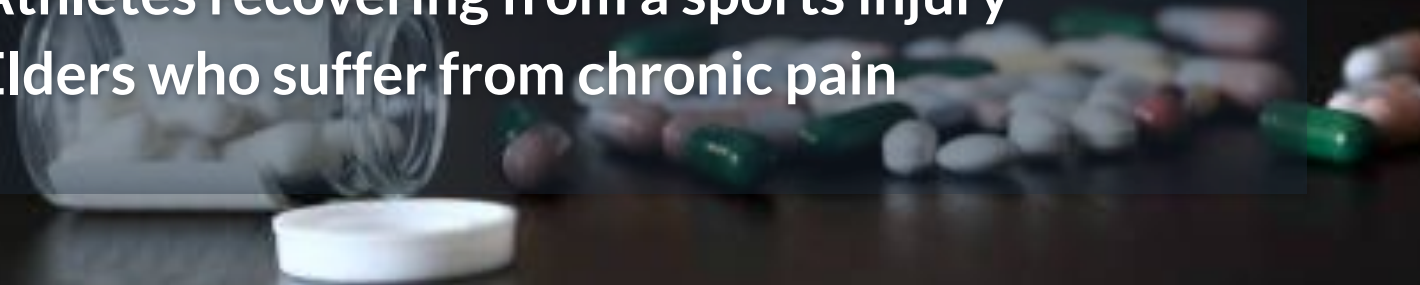
1. 2019 National Survey on Drug Use and Health, 2020.
2. NCHS Data Brief No. 394, December 2020.
3. NCHS, National Vital Statistics System. Provisional drug overdose death counts.

- There are over 150 deaths from opioid overdoses every single day
- Prescription opioid misuse has been increasing by the year since the 1990's

What are the common problems of opioids?

Over-Prescription of medication is common and oftentimes leaves patients with extra, this increases the risk for post op addiction in youth and elderly:

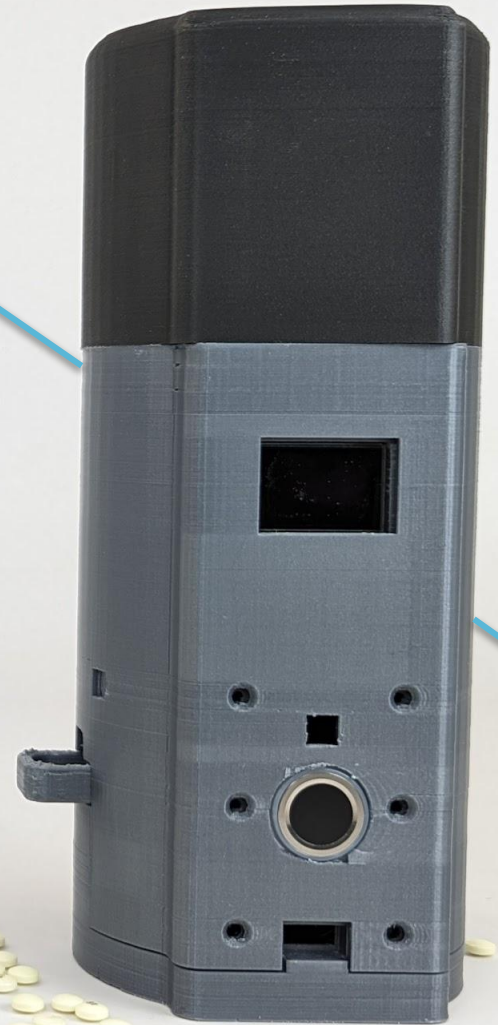
- Children recovering from surgeries
- Athletes recovering from a sports injury
- Elders who suffer from chronic pain

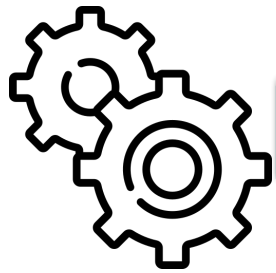


Our Solution:

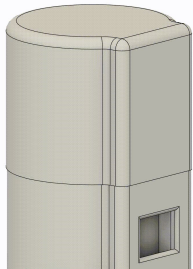
The PICARD bottle,
making sure its the:

- **Right** Dose
- **Right** Patient
- **Right** Time

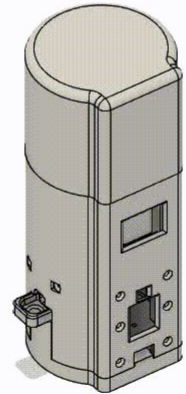


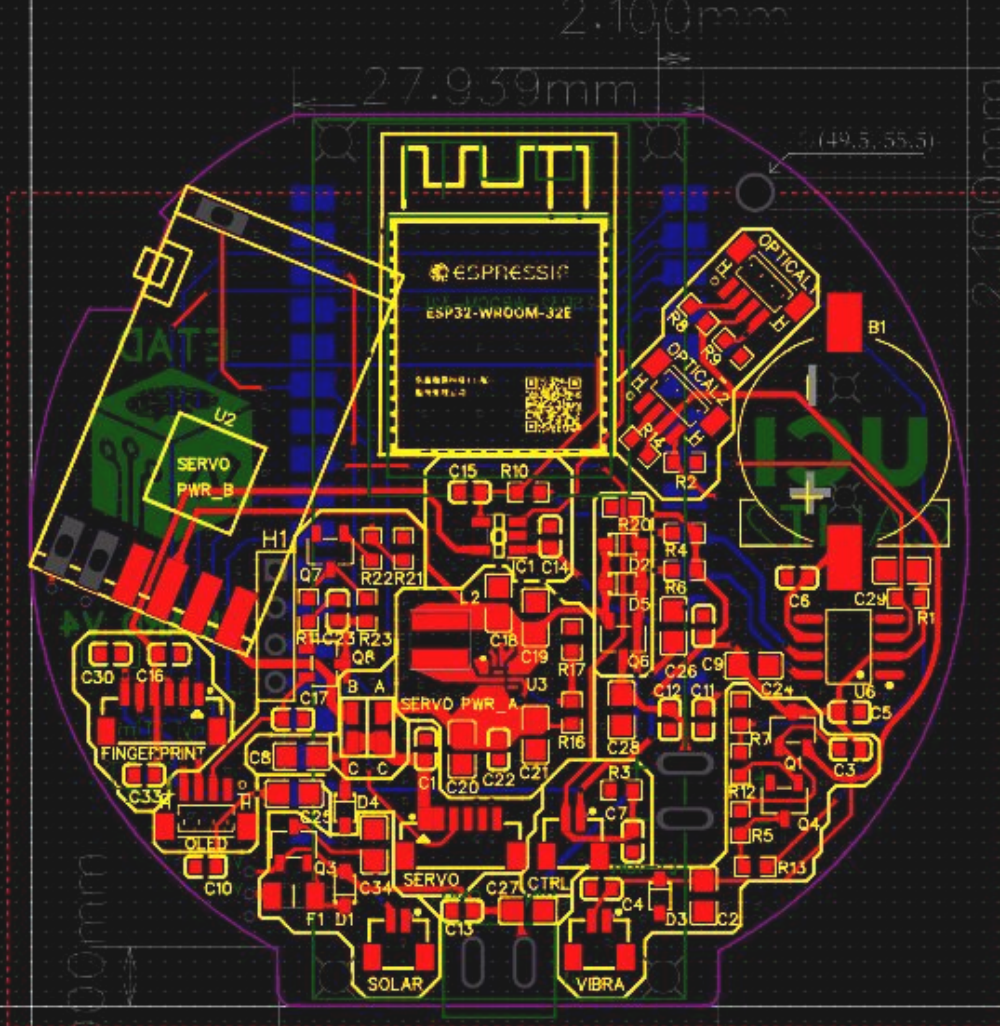


Mechanical Design



- 3D printed using PLA
- Helix propelled
- Vibration motor to help facilitate pills dispensing
- Looking into more efficient ways to pack the helix





Electronics



OLED Display



Servo Motor



Servo Power



Micro Photoelectric Sensor



Vibration Motor

OLED Display

Fingerprint
Sensor

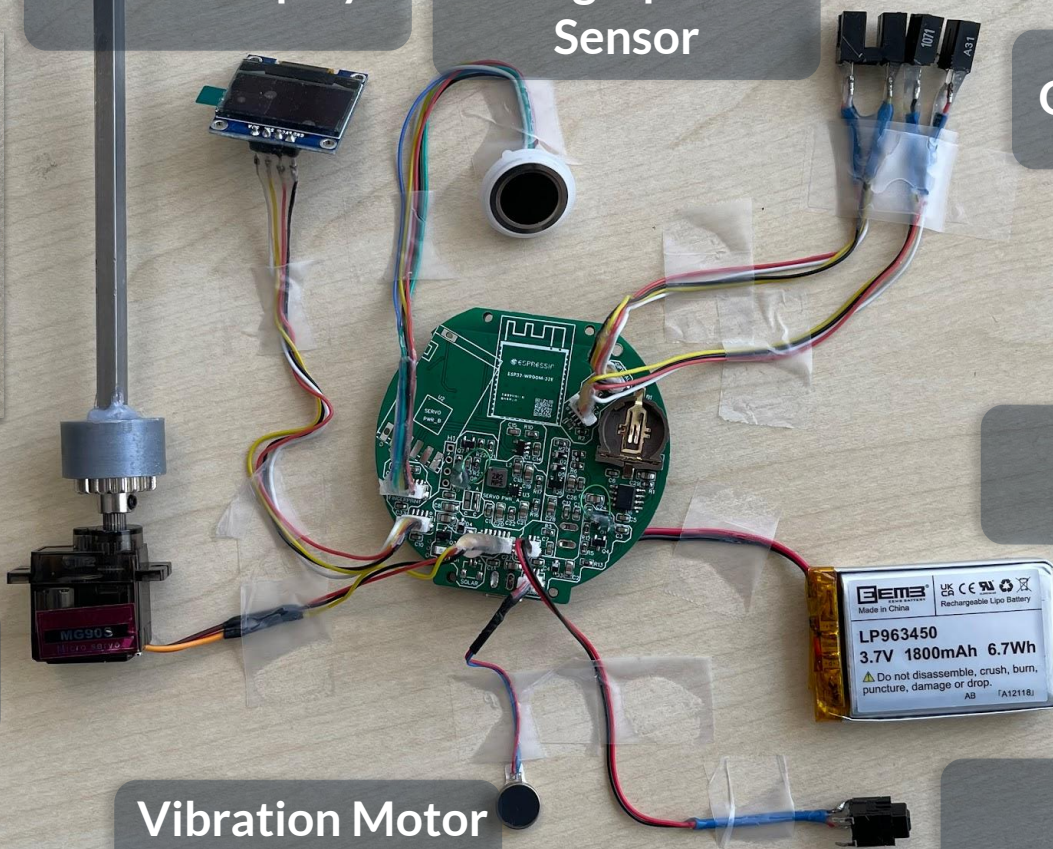
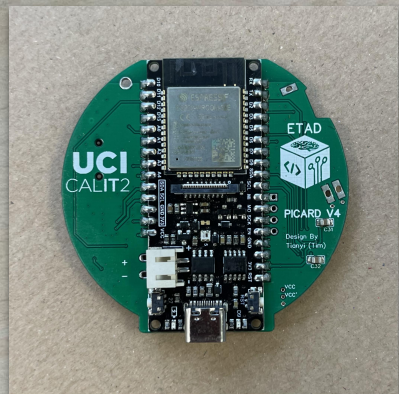
Optical Sensors

Battery

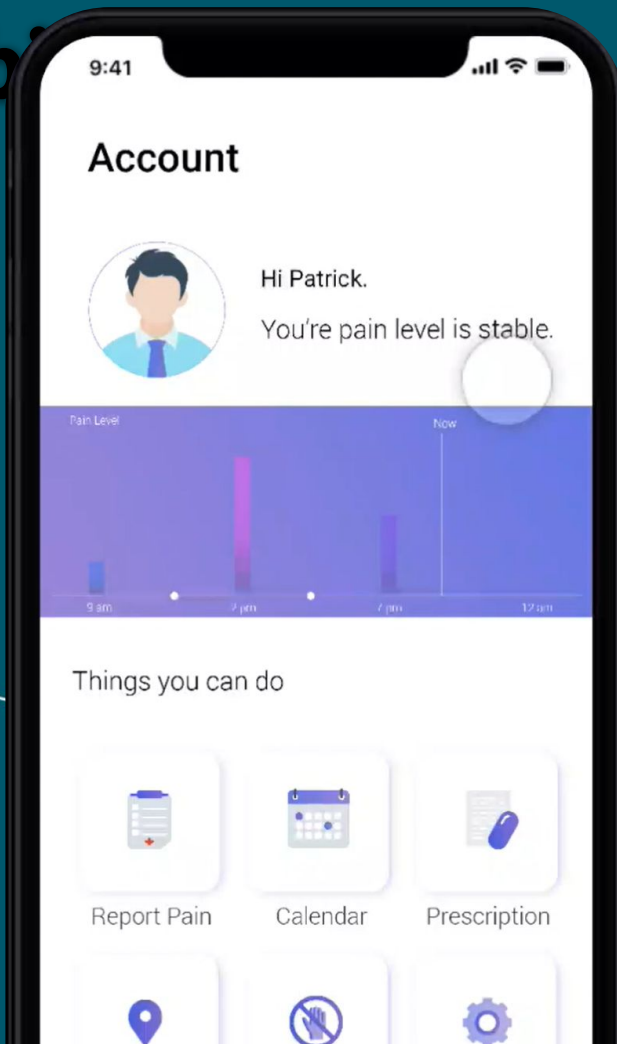
Button

Vibration Motor

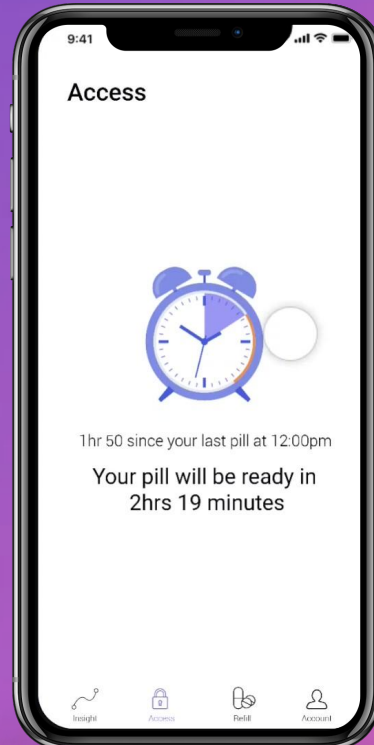
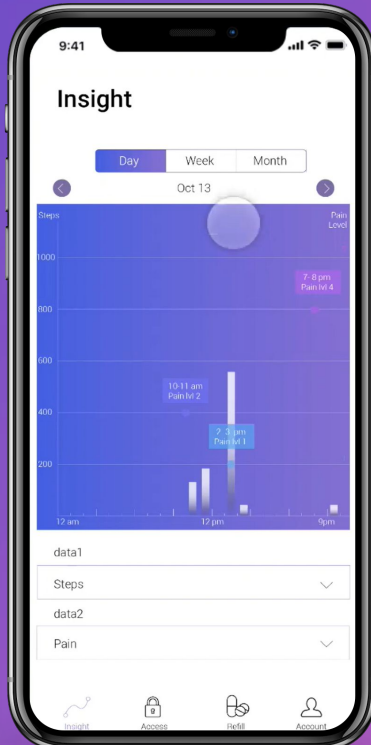
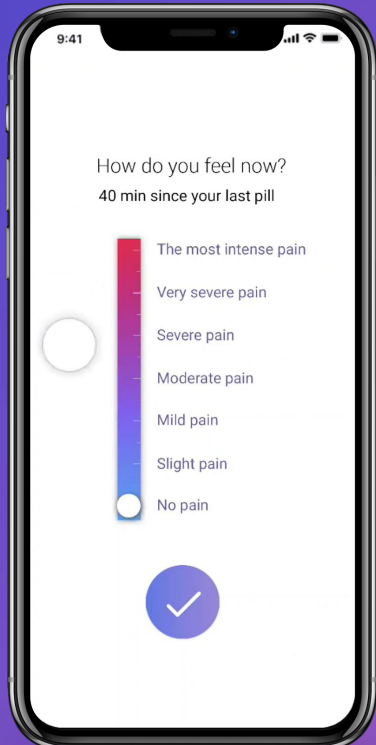
Servo Motor



PICARD Mobile App



Pain Insights



- Patient will self-evaluate pain level before dosage
- Pain level data will be categorized for analysis from patient or doctor



Future Plans

- Address points of malfunction with assembly
- Reduce bottle size
- Mechanical Locking System for cap
- Design fail safe for any blunt force impact



Thank you to our current and some previous members!

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