

SMART VitalWear

Team 3:

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The Problem

Monitoring vital health metrics is difficult.

There is a lack of integration and consolidation among devices for monitoring vitals. Additionally, the manual vital monitoring/interventions required by nurses can cause alert fatigue and extra workload.

Sponsor: David Chan, Carle hospital



Design

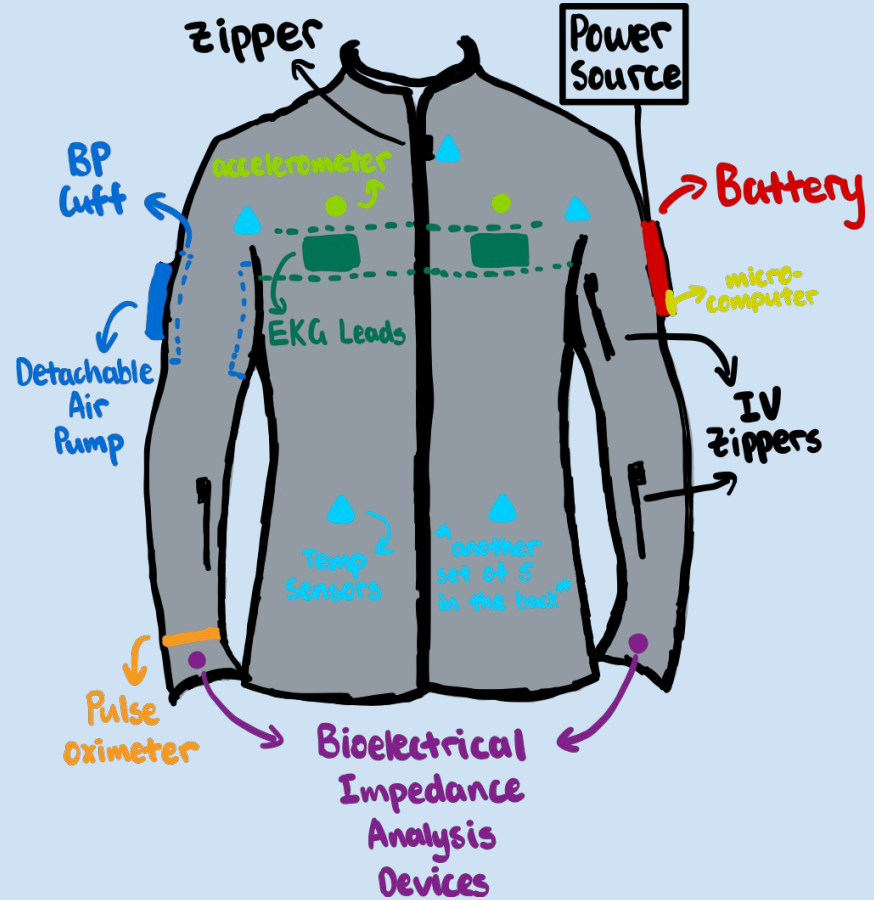
Sleek, lightweight, and compact design

Portable

Applicable for emergencies

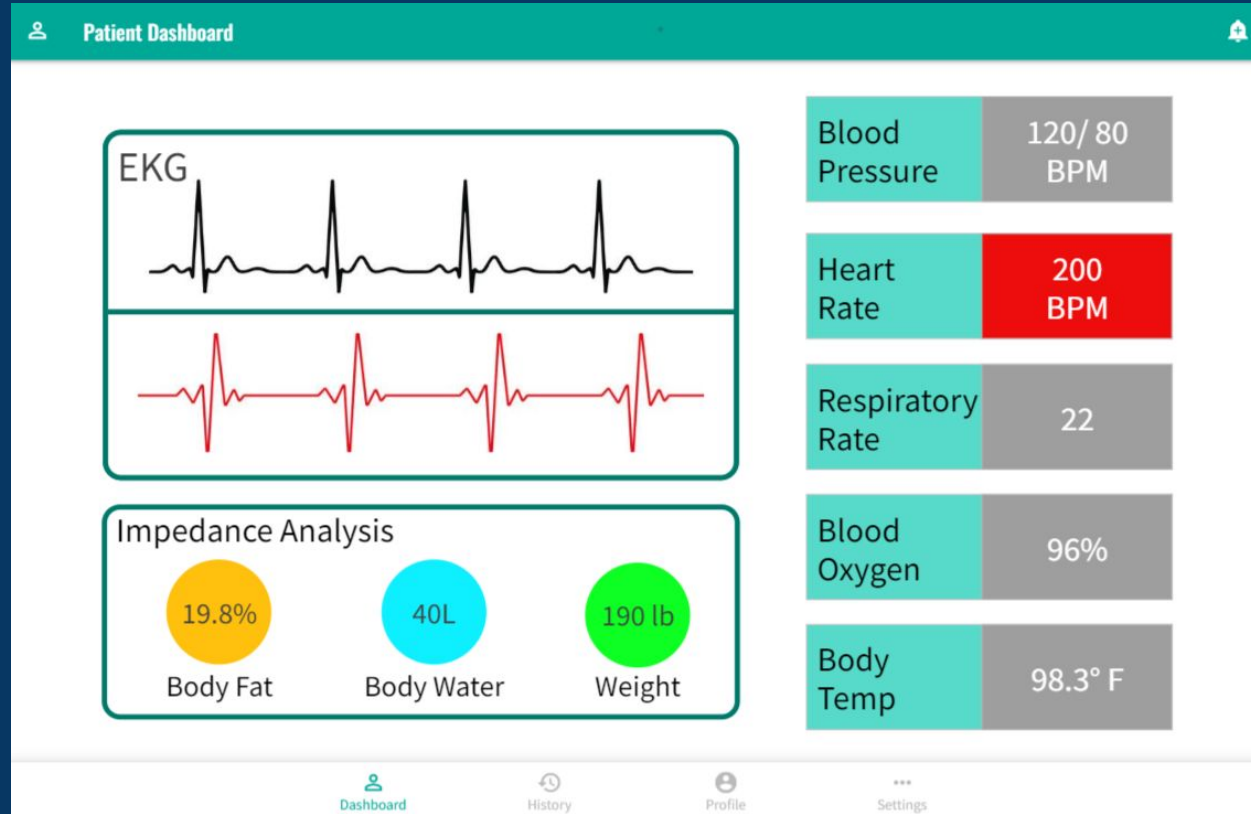
Wireless

Machine-Washable



App UI mockup

- Snapshot patient monitoring dashboard
- Set custom alerts
- View data history
- Synced between in-room monitor, mobile app, web app
- Different Patient vs. Physician Views
- EHR compatible
- Secure interface



Market

Target audience:

- General floor and ICU patients
- Nursing home residents
- At home patients



Areas of growth to pursue in the future

Customizable versions for different populations

- Built in AEDs
- More telemetry sensors
- Sweat sensors
- Compatibility with PEG Tube, wound bags or surgeries
- Personal use versions
- Athletes to track health and heart rate

Expected Material Costs

Wearable components	Average costs
ECG leads (2)	\$100
Temperature sensors (10)	\$30
Pulse Oximeter sensor	\$15
Blood pressure cuff + air pump	\$120
Bioimpedance sensors (2)	\$25
Accelerometers (2)	\$50
Monitor	\$40
Lithium ion battery	\$20
Wireless module + microcomputer	\$25
Fabric + production	\$100
Total	\$525

Next Steps

1. Prototyping
2. Initial data collection
3. Calibrations
4. Trial testings
5. Improvements accordingly

