

MD5 HACKATHON
JULY 2017

Hospital Bed On-The-Go

Adam Chew
Mandy Mei

(Team Patapaxi)

Case Study

Imagine an earthquake aftermath.

The First Response team arrives at the scene.

Someone's crying. He's crawling. She's screaming for help.

How do you determine who needs immediate medical attention and what do you do with those who are waiting?

Solution

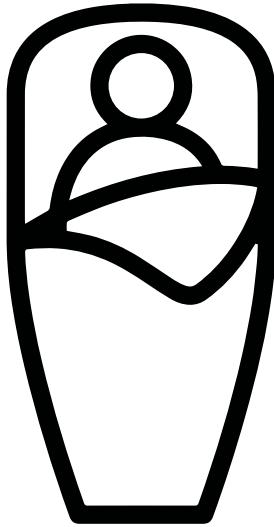
Hospital Bed On-The-Go:

Network of portable “hospital bed” with smart lining integrated in sleeping bags to monitor heart rate and regulate body temperature.

Not only does this help determine who is in need immediately, but it also serves as a temporary comforter to keep victims warm while waiting for medical assistance.

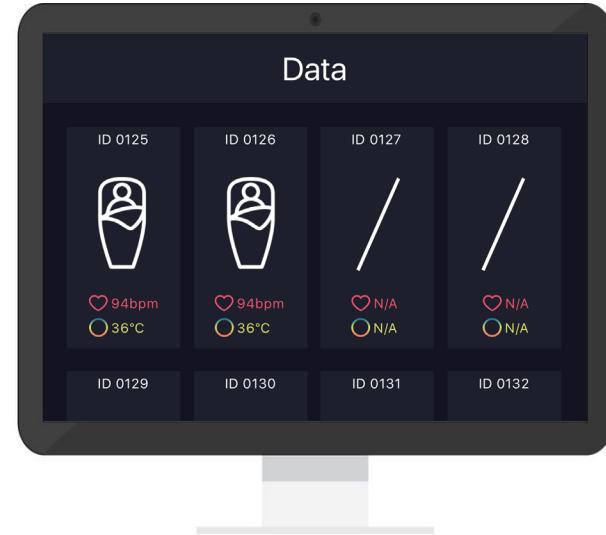
Hospital Bed On-The-Go is also 100x lighter and 20x more compact than a standard medical bed.

Demo + Deliverables



----->

Wireless Mesh Network



Demo:

Sleeping Bag Functions

- GPS Enabled
- Heart Rate Monitoring (strap)
- Body Temperature Moderation (smart fabric lining)

Deliverable:

Data Display for Medical Team

(<http://hospital-bed.herokuapp.com/>)

- Victim's heart rate, body temperature, and location in real time
- Data analytics
- Ability to control temperature of the bag remotely

Smart Fabrics + Technology

- **GPS Enabled**

Actively tracks and send geolocation to dispatch systems

- **Heart Rate Monitoring**

Integrated heart rate monitor attached inside the sleeping bag

- **Body Temperature Moderation**

- Skin thermistor within the fabric to monitor skin temperature

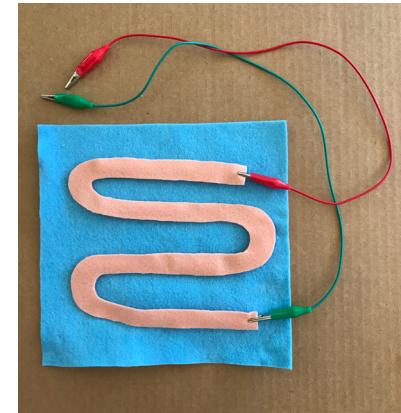
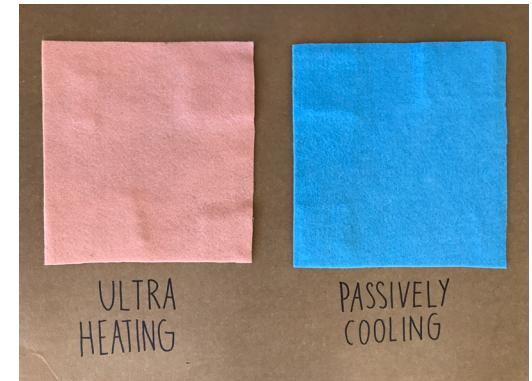
- Passive cooling fabric to relieve excessive heat

[\(<https://cambridgehack.md5.net/resource/GbCGhqt6X8mZ3EtAS>\)](https://cambridgehack.md5.net/resource/GbCGhqt6X8mZ3EtAS)

- Thermal heated fabric activated when needed

[\(<https://cdn-shop.adafruit.com/datasheets/Ultra+Heating+Fabric.pdf>\)](https://cdn-shop.adafruit.com/datasheets/Ultra+Heating+Fabric.pdf)

Smart Fabrics + Technology



Customer Validations

“It’s a great idea that actually can be tweaked for various environmental conditions.”

Tom Fletcher
20 Years in Army 11B + Paramedic
(Sandy, Katrina, 9/11)

“..it helps cut down on the after guilt of the first responders..”

John Pringle
Aeronautical / Electrical / Mechanical Engineer
(Volunteer/Missionary Rescue)

“Medical patients, unlike trauma patients, would be more ideal for the product since they are able to be moved.”

B. Leung
5 Years as EMT Paramedic