

Background

- Pressure Ulcers arise from reduced blood flow to a certain area due to prolonged pressure on the skin.
- These sores are most likely to occur where pressure is placed unevenly across the patient's body, namely over bony areas such as the buttocks, elbow, hips, ankles, shoulders, and back.
- Pressure shifting or turning protocols have been put into place to lessen the occurrence of ulcer formation.
- Compliance is generally low in nursing home and at-home care, however, due to high patient to nurse ratios and inadequate caretaker training respectively.

Clinical Need

Pressure ulcers (PU) are a common affliction among bedridden patients. Despite protocols to prevent their formation, around 11% of nursing home residents develop PUs in a given year. Nursing home and home-bound patients are at risk for ulcer formation and require frequent turning. **Caretakers need a simple, efficient device to help reposition patients and prevent pressure ulcers.**

Design: Nodes

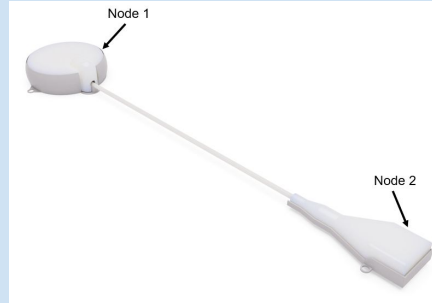
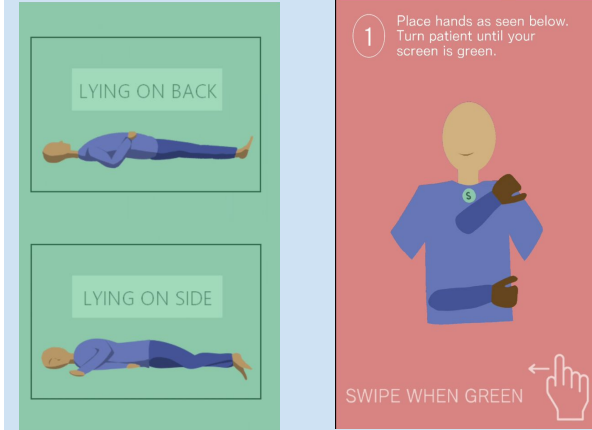


Figure 1. Product design with both nodes.



Figure 2. Prototype visualized on the body

Design: App



Figures 3 and 4. Screenshots of our accompanying app

Future Steps

- Human factors testing
- Clinical trial
- Increasing the size and scope of our user network

Acknowledgements

- Faculty and TAs from Honors Instrumentation Course & Rehabilitation Engineering Course.