

# Monitoring and Preventing Pressure Ulcer Development

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## Clinical Challenge

Develop a pressure ulcer monitoring device to improve the care of spinal cord injury (SCI) patients who must lie in bed or sit in a chair at all times.

Excessive pressure at the patient's bony prominences can stop local circulation through the skin, gradually creating a pressure ulcer in the tissue. Although relieving skin pressure at regular intervals can prevent this, each year, pressure ulcers add an estimated burden of over \$1 billion of expenditures to the United States healthcare system.

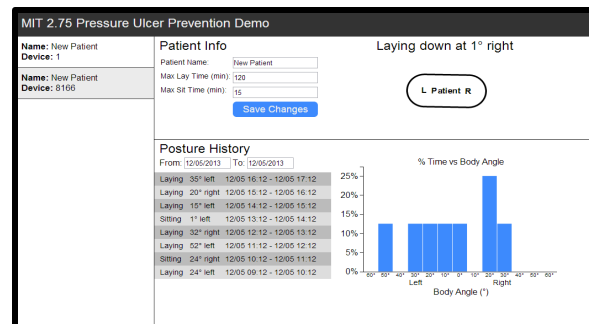
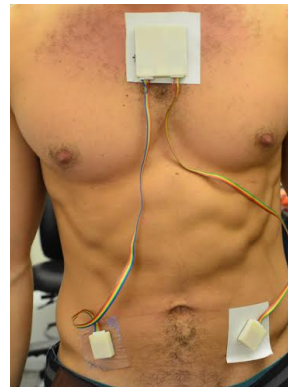
## Solution

### Patient Care Device

- *Sensor Module* – is worn by the patient and records angle data
- *Bedside Module* – communicates over RF with sensor module, generates posture data, and alarms caregivers to sedentariness

### Information Aggregation

- *Server* – stores patient posture data for all bedside modules in a hospital
- *User Interface* – allows caregivers to view posture data and configure devices



## Benefits

### For Patients

- *Proper Treatment* - Prevents pressure ulcers from developing
- *Position Versatility* - Easily transitions from use in seated and supine positions
- *Setting Versatility* - Easily transitions from use in hospital to home

### For Caregivers

- *Workflow Integration* - No additional manual burden for caregivers
- *Communication Integration* – Works with existing patient-caregiver communication

### For Physicians

- *Customized Care* - Allows per-patient device configuration
- *Data Collection* - Provide accurate reviewable history of patient posture
- *Low Cost* - Significantly less expensive than existing solutions