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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