CurveAssure

Deformity Posture Analysis For Spinal Patient Assessment

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Background

Treatment for complex spinal deformity ranges from physical therapy to surgeries. For patients with this debilitating disease, relief of symptoms comes after months of trial and error of different treatments.

The most invasive treatment is a procedure called a complex spinal fusion, where rods and screws are put into the back to stabilize a region.

Over the past 10 years, this procedure has seen a **250% increase in prevalence, with over 250,000 complex fusions performed every year** in the US. However, **17% of these procedures are done unnecessarily.**

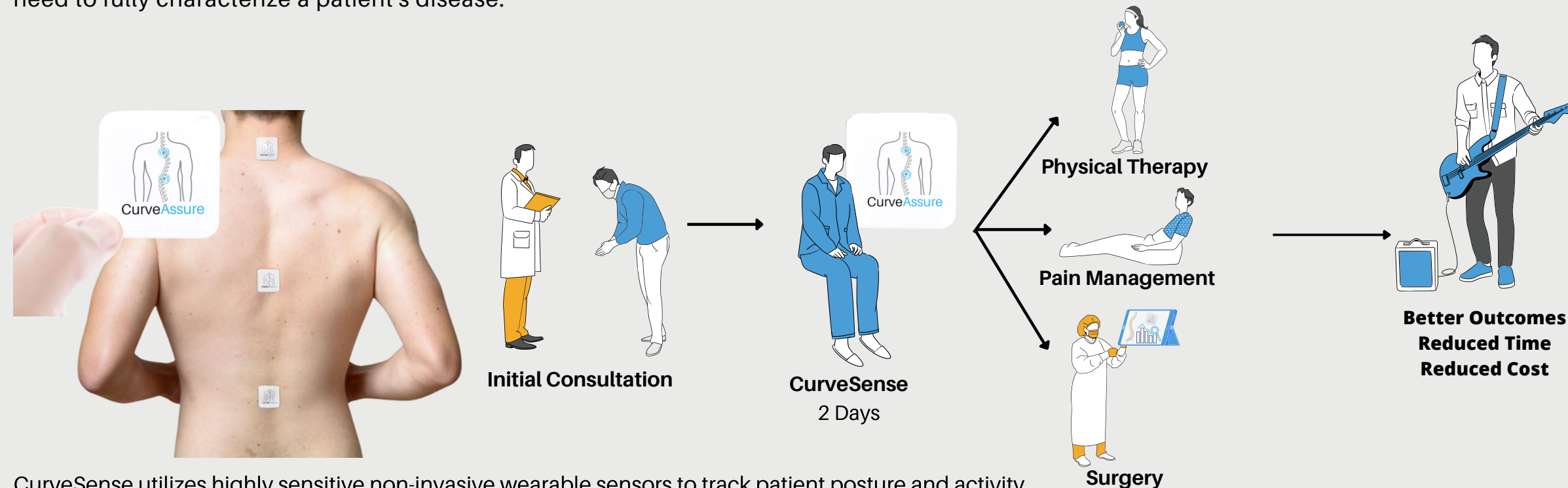They're also extraordinarily risky. **Fusions have a complication rate of over 50%**

Current planning tools for patient treatment are based off of static imaging techniques such as X-Rays, MRIs, and CT scans. These images, in conjunction with clinical visits, form the foundation that physicians use to prescribe treatment. However, the spine is an extremely flexible and mobile part of the body with over 350 joints. Current **images inadequately capture a patient's motion or deformity.**

Need Statement

Complex spinal deformity physicians need a **comprehensive method** of capturing the patient's true disease state to better assess patient treatment planning.

Our Solution: CurveSense
Providing Deformity Posture Diagnostics

CurveSense is a sensor based at-home wearable that monitors and tracks a patient's posture and motion. It provides physicians the data they need to fully characterize a patient's disease.

Initial Consultation

CurveSense 2 Days

Physical Therapy

Pain Management

Surgery

Better Outcomes Reduced Time Reduced Cost

CurveSense utilizes highly sensitive non-invasive wearable sensors to track patient posture and activity outside of the clinic. After data collection, our software processes the data from the sensors and translates it into actionable patient metrics for physicians to use in personalized treatment planning.

Conclusion

$124 M Potential yearly savings to system

48 hrs Measurements in Patient Natural Environment

5 Unique Metrics Designed To Improve Outcomes

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[1] Cutting Costs of Back Surgery
[2] "Unnecessary" spinal surgery: A prospective 1-year study of one surgeon's experience