

CASE STUDY

Good Shepherd Rehab Network



Enhancing Patient Neuroplasticity and Financial Profitability with the Ekso Robotic Exoskeleton

Organization Description

Good Shepherd Rehabilitation Network (Allentown, PA) is a nationally recognized neuro-rehabilitation leader, offering a continuum of care for people with injuries, complex medical needs and physical and/or cognitive disabilities. Patients come to Good Shepherd each year for specialized programs in stroke, orthopedics and sports injuries, brain injury, spinal cord injury, amputation and more. Good Shepherd provides services under Medicare, Medicaid, private pay, and commercial insurers.

Program Overview

Good Shepherd's clinical philosophy centers around returning patients to their maximal functional recovery. Good Shepherd embraces the principles of neuroplasticity in their rehabilitation program. Neuroplasticity is the capacity for continuous alteration of the neural pathways and synapses of the Central Nervous System in response to injury or repetitive experience. Good Shepherd's rehabilitation programs are based on motor learning techniques and approaches that induce neural plasticity. They provide training to patients that is: task specific, meaningful and challenging, repetitive and intensive, provided in an enriched environment with movements performed in a relatively normal biomechanical position and manner.

Challenge

Good Shepherd's clinicians are looking for ways to enhance motor control and functional recovery for their patients. They believed that rehabilitation robotics could be a viable solution for a broad patient population. They wanted to augment their locomotor training program with a robotic exoskeleton that would enhance neuroplasticity and maximize functional recovery. As with any facility, they must make investments that they feel will deliver the desired clinical outcomes and support the organization's mission in a manner that is financially viable.

Solution

Good Shepherd utilized the Ekso robotic exoskeleton designed for use by individuals with weakness or paralysis of the lower limbs, due to spinal cord injury (SCI) and stroke, in rehabilitation institutions.* as part of their customized rehabilitation care continuum.

Implementation Approach

Good Shepherd integrated their first Ekso device in their out-

"the Ekso System represents a compelling marriage of repeated positive clinical outcomes and very positive financial margins for our program."

Frank Hyland, PT, MS VP,
Rehabilitation Services and Hospital Administrator
Good Shepherd Rehabilitation Hospital

patient rehabilitation clinic. They hosted a series of interviews to determine which team of four physical therapists would obtain Ekso Certification to help build the clinical program.

Good Shepherd then fortified their clinical program with marketing efforts to raise visibility of their new acquisition and drive demand in the local and regional markets. They issued a press release and were featured on one of the affiliate stations; put an advertising "wrapper" promoting the Ekso wearable robot on one of their transportation vans, and added banners on the facility campus. After achieving repeated positive patient experiences and outcomes, they developed videos for use in social media and focused on optimizing their organic search results online. Within three months, the Ekso System was in usage 35-40 hours a week.

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Additionally, they saw a positive impact to the staff productivity and satisfaction. The team of Ekso Certified PTs repeatedly saw better patient outcomes and patients were improving more quickly. They were able to work on a broader range of therapeutic goals because fewer hands were required to facilitate gait training and PT aides were empowered to contribute at a higher level. The team of Ekso Certified PTs also now carry a sense of pride and ownership in the program, which has led to healthy competition.

Within 12 months, success in the outpatient setting drove Good Shepherd to invest in a second Ekso device for use inpatient. They speculated that 90% of the hemorrhagic stroke patients could benefit from early mobilization using the Ekso device during the inpatient phase of their care. They felt the Ekso Variable Assist software could get patients walking sooner, help prevent compensatory strategies and progress quicker. The outcomes equaled expectations. In addition, the Ekso device significantly reduced the need for further gait training by the time patients were discharged to outpatient therapy. The number of patients who used the Ekso System during inpatient rehabilitation who required robotic gait training when they entered the outpatient setting was reduced by 50%.

Financial Impact

Integrating the Ekso device into their rehab program has demonstrated a robust financial performance as well. In the first year, their program delivered a contribution margin of 37% with a payback period of two years.

Their acquisition of the Ekso robotic exoskeleton delivered an immediate impact on patient demand, with an expanding catchment area from a 20-mile radius to six hours outside of Good Shepherd and a 110% increase in locomotor training outpatient visits year over year. It was clear after year two that a second Ekso device could be profitably supported in the outpatient setting and allow for increased visits on a weekly basis, moving from one visit to two visits per new patient.

“We’ve dramatically increased our reputation in the region, even though we’re in a small town. We’ve seen amazing outcomes with many of our incomplete spinal cord injuries and strokes that we don’t think would have been possible without the Ekso system.”

Sue Golden, PT
Director of Neurorehabilitation
Good Shepherd Rehabilitation Network

The Ekso robotic exoskeleton also allowed the PT resources to be more productive and efficient. With proper training, most Ekso tasks could be transitioned from 2 PT resources to 1 PT resource with an aid in the outpatient setting, therefore the program could handle the 110% increase in locomotor training patient visits without adding any incremental PT resources. Focus then shifted to looking at ways to offer effective concurrent treatment for patients that optimized resources while optimizing clinical outcomes.

Key Highlights

- Within three months, the Ekso device was in usage 35-40 hours a week
- Staff saw better patient outcomes and patients improving more quickly
- Within 12 months, success in the outpatient setting led to acquisition of a second Ekso device for use inpatient
- Transitioned from 2 PT to 1 PT
- The number of patients who used the Ekso System during inpatient rehabilitation who required robotic gait training when they entered the outpatient setting was reduced by 50%
- In year one, their program delivered a contribution margin of 37% with a payback period of two years
- Expanded catchment area from a 20-mile range to six hours and a 110% increase in locomotor training

*for full indications for use please visit www.eksobionics.com