Barrow Neuro-Rehabilitation Services

Pushing the Boundaries in Rehabilitation

Barrow Neurological Institute

Winter 2025
Volume 11, Issue 1

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Dignity Health
St. Joseph's Hospital and Medical Center

Best Rehabilitation Hospital 2024-2025
U.S. News & World Report

For the third consecutive year, Barrow Neuro-Rehabilitation was ranked by the *U.S. News & World Report*, again moving up in the list of "Best Rehabilitation Hospitals." The pride of this recognition is shared across the continuum of neuro-rehabilitation services. Congratulations to the staff and leadership for this accomplishment.

Barrow Neuro-Rehabilitation ranked very high with patients treated for stroke and those treated for SCI. The ranking of discharges to home was higher than the national average.

Two areas ranked as excellent were:

1. **Advanced Technologies,** which includes the availability of technologies such as a simulated rehabilitation environment and prosthetic/orthotic services.
2. **Patient Services** of those being on-site, such as enabling services and case management.

Technology Update

Ongoing Assessment

The Barrow Assistive Technology (BAT) Committee has an ongoing schedule of assessing a variety of devices that could benefit our patients. These include devices used for swallowing disorders, cognition, mobility, therapeutic exercise, and neuromuscular retraining. The committee collaborates with national and international vendors, incorporating trials of various equipment as a Beta Center. This helps determine what devices best suit the needs of our patients and assesses any gaps in our therapeutic interventions that could be filled using these specific tools.

Additional Opportunities to Utilize Robotics and Technology

Additional opportunities to access the use of robotics and advanced technologies in the clinical setting are available in the areas of inpatient neuro-rehabilitation and the outpatient neuro-rehabilitation arena. Inpatient neuro-rehabilitation has partnered with two universities to have students in the occupational therapy program provide extra therapy with robotic and advanced technologies for our patients on the weekends under the supervision of an OT. In outpatient therapy, we have our Barrow Wellness Program, where people can access the devices through a self-pay option to either complement their conventional therapy or continue therapy while they do not have any further benefits.

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Technology Update continued

The Ekso Indego Personal

"Ekso Indego Personal is the only known portable exoskeleton robotic device to offer a modular quick connect design, which was engineered to allow users to put on and take off the device independently. At just 29 lbs., the Ekso Indego Personal is the lightest known commercial exoskeleton available offering ease of handling, transportation, and storage. Also offering an advanced gait mode, individuals using the device can reach faster walking speeds, granting them a new level of independence in the community." *(Source: Eksobionics.com)*

The Barrow Outpatient Neuro-Rehabilitation Center has three physical therapists who are certified to train an individual for the Ekso Indego Personal. In August 2024, the program received the first referral for a personal device user who met the criteria for eligibility. He has been receiving training in the Barrow Outpatient Neuro-Rehabilitation Center with Katie Chun PT, DPT, and Al Biemond PT, DPT. By January 2025, this individual will have completed his training and be the first Ekso Indego Personal user to be trained in the state of Arizona.

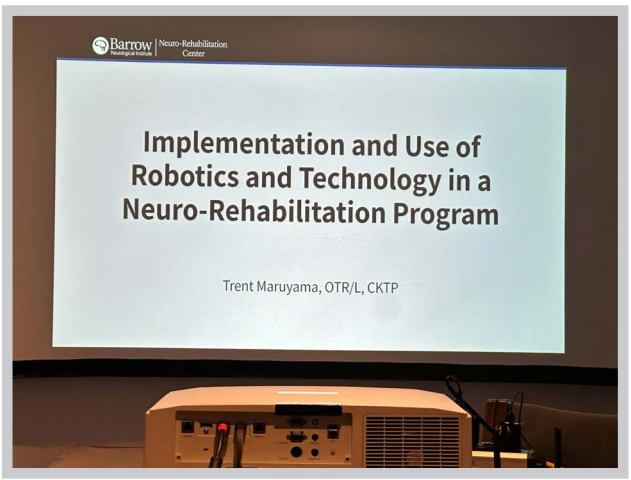
In late 2023, CMS completed its review of the Ekso Indego Personal and approved use of Healthcare Common Procedure Coding System ("HCPCS") Code K1007, to allow billing of Medicare for such devices. The final determination for reimbursement went into effect on April 1, 2024, paving the way for more persons with SCI the opportunity to obtain a personal use exoskeleton.

Eksobionics.com

Educational Corner

International Influence

Trent Maruyama, OTR/L, program manager for rehabilitation technology at Barrow Neuro-Rehabilitation, was invited to the Summer School on Neuro-Rehabilitation, SSNR, in Baiona, Spain. As a featured presenter, he spoke on implementing neuro-robotics and rehabilitation technology into the clinical setting. He shared his perspective on the benefits of using technology with the patients experiencing various neurological impairments, which is in fact the program currently in place at Barrow Neuro-Rehabilitation. The invitation was sent from the Motus Academy out of Zurich, Switzerland.



Travel Fellow Clinical Observer

Barrow rehabilitation services hosted their first travel fellow clinical observer, Marianne Hensman, PT, PhD, from Birmingham City University, Birmingham, England from Oct. 28 through Nov. 4, 2024.

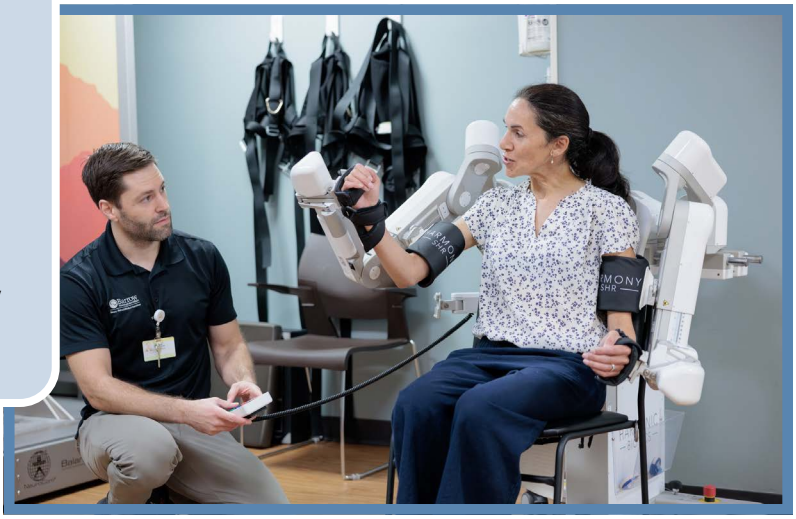
Dr. Hensman observed client treatments and interventions by physical therapists, occupational therapists, and speech-language pathologists across the continuum of rehabilitation on the Barrow campus. She expressed a particular interest in how Barrow rehabilitation professionals integrate technology and robotics into their clinical practice.

Dr. Hensman was able to observe clinical practice across the continuum of care, beginning in the acute care setting and through the Center for Transitional Neuro-Rehabilitation. Interviews with therapists, physicians, patients, and family members gave her a better appreciation of rehabilitation technology and the impact it has on patients receiving care at Barrow.

Quotes from Dr. Hensman's Exit Survey

In what specific ways do you feel your practice has been enhanced by this trip?

"Deeper understanding of practice in the USA and differences with UK health systems, awareness of the use of a range of technologies by different professionals. Development of different approaches to teaching—perhaps to include purchase of equipment. Planning of a research study potentially in collaboration with Barrow colleagues."



"Thank you to everyone who I spent time with for being very kind and welcoming—and so willing to share your skills and experiences. Thank you for answering all my questions about everything to do with the U.S. health system. I look forward to further collaborations in the future."

This international educational opportunity was funded through the Barrow UK - Marjorie Newsome Traveling Fellowship and the Association of Chartered Physiotherapists in Neurology (ACPIN).

Human Interest Story

In early 2024, I received a phone call from a gentleman who told me about a horrific accident which involved his daughter. He indicated that she was the only survivor of a hot air balloon crash that fell between 8,000-10,000 feet. One has to wonder: How did she survive? I tried to imagine the amount of fear and uncertainty he must have felt. He proceeded to inquire about the process of getting his daughter into the Barrow Neuro-Rehabilitation Center. He informed me that he had asked several colleagues to recommend what they thought was a good rehab program, and he said "hands down, Barrow Neuro-Rehab" was the selection.

That phone call was the beginning of my unwavering admiration for this devoted family. The commitment the parents made to ensure that she received the best possible care was a testament to their love for her.

Her medical condition was not yet stable enough to transfer her, so they placed her in a facility to manage her medical needs until she improved to a point where she could tolerate the intensity of therapy required in the inpatient program. A few weeks later, she met the criteria to be admitted to the Barrow Neuro-Rehabilitation Center.

Upon meeting them, I could tell that the parents were in different places emotionally. The mother was very excited to be in a rehabilitation facility. The father, on the other hand, was quiet, cautious, and obviously still very concerned about his daughter and her immediate response to therapy and, of course, her future.

In the beginning, the pain was tremendous and somewhat of a barrier to her ability to really participate. It seemed as though every bone in her body had been shattered, and any change in position or simple movement caused excruciating pain. She often cried out even though she truly wanted to try. The pain level and her response to it was very difficult for therapists, but they continued to provide positive feedback to keep her motivated. The therapists offered kind, warm, and encouraging messages to her throughout the session. If they expected her to be in pain, it was disclosed to her so she could be prepared.

Following two additional surgeries of the many she had already endured while hospitalized, the pain was better managed through various trials of medication administration. The young woman pushed through each day. At times, the parents would sit in the lobby of the rehab unit, letting their daughter have her time with friends who came to visit. Chai tea lattes and the friends' visits gave her a sense of some normalcy and desire to improve.

We learned she had a four-legged family member who was near and dear to her heart. Many dogs visit their family members while in the rehabilitation setting, as we know how important it is for a patient to be able to spend some time with their beloved pet. Her pet was a cat named Marvin. Even though cats are not the typical four-legged visitor, arrangements were made to allow her cat to come in and be with her. That was a very good day for her, and so worth the effort.

She stayed in the rehab unit for approximately 10 weeks, as she continued to focus on her strength, endurance, and movement. At the time of discharge, she was able to stand for short periods of time and take steps with body weight support systems, still managing her pain, but so determined.

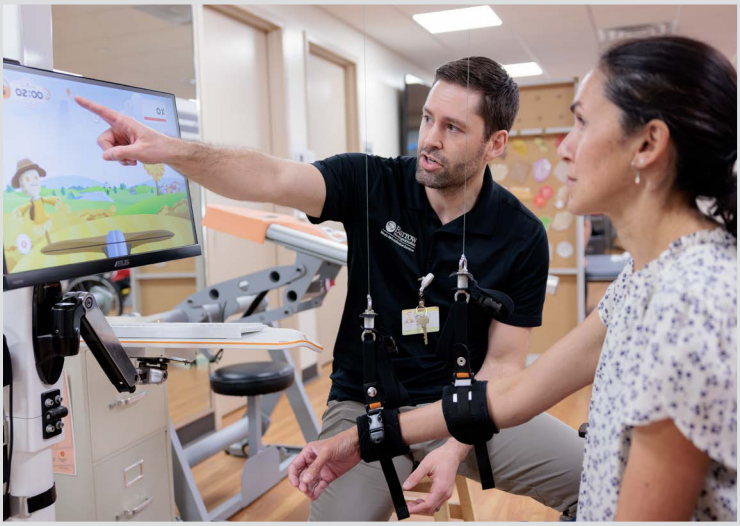
After discharge, she started in the Bridge Program, which is part of the Barrow Outpatient Neuro-Rehabilitation Center, attending four days per week. She was recently discharged from that program after weeks of hard work and persistence. She regained her ability to be independent with much of her care. The best part is that she had advanced to walking with a walker.

Seeing her today, after all she has been through, is truly a miracle. She tells stories and laughs, and is very much the same person who was so tragically injured nearly a year ago. Her focus and desire to return to her life as it was prior to the incident is very strong, and I know without a doubt she will get there soon. She still has her whole life ahead of her and so much to offer and accomplish; and with the love and support of her parents, this miracle will continue.

Rehab Technology Expo 2024

Rehabilitation services held their annual Technology Exposition on Sept. 25 and 26. This year, vendors were staged to demonstrate the latest in technology known to rehabilitation.

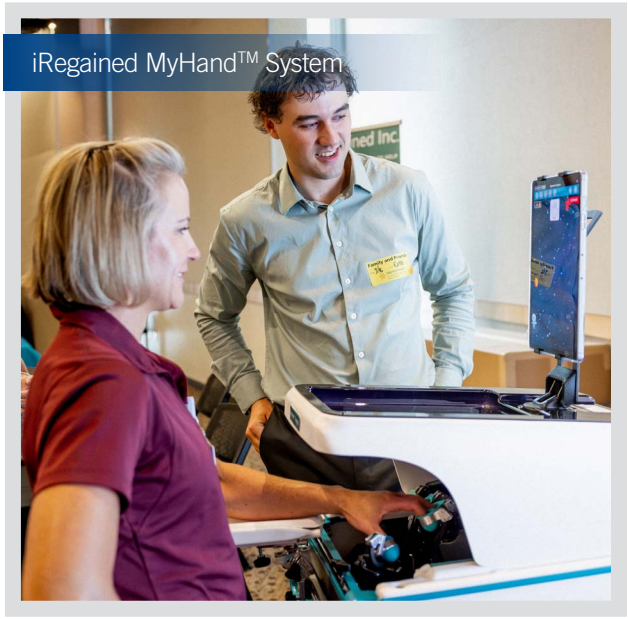
This event was well attended, with 150 participants.



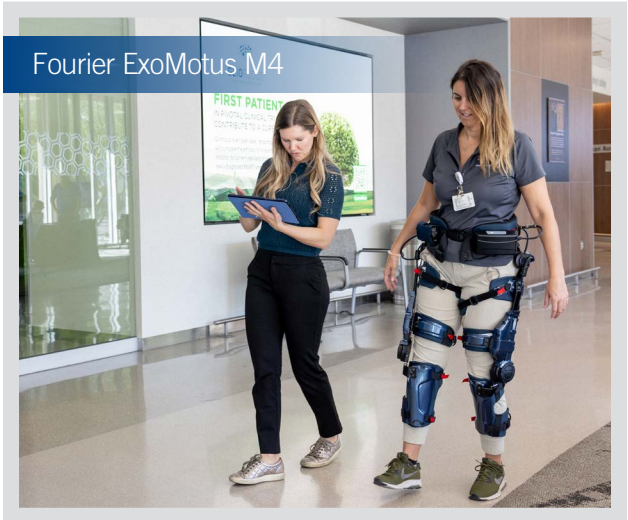
The feedback received included:	
Acquired new information	**100%**
Acquired new skills to put into practice	**90%**
Well organized	**100%**
Worth attending	**98%**

Vendors:

Ampcare NMES for dysphagia
Arizona Technology Access Program (AzTAP)
Compensatory Tools list & demonstration
Corpus VR virtual reality for rehabilitation
Fourier Arm Motus EMU upper limb rehab robot
Fourier ExoMotus M4 wearable robot and gait assist device
IOPI lip and tongue strength biofeedback device
iRegained MyHand™ System hand rehabilitation device
Medbridge Home Exercise Programs
Medication management options
NeuroMapper and awake craniotomy mapping
Tongueometer lip & tongue strength biofeedback device
UbiDuo speech generating device
Updated Therapeutic Apps list
Videostroboscopy imaging procedure for vocal folds
VitalStim Plus NMES and sEMG for dysphagia
Vivistim VNS for upper extremity rehabilitation



iRegained MyHand™ System

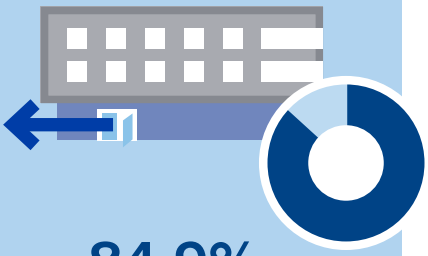


Fourier ExoMotus M4

Barrow Neuro-Rehabilitation Services Programs Overview and Outcomes - Calendar Year 2024

Inpatient Rehabilitation Facility

684
Total Patients Discharged



84.9%
Discharged to Community

Patient Satisfaction

99%
Overall Satisfaction

96%
Prepared me for going home

Outpatient Neuro-Rehabilitation Services

1,472
Total Patients

24,194
Total Visits

Patient Satisfaction

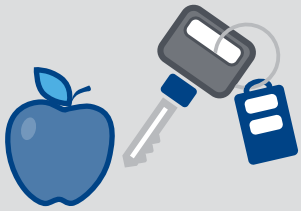
99.7%
Overall Satisfaction

100%
Likely to Recommend

Center for Transitional Neuro-Rehabilitation (CTN)

55
Total Admissions

18,994
Total Visits



86%
Return to Work/School

57%
Return to Driving

Patient Satisfaction

97.4%
Overall Satisfaction