

Elevating Engagement for VCU Health Systems' Critical Care Patients



Using a unique build of the GCX Patient Engagement System, tetraplegics and other physically limited patients can reconnect, regain some independence and take an active role in their healing process.

A team at a Richmond, Va.-based trauma 1 medical center wanted to help patients with severe spinal cord injuries engage with the outside world through the internet using a laptop with specialized eye-gaze technology. The problem was they couldn't conjure up a safe way to keep the laptop within visual range of a paralyzed patient.

Then an IT technician received a mailer for the new GCX Patient Engagement Table, a hospital-grade, over-bed table with an adjustable arm to hold a tablet and optional USB charger.

The table sparked an idea and eventually a new mobile cart that helps patients with severe mobility deficits who cannot sit at a laptop, let alone even hold a portable device, but for whom having the ability to connect and communicate through the internet is beneficial to their healing process.

Jerome "Jerry" Langford, the senior systems administrator and OR information systems infrastructure team lead for VCU Health's PeriSurgical Services, contacted GCX's Kent Hochgertle, who manages New Business Development. Working with a GCX product development team, Hochgertle quickly sent back a mockup using the base of the Patient Engagement Table with a larger arm able to accommodate a heavier portable device – a laptop. A VCU technician then added another gimbal, mount and handles to allow the laptop to maneuver directly over a potential patient lying flat in bed. It was then tested for visual range and usability. The cart proved to be easy to use and effective, allowing the laptop to be placed in range and safely tilted directly over a patient's visual field.

Customer Snapshot

NAME

VCU Medical Center

OVERVIEW

Part of the VCU Health system, VCU Medical Center is the region's only Level 1 trauma center

HEADQUARTERS

Richmond, Va.

GCX PRODUCTS

GCX Patient Engagement System

DEVICES SUPPORTED

1300 Points of Care – Patient Rooms, Anesthesia, ED/ER, PACU, ICU, Specialty Areas

CHALLENGES

- Help VCU staff develop a cart that can accommodate portable devices for tetraplegics and other patients with mobility deficits
- The mounting solution must be adjustable in all planes so a laptop can be positioned safely over the head of the patient. This allows eye-gaze technology to be calibrated properly, so the patient can direct a computer cursor with their eye movement
- Provide a safe way for hospital staff to give patients hands-free access to the internet, facilitating entertainment, social support, education, and ultimately greater independence

RESULTS

- A specially designed version of the GCX Patient Engagement Table to meet the unique needs of tetraplegics and other mobility-impaired patients
- Improved patient engagement/participation
- Ability to accelerate the healing process by connecting patients to the outside world using a laptop enabled with eye-gaze technology
- Improved patient safety and staff productivity

“We needed to get these special items ordered, delivered and installed quickly while making sure we chose a manufacturing partner that creates durable, safe parts that last and won’t fall on a paralyzed patient.” Langford said. “This is a situation where people are truly physically unable to rescue themselves if there was a danger. This was what was most important to us with the quality of the product.”

Langford states it normally takes six months from product inception to prototype delivery, but in this instance, GCX was able to deliver the demos within a month.

Reconnecting in the Blink of an Eye

Prior to adopting the adapted Patient Engagement System, VCU Health staff had looked into other available technologies to service tetraplegics, including Google Glass, but the technology wasn’t a good fit.



Then they learned about Tobii, which uses infrared technology to scan and record eye movement, allowing the user to perform the same functions they would with a mouse in their hand.

The project has inspired GCX product developers and staff, who for 45 years have helped hospital caregivers come up with solutions for a better patient and clinical experience.

“This particular project was the most rewarding one I’ve ever worked on,” Hochgertle said. “It was exciting to see it all come together by taking an old standard – the over-bed table – and making it more high-tech. Now patients can have an iPad or other technology right where they want it without long, obstructive arms or cords going across the floor.

This reduces clutter and removes trip hazards from caregivers’ and family members’ walkways, while bringing technology right there in front of the patient.”

Regaining Independence, Resuming a Prior Life

For patients with severe spinal cord injuries, it takes time to adjust psychologically to an often-sudden complete loss of independence, where a machine or caregiver must perform every ordinary function, and personal choices are limited. Under those circumstances, severe depression is common.

By providing the use of a laptop, patients are able to reconnect with friends and family, who provide vital support. They are also able to gain some independence and control over their activities and environment. This enables the patients to remove barriers that would keep them from returning to activities they previously enjoyed and resume productive participation in society.

In addition to accessing entertainment sites like Netflix or reading books via Audible and eBooks, patients can read up on their condition and start preparing for life once they leave the rehabilitation center and reenter the real world. Thanks to the phenomenon known as the internet of Things, where more and more “smart” devices are networked via the internet, the cart enables these patients to control room environments, home security systems and even turn cookware on or off using eye-gazing software.

It also has the potential to assist patients who transition from hospital to home, providing them the ability to reconnect independently with the



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Information Systems Infrastructure Team Lead,
VCU Health’s PeriSurgical Services

world: update Facebook, video chat with friends and family, read and respond to emails, surf the ‘net, watch videos, research and arrange for caregivers/transportation, return to school through online classes and much more as our understanding of integrated technology broadens.

“I get to spec and design and make things work all the time,” VCU’s Langford said, “but to have something on this scale and for it to have this impact, it’s by far the most rewarding job I’ve done for the hospital.

“So many technologies are great, but if you don’t have the equipment to deliver them – in this case the GCX Patient Engagement Table’s arm – you don’t have any way for them to deliver the benefits they are capable of.”