SCiPAD: Mobile Health (mHealth) for Individuals with Spinal Cord Injury

By Kim Bellon, Llisel Solis and Dr. Kazuko Shem

For the past 17 years, Dr. Kazuko Shem, a physiatrist and Chief of Physical Medicine and Rehabilitation Clinic at Santa Clara Valley Medical Center (SCVMC) has been caring for patients discharged to far outlying areas of California after leaving Spinal Cord Injury (SCI) Rehabilitation. Due to the size of SCVMC’s catchment area of acute inpatient rehabilitation program, patients often travel to SCVMC from as far as the California/Oregon border. Often times, these patients are unable to find specialized care in remote areas or are not able to return to SCVMC due to transportation issues after discharge.

Dr. Shem has traveled to see these patients in rural areas for several years, conducting outpatient clinics in Northern and Central California, approximately 8-10 times a year. Although these visits have been beneficial to patients, Dr. Shem became increasingly concerned about the care of these patients when they have urgent medical needs. In 2013, the VMC Foundation, on behalf of SCVMC and Dr. Shem, applied for and received a Quality of Life grant from the Craig H. Neilsen Foundation to pilot the “SCiPAD: Mobile Health (mHealth) for Individuals with Spinal Cord Injury” project. In the pilot year, ten patients, with either an acquired or traumatic SCI, were gifted iPads and enrolled in the project.

Dr. Shem’s idea of creating a telemedicine program in which patient-provider encounters occurred through Face Time, came to fruition! Within the first six weeks of the program implementation, the ten iPads had been distributed, four were given to patients with paraplegia and six were provided to patients with quadriplegia. Adaptive equipment such as gooseneck stands and mouth sticks were also provided in consultation with the patients’ occupational therapists. During the six months that each participant was in the program, Dr. Shem and her nurse carried out twenty-five telemedicine visits. It was also requested that a satisfaction survey be completed by the patients at the end of the program. Patients’ feedback included: “You guys do great work!” “I loved the program and will continue to use TM visits.” “The iPad made everything easier, even though I don’t have a lot of hand function, I can do everything on it. I use it all day, every day. You guys really nailed it with this program and obviously know what your patients need. I love it!”

The success of the initial SCiPAD telemedicine pilot study, brought about an invitation from the Nielsen Foundation to apply for a 3 year funding grant, which was awarded in 2014. The grant allows for the provision of 100 iPad Airs, a thinner, more lightweight iPad, to be distributed to patients over a three year time period. Currently, twenty-one of these iPads have been distributed to patients, and thirty-one telemedicine appointments have taken place. Additionally, two medical emergencies were reported to the program coordinator and staff was able to quickly advise these patients to go to their local emergency room to avert a medical crisis.

Dr. Shem finds conducting research incredibly rewarding, always keeping her patients’ well-being in mind: “Over the years, I’ve been active in a number of research projects designed to help people transition back into the community after an illness or injury, including how technology can be leveraged
to improve access to clinical support. Research can be directed toward different goals and take on different forms, but it’s particularly rewarding to be involved in studies that have a direct connection to improving someone’s quality of life”. While traditional medicine has usually involved a trip to the local doctor’s office, telemedicine encounters provided by the SCiPAD program is an ideal management tool for patients living with SCI as they can be assessed and managed in the comfort of their own home!