**Spinal Cord Injury Center**  
**VA Boston Health Care System**

**Mission:** Promote the health, independence, quality of life, and productivity of Veterans with spinal cord injuries and disorders (SCI/D) throughout their lives.

**Persons Served:** The Spinal Cord Injury (SCI) Center at VA Boston Healthcare System (VABHS) serves Veterans and Active Duty Service Members throughout New England. We work in a hub and spoke model, serving as the hub for designated spoke SCI teams at other VA facilities in the region.

**PROGRAM INFORMATION & OUTCOMES:**
We have organized our program goals and outcomes under five Areas of Excellence.

1. **Excellence in Population Health**

   One of our unique strengths is the full continuum of care for Veterans with SCI/D. Acute care, initial and ongoing rehabilitation, comprehensive specialty care, primary care, outpatient care, home care, virtual care, respite care, and long term care are all delivered in an integrated system with life-long access to needed care and resources. Services are provided in a caring environment using the latest technology.

   **Inpatient Rehabilitation:**
   The amount of improvement in function during rehabilitation is an important measure of effectiveness of SCI rehabilitation. Our 3-year aggregate data demonstrates higher average gains in motor function, achieved in a shorter time, than national benchmarks using the Functional Independence Measure or FIM (Figure 1). Functional gain per day of rehabilitation (FIM Efficiency) and sustainability of function at 90 days post-discharge (FIM Durability) are also higher than the national benchmark. A Fisher House on campus enables family members to be close to their loved ones during hospitalization.

   We monitor discharges to community living as a meaningful measure of effectiveness of SCI rehabilitation. Last year we exceeded our self-imposed target goal of 90 percent of patients living in a community setting 90-days after discharge following inpatient rehabilitation (Figure 2).

2. **Outpatient and Home-Care**

   We continue to enhance services to support Veterans with SCI/D in their communities. Examples of recent initiatives include: systematically identifying and addressing caregiver burden, increasing awareness and utilization of respite care services, implementing a Supported Employment program to enhance vocational outcomes, offering ever-expanding adaptive sports and recreational activities,
implementing a program for managing SCI-related chronic pain incorporating Cognitive Behavioral Therapy (CBT), and expanding virtual access with in-home video telehealth. Outcomes for some of these programs are demonstrated in Figures 3-6.

Outpatient Chronic Pain Program:
Patients served in our outpatient SCI program for chronic pain management from FY12 to FY14 report a clinically significant improvement in pain rating, pain interference with activities, and depressive symptoms (Figure 3).

The program incorporates practical skills to manage chronic pain and overcome maladaptive behaviors and pain-related negative thoughts. A primary goal is to improve overall quality of life while reducing psychological distress. To improve access to the program, we have started offering sessions via Video Telehealth at home, as an additional option to in-person visits.

Evidence-Based Supported Employment (EBSE):
EBSE is a tested and validated method for increasing competitive employment. Vocational and clinical staff work together, and support continues after a job is obtained. We participated in a multi-site project to examine the effect of enhanced vocational rehabilitation and job search assistance on competitive employment in the past three years. We had the highest competitive employment rate of all project sites (Figure 4). Given our initial success, we are further expanding this program as an important ongoing aspect of outpatient rehabilitation.

Expanding Virtual Health:
Our recent growth in Clinical Video Telehealth (CVT), including virtual visits in the home, is illustrated in Figure 5. Over 100 Veterans with SCI/D were served via CVT in FY14 and the number of SCI telehealth visits jumped from 21 in FY12 to 325 in FY14. CVT provides support during home transition after inpatient stay, appointments with various providers and specialists without needing to leave home, and can meet many other needs. We are further expanding this program with the recent hire of a full-time telehealth technician and incorporation of new and emerging technologies.
Supporting caregivers:
To provide the best care to our Veterans, we also need to pay attention to our Veterans’ caregivers. We see great value in systematically assessing and addressing caregiver burden. In FY12, we started administering a brief version of the Zarit Burden Interview (ZBI), a popular self-report measure of perceived burden, to caregivers who accompany Veterans for their outpatient SCI annual evaluation at VA Boston and to those followed by SCI Home Care. Specific items from these responses are followed with a more in-depth evaluation of needs and resources as indicated. 70 caregivers were given the interview in FY14 (Figure 6). We are further expanding the program to reach more caregivers.

We offer several resources to support caregivers. Respite care available at the SCI Center or in other settings can provide a helpful break while the Veteran is well cared for. Problem-focused education and information, targeted to individual needs, can be very helpful. Additional assistive services or new technology to reduce dependence on caregivers is indicated in some cases. Support groups can provide valuable camaraderie and help in problem-solving.

II. Excellence in Patient Experience

Surveys of Veterans who participate in our programs is an important way of assessing the quality of our services. Consistently high scores in standardized satisfaction surveys for our inpatient, outpatient, and home-care programs (Figure 7) validate the overwhelmingly positive feedback we receive from Veterans, families, and stakeholders. Ongoing initiatives to further enhance patient experience include focused staff training in communication that engages Veterans as full partners with their healthcare team.

We have started to specifically monitor the percent of persons served in our inpatient SCI rehabilitation who “Strongly Agree” with items relating to perceived Overall Value of the program in the uSPEQ Consumer Experience Survey. Benchmark information is available for 2014. We were in the top quartile of all VA SCI Centers for this measure and rated higher in all items for perceived overall value than comparable VA and non-VA program benchmarks (Figure 8).
III. Excellence in Financial Stewardship

Efforts to facilitate outreach and awareness of our programs include quarterly newsletters featuring our Veterans’ stories, outcomes, and program updates (see http://www.boston.va.gov/SCI_Newsletters.asp). We have implemented several measures to minimize waste and inefficiencies that don’t add value to persons served in our programs. Examples include significantly reduced missed opportunities from no-shows or cancelled appointments and actions to optimize timely delivery of durable medical equipment.

IV. Excellence in Workforce

Our SCI staff consistently report amongst the highest overall satisfaction in the VA All Employee Survey (Figure 9), with every domain scoring better than national or network averages (Figure 10). We have incorporated Systems Engineering expertise in SCI teams to fully harness staff commitment and creativity and develop their capacity as engaged work teams for continual improvement of their daily work.

V. Excellence in Service to Our Communities

We support many activities to promote SCI-related education, research, and advocacy. We are the primary training site for the Harvard Medical School SCI fellowship program and the designated national hub-site for the VA Advanced Fellowship in SCI Medicine. We train residents, nursing students, psychology and social work interns, and post-doctoral fellows. We have made ongoing enhancements to our training programs. Our staff regularly publishes peer-reviewed research, books and book chapters, presents at national meetings and contributes to national SCI training. Several staff have been recognized nationally for their contributions. We recently hosted our 14th Interdisciplinary SCI Nursing Conference and our 23rd Annual SCI Symposium to educate health professionals throughout New England.

We are proud of the achievements of our SCI Center, and are committed to continued excellence!