Rocky Mountain Regional VAMC
Spinal Cord Injury & Disorders Center
Outcomes Report
Fiscal Year 2022

Mission Statement

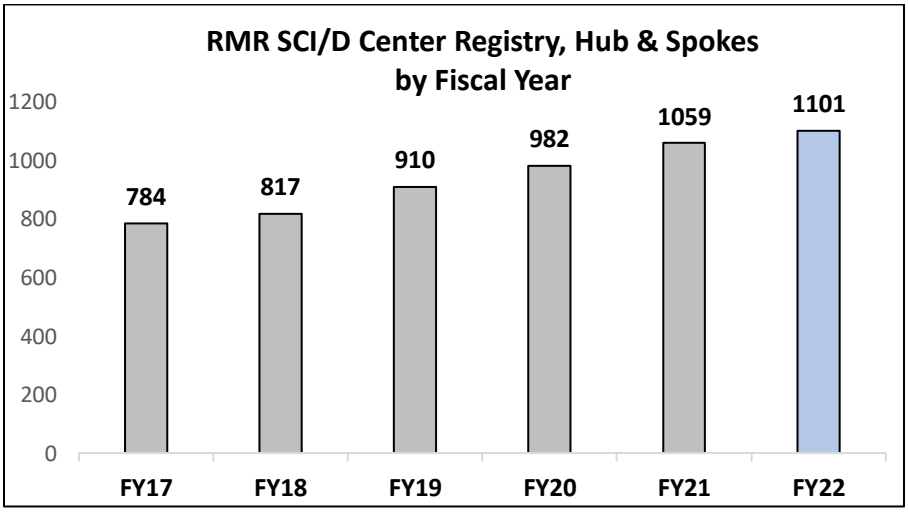
The Mission of the Rocky Mountain Regional (RMR) VA Medical Center (VAMC) Spinal Cord Injury & Disorders (SCI/D) Center is to provide an excellent, life-long care experience for Veterans, empowering them to optimize functional recovery, well-being, and participation in life through compassionate, evidence-based practice.

Vision Statement

The Vision of the RMRVAMC SCI/D Center is to become the destination SCI/D Center within the VA System of Care.

RMR SCI/D Center Registry

This includes Veterans on the Aurora catchment (hub and spokes) registry with any qualifying diagnosis (Spinal Cord Injury, Multiple Sclerosis, or Motor Neuron Disease) who were alive during the corresponding fiscal year.



During FY22, there was a net gain of 42 patients on our registry, to bring our total catchment to 1101. The total reflects a gain of 4% from FY21.

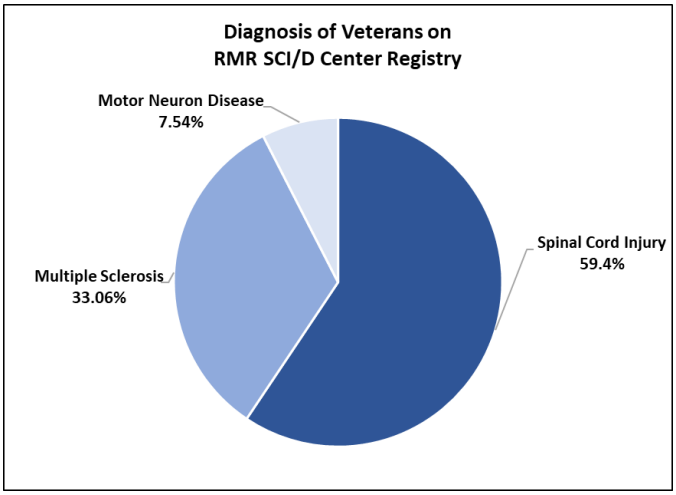
SCI/D Patients FY22 by Hub and Spokes*	
Aurora (Hub)	853
Black Hills	84
Cheyenne	67
Grand Junction	62
Salt Lake City	137
Sheridan	38

**Some patients receive SCI/D care at more than one site (for example, they may receive primary care in Grand Junction but also have participated in an inpatient admission at the Aurora Hub). Thus, the numbers in this table add up to more than the catchment total of 1101.*

Characteristics of RMR SCI/D Center Veterans

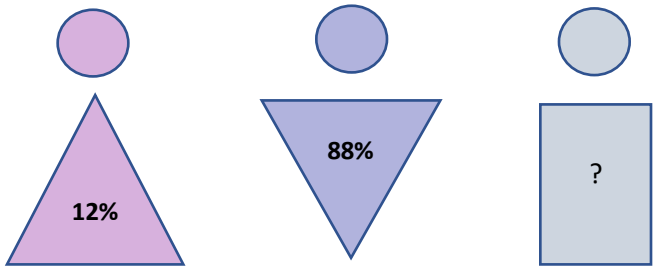
This section contains information about our full catchment, including all SCI/D diagnoses, and hub plus all spokes. For information on the characteristics of those Veterans who participated in our Comprehensive Integrated Inpatient Rehabilitation Program (CIIRP), please see the corresponding section later in this report.

Diagnosis:

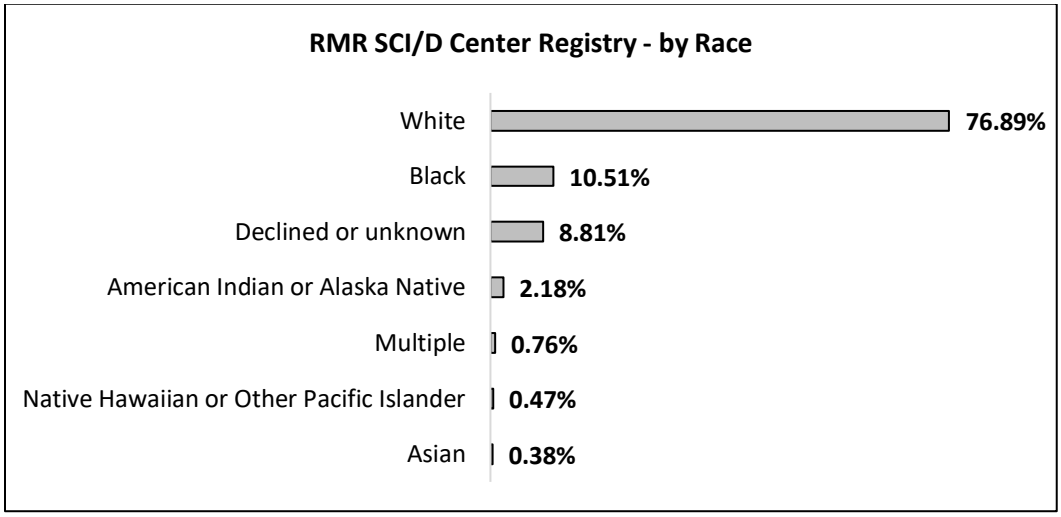


The National breakdown by diagnosis, (SCI 73%, Motor Neuron Disease 7%, and Multiple Sclerosis 20%) is in contrast with the higher proportion of Veterans in our region who are diagnosed with MS.

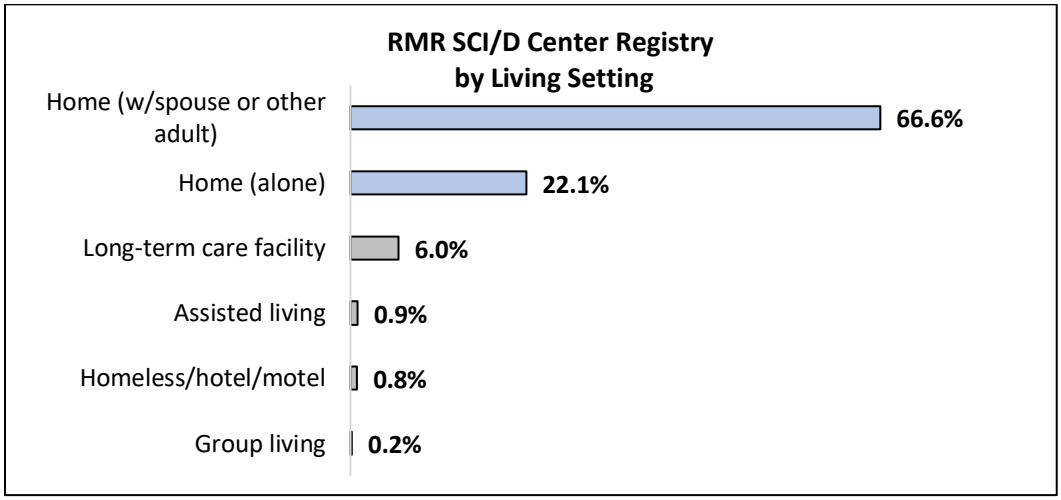
Gender: We care for a slightly greater proportion of female Veterans (12%) compared to the National SCI/D population, with National numbers at 8% female and 92% male. No data is readily available regarding the proportion of Veterans who identify as non-binary. Likewise, there is not comprehensive data regarding the number of transgender Veterans.



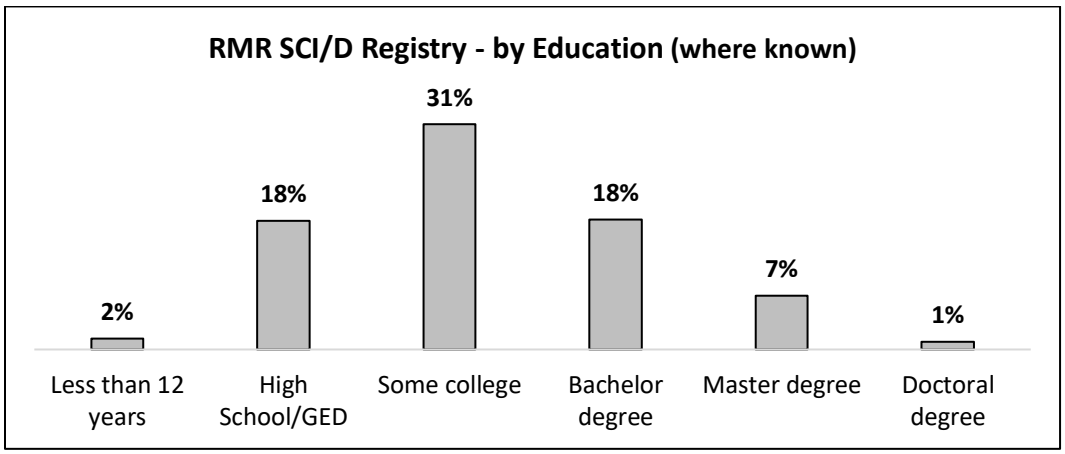
Race: We have a significantly lower proportion of Black or African American Veterans in our catchment (10.51%) compared to the National SCI/D population (21.57%). This reflects the demographics of Colorado and the Western United States.



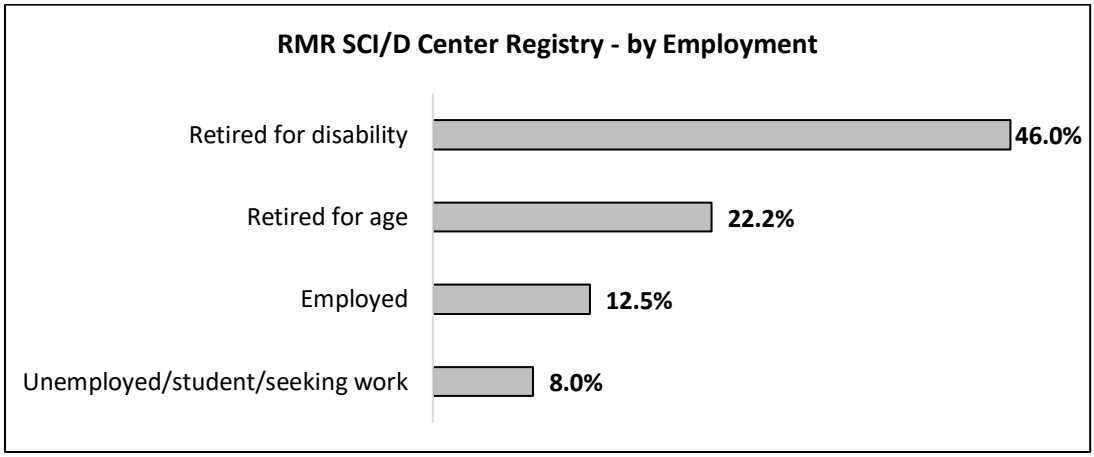
Living Setting: A total of 89% of our Veterans live in a home setting, either alone or with a spouse/other adult. This is comparable National SCI/D rate of 87%. The rate of residing in a long-term care facility is also comparable to National, at 6%.



Education:



Employment: In terms of employment, the National rate of SCI/D Veterans who report being employed is just 8.6%, while our population is at 12.5%. Rates for retirement due to disability are also lower, at 46% compared to the national rate of 54%.



RMRVAMC SCI/D Inpatient Unit

Services Provided: The RMRVAMC SCI/D Center provides comprehensive, lifelong, interdisciplinary SCI/D services to Veterans, including but not limited to: acute stabilization after new SCI/D, acute and subacute rehabilitation, medical care, surgical care, primary and preventive care, nursing care, therapies (physical, occupational, kinesiotherapy, therapeutic recreation), psychology, social work, vocational and rehabilitation counseling, fertility and sexual health support (may require community care referral), respiratory care, orthotics, prosthetics, sensory aids, assistive and emerging technologies, pain management, spasticity management, environmental modifications, nutrition education and counseling, weight management services, rehabilitation engineering, driver training, parenting issues, speech and language pathology, spiritual care, respite care, Whole Health, and advance care planning. Veterans with SCI/D are provided consultative services and care when needed from dental (for those with qualifying service connection), urology, neurosurgery, orthopedics, general surgery, plastic surgery, internal medicine, critical care, pulmonary medicine, neurology, cardiology, anesthesiology, women's health, pain medicine, radiology, oncology, palliative care, infectious disease, nephrology, dialysis, gastroenterology, home-based primary care, and mental health services including substance abuse treatment.

Medical and rehabilitation nursing coverage is provided 24 hours per day, 7 days per week. The frequency of medical and nursing care is determined by the Veteran's medical and rehabilitation status and needs. Full rehabilitation therapy services are available Monday through Friday except for holiday schedules and with limited therapy on weekends. Recreation therapy services are provided 6 days per week.

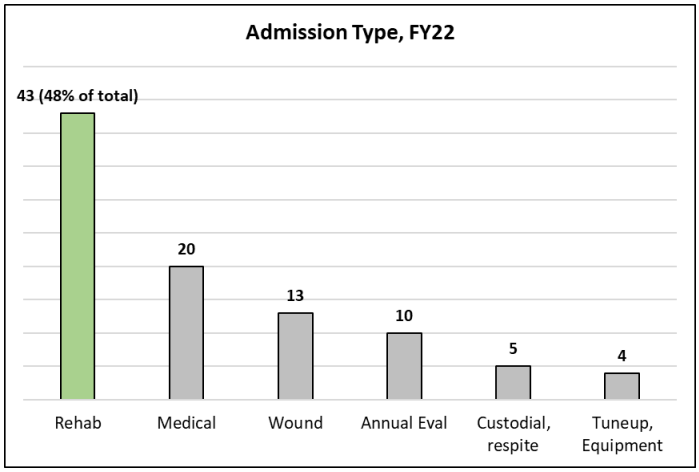
The inpatient unit has a comprehensive wound care program including specialized wound care nurses, SCI/D physicians, rehabilitation therapists, dietitians, and collaboration with surgical specialties. This allows us to rapidly stabilize pressure injuries and collaborate on a plan for closure of the wound.

Quote from a Veteran discharging from the inpatient unit: "Staff are always cordial, respectful, attentive, and timely. It would be hard for anyone to surpass the exceptional care I received."

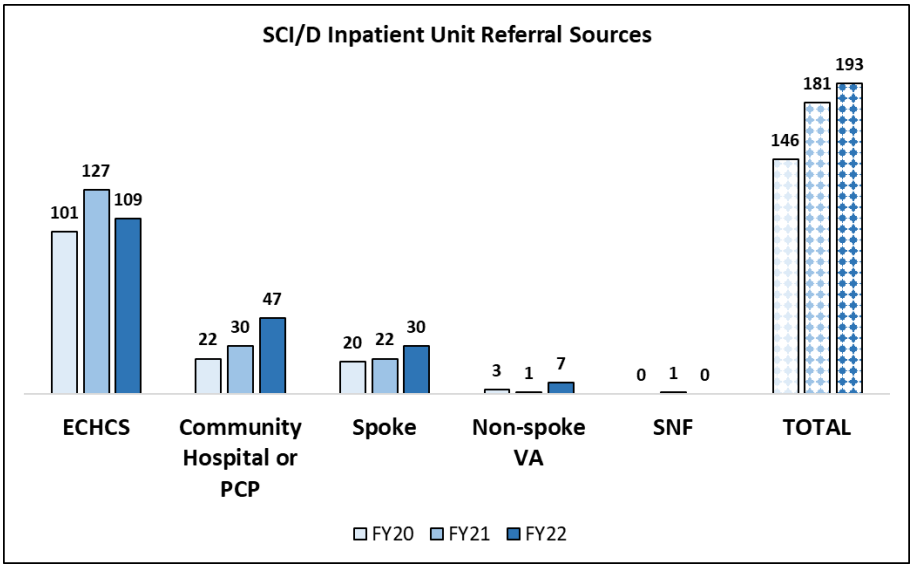
Admissions, discharges, and length of stay: all admission types: Inpatient admissions have grown steadily corresponding to bed capacity. The capacity of the SCI/D Center to offer care to Veterans who have complex wounds has allowed us to achieve healing that was not feasible outside an inpatient setting, because these wounds require care multiple times per day over a long period of time and a supportive medical and nursing environment that was not accessible to these Veterans prior to the opening of our Center. Looking at the data from year to year, it appears that FY21 was something of an anomaly in the number of admissions. That year several Veterans were admitted who then stayed for many months, pushing the average length of stay for the following fiscal year well above previous year's averages. The inpatient team is working to improve coordination of discharge for Veterans who face barriers to accessing appropriate discharge settings.

Time period	FY19 (4/10/19-9/30/19)	FY20	FY21	FY22
Total admissions	37	93	153	90
Total discharges	25	91	148	96
Avg. length of stay	32 days	46 days	46 days	75 days
Range	3-119 days	1-278 days	1-638 days	1-374 days

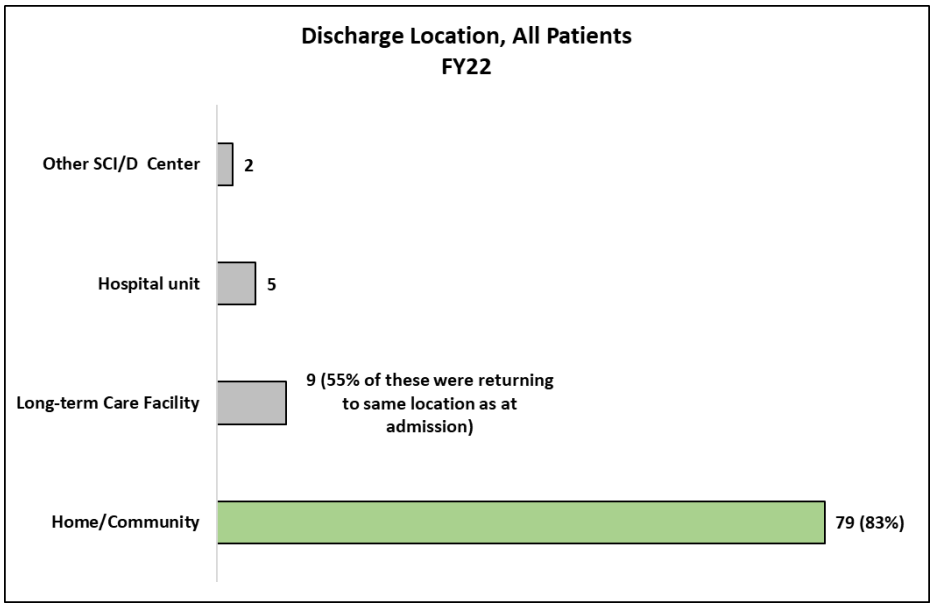
More Veterans are admitted to the H-1 inpatient unit for rehabilitation services than for any other single type of care:



Referral Sources, all admission types: Referrals for SCI/D services are accepted from sources within the RMRVAMC, within the ECHCS, within VISN 19, from outside VAMCs, from the Department of Defense, and from non-VA community providers and facilities. Since opening, our inpatient unit has received referrals from all our spoke sites, with the majority coming from Black Hills and Salt Lake City. We have also received referrals from all RMR medical units and from numerous community hospitals. It is the goal of the SCI/D Center to increase awareness of our services and frequency of referrals from our partners at our spoke sites and from community hospitals throughout the region.



<u>Discharge location, all admission types</u>: Our goal for discharge to the community following an inpatient SCI/D stay is 90%, although the diagnosis of a spinal cord injury or disorder and resulting need for care can sometimes require long term care facility placement at discharge.



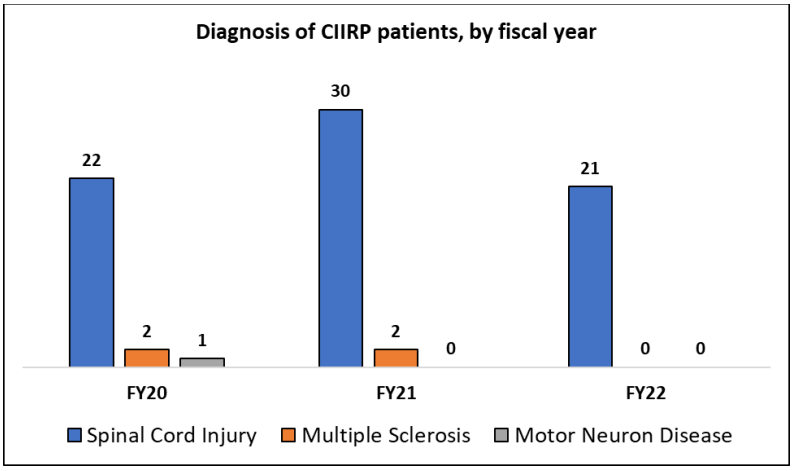
Rehospitalizations – all admission types: The goal for hospital readmissions is always zero. The SCI/D Center undertakes an annual analysis of readmissions to better understand the contributing factors and identify any potential trends that could be addressed.

Unplanned readmission to the SCI/D Center Inpatient Unit within 30 days of discharge				
Time period	**FY19** (4/10/19-9/30/19)	**FY20**	**FY21**	**FY22**
Number of discharges	25	91	147	95
Number of unplanned readmissions	0	4	8	5

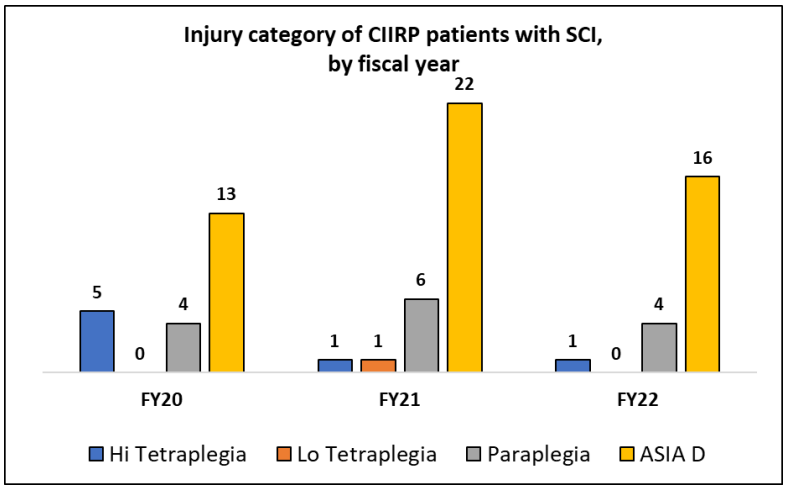
Comprehensive Integrated Inpatient Rehabilitation Program (CIIRP)

Characteristics of Veterans served in the CIIRP:

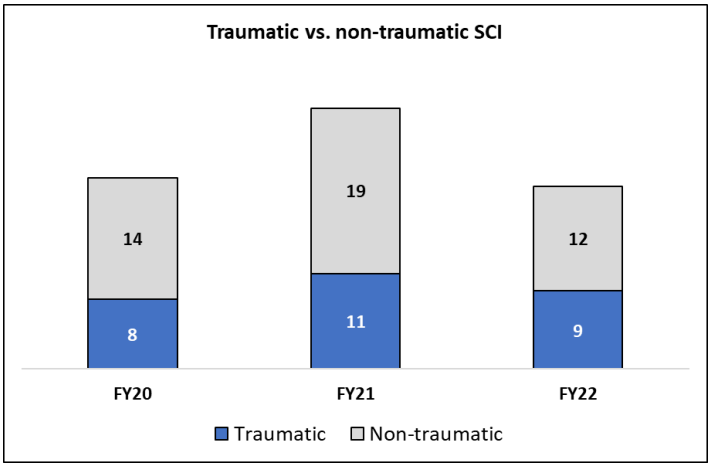
The SCI/D CIIRP primarily serves Veterans with a Spinal Cord Injury diagnosis:

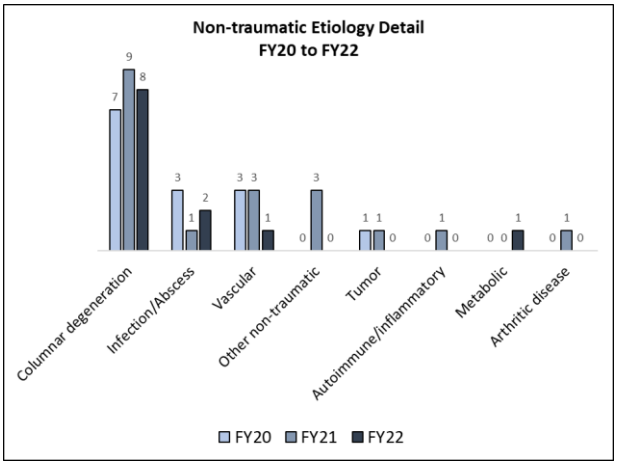


Most patients have ASIA D injuries:

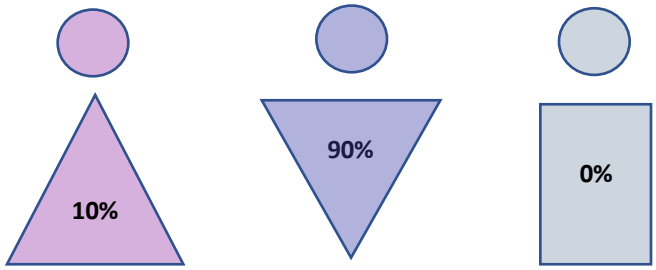


Etiology types are below. A greater proportion of the injuries are from non-traumatic causes, primarily columnar degeneration:

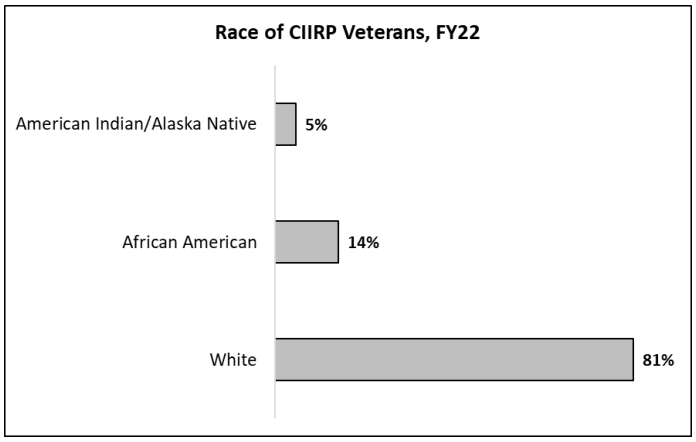




Gender of Veterans Served by CIIRP: Of the 21 Veterans who participated in CIIRP in FY22, 2 (10%) were female and 19 (90%) were male. This is roughly comparable to our Aurora registry overall. No CIIRP Veterans in FY22 identified as non-binary or transgender.



Race of Veterans Served by CIIRP: CIIRP Veterans' race is also comparable to the RMR SCI/D Registry as a whole.



Functional Outcomes: The Functional Independence Measure, or FIM, is a tool used to measure the impact of acute rehabilitation. Using the FIM, a Veteran's functioning is rated along many domains on a scale of 1-7, where a score of 1 indicates the Veteran requires full assistance to complete the task, and a score of 7 indicates the Veteran is able to perform the task with complete independence. The domains that factor into the FIM Motor Gain score include eating, grooming, bathing, dressing, toileting, bowel management, bladder management, transfers, mobility (walking or wheelchair) and stairs. FIM Motor scores are obtained at the start and the conclusion of rehabilitation.

Motor FIM gain: This fiscal year, the 21 Veterans who completed their CIIRP stays had an average of 26.5 points of gain in their FIM Motor scores. This is comparable to the National SCI/D rate of 26.4 points of average FIM Motor gain.

Average Motor FIM gain	
RMR	26.5
National SCI/D	26.4

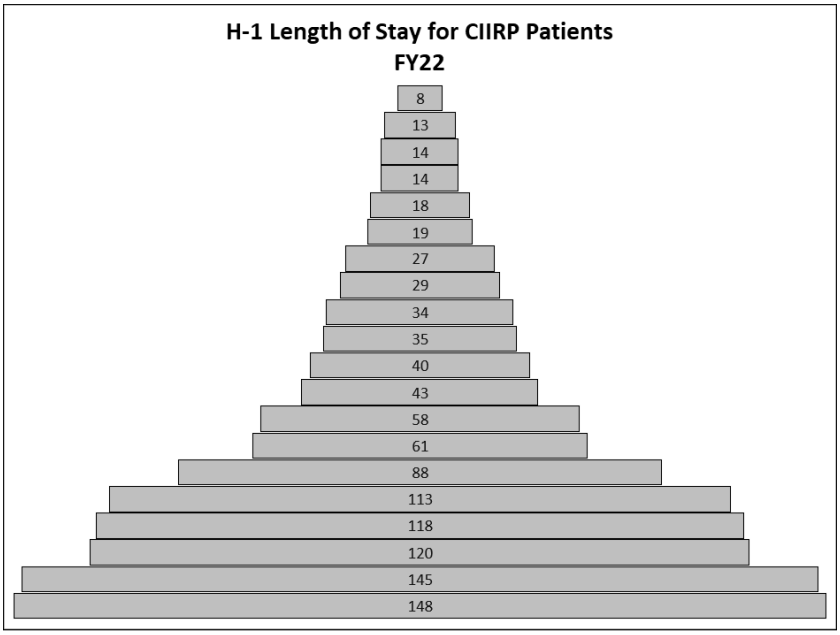
In terms of actual points of motor FIM gain, 48% of Veterans served experienced motor FIM gains > 25. Upon analysis, we identified some patients whose level of injury meant that they were unlikely to make substantial motor gains but could benefit from many other aspects of CIIRP such as learning to direct care and identifying appropriate equipment and technology. Some patients began rehabilitation with relatively high initial motor FIM scores, causing them to have a 'ceiling' in the total number of FIM points available to gain. Because the mission of the RMRVAMC SCI/D Center is to serve a diverse range of Veterans in need of rehabilitation, the analysis did not suggest that performance improvement was indicated.

FIM Efficiency is a calculation of FIM gain divided by length of the rehabilitation stay, in days. The RMRVAMC SCI/D Center's average motor FIM efficiency for Veterans at all levels of injury (ASIA A, B, C and D) this year was 1.12, which is 50% higher than the National SCI/D score of 0.73. Our average motor FIM efficiency for Veterans with ASIA D level injury only was 1.3, which is again 50% higher than the National SCI/D score of .89.

Average motor FIM efficiency		
	All ASIA levels	ASIA D only
RMR	1.12	1.3
National SCI/D	0.73	0.89

Our goal for FIM efficiency was that 75% of Veterans would have scores above the national average. We did not meet this goal. Only 52% of our veterans with injuries at all-levels had FIM efficiency scores above the national average, and only 56% CIIRP patients with AIS D spinal cord injuries had FIM efficiency scores above the national average. An evaluation of the veterans with lower FIM efficiencies suggested that the transition from CIIRP to sub-acute rehabilitation was likely delayed for most of those patients. It was recommended that the CIIRP team will need to be more attentive to our patient's FIM progress and engage in more deliberate discussions regarding a patient's suitability to remain in CIIRP status versus appropriate timing to transition them to the subacute level of rehabilitation.

H-1 SCI/D Unit and Rehabilitation Length of Stay: The average length of stay for the CIIRP Veterans who discharged from H-1 in FY22 was 57 days. There was wide variability in the individual lengths of stay, as depicted below. This speaks to the variability in the presentation of each Veteran served in the CIIRP. They have a wide range of functional statuses at admission, rates of improvement, and capacities for making gains.

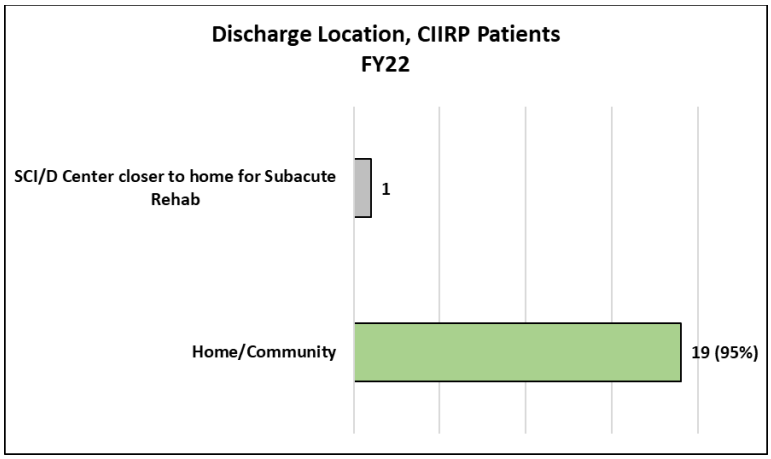


The duration of the Veterans' participation in active acute rehabilitation, in contrast, averaged 38 days, with a range from 5-119 days. Five veterans had inpatient stays that continued from between 35-104 days after discharging from the CIIRP. In one case a Veteran was waiting for home modifications to be completed, one Veteran needed time and assistance to locate a new living setting, and three Veterans required additional rehabilitation at the subacute level. These continued stays account for the difference between average length of acute rehab and average overall stay on the inpatient unit for these CIIRP veterans.

Service Interruptions: Of the 21 patients who completed a course of acute rehabilitation during FY22, two experienced interruptions in their rehab.

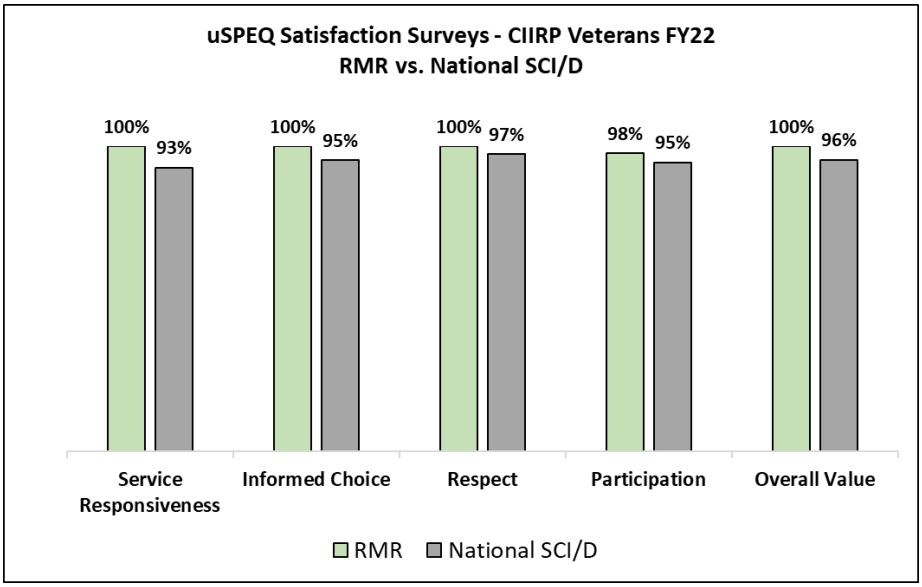
Readmissions of CIIRP patients: Of the 20 patients who both completed their CIIRP rehabilitation during FY22 *and* discharged from the hospital during FY22, one was readmitted within 30 days of discharge.

Discharge location: The "gold standard" of rehabilitation outcomes is the proportion of patients who are discharged to a home environment at the conclusion of their inpatient rehab stay. Our rate of 95% compares favorably to the National SCI/D rate of 86%.



Quote from Veteran's wife during rehab: "I know how much he wants to be home. His determination is my inspiration. Up until yesterday I was skeptical that we could manage, but his positive attitude and the Team gave me hope and the confidence that "YES, I CAN"!

Satisfaction with Rehabilitation Services: Veterans who are discharging from the SCI/D Center inpatient unit CIIRP are invited to participate in an anonymous survey about their stay, with questions evaluating the 5 domains listed in the chart below. In FY22 (the latest fiscal year for which full-year data is available), the RMRVAMC SCI/D Center met consistently out-performed national averages for SCI/D Centers on all domains.



Veteran quote upon discharge from the inpatient SCI/D unit: "The ward is spectacular. Physical therapy from staff was exceptional. They really enhanced my self-confidence."

Report prepared by RMRVAMC SCI/D Center Management of Information & Outcomes Coordinator

Sheila Saliman, Ph.D.