Complementary and Integrative Health Services Evaluation

Annual Report SFY 2016-17

Prepared for the Colorado Department of Health Care Policy & Financing

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Evaluation Background

The Home and Community Based Services – Spinal Cord Injury (HCBS-SCI) Pilot Program was created under the authority of Colorado Revised Statute §25.5-6-1303 (2009) and a waiver approved by the Centers for Medicare and Medicaid Services (CMS) pursuant to Section 1915 (c) of the Social Security Act. The HCBS-SCI Pilot Program allowed individuals with spinal cord injuries to receive alternative therapies, now called Complementary and Integrative Health Services (CIHS) (acupuncture, chiropractic care and massage therapy), in addition to other home- and community-based services already provided through Elderly, Blind and Disabled (EBD) waivers.

The HCBS-SCI Pilot Program was established for a 3-year period, from July 1, 2012 through June 30, 2015. Each year, the program enabled up to 67 eligible individuals to receive CIHS for spinal cord injury. To participate in the pilot program, the individuals and their complimentary and integrative health services (CIHS) providers agreed to provide data, complete forms and respond to interviews or surveys related to the pilot program. National Research Center, Inc. (NRC) conducted the evaluation of this pilot program and submitted a final report to Colorado Department of Health Care Policy and Financing (HCPF or "the Department") in July of 2015.

The original Pilot Program showed promise, but did not provide enough data to conclude whether SCI Waiver Members saw improvements in their conditions from the alternative therapies. The Department renewed the program for an additional five years (ending June 30, 2020) with some changes in response to the Pilot Program evaluation and other stakeholder input. Changes of note for this evaluation seek to rectify deficiencies in the Pilot program related to ambiguity of "alternative therapies," a small sample size and bottlenecks to receiving services. These changes include:

- To provide a better descriptive, "alternative therapies" (acupuncture, chiropractic care and massage therapy) are now referred to as "complimentary and integrative health services (CIHS).
- The definition of SCI was broadened to improve enrollment eligibility.
- The cap of 67 SCI Waiver Members was increased to 120, with the option to increase this cap if need is shown. This is intended to serve a larger group and provide a sufficient number of participants to draw conclusions in the evaluation. This has also allowed the elimination of the waitlist.
- The requirement that CIHS providers be center-based, with a supervising physician at the site was removed. Individual CIHS providers and centers without physicians can now apply to become CIHS providers under the waiver. This is intended to ensure SCI Waiver Members have access to the CIHS, reducing the service bottlenecks experienced in the three-year pilot program.

NRC was retained to implement the evaluation for the new five-year SCI waiver program. Specifically this evaluation will assess whether:

- CIHS helped reduce the need for continuous or more expensive procedures, medications, and hospitalizations for a person with a spinal cord injury.
- The HCBS-SCI program results in cost savings for the State compared to the estimated expenditures that would have otherwise been spent for the same persons with spinal cord injuries absent the program.
- CIHS led to any changes to the health status or health outcomes of persons using the services.
- CIHS led to any changes to the quality of life of persons using the services.
- CIHS allowed persons with a spinal cord injury to become and/or remain employed.

Additionally, the study will identify any specific ways to improve the HCBS-SCI program based on participant feedback and overall study findings.

2016-2020 Evaluation Components

Upon enrollment onto the Medicaid HCBS-SCI waiver, each individual is provided a consent form by their case manager informing them of the evaluation and their participation in the study. The consent form is collected by the participant's CIHS provider prior to their first appointment. If an individual refuses consent, they are not included in the evaluation.

To achieve the goals of the study evaluation, five components are being implemented:

1. Provider-administered three question assessment that is conducted at the start of each CIHS session.
2. Self-administered assessments of health status, employment and quality of life, administered at the first CIHS appointment and annually (in March) and/or semi-annually (in March and September).
    a. Form 1: Self-Administered Health History (annually)
    b. Form 2: Self-Administered Health Assessment (semi-annually)
    c. Form 3: Self-Administered Quality of Life Assessment (WHOQOL-BREF, semi-annually)
    d. Form 4: Self-Administered Functional Assessment (CHART, annually)
3. Feedback surveys to assess satisfaction with the program and areas for improvement, implemented annually in April/May.
4. Analysis of data from the HCPF claims database, MMIS, to assess service usage and costs; results culled annually for the Annual Report.
5. Analysis of the ULTC 100.2 Long Term Care Assessment form, filled out by each participant's Medicaid Case Manager annually (and updated with changes in treatment plans); results culled annually for the Annual Report.

This report details the results of the evaluation for the first year of the five year program.

Program Participant Details

CIHS Provider Enrollment

As of June 1, 2017, there are four CIHS providers enrolled:

- Spinal Cord Injury Recovery Project
  866 E. 78th Avenue
  Denver, CO 80229-5934
- The Chanda Plan Foundation (Lakewood)
  1630 Carr Street
  Lakewood, CO 80214
- The Chanda Plan Foundation (PEAK Center)
  3425 S. Clarkson Street
  Englewood, CO 80113-2811
- Unity Community Acupuncture
  1355 E 22nd Ave
  Denver, CO 80205-5220

SCI Waiver Member Enrollment

As of May 31, 2017 there are 84 people on the SCI Waiver. Of these, 62 had claims made to HCPF for CIHS that received payment as of March 30, 2017 (the latest available claims data due to lags in the administrative processes). An additional ** patients were known to have received CIHS but claims were denied in the billing process and the remaining ** were waiver members but were not known to have accessed CIHS.

Table 1: SCI Waiver Member Status

	Number	Percent
Total	84	100%
With CIHS claims	62	74%
No CIHS claims	**	**%
Billing denial	**	**%

Not included in this study are ** SCI waiver members who were members in the first 3-year program, but had since left the waiver (** dis-enrolled and ** passed away).

Evaluation Participation

The primary difference between services provided under the EBD waiver and the SCI waiver is access to CIHS (the other difference is that Alternative Care Facility, a residential service, is available under EBD but not included in the SCI Waiver). As such, to best evaluate the effect of the SCI waiver, only members who are using CIHS are included in the evaluation (i.e., those on the SCI waiver who are not receiving CIHS are considered equivalent to not being on the SCI waiver).

Of the 84 current SCI Waiver members, ** have not received CIHS and therefore have not begun to participate in the evaluation. Of the 67 who are known to have used CIHS, the following numbers have completed the evaluation components.

Table 2: Number of Evaluation Forms Completed (and Response Rate)

Form*	At outset of CIHS (Total N=67)	Iteration/timing of form**		
		June/July 2016	September 2016	March 2017 (Total N=67)
Form 1: Self-Administered Health History (annually)	59 (88%)	**	**	49 (73%)
Form 2: Self-Administered Health Assessment (semi-annually)	60 (90%)	**	45	54 (81%)
Form 3: Self-Administered Quality of Life Assessment (WHOQOL-BREF, semi-annually)	60 (90%)	**	45	54 (81%)
Form 4: Self-Administered Functional Assessment (CHART, annually)	58 (87%)	**	30	47 (70%)

Note that start dates for each participant is unique, so not all were in the program at the first iterations (June/July and September, 2016). However, each should have completed all four forms at the outset of their care.

**Forms 1 and 4 are intended to be completed at the outset of CIHS and annually in March. Forms 2 and 3 are to be completed each March and each September.*

***Some forms were received in the month before or month after September and March, but for simplicity are grouped with the target month they are closest too.*

****Response rates for June/July 2016 and September 2016 are not shown, as an accurate count of participants was not known.*

While these numbers represent a good response rates for a voluntary evaluation, participation of all SCI waiver members in CIHS and full participation in the evaluation by those accessing CIHS is the goal of the program. NRC has been identifying the participants who have missing forms and sharing this list with providers, but this process should be revisited (before the next iteration, September 2017) with HCPF staff (and later provider staff) to work toward full compliance with the evaluation process.

The greatest challenge to this process is finding an accurate list of participants, updated in real time. NRC culled the list of 84 current participants from three places: a list provided by HCPF of current enrollees, names culled from the forms completed online and at the provider centers and names culled from the Medicaid claims billing database. While most individuals are found in all three sources, not all are, and the process of identifying actual current enrollees is not complete until all the data is in and providers and HCPF staff review the anomalies to resolve them (identify people not on the waiver, who left the waiver, missing forms, etc.). An in-time accounting of who should be completing the forms has these challenges:

- Some people filled evaluation forms and were not on the SCI waiver
- Some were getting CIHS but were not yet on the HCPF list of current enrollees

- Some are on the enrollee list, but not getting services (as shown in the claims data, but there is always has some uncertainty because of lags in administrative databases).

Participant Demographics

Participant demographics are culled from the most recently completed Form 1 and from the Medicaid registration/claims database. As shown in Table 3, a majority of participants are male (60%), single, live alone and reliant on Social Security for their income. There is a wide age range and about half have a high school education or less and half have a college degree. Just over one-third are able to drive themselves (36%) while 40% rely on others to drive them and 17% use buses or taxis for their primary transportation. Most do not drink alcohol (74%), smoke cigarettes (86%) or use other tobacco products (91%).

Table 3: Demographic Profile of SCI Waiver Evaluation Participants

		Percent	
Gender	Male	60%	
	Female	40%	
	Total	100%	
Age	18 to 34	34%	
	35 to 54	45%	
	55 or older	21%	
	Total	100%	
Work status (can choose more than one)	Disabled	67%	
	Unemployed	19%	
	Part time	14%	
	Retired	9%	
	Student	3%	
	Full time	2%	
	Sick leave	0%	
	Total	100%	
Income Source (can choose more than one)	Social Security	84%	
	Disability Comp	12%	
	Salary	9%	
	Other	9%	
	Pension	2%	
	Total	100%	
Primary mode of transportation	Others drive	40%	
	Drive	36%	
	Bus	10%	
	Other	7%	
	Taxi	7%	
	Total	100%	

Marital status	Single	72%	
	Divorced	16%	
	Married	9%	
	Widowed	3%	
	Separated	0%	
	Total	100%	
Live with (can choose more than one)	Alone	40%	
	Parents or siblings	26%	
	Friends	12%	
	Other	12%	
	Children	10%	
	Spouse	9%	
	Significant other	2%	
	Total	100%	
Live in	House	62%	
	Apartment	29%	
	Other	9%	
	Retirement housing	0%	
	Assisted living	0%	
	Total	100%	
Highest grade completed	Grade School	7%	
	High School	43%	
	College	34%	
	Postgraduate	16%	
	Total	100%	
Drink alcoholic beverages	No	74%	
	Yes	26%	
	Total	100%	
Smoke cigarettes	No	86%	
	Yes	14%	
	Total	100%	
Use other tobacco products	No	91%	
	Yes	9%	
	Total	100%	

Source: Gender and age from HCPF database, all other items from each participant's most recently completed Form 1 (questions 1 to 10).

Over half of the evaluation participants received their spinal cord injury (SCI) 10 or more years prior to this evaluation. Most had injuries in the C1-8 region (75%) and 57% were quadriplegic.

Table 4: Injury Profile of SCI Waiver Evaluation Participants

Years with SCI	Less than 2 years	10%	
	2-5 years	21%	
	6-9 years	17%	
	10 or more years	52%	
	Total	100%	
Level of SCI (can choose more than one)	C5-C8	40%	
	C1-C4	35%	
	T6-T12	22%	
	T1-T5	11%	
	L1-L5	4%	
	S1-S5	0%	
	Total	100%	
Type/Result of SCI (can choose more than one)	Quadriplegia	57%	
	Paraplegia	20%	
	Tetraplegia	16%	
	Other	14%	
	Total	100%	

Source: Most recently completed Form 1 (questions 11 to 13).

The most common medical conditions and symptoms experienced by evaluation participants were neck, muscle, joint and back pain. Most also had experienced sleep problems currently or in the past.

Table 5: Diagnosed Medical Conditions and Symptoms for SCI Waiver Evaluation Participants

	Current	Current or Past
	Percent	Percent
Neck pain	79%	84%
Muscle pain	72%	84%
Joint pain	66%	71%
Back pain	60%	76%
Sleep problems	43%	57%
Seasonal allergies	40%	50%
Headaches	29%	50%
Vision problems	29%	38%
Memory problems	29%	36%
Arthritis	28%	29%
Heartburn	26%	43%
Anxiety	24%	41%
Depression	22%	43%
Osteoporosis	22%	26%
Skin problems	19%	43%
Chronic fatigue	19%	33%
Obesity	19%	22%
Thyroid problems	14%	17%
Diabetes	12%	14%
High blood pressures	10%	24%
Asthma	9%	17%
Kidney problems	7%	16%
High cholesterol	7%	14%
Lung disease	7%	9%
Blood clots	5%	26%
Migraines	5%	16%
Hearing problems	5%	5%
Difficulty chewing or swallowing	3%	16%
Eye disease	3%	3%
Ulcers	2%	12%
Cancer	2%	7%
Seizures	0%	7%
Stroke	0%	7%
Heart disease	0%	5%
No current conditions	5%	

Source: Most recently completed Form 1, Question 14: Have you had any of the following diagnosed medical conditions or symptoms? Check one: Currently, In the past, or Never

Cost and Utilization of CIHS

Notes on Comparisons by Year

SCI waiver participants generally participated in the HCBS-EBD (Elderly, Blind, & Disabled) waiver before enrolling in the SCI waiver. Therefore, for most participants, Medicaid claims costs can be tracked pre and post joining the SCI waiver.

As discussed above, the only difference between services provided under the EBD waiver and the SCI waiver is access to CIHS. As such, for the purpose of this study, the important start date for determining the impact of the SCI waiver is the first day the participant received a complimentary and integrative health service.

The start date for first year of CIHS differs for each SCI waiver participant, so calendar years are not used for comparisons. Throughout the report, years are defined as "1 Year Pre," "1 Year Post," "2 Years Post," etc., anchored on the first date the individual started CIHS.

While this is the report for the first year of the five-year study of the renewed SCI waiver program, many of the current participants also participated in the three-year pilot program and therefore have been receiving CIHS for up to three full years.

To ensure comparability, annual usage and costs are only included if the participant had participated for the full year (i.e., all 12 months in "1 Year Pre," or "1 Year Post," or "2 Years Post," etc.).

Utilization of CIHS

The number of units of CIHS that have been paid for by Medicaid under the SCI waiver are shown in Table 6 (with claims ending March 30, 2017). These exclude participants who left the waiver and those with only partial years on the waiver. The "years post" shown in Table 6 and throughout the report are tethered to each individuals starting date (the date of their first CIHS). Each successive annual report should have more participants with longer term SCI Waiver membership and that will provide a more robust comparison of the changes in utilization and cost over time.

Massage therapy was the most frequently used CIHS with an average of 93 units being used in the first year of joining the SCI waiver and starting CIH treatments. Acupuncture was second most frequently used (an average of 81 units in the first year) and chiropractic was used by fewer people (35 compared to 45 using massage therapy) and the least frequently (an average of 20 units in the first year).

Table 6: Hours and Cost of CIHS Paid for by Medicaid (Full Year Data)

Only those with a full year of data are included (adjusted dollars)		Number of Participants	Total Cost	Average Cost per year	Total Units[1]	Average Units per year
Acupuncture	1 Year Post	N=45	$64,835	$1,441	3,651	81
	2 Year Post	N=31	$28,747	$927	1,599	52
	3 Year Post	N=**	$8,347	$1,669	463	93
Chiropractic	1 Year Post	N=35	$12,477	$356	709	20
	2 Year Post	N=**	$7,644	$478	430	27
	3 Year Post	N=**	$2,099	$1,050	116	58
Massage	1 Year Post	N=46	$58,510	$1,272	4,270	93
	2 Year Post	N=30	$26,230	$874	1,892	63
	3 Year Post	N=**	$7,516	$1,253	542	90

[1] Each paid unit is 15 minutes.
Data source: Medicaid claims billing database, claims ending March 30, 2017.

Overall Medicaid Costs (Including CIHS)

Changes in Healthcare Costs

As Medicaid claims rates may change each fiscal year, comparisons of real dollars (not adjusted for changes in reimbursement rates) may hide real changes in expenditures. As such, in this report past health care costs were adjusted to 2015/16 dollars based on the rate changes below.

Table 7: Changes in Medicaid Reimbursement Rates

State Fiscal Year	Rate Change
FY 2009-10	1.5% decrease as of Sept and 1% decrease beginning December
FY 2010-11	1% decrease effective July
FY 2011-12	None
FY 2012-13	None
FY 2013-14	8.26% increase effective July
FY 2014-15	2% increase effective July
FY 2015-16	0.5% increase effective July
FY 2016-17	None

Source: HCPF (email correspondence 4/20/2016)

Overall Medicaid Costs

Table 8 shows the costs for all claims made to Medicaid for evaluation participants. Table 9 shows only those who had a full year of data both pre and post starting CIHS. Both Table 8 and Table 9 show a decreasing trend in total Medicaid costs after starting CIHS.

Table 8: Total Medicaid Costs by Year

Adjusted for Cost Inflation	Count	Sum	Mean	Standard Deviation	Minimum	Maximum
2 Years Pre	**	$1,212,209	$63,800	$54,433	$1,532	$207,853
1 Year Pre	47	$3,160,193	$67,238	$62,188	$9	$272,790
1 Year Post	47	$3,172,733	$67,505	$54,606	$5,210	$293,845
2 Years Post	46	$2,854,830	$62,062	$50,053	$2	$255,994
3 Years Post	38	$2,108,569	$55,489	$46,336	$1,401	$263,746

Data source: Medicaid claims billing database. Costs are in real 2015/16 dollars adjusted for inflation. Data is not included if the participant had only a partial year of services in the service year (i.e., was on the EBD or SCI waiver for fewer than 12 months in that year). The time frame for each year varies by participant.

Table 9: Total Medicaid Costs by Year (with at least one full year pre and post CIHS)

Adjusted for Cost Inflation	Count	Sum	Mean	Standard Deviation	Minimum	Maximum
2 Years Pre	**	$870,293	$66,946	$65,107	$1,532	$207,853
1 Year Pre	36	$2,577,359	$71,593	$66,178	$129	$272,790
1 Year Post	36	$2,527,623	$70,212	$58,518	$5,210	$293,845
2 Year Post	36	$2,238,448	$62,179	$52,450	$2	$255,994
3 Year Post	30	$1,682,266	$56,076	$49,519	$1,401	$263,746

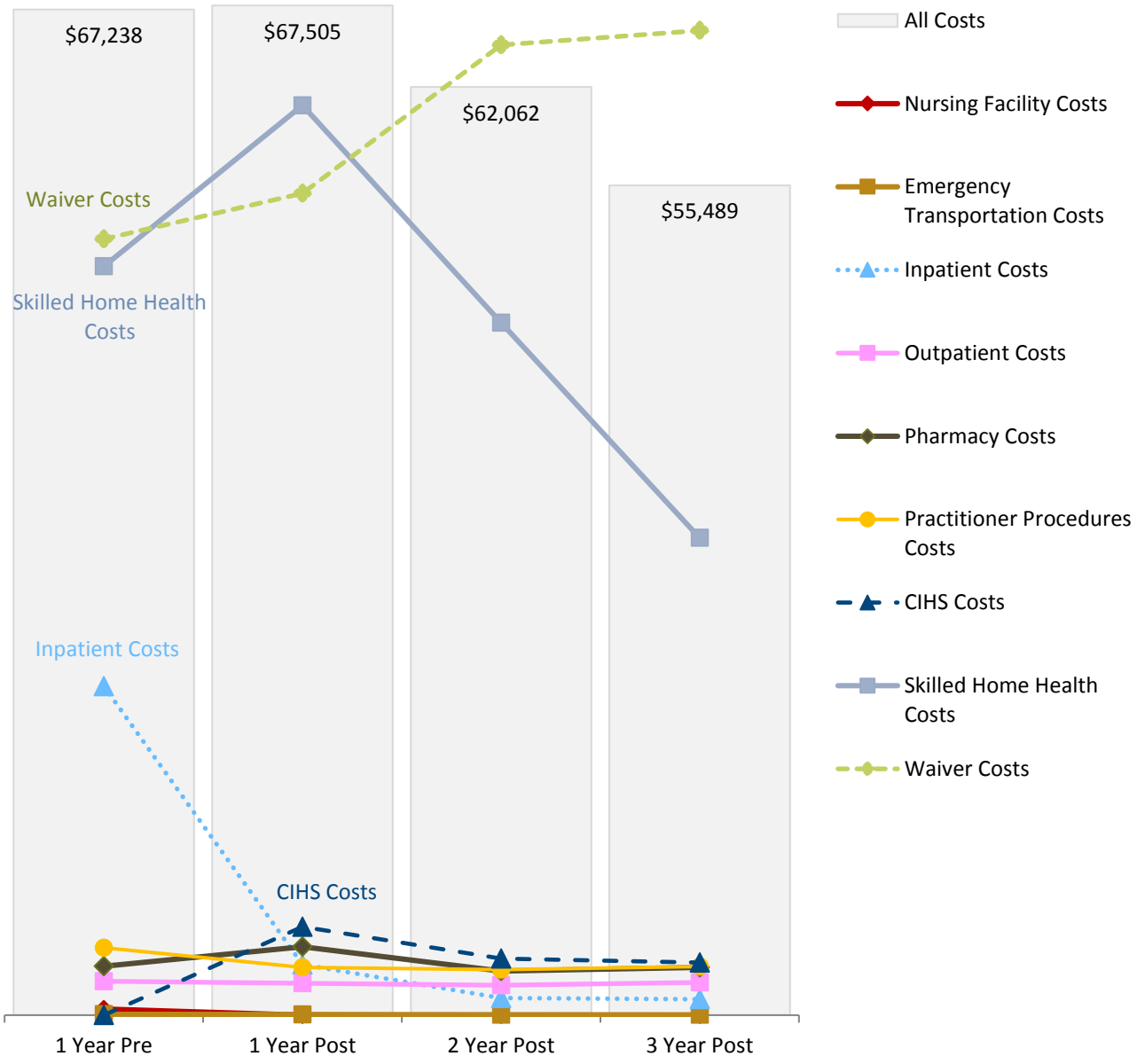
Data source: Medicaid claims billing database.

Only included if participated for one full year pre and post CIHS. Data is not included if the participant had only a partial year of services in the service year (i.e., was on the EBD or SCI waiver for fewer than 12 months in that year). The time frame for each year varies by participant.

Medicaid Cost by Category

While it is hypothesized that the use of CIHS will lead to a reduction, or at least no increase, in overall Medicaid claims, not all Medicaid costs are expected to be impacted by CIHS use. Figure 1 shows all costs for those who had a full 12 months of data in each year. There was an increase in claims made for waiver services after CIHS were started and decreases in in-patient and skilled home health claims. Other claims remained relatively similar. Details for each are presented in the following pages.

Figure 1: Average Medicaid Costs by Category by Year (Adjusted for Cost Inflation)



CIHS were initiated once joining the SCI waiver (1 Year Post) with average costs of $2,955 in that first year. Average CIHS costs dropped in the second year post-SCI to $1,894 and were at a similar level in the second year post-SCI

Table 10: CIHS Costs by Year

Adjusted for Cost Inflation	Count	Sum	Mean	Standard Deviation	Minimum	Maximum
2 Years Pre	**	$0	$0	$0	$0	$0
1 Year Pre	47	$0	$0	$0	$0	$0
1 Year Post	47	$138,868	$2,955	$1,340	$419	$5,996
2 Years Post	46	$87,131	$1,894	$1,597	$0	$6,165
3 Years Post	38	$66,749	$1,757	$2,015	$0	$5,670

Data source: Medicaid claims billing database. Costs are in real 2015/16 dollars adjusted for inflation. Data is not included if the participant had only a partial year of services in the service year (i.e., was on the EBD or SCI waiver for fewer than 12 months in that year). The time frame for each year varies by participant.

Table 11: CIHS Costs by Year (with at least one full year pre and post CIHS)

Adjusted for Cost Inflation	Count	Sum	Mean	Standard Deviation	Minimum	Maximum
2 Years Pre	**	$0	$0	$0	$0	$0
1 Year Pre	36	$0	$0	$0	$0	$0
1 Year Post	36	$112,093	$3,114	$1,209	$419	$5,996
2 Year Post	36	$67,424	$1,873	$1,537	$0	$4,476
3 Year Post	30	$49,119	$1,637	$1,883	$0	$5,482

Data source: Medicaid claims billing database.
Only included if participated for one full year pre and post starting CIHS.

Waiver services include services such as non-medical transportation, personal emergency response systems, adult day care and unskilled personal and home care services. Needs for personal emergency systems, unskilled personal and home care services are not expected to change due to receiving CIHS services, while non-emergency transportation may increase as participants go to more CIHS appointments and potentially feel well enough to leave their homes more frequently for other purposes (only about one-third of participants are able to drive themselves). These costs are showing an upward trend.

Table 12: Waiver Services Costs by Year

Adjusted for Cost Inflation	Count	Sum	Mean	Standard Deviation	Minimum	Maximum
2 Years Pre	**	$285,885	$15,047	$24,666	$0	$81,563
1 Year Pre	47	$1,219,594	$25,949	$31,586	$0	$123,166
1 Year Post	47	$1,291,212	$27,473	$27,288	$0	$90,340
2 Years Post	46	$1,492,285	$32,441	$26,691	$0	$89,381
3 Years Post	38	$1,250,875	$32,918	$28,932	$0	$95,533

Data source: Medicaid claims billing database. Costs are in real 2015/16 dollars adjusted for inflation. Data is not included if the participant had only a partial year of services in the service year (i.e., was on the EBD or SCI waiver for fewer than 12 months in that year). The time frame for each year varies by participant.

Table 13: Waiver Services Costs by Year (with at least one full year pre and post CIHS)

Adjusted for Cost Inflation	Count	Sum	Mean	Standard Deviation	Minimum	Maximum
2 Years Pre	**	$168,171	$12,936	$24,064	$0	$81,563
1 Year Pre	36	$836,257	$23,229	$26,869	$0	$90,261
1 Year Post	36	$1,016,021	$28,223	$27,630	$0	$90,340
2 Year Post	36	$1,182,178	$32,838	$27,044	$0	$89,381
3 Year Post	30	$974,395	$32,480	$28,625	$0	$95,533

Data source: Medicaid claims billing database.
Only included if participated for one full year pre and post CIHS.

The greatest decrease in costs (from pre to post SCI Waiver) was seen in costs for skilled home health care services (such as occupational or physical therapy care or evaluations). These may be being replaced by lower cost CIHS.

Table 14: Average Skilled Home Health Services Costs by Year

Adjusted for Cost Inflation	Count	Sum	Mean	Standard Deviation	Minimum	Maximum
2 Years Pre	**	$591,543	$31,134	$54,029	$0	$187,120
1 Year Pre	47	$1,176,612	$25,034	$52,333	$0	$261,607
1 Year Post	47	$1,429,697	$30,419	$56,578	$0	$277,361
2 Years Post	46	$1,064,855	$23,149	$47,053	$0	$230,173
3 Years Post	38	$606,323	$15,956	$41,424	$0	$233,580

Data source: Medicaid claims billing database. Costs are in real 2015/16 dollars adjusted for inflation. Data is not included if the participant had only a partial year of services in the service year (i.e., was on the EBD or SCI waiver for fewer than 12 months in that year). The time frame for each year varies by participant.

Table 15: Skilled Home Health Services Costs by Year (with at least one full year pre and post CIHS)

Adjusted for Cost Inflation	Count	Sum	Mean	Standard Deviation	Minimum	Maximum
2 Years Pre	**	$499,126	$38,394	$62,490	$0	$187,120
1 Year Pre	36	$1,092,821	$30,356	$57,877	$0	$261,607
1 Year Post	36	$1,166,191	$32,394	$60,793	$0	$277,361
2 Year Post	36	$821,069	$22,807	$48,069	$0	$230,173
3 Year Post	30	$516,681	$17,223	$45,619	$0	$233,580

Data source: Medicaid claims billing database.
Only included if participated for one full year pre and post CIHS.

It is hypothesized that better pain management through CIHS will lead to a reduced need for pharmaceuticals to manage pain and depression. Early data shows some support for this hypothesis.

Table 16: Pharmacy Costs by Year

Adjusted for Cost Inflation	Count	Sum	Mean	Standard Deviation	Minimum	Maximum
2 Years Pre	**	$52,264	$2,751	$3,462	$0	$10,016
1 Year Pre	47	$76,827	$1,635	$3,133	$0	$14,480
1 Year Post	47	$107,429	$2,286	$3,967	$0	$14,888
2 Years Post	46	$67,827	$1,474	$3,119	$0	$14,700
3 Years Post	38	$60,744	$1,599	$3,204	$0	$13,703

Data source: Medicaid claims billing database. Costs are in real 2015/16 dollars adjusted for inflation. Data is not included if the participant had only a partial year of services in the service year (i.e., was on the EBD or SCI waiver for fewer than 12 months in that year). The time frame for each year varies by participant.

Table 17: Pharmacy Costs by Year (with at least one full year pre and post CIHS)

Adjusted for Cost Inflation	Count	Sum	Mean	Standard Deviation	Minimum	Maximum
2 Years Pre	**	$36,993	$2,846	$3,936	$0	$10,016
1 Year Pre	36	$70,594	$1,961	$3,497	$0	$14,480
1 Year Post	36	$90,571	$2,516	$4,251	$0	$14,888
2 Year Post	36	$61,061	$1,696	$3,427	$0	$14,700
3 Year Post	30	$53,141	$1,771	$3,493	$0	$13,703

Data source: Medicaid claims billing database.
Only included if participated for one full year pre and post CIHS.

Health maintenance requires regular visits to primary physicians and this is not expected to change due to the introduction of CIHS. However, early data shows a drop in the claims made for practitioner services after starting to receive CIHS services.

Table 18: Practitioner Services Costs by Year

Adjusted for Cost Inflation	Count	Sum	Mean	Standard Deviation	Minimum	Maximum
2 Years Pre	**	$50,969	$2,683	$3,890	$0	$12,480
1 Year Pre	47	$105,928	$2,254	$5,944	$0	$37,536
1 Year Post	47	$75,071	$1,597	$2,658	$0	$14,036
2 Years Post	46	$69,952	$1,521	$3,005	$0	$19,425
3 Years Post	38	$61,786	$1,626	$3,485	$0	$21,167

Data source: Medicaid claims billing database. Costs are in real 2015/16 dollars adjusted for inflation. Data is not included if the participant had only a partial year of services in the service year (i.e., was on the EBD or SCI waiver for fewer than 12 months in that year). The time frame for each year varies by participant.

Table 19: Practitioner Services by Year (with at least one full year pre and post CIHS)

Adjusted for Cost Inflation	Count	Sum	Mean	Standard Deviation	Minimum	Maximum
2 Years Pre	**	$25,095	$1,930	$3,264	$0	$12,480
1 Year Pre	36	$87,766	$2,438	$6,748	$0	$37,536
1 Year Post	36	$47,673	$1,324	$1,901	$0	$8,315
2 Year Post	36	$42,313	$1,175	$1,408	$0	$5,697
3 Year Post	30	$34,602	$1,153	$1,368	$0	$6,058

Data source: Medicaid claims billing database.
Only included if participated for one full year pre and post CIHS.

Many of the inpatient services received by SCI waiver participants were related to urinary and intestinal issues. These are areas that CIHS are hypothesized to improve, which may lead to reductions in needs for inpatient services. Preliminary data suggest a drop in these costs.

Table 20: Inpatient Services Costs by Year

Adjusted for Cost Inflation	Count	Sum	Mean	Standard Deviation	Minimum	Maximum
2 Years Pre	**	$198,826	$10,465	$25,461	$0	$106,398
1 Year Pre	47	$516,959	$10,999	$38,234	$0	$205,075
1 Year Post	47	$79,645	$1,695	$5,850	$0	$28,206
2 Years Post	46	$26,170	$569	$1,948	$0	$8,731
3 Years Post	38	$20,233	$532	$2,837	$0	$17,455

Data source: Medicaid claims billing database. Costs are in real 2015/16 dollars adjusted for inflation. Data is not included if the participant had only a partial year of services in the service year (i.e., was on the EBD or SCI waiver for fewer than 12 months in that year). The time frame for each year varies by participant.

Table 21: Inpatient Services by Year (with at least one full year pre and post CIHS)

Adjusted for Cost Inflation	Count	Sum	Mean	Standard Deviation	Minimum	Maximum
2 Years Pre	**	$118,828	$9,141	$29,328	$0	$106,398
1 Year Pre	36	$443,343	$12,315	$42,803	$0	$205,075
1 Year Post	36	$51,922	$1,442	$5,143	$0	$28,206
2 Year Post	36	$26,170	$727	$2,182	$0	$8,731
3 Year Post	30	$20,233	$674	$3,189	$0	$17,455

Data source: Medicaid claims billing database.
Only included if participated for one full year pre and post CIHS.

Outpatient services such as imaging, lab work, emergency room visits and physical or occupational therapy are services that may see a reduction in use if access to CIHS services leads to improved overall health and fewer illnesses and injuries. Early data suggest these costs are relatively steady.

Table 22: Outpatient Services Costs by Year

Adjusted for Cost Inflation	Count	Sum	Mean	Standard Deviation	Minimum	Maximum
2 Years Pre	**	$32,442	$1,707	$1,931	$0	$6,678
1 Year Pre	47	$53,269	$1,133	$1,478	$0	$6,964
1 Year Post	47	$49,925	$1,062	$1,794	$0	$9,128
2 Years Post	46	$45,975	$999	$1,420	$0	$4,597
3 Years Post	38	$41,505	$1,092	$1,655	$0	$6,584

Data source: Medicaid claims billing database. Costs are in real 2015/16 dollars adjusted for inflation. Data is not included if the participant had only a partial year of services in the service year (i.e., was on the EBD or SCI waiver for fewer than 12 months in that year). The time frame for each year varies by participant.

Table 23: Outpatient Services Costs t by Year (with at least one full year pre and post CIHS)

Adjusted for Cost Inflation	Count	Sum	Mean	Standard Deviation	Minimum	Maximum
2 Years Pre	**	$21,935	$1,687	$2,229	$0	$6,678
1 Year Pre	36	$36,272	$1,008	$1,134	$0	$4,574
1 Year Post	36	$42,517	$1,181	$1,991	$0	$9,128
2 Year Post	36	$37,734	$1,048	$1,461	$0	$4,597
3 Year Post	30	$33,743	$1,125	$1,725	$0	$6,584

Data source: Medicaid claims billing database.
Only included if participated for one full year pre and post CIHS.

While it is hoped that accessing CIHS will reduce the need for emergency medical transportation and nursing facility care, both of these services were rarely used by SCI waiver participants (both before and after joining the SCI waiver). As such they are not expenses that are expected to change significantly.

Table 24: Emergency Transportation Costs by Year

Adjusted for Cost Inflation	Count	Sum	Mean	Standard Deviation	Minimum	Maximum
2 Years Pre	**	$280	$15	$44	$0	$145
1 Year Pre	47	$1,372	$29	$108	$0	$595
1 Year Post	47	$886	$19	$66	$0	$271
2 Years Post	46	$635	$14	$76	$0	$499
3 Years Post	38	$353	$9	$33	$0	$149

Data source: Medicaid claims billing database. Costs are in real 2015/16 dollars adjusted for inflation. Data is not included if the participant had only a partial year of services in the service year (i.e., was on the EBD or SCI waiver for fewer than 12 months in that year). The time frame for each year varies by participant.

Table 25: Emergency Transportation Costs by Year (with at least one full year pre and post CIHS)

Adjusted for Cost Inflation	Count	Sum	Mean	Standard Deviation	Minimum	Maximum
2 Years Pre	**	$145	$11	$40	$0	$145
1 Year Pre	36	$675	$19	$76	$0	$432
1 Year Post	36	$635	$18	$64	$0	$271
2 Year Post	36	$499	$14	$83	$0	$499
3 Year Post	30	$353	$12	$37	$0	$149

Data source: Medicaid claims billing database.
Only included if participated for one full year pre and post CIHS.

Table 26: Nursing Facilities Costs by Year

Adjusted for Cost Inflation	Count	Sum	Mean	Standard Deviation	Minimum	Maximum
2 Years Pre	**	$0	$0	$0	$0	$0
1 Year Pre	47	$9,633	$205	$1,405	$0	$9,633
1 Year Post	47	$0	$0	$0	$0	$0
2 Years Post	46	$0	$0	$0	$0	$0
3 Years Post	38	$0	$0	$0	$0	$0

Data source: Medicaid claims billing database. Costs are in real 2015/16 dollars adjusted for inflation. Data is not included if the participant had only a partial year of services in the service year (i.e., was on the EBD or SCI waiver for fewer than 12 months in that year). The time frame for each year varies by participant.

Quality of Life Measurements

Treatment Session Self-Assessment

At the outset of each treatment session, for all three CIHS (acupuncture, chiropractic care and massage therapy), participants are asked three questions:

(1) How are you feeling, today on the following scale?
(2) How does this compare to your last visit?
(3) What is your area of primary concern today?

These questions were asked starting in July 2017, and as such, most participants do not have a full year of data for comparison. In future years the average ratings for all assessments within a year will be compared by year and patterns will be explored.

Table 27 shows the results from the first question. On average most respondents rated their pain issues at 4.4, where 0= no pain/issues and 10=worst pain/issues. Table 28 shows changes in ratings from the first the most recent session. As these ratings are made just before a session, it is not clear that a reduction in this rating should be seen across sessions; it may be that the session is beneficial, but that the benefits fade in the time between sessions and the rating before each assessment is similar. These early results show fluctuations, with many patients feeling worse between their first and most recent sessions; however many reported feeling better, as well. Thus, current results are inconclusive. Additionally, the time between these ratings varies and the impact of time between sessions will be explored in future analyses. While fluctuations are expected across sessions, an overall reduction in acuity may be seen in future cross-year comparisons.

Table 27: Status at Treatment Session

	Acupuncture	Chiropractic	Massage	All
No pain/issues (0)	1%	3%	2%	2%
None/ mild (1)	1%	2%	3%	2%
Mild (2)	15%	14%	13%	14%
Mild/ moderate (3)	21%	21%	19%	20%
Moderate (4)	20%	24%	23%	22%
Moderate/ severe (5)	12%	19%	17%	15%
Severe (6)	7%	7%	9%	8%
Severe/ very severe (7)	7%	6%	6%	6%
Very severe (8)	8%	2%	5%	6%
Very severe/ worst (9)	4%	0%	1%	2%
Worst pain/issues (10)	3%	1%	2%	2%
Number of sessions	**532**	**161**	**718**	**1,411**
Average score	**4.6**	**4.0**	**4.3**	**4.4**

Source: On-Going Assessment Forms, Q1: How are you feeling, today on the following scale? 0= No pain/issues, 1=None/ mild, 2=Mild, 3=Mild/ moderate, 4=Moderate, 5=Moderate/ severe, 6=Severe, 7=Severe/ very severe, 8=Very severe, 9=Very severe/ worst, 10=Worst pain/issues.

Table 28: Change in Status Score from Participant's First to Most Recent Treatment Session

	Acupuncture		Chiropractic		Massage	
Worse	N=**	45%	N=**	23%	N=**	47%
Same	N=**	10%	N=**	15%	N=**	13%
Improved	N=**	45%	N=**	62%	N=**	39%

Source: On-Going Assessment Forms, Q1 How are you feeling, today on the following scale?
Average rating where 0= No pain/issues, 1=None/ mild, 2=Mild, 3=Mild/ moderate, 4=Moderate, 5=Moderate/ severe, 6=Severe, 7=Severe/ very severe, 8=Very severe, 9=Very severe/ worst, 10=Worst pain/issues

The second question is a self-assessment of whether patients feel better or worse at the current session compared to the last session. Most indicated that they felt the same or (31%) or better (42%). This was similar across modalities.

Table 29: Change from Last Treatment Session

	Acupuncture	Chiropractic	Massage	All
Much better	11%	4%	20%	14%
Somewhat better	32%	34%	23%	28%
Same	30%	33%	31%	31%
Somewhat worse	23%	25%	20%	22%
Much worse	4%	3%	6%	5%
Number of sessions	**516**	**154**	**687**	**1,357**
Average score	**2.8**	**2.9**	**2.7**	**2.7**

Source: On-Going Assessment Forms, Q2: How does this compare to your last visit?
Average score where 1=Much better, 2=Somewhat better, 3=Same, 4=Somewhat worse, 5=Much worse

When asked what their area of primary concern to address in the session, clients could offer more than one area and sometimes indicated locations (e.g., back or leg) and sometimes indicated conditions (pain, depression, spasms). Table 30 outlines the frequency that each area of concern was mentioned across all sessions.

While issues with the neck/shoulder area, pain and upper body issues (back or trunk) were the most frequently addressed by all modalities, massage therapy was more often addressing neck/shoulder issues, chiropractic was most often focused on relieving pain in the upper body and those seeking treatment for sleep and depression issues were most often addressing these with acupuncture.

Table 30: Change from Last Treatment Session (Rating from Most Recent Session)

	Acupuncture	Chiropractic	Massage	All
Neck/shoulder	28%	37%	55%	43%
Pain (ache, soreness)	33%	66%	33%	37%
Upper body (back, spine, trunk, trapezius, core, glutes, chest)	35%	40%	32%	34%
Leg (knee, calve, hamstring, IT band)	9%	11%	16%	12%
Central body (hip, buttocks, sacrum, pelvis)	9%	6%	8%	8%
Muscle (tightness, stiffness)	9%	8%	7%	8%
Arm (hands, triceps, biceps, finger)	4%	2%	10%	7%
Mental health (depression, sadness, anxiety, mood, stress)	10%	1%	2%	5%
Sleep (energy, fatigue, tired, exhausted)	11%	0%	0%	4%
Spasms	7%	3%	3%	4%
GI (digestion, constipation, stomach, bloating, bowel)	8%	1%	2%	4%
Other	4%	4%	4%	4%
Nothing	4%	2%	2%	3%
UTI (bladder)	6%	1%	1%	3%
Reproductive (cervical, prostrate)	1%	2%	4%	3%
Ankle/feet	1%	0%	4%	2%
Head (headache, cold, sinus, migraine)	2%	1%	2%	2%
Weight	3%	0%	0%	1%

Source: On-Going Assessment Forms, Q3 What is your area of primary concern today?

Self-Administered Health Issue Assessment

At the initial treatment session and every March and September, participants are asked to complete the Form 2 Self-Administered Health Assessment. Those in the current study can have completed it up to three times (at outset, in September 2016 and in March 2017). The iterations shown in the tables below are based on the each individual's starting point.

Table 31 shows the average ratings for participant's first, second and third completion of Form 2. On average, the most sever issues experienced by participants were muscle spasms and overall, muscle and nerve pain. Average ratings for pain were similar to national averages shown in Table 32.

Table 31: Self-Administered Health Issue Assessment by Iteration

	Iteration					
	1		2		3	
Overall pain	N=60	4.2	N=40	4.4	N=**	4.6
Muscle spasms	N=60	4.2	N=39	4.8	N=**	3.6
Muscle pain	N=53	4.1	N=40	4.2	N=**	3.5
Nerve pain	N=59	3.7	N=39	4.0	N=**	4.2
Muscle wasting or atrophy	N=59	3.5	N=40	3.6	N=**	3.1
Joint problems	N=59	2.7	N=40	2.9	N=**	2.5
Urinary tract complications (UTI)	N=59	2.4	N=40	1.9	N=**	2.3
Bowel dysfunction	N=60	2.0	N=40	2.3	N=**	1.7
Sadness, disinterest, depression	N=59	1.9	N=40	1.9	N=**	1.1
Blood pressure issues	N=60	1.5	N=40	1.2	N=**	1.7
Pressure sores or skin breakdown	N=60	0.8	N=40	1.3	N=**	1.4
Pneumonia or other respiratory problems	N=60	0.8	N=40	0.2	N=**	0.6

Average rating where 0=not at all, 1=not at all/mild, 2=mild, 3=mild/moderate, 4=moderate, 5=moderate/severe, 6=severe, 7=severe/very severe, 8=very severe, 9=very severe/worst and 10=worst.

Timing of iterations varies by start date for SCI services. SCI waiver members are intended to complete Form 2 when they start services and every March and September following.

Source: Form 2 Self-Administered Health Assessment.

Table 32: National Severity of Average Pain Scores by Post Injury Year

Injury year	1 (N=7242)	5 (N=4868)	10 (N=3671)	15 (N=2738)	20 (N=2596)	25 (N=2508)	30 (N=2029)	35 (N=959)	40 (N=134)
Past 4 weeks' usual level of pain	4.2	4.4	4.4	4.4	4.3	4.2	4.3	4.2	4.4

Source: National Spinal Cord Injury Statistical Center, University of Alabama at Birmingham, 2015 Annual Statistical Report – Complete Public Version (Table 106). Includes all Form IIs entered into the database since March 1, 2001.

Table 33 shows the change in the rating from the first to the most recent evaluation for those participants who completed at least two iterations of the form (and had ratings for the item on both iterations). The average ratings from the first and most recent evaluations were not statistically different.

Table 33: Changes in Self-Administered Health Issues from First to Most Recent Assessment

		Average score (SD)		Change in score (percent of participants)		
	Number	Initial	Last	Improved	Same	Worse
Overall pain	N=38	4.2 (2.1)	4.6 (2.1)	38%	20%	43%
Nerve pain	N=38	3.6 (2.4)	4.1 (2.3)	33%	21%	46%
Muscle pain	N=33	3.8 (2.4)	4.4 (2.3)	46%	17%	37%
Urinary tract complications (UTI)	N=40	1.8 (2.3)	2.2 (2.9)	22%	44%	34%
Bowel dysfunction	N=41	1.9 (2.2)	2.0 (2.4)	27%	41%	32%
Pressure sores or skin breakdown	N=41	0.7 (1.7)	1.3 (2.2)	15%	59%	27%
Joint problems	N=41	2.7 (2.4)	2.8 (2.3)	32%	34%	34%
Muscle wasting or atrophy	N=38	2.8 (2.8)	2.9 (2.5)	37%	32%	32%
Muscle spasms	N=38	3.8 (2.5)	3.9 (2.2)	40%	23%	38%
Sadness, disinterest, depression	N=41	1.6 (1.8)	1.7 (1.9)	29%	46%	24%
Pneumonia or other respiratory problems	N=41	0.4 (1.3)	0.5 (1.3)	10%	76%	15%
Blood pressure issues	N=41	1.5 (2.3)	1.2 (2.0)	22%	56%	22%

Average rating where 0=not at all, 1=not at all/mild, 2=mild, 3=mild/moderate, 4=moderate, 5=moderate/severe, 6=severe, 7=severe/very severe, 8=very severe, 9=very severe/worst and 10=worst.

Timing of iterations varies by start date for SCI services. SCI waiver members are intended to complete Form 2 when they start services and every March and September following.

Comparison between those participants who completed Form 2 at the initial visit and at least once more, difference is between initial assessment and most recent assessment.

Source: Form 2 Self-Administered Health Assessment.

WHOQUAL-Bref Assessment

At the initial treatment session and every March and September, participants are asked to complete the Form 3: WHOQOL-BREF Assessment. Those in the current study can have completed it up to three times (at outset, in September 2016 and in March 2017). The iterations shown in the following tables are based on the each individual's starting point.

The World Health Organization Quality of Life –BREF instrument (WHOQOL-BREF, Form 3) is a 26-item measure that asks individuals to self-report their quality of life in four primary domains: (1) physical capacity, (2) psychological well-being, (3) social relationships and (4) environment. Multiple studies have confirmed the cross-cultural reliability and validity of the WHOQOL with SCI patient populations of diverse backgrounds[1,2] In addition to its strong psychometric properties, the WHOQOL-BREF has the advantage of being easy to administer and score, requiring minimal time and effort for both patient and physician. The

[1] *Hu Y, Mak JN, Wong YW, Leong JC, & Luk, KD (2008). Quality of life of traumatic spinal cord injured patients in Hong Kong.*

[2] *Jang Y, Hsieh CL, Wang YH, Wu YH (2004). A validity study of the WHOQOL-BREF assessment in persons with traumatic spinal cord injury.*

instrument places primary importance on patients' own perception of their quality of life within the past two weeks, allowing researchers to assess changes in patients' recovery experiences over time.

The average WHOQOL-BREF domain scores calculated from assessments made at the initial visit and up to two subsequent iterations (in March and/or September) are shown in Table 34. Participants had the highest average scores for their environment, which includes assessments of their financial resources, freedom, physical safety and security, health and social care, accessibility and quality, home environment, opportunities for acquiring new information and skills, participation in and opportunities for recreation/leisure activities, physical environment (pollution/noise/traffic /climate) and transportation. The lowest average score was for physical health which included assessments of activities of daily living, dependence on medicinal substances and medical aids, energy and fatigue, mobility, pain and discomfort, sleep and rest and work capacity.

Ratings did not differ statistically by iteration.

Table 34: WHOQOL-BREF Average Scores by Iteration

	Iteration					
	1		2		3	
Environment	N=59	70	N=40	68	N=**	66
Psychological	N=59	67	N=39	67	N=**	68
Social relationships	N=55	57	N=40	56	N=**	56
Physical health	N=58	55	N=39	56	N=**	56

Average score where 100=best and 0=worst.

Timing of iterations varies by start date for SCI services. SCI waiver members are intended to complete Form 3 (WHOQOL-BREF) when they start services and every March and September following.

Physical health includes activities of daily living, dependence on medicinal substances and medical aids, energy and fatigue, mobility, pain and discomfort, sleep and rest and work capacity.

Psychological includes bodily image and appearance, negative feelings, positive feelings, self-esteem, spirituality/religion/personal beliefs, thinking, learning, memory and concentration.

Social relationships include personal relationships, social support and sexual activity.

Environment includes financial resources, freedom, physical safety and security, health and social care, accessibility and quality, home environment, opportunities for acquiring new information and skills, participation in and opportunities for recreation/leisure activities, physical environment (pollution/noise/traffic /climate) and transportation.

Data source: Form 3 Self-Administered Quality of Life Assessment (WHOQOL-BREF).

Table 35 shows the change in the WHOQOL-BREF domain scores from the initial assessment and the most recent assessment. For those who completed the initial and at least one follow-up WHOQOL-BREF assessment, average ratings were similar in both iterations for all four domains. Compared to population benchmarks for the USA general population (see Table 36) evaluation participants had higher scores on average for environmental factors, similar for psychological and lower scores on average for social relationships and physical health

Table 35: Changes in WHOQOL-BREF Average Scores Initial Compared to Most Recent Assessment

		Average score (SD)[2]		Change in score (percent of participants)		
	Number	Initial	Last	Better/ more satisfied	Same	Worse/ less satisfied
Environment	N=41	69 (17)	67 (16)	37%	10%	54%
Psychological	N=41	68 (15)	66 (15)	26%	28%	46%
Social relationships	N=38	58 (22)	56 (19)	37%	16%	47%
Physical health	N=41	56 (18)	54 (19)	27%	41%	32%

Average score where 100=best and 0=worst.

Timing of iterations varies by start date for SCI services. SCI waiver members are intended to complete Form 3 (WHOQOL-BREF) when they start services and every March and September following.

Comparison between those participants who completed Form 3 at the initial visit and at least once more, difference is between initial assessment and most recent assessment.

Physical health includes activities of daily living, dependence on medicinal substances and medical aids, energy and fatigue, mobility, pain and discomfort, sleep and rest and work capacity.

Psychological includes bodily image and appearance, negative feelings, positive feelings, self-esteem, spirituality/religion/personal beliefs, thinking, learning, memory and concentration.

Social relationships include personal relationships, social support and sexual activity.

Environment includes financial resources, freedom, physical safety and security, health and social care, accessibility and quality, home environment, opportunities for acquiring new information and skills, participation in and opportunities for recreation/leisure activities, physical environment (pollution/noise/traffic /climate) and transportation.

Data source: Form 3 Self-Administered Quality of Life Assessment (WHOQOL-BREF).

Table 36: Comparative WHOQOL-BREF Domain Scores

			Dutch Rehabilitation Patients[3]			UK Patients by Condition[4]	
Mean (SD)	USA General Population[1]	Brazil SCI (N=47)[2]	Musculo-skeletal (N=280)	Chronic pain (N=174)	Neurological (N=59)	Musculo-skeletal (N=493)	Neurological (N=45)
Environment	59	55	73 (11)	70 (12)	70 (11)	60 (17)	68 (16)
Psychological	69	64	70 (12)	66 (12)	69 (13)	55 (18)	57 (18)
Social relationships	66	69	77 (16)	71 (17)	73 (19)	62 (23)	63 (21)
Physical health	78	59	57 (13)	51 (13)	53 (15)	40 (20)	55 (20)

1 S.M. Skevington, M. Lotfy & K.A. O'Connell. The World Health Organization's WHOQOL-BREF quality of life assessment: Psychometric properties and results of the international field trial A Report from the WHOQOL Group, WHO Centre for the Study of Quality of Life, Department of Psychology, University of Bath, Bath, UK. Average score was converted from a 20-point scale to a 100-point scale for comparability.

2 e Franca, I. S., Coura, A. S., de Franca, E. G., Basilio, N. N., & Souto, R. Q. (2011). Quality of life of adults with spinal cord injury: A study using the WHOQOL-bref. Revista da Escola de Enfermagem da USP, 45 (6), 1364–1371.

3 Ernst Schrier, Irene Schrier, Jan H. B. Geertzen, and Pieter U. Dijkstra. Quality of life in rehabilitation outpatients: normal values and a comparison with the general Dutch population and psychiatric patients. Average score was converted from a 20-point scale to a 100-point scale for comparability.

4 Skevington, S. M., & McCrate, F. M. (2012). Expecting a good quality of life in health: Assessing people with diverse diseases and conditions using the WHOQOL-BREF. Health Expectations, 15(1), 49–62.

Functional Status Measurements

At their initial CIHS treatment appointment and every March thereafter, evaluation participants should completed the Craig Handicap Assessment and Reporting Technique (CHART, Form 4)[3] to assess their day-to-day functionality. The CHART is a 27-item self-report measure designed to assess six dimensions of disability identified by the World Health Organization: (1) physical independence, (2) cognitive independence, (3) mobility, (4) occupation, (5) social integration and (6) economic self-sufficiency. Because the CHART asks respondents to quantify specific behaviors (e.g., "On a typical day, how many hours are you out of bed?"), it is able to index disability more objectively than similar inventories that tap into respondent attitudes or beliefs about their disability.

At the time of the initial visit, participants' highest average scores were for social integration, mobility and cognitive independence and the lowest average scores were for occupation and economic self-sufficiency.

CHART Functional Assessment

Table 37: CHART Average Domain Scores by Iteration

	Iteration			
	1		2	
Social integration	N=52	80	N=36	83
Mobility	N=58	75	N=36	77
Cognitive independence	N=55	75	N=35	76
Physical independence	N=57	66	N=36	58
Economic self sufficiency	N=48	41	N=31	41
Occupation	N=58	39	N=36	48

Average score where 100=best and 0=worst.

Timing of iterations varies by start date for SCI services. SCI waiver members are intended to complete Form 4 (CHART) when they start services and every March following.

Data source: Form 4 Self-Administered Functional Assessment (CHART).

[3] Whiteneck GG, Charlifue SW, Gerhart KA, Overhosler JD, Richardson GN (1992). Quantifying handicap: A new measure of long-term rehabilitation outcomes.

Comparing ratings for those who completed at least two assessments, the initial and most recent scores were statistically similar. Compared to the National CHART Domain Scores, social integration and mobility were similar to the national benchmark, but physical independence and occupation had lower scores.

Table 38: CHART Average Domain Scores Initial Compared to Last Assessment

CHART Domain	Number	Average score (SD)		Change in score (percent of participants)		
		Initial	Last	Improved	Same	Worse
Social integration	N=32	81 (23)	82 (23)	44%	31%	25%
Mobility	N=35	78 (19)	78 (23)	47%	15%	38%
Cognitive independence	N=34	75 (23)	76 (26)	36%	30%	33%
Physical independence	N=34	67 (30)	59 (34)	32%	6%	61%
Economic self-sufficiency	N=**	33 (33)	39 (35)	40%	52%	8%
Occupation	N=35	44 (35)	48 (38)	51%	11%	37%

Average score where 100=best and 0=worst.
Timing of iterations varies by start date for SCI services. SCI waiver members are intended to complete Form 4 (CHART) when they start services and every March following.
Comparison between those participants who completed Form 4 at the initial visit and at least once more, difference is between initial assessment and most recent assessment.
Data source: Form 4 Self-Administered Functional Assessment (CHART).

Table 39: National CHART Domain Scores for Persons with SCI by Post-Injury Year

Average score (number)	1	5	10	15	20	25	30	35	40
Social integration	86.5 (9,746)	86.2 (6,525)	86.3 (4,839)	87.2 (3,995)	87 (3,533)	87.2 (2,828)	86 (2,226)	86.6 (1,163)	84.2 (257)
Mobility	73.5 (9,937)	77.1 (6,648)	78.2 (4,875)	79 (4,038)	78.8 (3,572)	78.9 (2,856)	76.3 (2,254)	76.3 (1,170)	74.9 (256)
Cognitive independence	NA	NA	NA	NA	NA	NA	NA	NA	NA
Physical independence	71.3 (9,999)	76.7 (6,683)	78.6 (4,902)	81 (4,051)	83.3 (3,583)	83.4 (2,867)	84.1 (2,258)	87.3 (1,177)	88.7 (259)
Economic self-sufficiency	NA	NA	NA	NA	NA	NA	NA	NA	NA
Occupation	49.2 (9,812)	58.4 (6,585)	60.1 (4,849)	62.7 (4,000)	64.3 (3,544)	66.2 (2,845)	63.6 (2,235)	61.2 (1,162)	58.1 (257)

Source: National Spinal Cord Injury Statistical Center, University of Alabama at Birmingham, 2016 Annual Statistical Report – Complete Public Version (Tables 100 to 103). Includes all Form IIs entered into the database from January, 1996 to September, 2016. https://www.nscisc.uab.edu/public/2016%20Annual%20Report%20-%20Complete%20Public%20Version.pdf

Long Term Care Assessment

Functional status under the HCBS SCI and EBD waivers is measured using the Uniform Long Term Care (ULTC) 100.2 Assessment. This form is filled out by a Medicaid Case Manager annually and, in the rarer instance, within six months of a significant change in functional abilities that warrant a reassessment or change to scoring. As such, there may be more than one functional assessment completed in a given year. For comparison purposes, we report the scores for the last functional assessment completed in the given year, assuming this is most representative of how that year's services have influenced the participant's functionality.

On average participants were most independent in the areas of memory (the age appropriate ability to acquire and use information, reason, problem solve, complete tasks or communicate needs in order to care for oneself safely) and behavior (the ability to engage in safe actions and interactions and refrain from unsafe actions and interactions). They were most dependent in the areas of transferring, bathing, dressing, toileting and mobility. A detailed description of each assessment category can be found in *Appendix B: ULTC 100.2 Long Term Care Assessment Protocol.*

Compared to EBD Waiver members who qualify for the SCI Waiver (see Table 41), SCI waiver members (Table 40) had higher scores for memory and behavior but lower scores in the areas of bathing, dressing, toileting, mobility, transferring and eating. Those who sign up may be better able to advocate for themselves, but likely have more severe injuries than the average person who qualifies for the SCI waiver but has not signed up.

Table 40: Long Term Care Assessment Scores by Year (SCI Waiver Members)

	Year relative to the start date of SCI Waiver									
	2 Years Pre		1 Year Pre		1 Year Post		2 Years Post		3 Years Post	
Bathing	N=63	**	N=77	**	N=68	**	N=57	30	N=53	33
Dressing	N=63	**	N=77	34	N=68	31	N=57	38	N=53	38
Toileting	N=63	**	N=77	31	N=68	32	N=57	36	N=53	33
Mobility	N=63	**	N=77	**	N=68	31	N=57	32	N=53	32
Transferring	N=63	**	N=77	**	N=68	**	N=57	**	N=53	**
Eating	N=63	56	N=77	58	N=68	60	N=57	62	N=53	59
Behaviors	N=63	89	N=77	86	N=68	84	N=57	87	N=53	86
Memory/Cognition Deficit	N=63	94	N=77	95	N=68	93	N=57	93	N=53	92

Average rating where 100=independent, 66.7=mostly independent, 33.3=mostly dependent and 0=dependent.
See Appendix B: ULTC 100.2 Long Term Care Assessment Protocol for further details on how independence is rated for each activity of daily living (ADL).
Data source: ULTC 100.2 Long Term Care Assessment.

Table 41: Long Term Care Assessment Scores by Year (EBD Waiver Members*)

	Year 1		Year 2		Year 3		Year 4		Year 5	
Bathing	N=1073	41	N=882	40	N=764	39	N=643	39	N=517	38
Dressing	N=1073	48	N=882	47	N=764	47	N=643	46	N=517	44
Toileting	N=1073	55	N=882	54	N=764	51	N=643	50	N=517	49
Mobility	N=1073	35	N=882	33	N=764	33	N=643	33	N=517	33
Transferring	N=1073	35	N=882	33	N=764	32	N=643	31	N=517	31
Eating	N=1073	71	N=882	70	N=764	70	N=643	68	N=517	67
Behaviors	N=1073	81	N=882	82	N=764	81	N=643	80	N=517	81
Memory/Cognition Deficit	N=1073	78	N=882	78	N=764	77	N=643	77	N=517	77

** EBD Waiver members who qualify for the SCI Waiver.*

Average rating where 100=independent, 66.7=mostly independent, 33.3=mostly dependent and 0=dependent.

See Appendix B: ULTC 100.2 Long Term Care Assessment Protocol for further details on how independence is rated for each activity of daily living (ADL).

Data source: ULTC 100.2 Long Term Care Assessment.

Program Stakeholder Annual Feedback

Each year in April/May, SCI waiver members who are participating who are receiving CIHS, CIHS providers and SCI waiver case managers and supervisors are asked to complete a survey that asks about their overall experience with the SCI waiver. These surveys gather input on how the process is working and also ask stakeholders for their impressions of the effectiveness of the waiver. An overview of the results for the 2016 survey is presented in this section. Detailed results from the annual feedback surveys are provided in *Appendix A: Participant, Provider and Case Manager Experience Surveys*. In April/May 2016, 33 SCI waiver members completed the survey, along with 13 Medicaid case managers and case manager supervisors and 15 CIHS providers (chiropractors, acupuncturists, massage therapists and staff tasked with managing the program in the provider office).

4.5.1 Impact of SCI Waiver on Participants

When asked if they would recommend joining the SCI waiver to other people with spinal cord injuries, 97% of respondents to the SCI Waiver participant survey and 100% of respondents to the case manager survey, said they would recommend joining the SCI waiver. The one participant who would not recommend the waiver indicated that they had never heard of the "waiver" so could not assess it (they did however rate the CIHS services, so it is likely that they were in the program but did not know its name).

When asked why they would recommend it almost all participants cited their increased quality of life and reduction in pain.

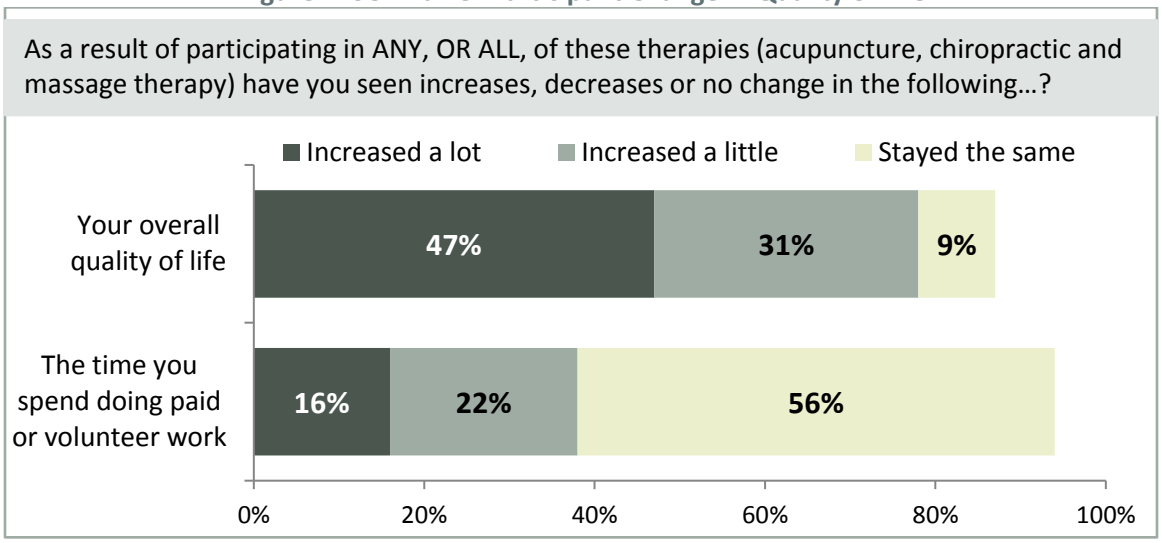
> *"It's a good motivation to keep a good regular routine. By doing this you get stronger in the long term. The program is a great incentive to keep us mobile"*
>
> *"Getting these types of therapies has helped a lot mentally physically and emotionally. Overall things with my body feel more relaxed"*
>
> *"It helps the level of pain tremendously and it also gives us (SCI community) time to see one another and realize we are not the only ones going through this injury. It also increases self-esteem and self-worth (in my opinion)."*
>
> "The SCI waiver has helped me reduce pain, sleep better, have more energy and improve my quality of life. "
>
> *"I am very grateful this has become an option because I am so tired of taking pills for everything!!"*
>
> *(See Appendix A: Participant, Provider and Case Manager Experience Surveys for all participant comments)*

Case managers and supervisors echoed these comments, as they had heard the same from their clients.

> *"Most of my clients report that attending their SCI therapies is a bright spot in their week. It's something they look forward to and really feel the physical and emotional benefits from the therapies. I truly believe that these modalities are helping my clients reduce their pain levels, muscle spasms, depression and anxiety symptoms and ultimately helping them maintain a higher level of physical and emotional health."*

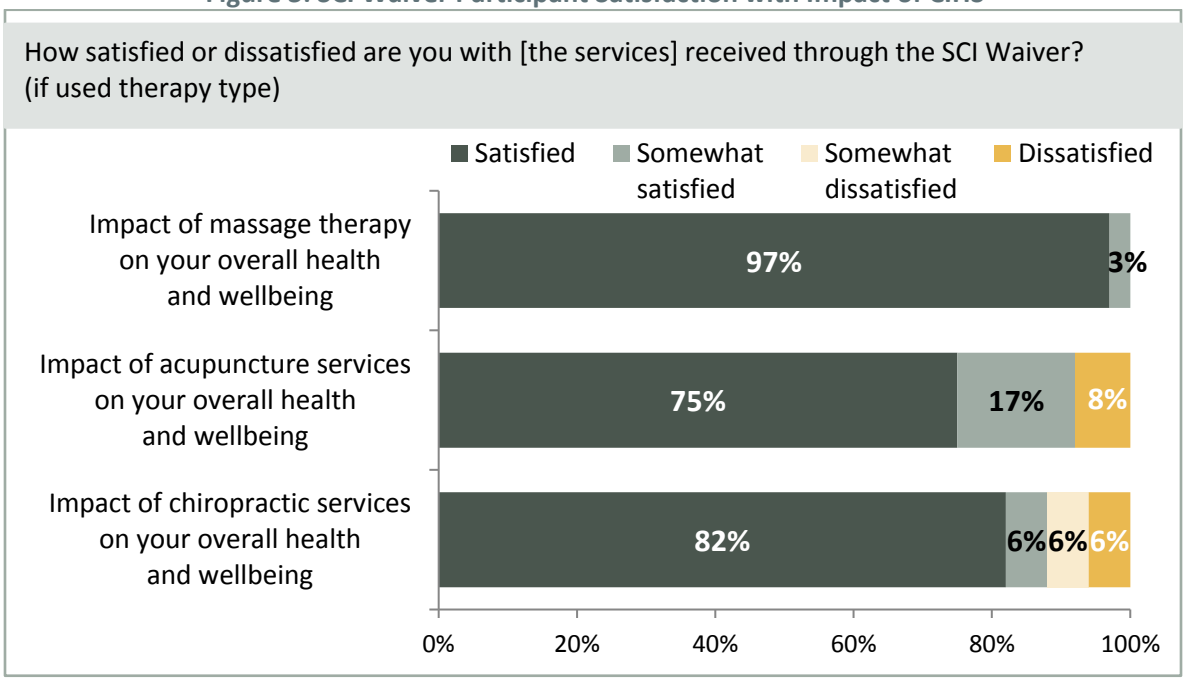
Most SCI waiver participant survey respondents said they thought receiving CIHS had increased their quality of life a lot (47%) or a little (31%). Fewer said it had resulted in an increase in the time they spent doing paid or volunteer work at least a little (38%).

Figure 2: SCI Waiver Participant Change in Quality of Life



When asked how satisfied they were with the impact of each of the CIHS modalities on their health and wellbeing, a large majority were satisfied with the outcomes and most others were somewhat satisfied. Satisfaction was highest with the outcomes of massage therapy, while a small portion of service users were dissatisfied with the outcomes of chiropractic services (18%) and acupuncture (8%).

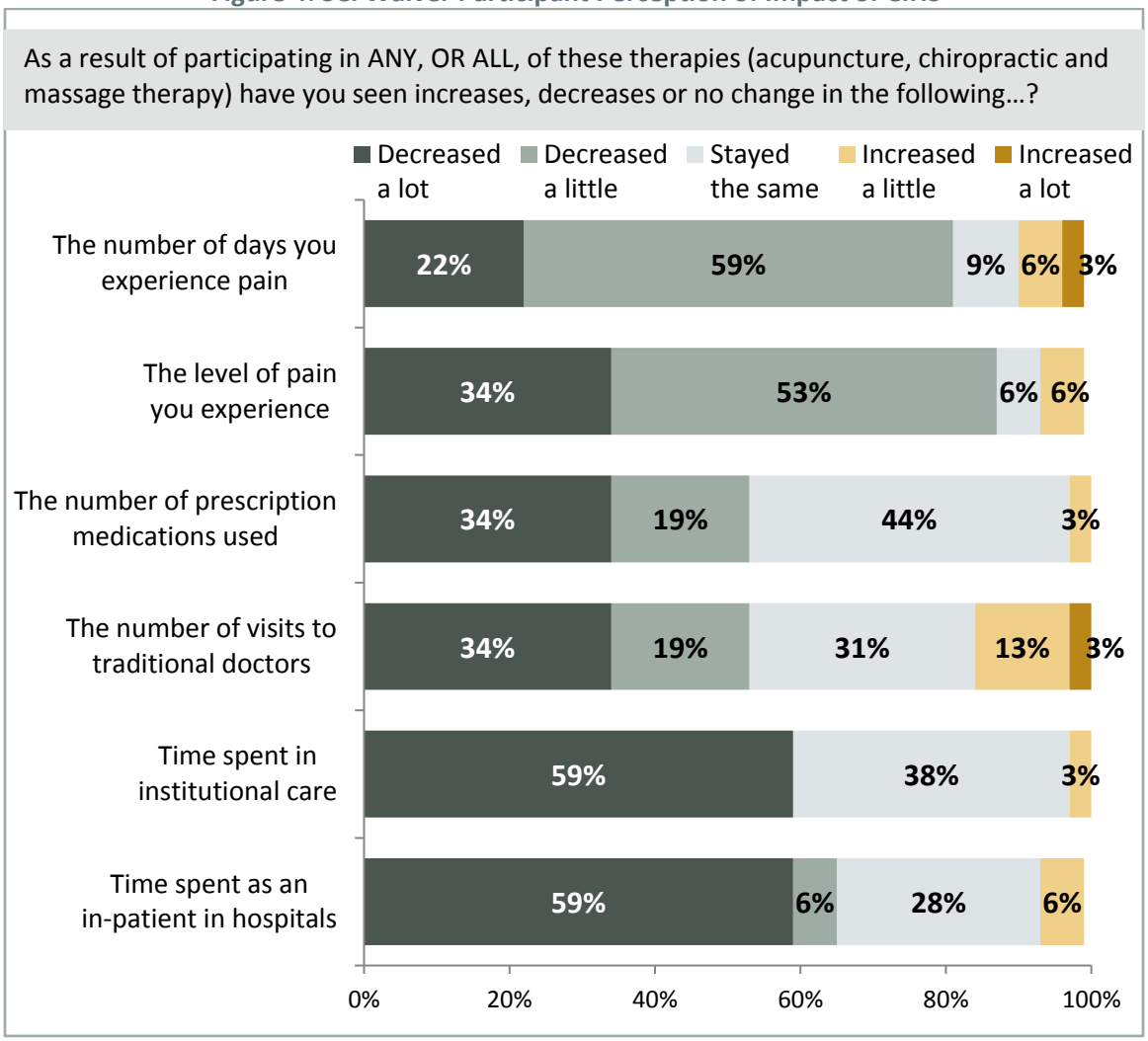
Figure 3: SCI Waiver Participant Satisfaction with Impact of CIHS



The most commonly cited result of receiving CIHS was a decrease in pain; 81% of participant respondents said that they experienced pain on fewer days and 87% said their level of pain had decreased as a result of CIHS.

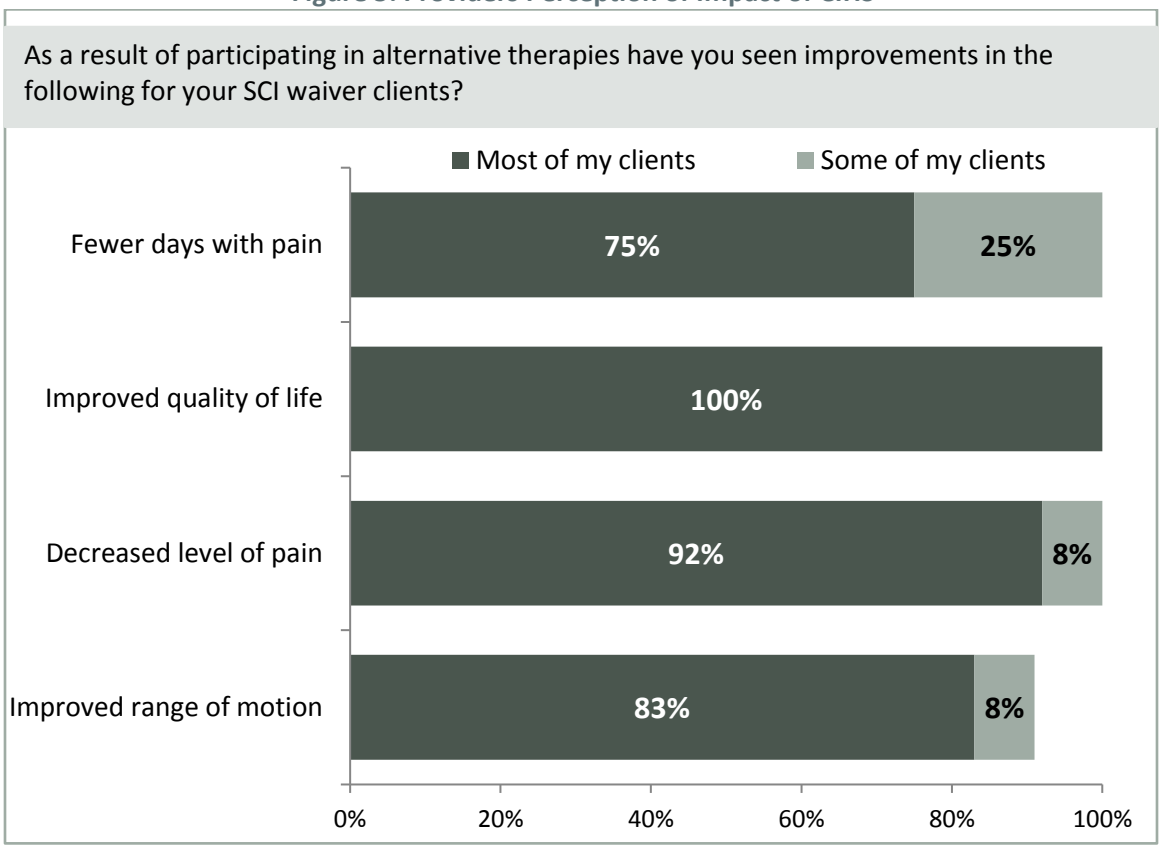
About half (53%) also thought that they were able to decrease the number of prescription medications that they used and trips to traditional doctors by a lot or at least a little. Over half experienced a reduction in time spent in institutional care or hospitals.

Figure 4: SCI Waiver Participant Perception of Impact of CIHS



CIHS providers also perceived an improvement in the quality of life of their SCI waiver clients. One hundred percent of providers said that most of their clients had an improved quality of life and a large majority said most of their clients had a reduced level of pain, an improved range of motion and fewer days with pain.

Figure 5: Providers Perception of Impact of CIHS



4.5.2 Satisfaction with CIHS Service Implementation

SCI waiver participants were generally satisfied with the overall quality of the services they received from massage therapists (100% satisfied or somewhat satisfied), acupuncturists (92% satisfied or somewhat satisfied) and chiropractors (88% satisfied or somewhat satisfied). A similar proportion of participants were also satisfied with how safe they felt while getting these services.

Figure 6: SCI Waiver Participant Satisfaction with Overall Quality of Services

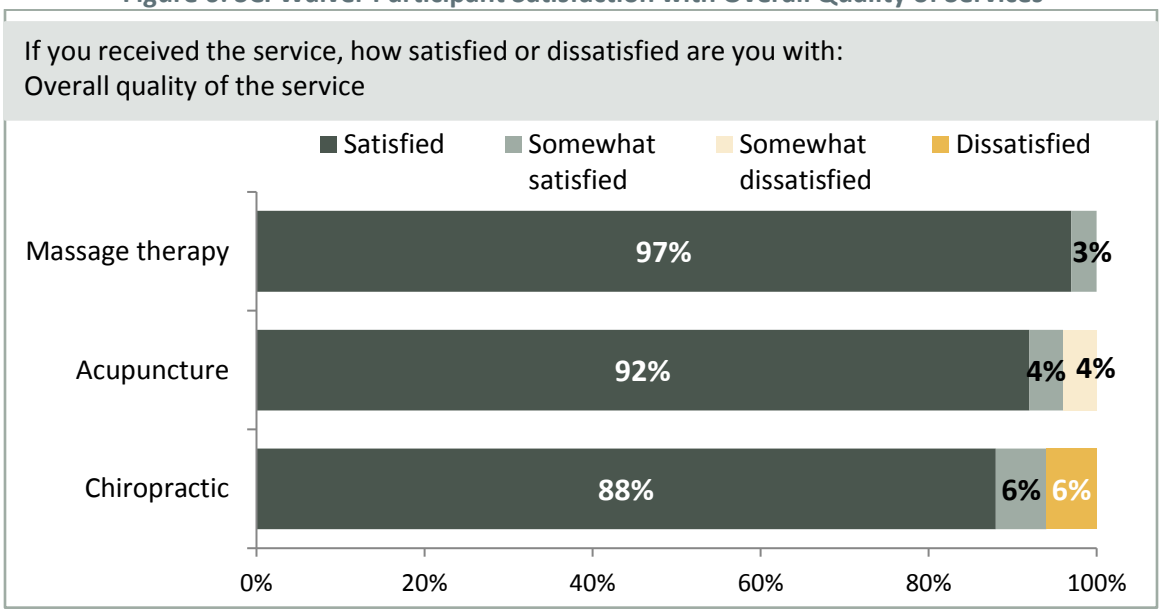
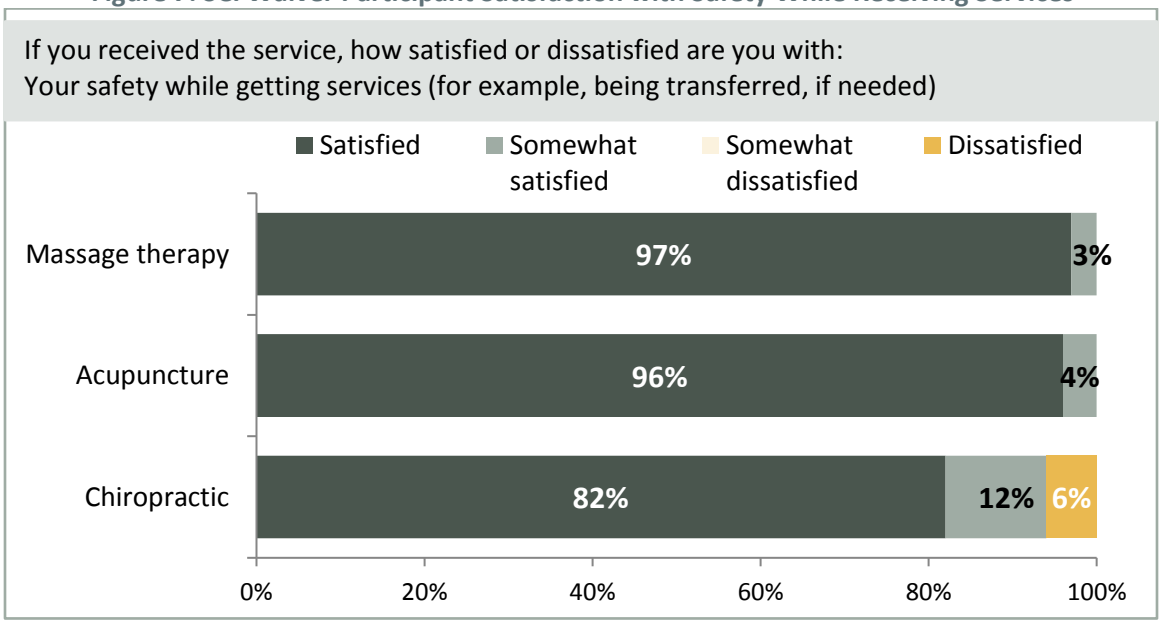
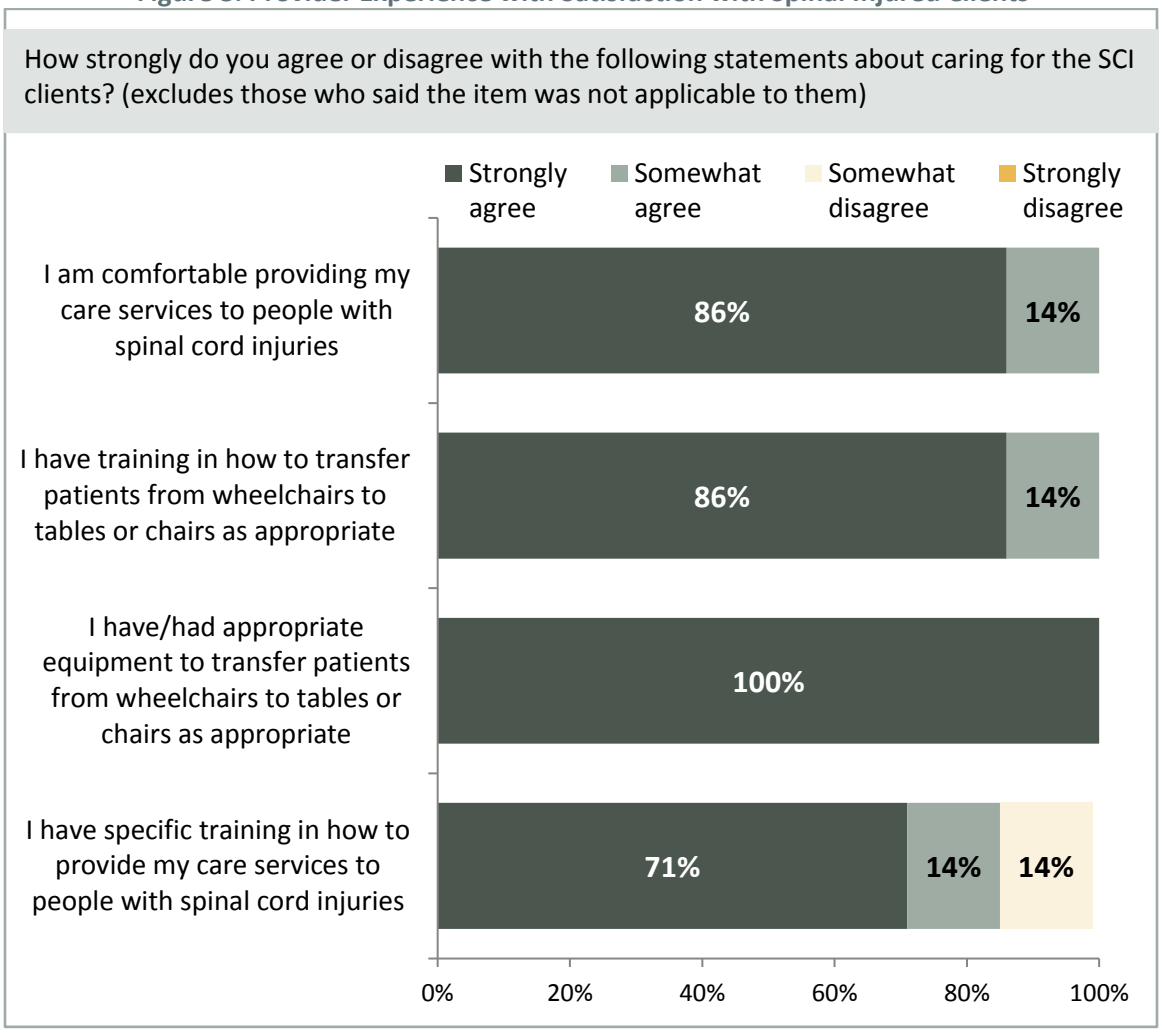


Figure 7: SCI Waiver Participant Satisfaction with Safety While Receiving Services



SCI waiver participants generally felt safe getting services, and most CIHS providers had training in providing services to people with spinal cord injuries. This was a significant improvement from the three-year pilot program and reflects an effort to ensure this training has been provided.

Figure 8: Provider Experience with Satisfaction with Spinal Injured Clients

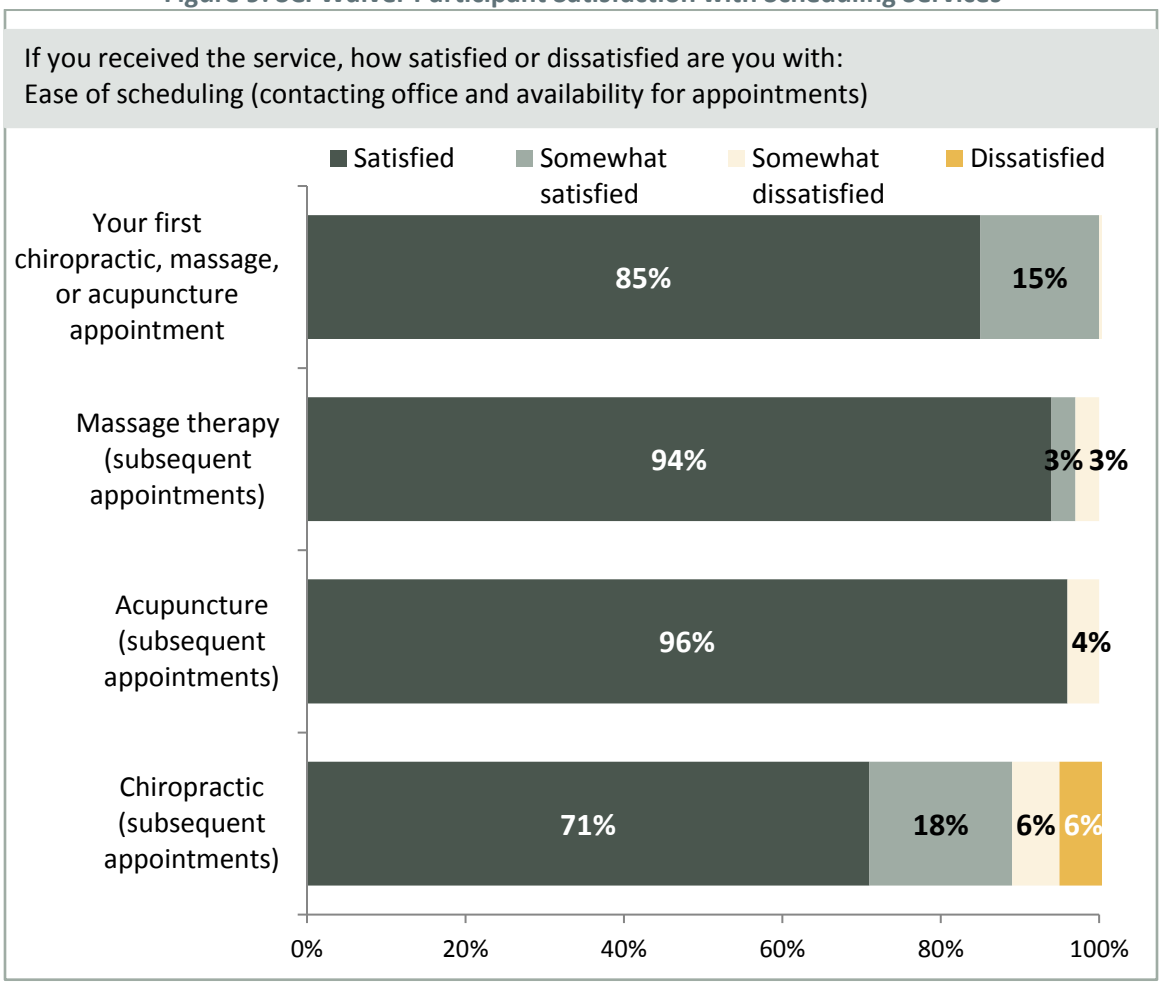


4.5.3 Satisfaction with Scheduling CIHS

Most respondents to the participant survey indicated that they were satisfied or at least somewhat satisfied with the ease of scheduling CIHS (Figure 9). Only 3%-4% were dissatisfied with scheduling massage therapy and acupuncture and 12% were dissatisfied scheduling with their chiropractor.

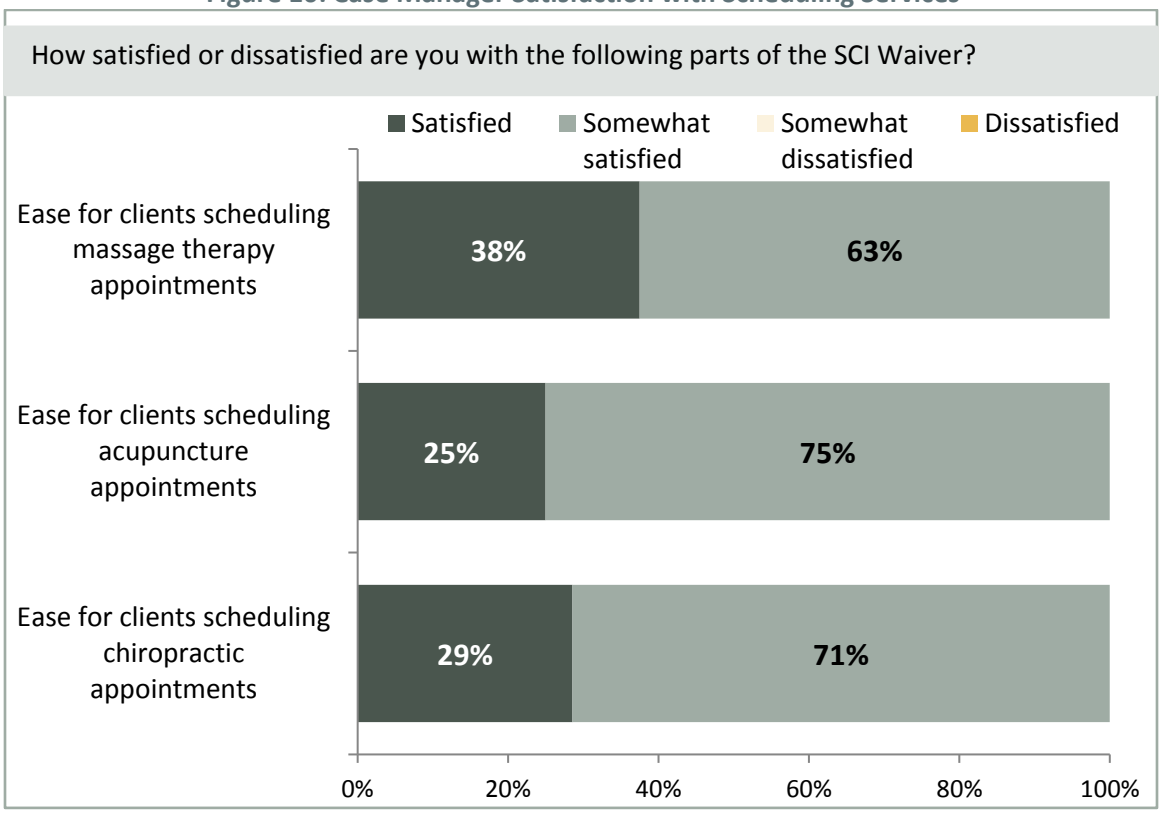
When asked if they had encountered challenges accessing CIHS under the SCI waiver, 19% said yes and most of those mentioned the distance or transportation challenges, some could not get in with their preferred provider.

Figure 9: SCI Waiver Participant Satisfaction with Scheduling Services



All case managers were at least somewhat satisfied with the scheduling processes, which was an improvement from the original three year pilot study when only about 60% were at least somewhat satisfied. When asked about challenges accessing services, 54% said their clients had encountered problems and most mentioned that providers were too far away (would take too long to get there) and transportation was had to arrange, a few said preferred providers were not available.

Figure 10: Case Manager Satisfaction with Scheduling Services



4.5.4 Satisfaction with SCI Waiver Administration

About 20% of participants ([redacted]) said they had problems or challenges joining the SCI waiver, but 94% were satisfied or somewhat satisfied with the ease of joining the waiver (Figure 11). However, 38% of case managers or supervisors said they had problems or challenges assisting clients in joining the SCI waiver (either as a transfer or new enrollee; see Figure 12).

Some issues harken back to joining during the original three-year pilot program (no spots available on the waiver) most others were related to paperwork (from clients and getting the Professional Medical Information Page back from the doctor in time) or billing codes. Most case managers were at least somewhat satisfied with the ease of determining eligibility, enrolling clients and transferring them from the EBD waiver to the SCI waiver.

Almost all of the SCI participant survey respondents were satisfied or somewhat satisfied with their CIHS plan.

Figure 11: SCI Waiver Participant Satisfaction with Administration

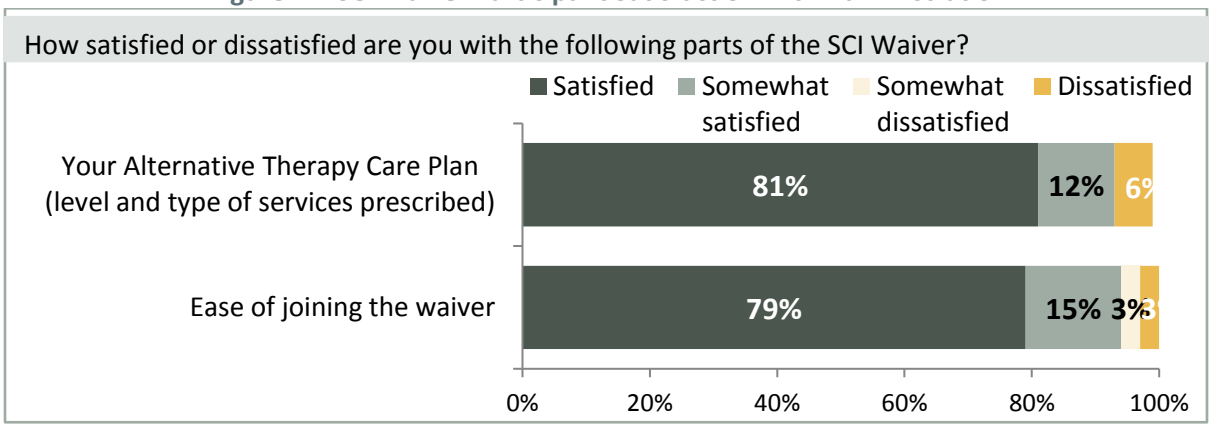
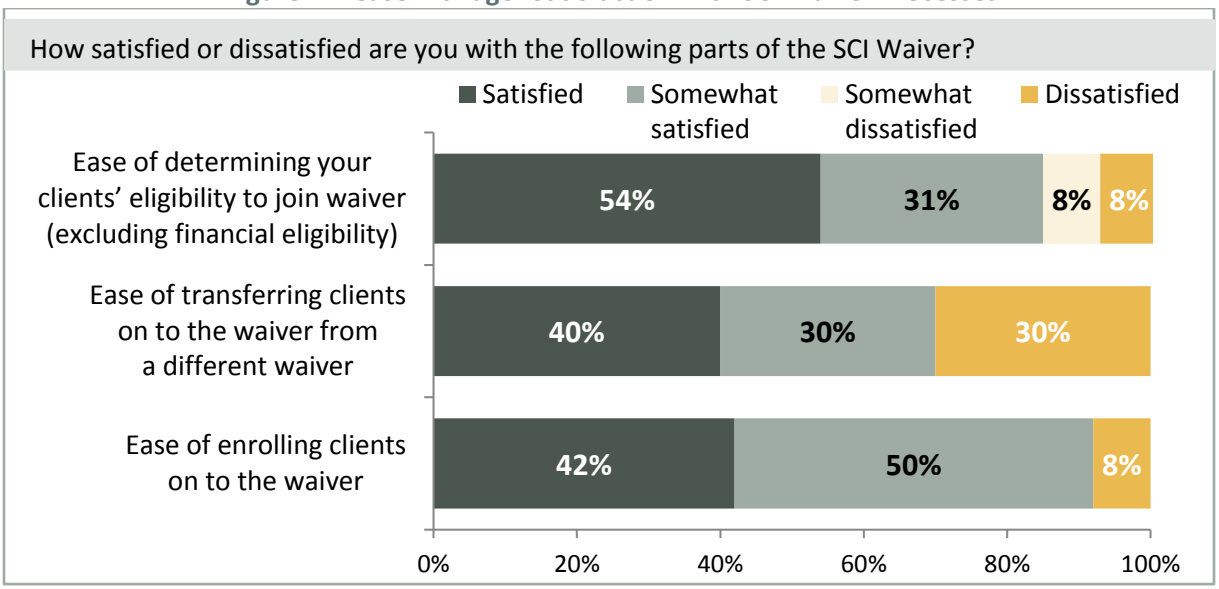
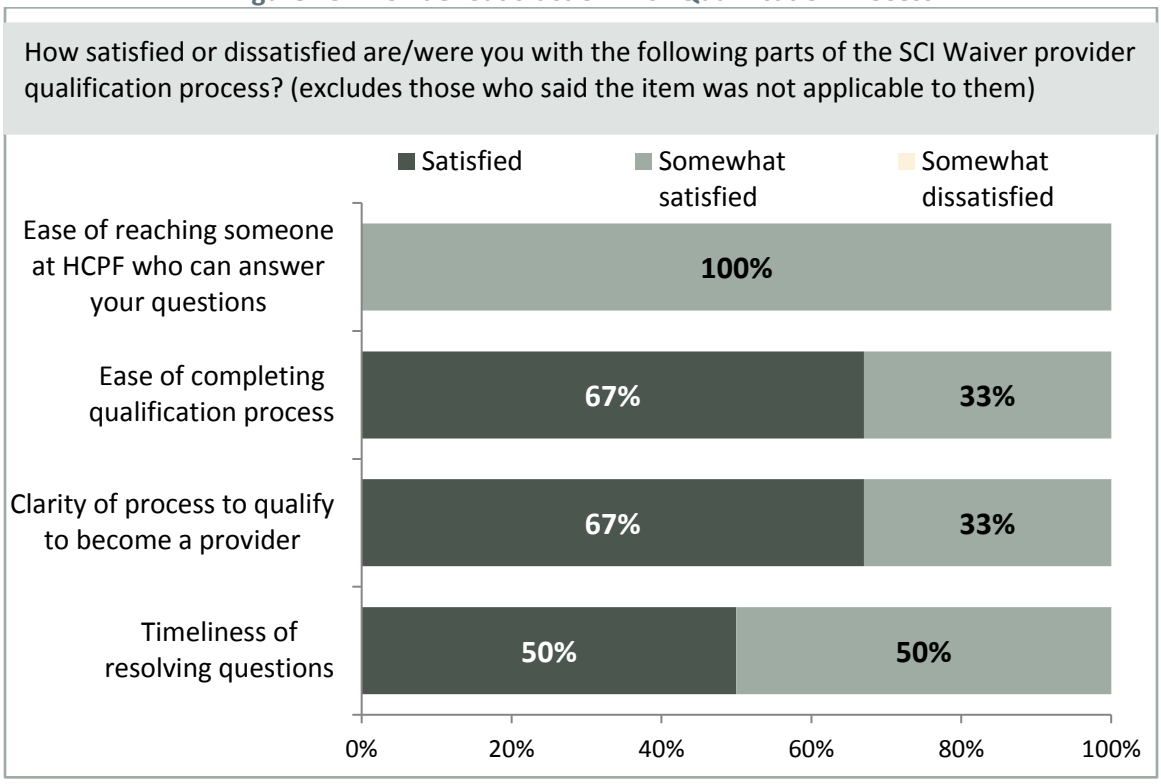


Figure 12: Case Manager Satisfaction with SCI Waiver Processes



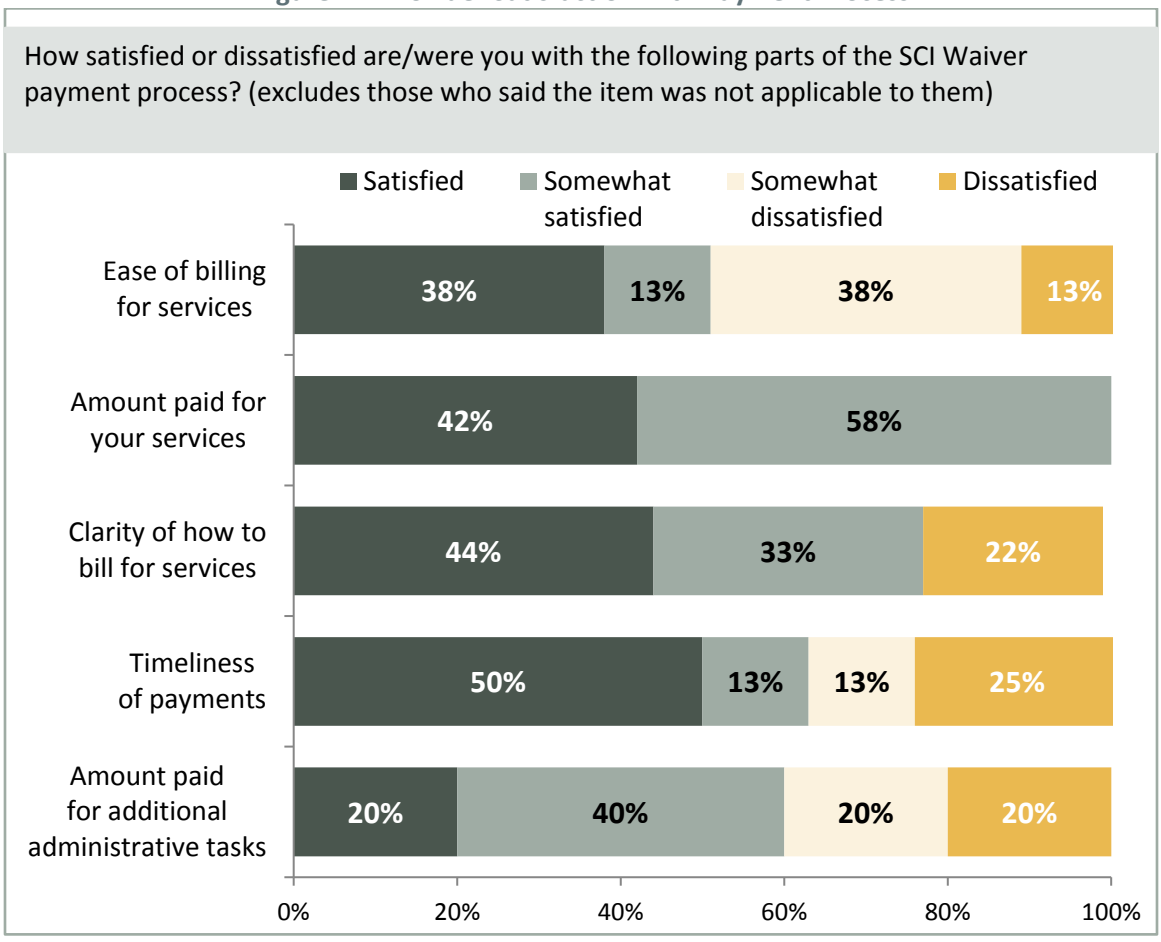
Most of the respondents to the provider survey, who were involved in the application process to become a SCI waiver CIHS provider, were at least somewhat satisfied with that process.

Figure 13: Provider Satisfaction with Qualification Process



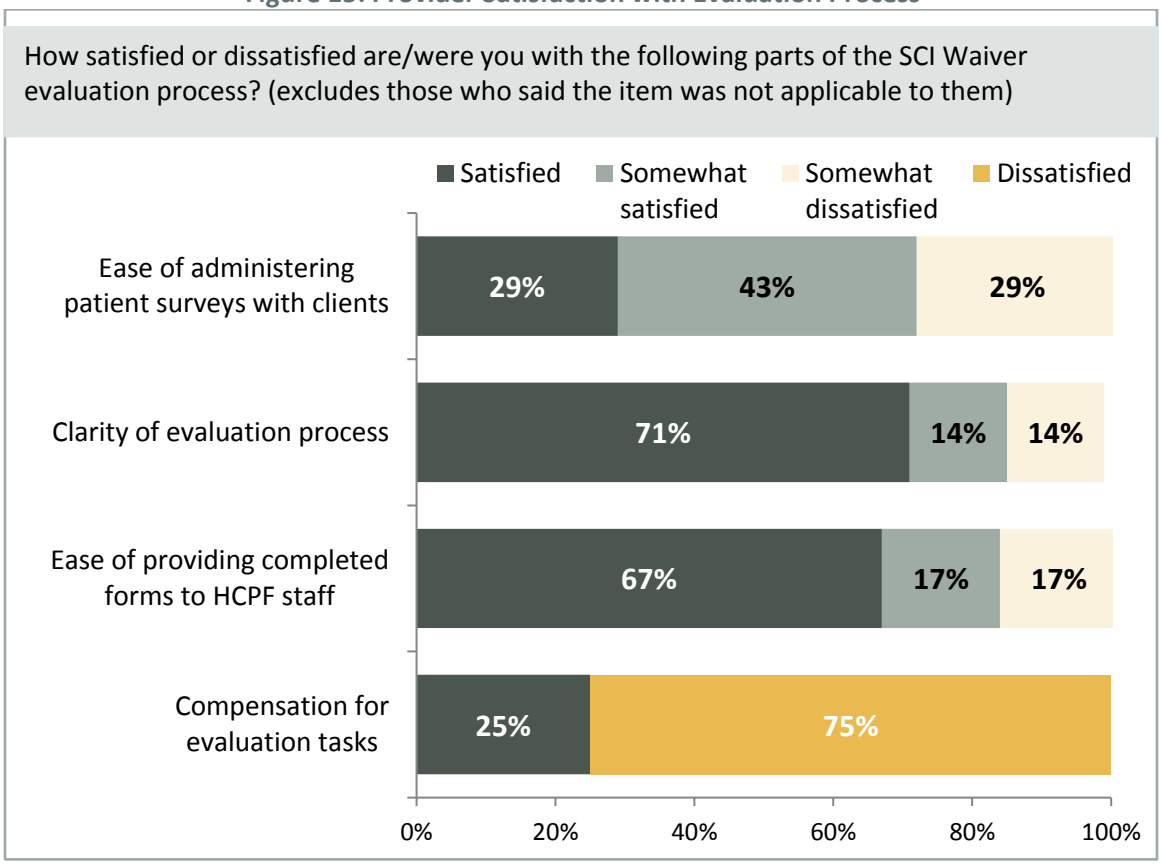
The billing process held some challenges for providers, but ratings improved from 2015. Only 20% were fully satisfied with the level of compensation for administrative tasks but most were at least somewhat satisfied with the amount paid for services. In 2015, only 36% were not satisfied with the timeliness of payments and 56% were satisfied with the clarity of how to bill for services. This increased to 63% and 77%, respectively, in 2017.

Figure 14: Provider Satisfaction with Payment Process



While there are challenges in managing the data collection for the evaluation, providers were generally at least somewhat satisfied with the process, except for the amount of compensation.

Figure 15: Provider Satisfaction with Evaluation Process



4.6 Conclusions

The number of SCI waiver participants who are accessing CIHS has increased significantly from the first pilot study to the current five year program. However, conclusions made should still be considered preliminary, with the expectation that comparisons will become more robust as more people on the waiver receive CIHS for longer periods and more people join the SCI waiver.

However, with that caveat, initial evidence from the SCI waiver participants included in our evaluation suggests that CIHS are reducing the cost of care and increasing or maintaining the quality of life.

Changes in ratings of functional status and quality of life measured by comparing point- in-time scores on the evaluative forms (Self-Administered Health Issue Assessment, Uniform Long Term Care (ULTC) 100.2 Assessment, Craig Handicap Assessment and Reporting Technique (CHART) assessment and World Health Organization Quality of Life –BREF instrument (WHOQOL-BREF), were not statistically significant.

However when asked to reflect on the impact of the program on their health and wellbeing (in a survey at the end of evaluation period) most participants were effusive in their description of how the program improved their overall quality of life, reducing the number of days they spent in pain and the level of pain of those days.

Improvements from 2015 to 2017 were seen in the implementation of the evaluation forms by providers, satisfaction with the level of compensation for services and training for transferring and working with the SCI population.

The major challenges of the first iteration of the SCI waiver program were bottlenecks in booking services due to limited numbers of providers. This seems to have been significantly alleviated through the changes made to the provider requirements (allowing more providers to join), but is still an issue for some. Distance travelled to receive care remains a challenge, so increasing the regional diversity of providers would be helpful to clients.

Appendix A: Participant, Provider and Case Manager Experience Surveys

In April 2017 SCI Waiver participants, CIHS service providers and case managers for those on the SCI waiver were asked to complete a survey to reflect on their experience with the SCI Waiver. The detailed results from the three surveys are shown in this appendix.

2017 Participant Survey

Table 42: Satisfaction with SCI Waiver

1. How satisfied or dissatisfied are you with the following parts of the SCI Waiver?	Satisfied	Somewhat satisfied	Somewhat dissatisfied	Dissatisfied	No opinion/ Not applicable	Total
Ease of joining the waiver	79%	15%	3%	3%	0%	100%
	N=**	N**	N=**	N**	N=0	N=33
Ease of scheduling your first chiropractic care, massage, or acupuncture appointment	85%	12%	0%	0%	3%	100%
	N=**	N**	N=0	N=0	N=**	N=33
Your CIHS Care Plan (level and type of services prescribed)	79%	12%	0%	6%	3%	100%
	N=**	N=**	N=0	N=**	N=**	N=33

Table 43: Initial Source of Information about SCI Waiver

2. How did you first find out about the SCI Waiver? (Check all that apply)	Percent
My case manager told me about it	48%
From the Chanda Plan Foundation	39%
Other, please specify:	15%
Friend or family member told me about it	12%
Another SCI Waiver participant told me about it	6%
From SCIRP	6%
Total	100%

Table 44: "Other" Initial Source of Information about SCI Waiver

2. How did you first find out about the SCI Waiver? (Check all that apply)
flyer from Craig
Haven't heard a thing about it. Haven't read SCI's messages either
I was awaiting my bone structure test to get standing then it took a couple of years later and I got passed, the test
Mother drove by
Natural progression from EBD waiver to SCI waiver due to my physical condition

Table 45: Frequency of Use of SCI Waiver CIHS

3. In the past year, while you have been on the SCI Waiver, how frequently did you receive these services through the SCI Waiver?	Never	A few times a year	At least once a month	More than once a month	Total
Acupuncture	21%	15%	9%	55%	100%
Chiropractic	48%	9%	12%	30%	100%
Massage therapy	6%	3%	6%	85%	100%

Table 46: Satisfaction with Acupuncture Services

4. IF YOU RECEIVED ACUPUNCTURE. How satisfied or dissatisfied are you with acupuncture services received through the SCI Waiver?	Satisfied	Somewhat satisfied	Somewhat dissatisfied	Dissatisfied	Total
Ease of scheduling acupuncture (contacting office and availability for appointments)	96%	0%	4%	0%	100%
Overall quality of acupuncture services	92%	4%	4%	0%	100%
Your safety while getting acupuncture services (for example, being transferred, if needed)	96%	4%	0%	0%	100%
Impact of acupuncture services on your overall health and well	75%	17%	0%	8%	100%

Table 47: Satisfaction with Chiropractic Services

5. IF YOU RECEIVED CHIROPRACTIC SERVICES. How satisfied or dissatisfied are you with chiropractic services received through the SCI Waiver?	Satisfied	Somewhat satisfied	Somewhat dissatisfied	Dissatisfied	Total
Ease of scheduling chiropractic services (contacting office and availability for appointments)	71%	18%	6%	6%	100%
Overall quality of chiropractic services	88%	6%	0%	6%	100%
Your safety while getting chiropractic services (for example, being transferred, if needed)	82%	12%	0%	6%	100%
Impact of chiropractic services on your overall health and well	82%	6%	6%	6%	100%

Table 48: Satisfaction with Massage Therapy Services

6. IF YOU RECEIVED MASSAGE THERAPY SERVICES. How satisfied or dissatisfied are you with Massage Therapy Services received through the SCI Waiver?	Satisfied	Somewhat satisfied	Somewhat dissatisfied	Dissatisfied	Total
Ease of scheduling massage therapy (contacting office and availability for appointments)	94%	3%	3%	0%	100%
Overall quality of massage therapy services	97%	3%	0%	0%	100%
Your safety while getting massage therapy (for example, being transferred, if needed)	97%	3%	0%	0%	100%
Impact of massage therapy on your overall health and well	97%	3%	0%	0%	100%

Table 49: Change in Health as a Result of SCI Waiver CIHS

7. As a result of participating in ANY, OR ALL, of these therapies (acupuncture, chiropractic and massage therapy) have you seen increases, decreases or no change in the following?	Increased a lot	Increased a little	Stayed the same	Decreased a little	Decreased a lot
The number of prescription medications used	0%	3%	44%	19%	34%
The number of visits to traditional doctors	3%	13%	31%	19%	34%
Time spent as an in	0%	6%	28%	6%	59%
Time spent in institutional care	0%	3%	38%	0%	59%
The number of days you experience pain	3%	6%	9%	59%	22%
The level of pain you experience	0%	6%	6%	53%	34%

Table 50: Change in Quality of Life as a Result of SCI Waiver CIHS

8. As a result of participating in ANY, OR ALL, of these therapies (acupuncture, chiropractic and massage therapy) have you seen increases, decreases or no change in the following?	Increased a lot	Increased a little	Stayed the same	Decreased a little	Decreased a lot
Your overall quality of life	47%	31%	9%	9%	3%
The time you spend doing paid or volunteer work	16%	22%	56%	3%	3%

Table 51: Challenges Joining the SCI Waiver

9. Did you have any problems or challenges joining the SCI waiver?	Percent
Yes	19%
No	81%
Total	100%

Table 52: Types of Challenges Joining the SCI Waiver

9a. [IF YES] What problems or challenges did you have in joining the SCI waiver?	Percent
Other, please specify:	67%
I had trouble completing the forms	33%
No spots were available (I was put on a wait list)	17%
Total	100%

Table 53: "Other" Types of Challenges Joining the SCI Waiver

9a. [IF YES] What problems or challenges did you have in joining the SCI waiver?
Because I was on a motorcycle and not in a wheelchair (C-5 palsy from a fusion)
Believe I haven't received the form to fill out.
CM signing me up.
Takes a long time to go through

Table 54: Challenges Receiving Acupuncture, Chiropractic or Massage Therapy Services on the SCI Waiver

10. Have you had any problems or challenges receiving acupuncture, chiropractic or massage therapy services on the SCI waiver?	Percent
Yes	16%
No	84%
Total	100%

Table 55: Types of Challenges Receiving Services on the SCI Waiver

10a. [IF YES] What problems or challenges did you have receiving acupuncture, chiropractic or massage therapy services on the SCI waiver? (Select all that apply)	Percent
The service providers were too far away (would take too long to get there)	60%
Other, please specify:	60%
I did not like the service center provider(s) that were available	40%
I could not find transportation to appointments	20%
The providers were too busy; they could not fit me in	20%
I did not like the individual therapists that were available	20%
Total	100%

Table 56: "Other" Types of Challenges Receiving Services on the SCI Waiver

10a. [IF YES] What problems or challenges did you have receiving acupuncture, chiropractic or massage therapy services on the SCI waiver? (Select all that apply)
Had appointments, did not keep, and thought I'd be charged out of pocket if I went over.
[redacted] is horrible at scheduling and very rude on top of that
There's been periods of time where they didn't have a massage therapist available and that was frustrating [redacted]

Table 57: Recommend the SCI Waiver

11. If they were eligible, would you recommend joining the SCI waiver to other people with spinal cord injuries?	Percent
Yes	97%
No	3%
Total	100%

Table 58: Reasons Would Recommend the SCI Waiver

12a. Please explain why you would recommend joining the SCI waiver to other people with spinal cord injuries.
It's a good motivation to keep a good regular routine. By doing this you get stronger in the long term. The program is a great incentive to keep us mobile.
After a SCI everyone experiences neck and shoulder pain and this is better than just taking pills.
As much as it sucks to get poked with needles acupuncture really works! And massage helps as well, especially with tight muscles from lack of Mobility.
Being able to address the issue of pain and treating it makes life easier
Eased pain and has helped me relax. Also told me about some things I can change in my diet that will help. The staff is wonderful.
Getting these types of therapies has helped a lot mentally physically and emotionally. Overall things with my body feel more relaxed.
Helps improve quality of life and decrease in pain.
I believe it's very helpful.
I recommend it because my muscle pain has decreased and I always feel better when I go. My nerve pain has increased but that has nothing to do with the SCI waiver program
I would highly recommend them!
it has helped ease some pain and stress
It helps the level of pain tremendously and it also gives us (SCI community) time to see one another and realize we are not the only ones going through this injury. It also increases self-esteem and self-worth (in my opinion).
it is very beneficial to overall health and wellbeing
It really reduces the amount of pain I'm in every time I go in to receive treatment.
My overall health is better using these services

12a. Please explain why you would recommend joining the SCI waiver to other people with spinal cord injuries.
Over the past 40 some years being in a wheelchair, I've seen many a friend die from self-medicating for pain. If they could of joined the SCI waiver, I think they would have benefited and would still be with us today. It's all about the pain.
Provides free therapeutic services at a few locations. How could you argue against that? For people with spasticity, massage is a nice alternative to prescription medication.
the overall way of life has gotten much better. the ladies talk to each other and me and the plan things that help me over all. .and help me understand new issues that happen. at seventy five years of age this is a blessing. can't think of any negatives THANK YOU FOR GIVEING ME THE CHANCE TO GIVE MY OPINION *[name removed]*
The SCI waiver allows me to receive alternative modalities since western medicine surgeries/treatments are no longer an option for my care. The SCI waiver is a life saver for me, allowing me to actively take part in the community and work. I see the waiver as a super support and insurance that allows individuals the freedoms to elect the best care and treatments possible aligning with person-centered care. The SCI waiver is an essential support for Coloradoans.
The SCI waiver has helped me reduce pain, sleep better, have more energy and improve my quality of life.
The services provided on the SEI waiver have greatly improved my quality of life, my ability to work in the community and travel around the country for pleasure and business.
The therapies offered are not only beneficial to the wellbeing of the recipient, but are also extremely good opportunities to get out and meet and work with people involved with the disability community!
The therapists are very professional and compassionate. They know spinal cord injury so I don't have to explain my care. Very helpful for my shoulder pain and relaxing at same time.
They're very professional and accommodating to your circumstances.
This saves the patient money and makes it easy to get integrative therapies that help with pain/quality of life
very helpful to quality of life; ease of joining; great staff
You all have helped me quite a bit. And it just wouldn't be right if I didn't pass you all on to others.

Table 59: Reasons Would Not Recommend the SCI Waiver

12b. Please explain why you would not recommend joining the SCI waiver to other people with spinal cord injuries.
Don't know anything about it. What is it?.

Table 60: Additional Comments about SCI Waiver

13. Is there anything else you would like to share about your experience on the SCI waiver?
The new facility that we moved into is fabulous. The rooms are nice and large and there's so much space. I was really surprised to see such small windows and some rooms without windows. My first massage in the room was really uncomfortable. It was muggy and it seemed that it lacked oxygen and ventilation. The room was rather dark because of the tiny windows. Since then we have done massage in a room with a rather good size window. It makes a big difference. The rest of the building is very cozy and well maintained.
Enjoy the workers, very helpful.
I am very grateful this has become an option because I am so tired of taking pills for everything!!

13. Is there anything else you would like to share about your experience on the SCI waiver?
I would like to see more funding available so more facilities will be able to participate within the restraints of the waiver.
Immense gratitude to ALL who work on the SCI waiver to ensure individuals like me continue on in good health.
It would be nice to have a place down south so we don't have to drive so far to get relief.
It's a FANTASTIC program - it helps people with SCIs improve their quality of life.
N/A
no
No
Nope
Other than you yall rock in my little world. Not at this time.
Please get tables that are automated to go up and down. It's so hard to transfer safely and having an automated table would be so much safer and more effective
The experience has been positive. I've connected with the therapists and made new friends.

2017 Provider Survey

Table 61: SCI Waiver Service Provider Role

1. What is your role in providing care under the SCI Waiver?	Percent
Massage Therapist	47%
Acupuncturist	27%
Provider Administrator	20%
Chiropractor	7%
Other, please specify:	0%
Total	100%

Table 62: Date Started Working with SCI Waiver Participants

2. In what year and month did you start work with SCI Waiver participants?	
	January
	February
	March
2015	August
	April
2014	May
2012	November

Table 63: Continue to Work with SCI Waiver Participants

3. Are you still working with SCI waiver participants?	Percent
Yes	100%
No	0%

Table 64: Involvement with SCI Waiver Qualification Process

4. Were you involved in the process of qualifying to become a SCI waiver service provider?	Percent
No	79%
Yes	21%
Total	100%

Table 65: Satisfaction with SCI Waiver Qualification Process

5. [IF YES TO 4] How satisfied or dissatisfied are/were you with the following parts of the SCI Waiver provider qualification process? (excludes those who said the item was not applicable to them)	Satisfied	Somewhat satisfied	Somewhat dissatisfied	Dissatisfied	Total
Clarity of process to qualify to become a provider	67%	33%	0%	0%	100%
Ease of completing qualification process	67%	33%	0%	0%	100%
Ease of reaching someone at HCPF who can answer your questions	0%	100%	0%	0%	100%
Timeliness of resolving questions	50%	50%	0%	0%	100%

Table 66: Satisfaction with SCI Waiver Payment Process

6. How satisfied or dissatisfied are/were you with the following parts of the SCI Waiver payment process? (excludes those who said the item was not applicable to them)	Satisfied	Somewhat satisfied	Somewhat dissatisfied	Dissatisfied	Total
Amount paid for your services	42%	58%	0%	0%	100%
Clarity of how to bill for services	44%	33%	0%	22%	100%
Ease of billing for services	38%	13%	38%	13%	100%
Timeliness of payments	50%	13%	13%	25%	100%
Amount paid for additional administrative tasks	20%	40%	20%	20%	100%

Table 67: Involvement with SCI Waiver Evaluation Process

7. Were you involved in administering program evaluation surveys to SCI waiver participants?	Percent
Yes	62%
No	38%

Table 68: Satisfaction with SCI Waiver Evaluation Process

8. [IF YES TO 7] How satisfied or dissatisfied are/were you with the following parts of the SCI Waiver evaluation process? (excludes those who said the item was not applicable to them)	Satisfied	Somewhat satisfied	Somewhat dissatisfied	Dissatisfied	Total
Clarity of evaluation process	71%	14%	14%	0%	100%
Ease of administering patient surveys with clients	29%	43%	29%	0%	100%
Ease of providing completed forms to HCPF staff	67%	17%	17%	0%	100%
Compensation for evaluation tasks	25%	0%	0%	75%	100%

Table 69: Involvement with Physical Care or Examinations

9. Did you provide physical care or examinations for your SCI Waiver clients?	Percent
Yes	58%
No	42%
Total	100%

Table 70: Satisfaction with SCI Waiver Evaluation Process

10. [IF YES TO 9] How strongly do you agree disagree with the following statements about caring for the SCI clients? (excludes those who said the item was not applicable to them)	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	Total
I have specific training in how to provide my care services to people with spinal cord injuries	71%	14%	14%	0%	100%
I am comfortable providing my care services to people with spinal cord injuries	86%	14%	0%	0%	100%
I have training in how to transfer patients from wheelchairs to tables or chairs as appropriate	86%	14%	0%	0%	100%
I have/had appropriate equipment to transfer patients from wheelchairs to tables or chairs as appropriate	100%	0%	0%	0%	100%

Table 71: Improvements for SCI Waiver Participants

12. As a result of participating in alternative therapies have you seen improvements in the following for your SCI waiver clients?	Most of my clients	Some of my clients	Few of my clients	None of my clients	Don't know	Total
Improved range of motion	83%	8%	0%	0%	8%	100%

12. As a result of participating in alternative therapies have you seen improvements in the following for your SCI waiver clients?	Most of my clients	Some of my clients	Few of my clients	None of my clients	Don't know	Total
	75%	25%	0%	0%	0%	100%
Fewer days with pain						
	92%	8%	0%	0%	0%	100%
Decreased level of pain						
	100%	0%	0%	0%	0%	100%
Improved quality of life						

Table 72: Greatest Barriers to Receiving Care

13. What were the greatest barriers for your clients in receiving care?
Waiting for approval of paperwork and the need to complete new care plans anytime the modality or frequency changes. I wish if the modality was confirmed, we would just email case managers about changes in frequency not send in new care plans that require signatures from all providers, even those whose modality frequencies are not changing.
Transportation.
Transportation, but that seems to be not as much of an issue as it has been.
Transportation by far and away.
transportation and too few provider locations
Transportation
paperwork
need more chiropractors to participate
Lack of information about the SCI waiver from PCP.
Financial before the waiver available. Awareness of different modalities potential benefits for their particular diagnosis/symptoms Access to providers that were versed in working with SCI. Transportation back and forth from appointments.

Table 73: Desired Improvements to SCI Waiver Program

14. What would you most like to see changed about how the SCI Waiver program is administered?
The pain scale assessments may not be the best way to collect data. Some of my clients experience a roller coaster of emotions throughout their week and when I ask them on a scale of 1-10 what is your pain at, I have experienced comments along the lines of well today I am a 2 but yesterday I was an 8..
That all individuals with an SCI are able to receive alternative medical treatment...
online evaluations patients can complete on own time
NA
more providers
More accountability for missed patients.....we are getting better, but still could be better at not servicing people who aren't committed.

14. What would you most like to see changed about how the SCI Waiver program is administered?
As a practitioner have been pleased with how the program has been administered. I work under the umbrella of the Chanda Plan program so I haven't had to directly deal with administrative and billing issues. It would be good to have a shorter period of time between when people get evaluated and approved to start treatment.

Table 74: Additional Comments

15. Is there anything else you would like to share about your experience being a SCI Waiver service provider?
Please make the SCI waiver into a law & expand it to a national level program for all individuals on Medicaid that are living with an SCI. Please & thank you...
I'm very appreciative that this has been made available to individuals with a SCI. As an acupuncturist and former occupational therapist working in rehab, it's been a great opportunity to use both skill sets in helping this population. I appreciate being able to provide the opportunity for more deserving individuals to improve function, comfort and have an improved quality of life. It is great to provide relief for many of the complaints/symptoms and help support improved function and quality of life. I did not fill out date as it did not offer a 2016 option. I did start seeing people on SCI waiver at Chanda Plan facility in the summer of 2016. Thank you.
I truly love being a part of this program. In my experience, I have seen clients gain range of motion, control and an increase in pain free days. Thank you for this opportunity.
i love working with the program
I love this population.
Excited to be part of a potential systemic change by this waiver's process.

2017 Case Manager/Supervisor Survey

Table 75: Satisfaction with SCI Waiver

1. How satisfied or dissatisfied are you with the following parts of the SCI Waiver?	Satisfied	Somewhat satisfied	Somewhat dissatisfied	Dissatisfied	Total
Ease of determining your clients' eligibility to join waiver (excluding financial eligibility)	54%	31%	8%	8%	100%
Ease of enrolling clients on to the waiver	42%	50%	0%	8%	100%
Ease of transferring clients on to the waiver from a different waiver	40%	30%	0%	30%	100%
Ease for clients scheduling acupuncture appointments	25%	75%	0%	0%	100%
Ease for clients scheduling chiropractic appointments	29%	71%	0%	0%	100%
Ease for clients scheduling massage therapy appointments	38%	63%	0%	0%	100%

Table 76: Improvements for Clients through SCI Waiver

2. As a result of participating in alternative therapies have you seen improvements in the following for your clients that participate in the SCI waiver?	Most of my clients	Some of my clients	Few of my clients	None of my clients	Don't know	Total
Fewer prescription medications used	0%	23%	0%	8%	69%	100%
Fewer visits to traditional doctors	0%	31%	0%	8%	62%	100%
Less time spent as an in-patient in hospitals	0%	23%	8%	8%	62%	100%
Less time spent in institutional care	8%	31%	0%	8%	54%	100%
Fewer days with pain	31%	15%	15%	8%	31%	100%
Decreased level of pain	23%	23%	15%	8%	31%	100%
Improved quality of life	46%	15%	15%	8%	15%	100%

Table 77: Challenges Assisting Clients in Joining the SCI Waiver

3. Did you have any problems or challenges assisting clients in joining the SCI waiver?	Percent
Yes	38%
No	62%
Total	100%

Table 78: Types of Challenges Assisting Clients in Joining the SCI Waiver

3a. [IF YES] What problems or challenges did you have assisting clients in joining the SCI waiver? (Select all that apply)	Percent
Other, please specify:	80%
No spots were available (client was put on a wait list)	20%
Getting the PMIP back from the Doctor in time	20%
Getting clients to complete the forms	0%
Total	100%

Table 79: "Other" Types of Challenges Assisting Clients in Joining the SCI Waiver

3a. [IF YES] What problems or challenges did you have assisting clients in joining the SCI waiver? (Select all that apply)
All of the forms that need to be filed out by clients, doctors and providers at the clinics. Its still a little confusing re: the care plan and units. The process from beginning to end is not entirely smooth paperwork wise and then the providers have not been able to service the client for one reason or another and the locations were prohibitive for my client. I do believe the added location in the south area has helped quite a bit though.
Financial Coding
financial recoding from DHS to roll a client from one waiver to another
No Chiro, no massage

Table 80: Challenges Receiving Acupuncture, Chiropractic or Massage Therapy Services on the SCI Waiver

4. Have your clients had any problems or challenges receiving acupuncture, chiropractic or massage therapy services on the SCI waiver?	Percent
Yes	54%
No	46%
Total	100%

Table 81: Types of Challenges Receiving Services on the SCI Waiver

4a. [IF YES] What problems or challenges did your clients have receiving acupuncture, chiropractic or massage therapy services on the SCI waiver? (Select all that apply)	Percent
Could not find transportation to appointments	43%
The service providers were too far away (would take too long to get there)	43%
Did not like the service center provider(s) that were available	43%

4a. [IF YES] What problems or challenges did your clients have receiving acupuncture, chiropractic or massage therapy services on the SCI waiver? (Select all that apply)	Percent
Did not like the individual therapists that were available	29%
Other, please specify:	29%
The providers were too busy; they could not fit the client in	14%
Total	100%

Table 82: "Other" Types of Challenges Receiving Services on the SCI Waiver

4a. [IF YES] What problems or challenges did your clients have receiving acupuncture, chiropractic or massage therapy services on the SCI waiver? (Select all that apply)
HCPF said to present program and there are no providers in Jeffco, now he is on SCI waiver and par is denied d/t no services.
I do believe that these issues have been resolve now though with the added south area location. At one time, my client reported that the provider at one of the centers was not familiar with how to physically assist/transfer a paraplegic client. But as I said, I think these issues have been resolved with the new provider my client goes to.

Table 83: Recommend the SCI Waiver

5. If they were eligible, would you recommend joining the SCI waiver to other people with spinal cord injuries?	Percent
Yes	92%
No	8%
Total	100%

I'

Table 84: Reasons Would Recommend the SCI Waiver

[IF YES] Please explain why you would recommend joining the SCI waiver to other people with spinal cord injuries.
According to my clients who actively participate in alternative therapies, it helps to improve quality of life and decrease pain. The majority of individuals on the SCI waiver have reported that they enjoy having access to alternative therapies of their choice.
Alternative therapies seem to be an amazing way for people with spinal cord injuries to have a better quality of life and have less pain.
b/c SCI offers massages that I believe would be beneficial for SCI injuries
I believe that certain clients benefit from these types of therapy.
I would recommend any client who is suffering from chronic pain. I only have one client on the program and even though he had a lot of frustration getting the services he needed initially, he has reported that the services do help with his pain management.
I'm a new employee so I haven't seen many clients quite yet, but the ones I have seen LOVE having massage, acupuncture, and chiropractic and have reported improvements in the pain they experience and feel the services are impacting their quality of life in a good way! I hope that these services can continue to be offered to my SCI clients.
If the services are available it would be great for clients. Jeffco only has acupuncture

[IF YES] Please explain why you would recommend joining the SCI waiver to other people with spinal cord injuries.
Most of my clients report that attending their SCI therapies is a bright spot in their week. It's something they look forward to and really feel the physical and emotional benefits from the therapies. I truly believe that these modalities are helping my clients reduce their pain levels, muscle spasms, depression and anxiety symptoms and ultimately helping them maintain a higher level of physical and emotional health.
The services provide are beneficial to the client

Table 85: Reasons Would Not Recommend the SCI Waiver

[IF NO] Please explain why you would NOT recommend joining the SCI waiver to other people with spinal cord injuries.
No responses

Table 86: Additional Comments about SCI Waiver

6. Is there anything else you would like to share about your experience being a case manager for someone on the SCI Waiver?
I love to hear the stories of my clients who are benefiting from these non-traditional treatment modalities. They have persevered through so much on their individual quests in healing. I think these therapies are an integral part of helping them achieve the quality of life they deserve.
In my experience the majority of my clients on the SCI waiver feel satisfied with the alternative therapies they are provided, the most common complaint is the transportation issues.
It is amazing to complete HV's with these people who have an entire different outlook on life because of how these services are positively impacting their life.

Appendix B: ULTC 100.2 Long Term Care Assessment Protocol

The ULTC 100.2 Assessment form is filled out by a Medicaid Case Manager annually and each time a Medicaid participant under the Home and Community-Based Services Elderly, Blind and Disabled (HCBS-EBD) Waiver or the HCBS-SCI waiver has a change in condition (like hospitalization).

Table 87: Long Term Care Eligibility Assessment Description of Activities of Daily Living (ADL) and Assessment Levels

ADL	ADL description	Independent (100)	Mostly independent (67)	Mostly dependent (33)	Dependent (0)
Bathing	The ability to shower, bathe or take sponge baths for the purpose of maintaining adequate hygiene.	The client is independent in completing the activity safely.	The client requires oversight help or reminding; can bathe safely without assistance or supervision, but may not be able to get into and out of the tub alone.	The client requires hands on help or line of sight standby assistance throughout bathing activities in order to maintain safety, adequate hygiene and skin integrity.	The client is dependent on others to provide a complete bath.
Dressing	The ability to dress and undress as necessary. This includes the ability to put on prostheses, braces, anti-embolism hose or other assistive devices and includes fine motor coordination for buttons and zippers. Includes choice of appropriate clothing for the weather. Difficulties with a zipper or buttons at the back of a dress or blouse do not constitute a functional deficit.	The client is independent in completing activity safely.	The client can dress and undress, with or without assistive devices, but may need to be reminded or supervised to do so on some days.	The client needs significant verbal or physical assistance to complete dressing or undressing, within a reasonable amount of time.	The client is totally dependent on others for dressing and undressing

ADL	ADL description	Independent (100)	Mostly independent (67)	Mostly dependent (33)	Dependent (0)
Toileting	The ability to use the toilet, commode, bedpan or urinal. This includes transferring on/off the toilet, cleansing of self, changing of apparel, managing an ostomy or catheter and adjusting clothing.	The client is independent in completing activity safely.	The client may need minimal assistance, assistive device, or cueing with parts of the task for safety, such as clothing adjustment, changing protective garment, washing hands, wiping and cleansing.	The client needs physical assistance or standby with toileting, including bowel/bladder training, a bowel/bladder program, catheter, ostomy care for safety or is unable to keep self and environment clean.	The client is unable to use the toilet. The client is dependent on continual observation, total cleansing, and changing of garments and linens. This may include total care of catheter or ostomy. The client may or may not be aware of own needs.
Mobility	The ability to move between locations in the individual's living environment inside and outside the home. Note: Score client's mobility without regard to use of equipment other than the use of prosthesis.	The client is independent in completing activity safely.	The client is mobile in their own home but may need assistance outside the home.	The client is not safe to ambulate or move between locations alone; needs regular cueing, stand-by assistance, or hands on assistance for safety both in the home and outside the home.	The client is dependent on others for all mobility.
Transferring	The physical ability to move between surfaces from bed/chair to wheelchair, walker or standing position; the ability to get in and out of bed or usual sleeping place; the ability to use assisted devices for transfers. Note Score client's mobility without regard to use of equipment.	The client is independent in completing activity safely.	The client transfers safely without assistance most of the time, but may need standby assistance for cueing or balance; occasional hands on assistance needed.	The client transfer requires standby or hands on assistance for safety; client may bear some weight.	The client requires total assistance for transfers and/or positioning with or without equipment.

ADL	ADL description	Independent (100)	Mostly independent (67)	Mostly dependent (33)	Dependent (0)
Eating	The ability to eat and drink using routine or adaptive utensils (including via tube feedings or intravenously). This also includes the ability to cut, chew and swallow food.	The client is independent in completing activity safely	The client can feed self, chew and swallow foods but may need reminding to maintain adequate intake; may need food cut up; can feed self if food brought to them, with or without adaptive feeding equipment.	The client can feed self but needs line of sight standby assistance for frequent gagging, choking, swallowing difficulty; or aspiration resulting in the need for medical intervention. The client needs reminder/assistance with adaptive feeding equipment; or must be fed some or all food by mouth by another person.	The client must be totally fed by another person; must be fed by another person by stomach tube or venous access.
Behaviors	The ability to engage in safe actions and interactions and refrain from unsafe actions and interactions (Note, consider the client's inability versus unwillingness to refrain from unsafe actions and interactions).	The client demonstrates appropriate behavior; there is no concern.	The client exhibits some inappropriate behaviors but not resulting in injury to self, others and/or property. The client may require redirection. Minimal intervention is needed.	The client exhibits inappropriate behaviors that put self, others or property at risk. The client frequently requires more than verbal redirection to interrupt inappropriate behaviors.	The client exhibits behaviors resulting in physical harm for self or others. The client requires extensive supervision to prevent physical harm to self or others.
Memory/ Cognition Deficit	The age appropriate ability to acquire and use information, reason, problem solve, complete tasks or communicate needs in order to care for oneself safely.	Independent no concern	The client can make safe decisions in familiar/routine situations, but needs some help with decision making support when faced with new tasks, consistent with individual's values and goals.	The client requires consistent and ongoing reminding and assistance with planning, or requires regular assistance with adjusting to both new and familiar routines, including regular monitoring and/or supervision, or is unable to make safe decisions, or cannot make his/her basic needs known.	The client needs help most or all of time.