



**Embedded Certified Recovery Specialists**  
**An Assessment of the Impact of CRS in Substance Use Outpatient Clinics**  
2018 – 2019  
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**Introduction**

For many, recovering from addiction to drugs and alcohol is a difficult task that requires treatment, support, and perseverance. For years, addiction has been treated with traditional 24/7 care such as rehabilitation centers, as well as outpatient treatment, and non-clinical support groups. In recent years, there has been a push to expand and improve the types of services available to not only *treat* addiction, but to help people *recover* from addiction. This recovery themed approach has led to a focus on the importance of peer support workers in addiction treatment. Peer support workers are people who have been successful in the recovery process and help others experiencing similar situations (SAMHSA, 2020). The peer role ultimately evolved into the current, Certified Recovery Specialist or CRS. A CRS is an earned credential for individuals with personal, lived experience in their own substance use disorder recovery. By offering insight into the recovery process based on their own experience, Recovery Specialists are able to provide a unique perspective while providing recovery support services. The CRS is not a sponsor, case manager, or a therapist but rather a role model, mentor, advocate, and motivator (Pennsylvania Certification Board, 2020).

In fall 2018, the Capital Area Behavioral Health Collaborative (CABHC) began a reinvestment program that funded the inclusion of a Certified Recovery Specialist as an embedded service at four different Substance Use Outpatient (SU OP) provider locations. There were three providers chosen for this project: Genesis House in Dauphin County, Pennsylvania Counseling Services (PCS) in both the Lebanon and Lancaster County locations, and Perry Human Services (PHS) for both Cumberland and Perry Counties. By embedding a CRS in a licensed Substance Use outpatient setting, the objective was to increase access to a CRS and increase the number of people who utilized the CRS in conjunction with formal outpatient treatment as a means of further supporting their recovery. In this program, the CRS are considered part of the clinical team, providing invaluable supports that the treating therapist does not have time to address. The CRS focuses on addressing barriers to treatment, working with people in their community, teaching and modeling recovery principles, and assessing a person's access to recovery capital; including education and vocation, stable housing, connecting with natural supports, and finding and developing leisure activities. The providers anticipated that individuals who utilized the CRS would have many positive benefits including increased rates of treatment completion, improved community connections, increased length of treatment in SU OP, decreased use of acute types of SU treatment, and increased recovery capital.

The purpose of this analysis is to examine the impact of the embedded CRS on treatment outcomes for those individuals who utilized the CRS as compared to the individuals who chose not to utilize the CRS. It is predicted that people who engage with the CRS will have a longer length of service and receive more units of service while in SU OP as well as utilize fewer acute SU services in the 6-months after SU OP discharge as compared to the people who did not utilize the CRS.

## **Methodology**

In order to identify the population for this analysis, data was collected from multiple sources, including provider level CRS encounter data, person specific demographic data, and claims data. For inclusion in the analysis, all individuals had to meet the following criteria:

1. Had an episode of SU OP treatment at one of the four target providers<sup>1</sup>
2. The episode of SU OP treatment began within the range of time that the CRS became available and ended no later than 12/31/2019<sup>2</sup>
3. Maintained continuous HealthChoices eligibility while in SU OP and for 6-months immediately following discharge from SU OP

In order to analyze the impact of the CRS, two distinct groups of people were formed which could then be compared.

Group 1 – The Treatment Group: This group consisted of individuals who met the inclusion criteria and also engaged with the CRS. Engagement with the CRS was defined as three or more sessions with the CRS<sup>3</sup>.

Group 2 – The Control Group: This group consisted of individuals who met the inclusion criteria and had no encounters with the CRS at any time.

Although the Groups were already similar based on provider and dates those individuals accessed services, in order to make comparisons between the two Groups, it was essential to identify and control for additional variables, which increased the likelihood that any observed differences between groups was a result of the CRS and not due to another variable. This was done through an analysis of person specific demographic data that included race, ethnicity, diagnosis, gender, primary language, County of residence, and Physical Health Managed Care Organization (PH-MCO). The diagnosis and PH-MCO<sup>4</sup> of the individuals in the Treatment Group was used to further define inclusion in the Control Group. No one was excluded based on race, ethnicity, gender, primary language, or County of residence.

A total of 155 individuals engaged with a CRS a minimum of three times during the time range of this analysis. Of those, 67 duplicated people (66 unique individuals) or 43.2% met the HealthChoices eligibility requirement and were included in Group 1, the Treatment Group, of

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<sup>1</sup> For this analysis, an episode in SU OP had an allowable gap of 60 days or less between claims. However, if an individual accessed an acute SU service during an OP treatment gap, then the SU OP episode ended when the acute service began.

<sup>2</sup> Date ranges included by Provider: PCS Lancaster and Lebanon: October 1, 2018-December 31, 2019; Genesis House: September 1, 2018-December 31, 2019; Perry Human Services: December 1, 2018-December 31, 2019.

<sup>3</sup> A session with the CRS worker is not equal to a billed claim of SU OP.

<sup>4</sup> See Attachment A for a complete list of diagnoses and PH-MCO's included.

this analysis. A total of 686 duplicated people (640 unique individuals) met all of the inclusion criteria for Group 2, the Control Group, and are included in this analysis.

The study had two areas of focus:

1. To assess the impact of the CRS on length of stay (LOS) and units received while in SU OP
2. To assess the impact of CRS services on SU service use in the 6-months immediately following discharge from SU OP

To complete this analysis, claims data was used to assess the average LOS and average units of service received per Member episode for both Groups. Claims data was further used to assess level of care utilized and cost of SU services used in the 6-months following discharge. A Comparison-of-means test<sup>5</sup> was used to compare the Treatment Group and Control Group on the average for LOS, units, and cost. A Chi-Square Test of Independence<sup>6</sup> was used to compare the Treatment and Control Groups on the type of service utilized in the 6-months following discharge.

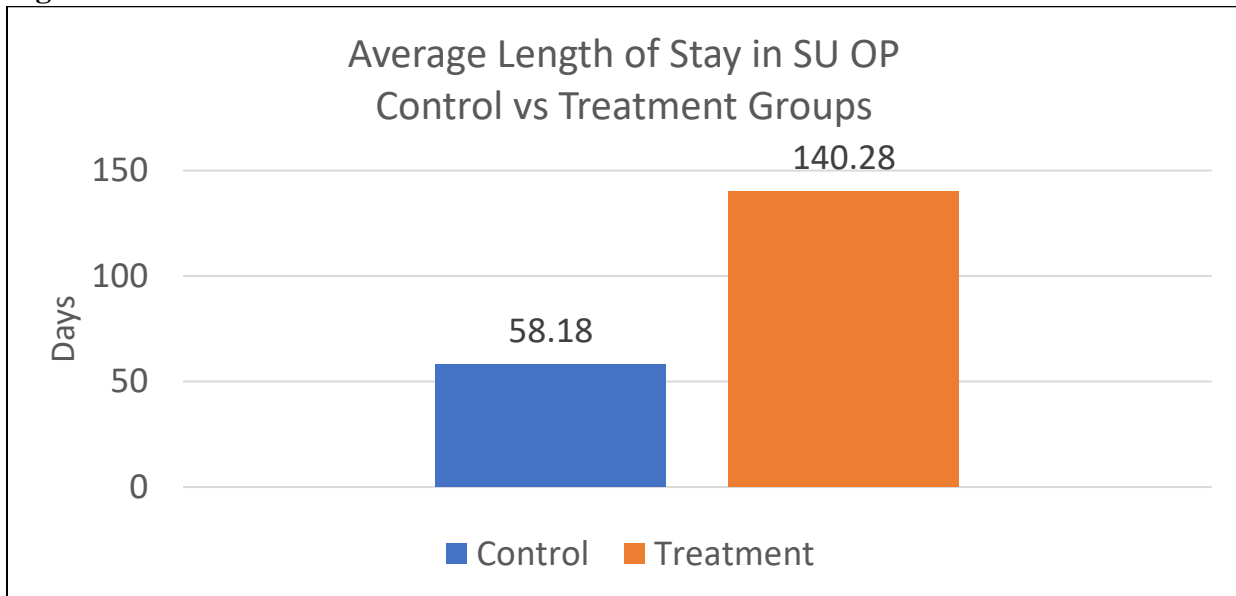
## Findings

### Impact of CRS while in Substance Use Outpatient:

#### *Length of stay*

It was predicted that the individuals in the Treatment Group would demonstrate longer lengths of stay in SU OP when compared to individuals in the Control Group. Figure 1 shows the average length of stay (LOS) in days per episode in SU OP for each Group.

**Figure 1:**



<sup>5</sup> Comparison-of-means test is a statistical test that compares the mean or average of a variable in one group to the same variable in another group and determines statistical significance.

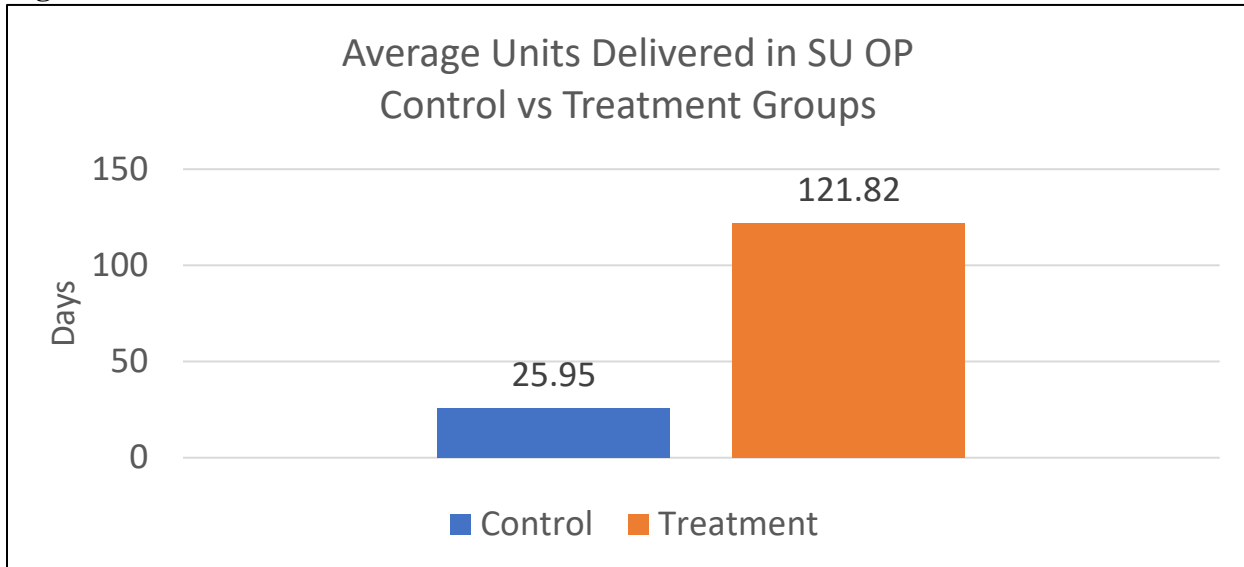
<sup>6</sup> Chi-Squared Test of Independence is a statistical test used to determine whether two variables are likely to be related.

The comparison-of-means test revealed a difference in the average LOS per Member episode in SU OP that is statistically significant at the  $p < .001$  level. This level of significance means there is a high level of confidence that the difference detected between groups is real and not caused by error. People who utilized the CRS (N=67) had an average LOS in SU OP of 140.28 days, ranging from 1 day to 615 days in treatment. The Control Group (N=686) had an average LOS in SU OP of 58.18 days, ranging from 1 day to 405 days. The average LOS per Member episode in the Treatment Group is 2.4 times longer than the average LOS in the Control Group.

*Units Delivered*

It was projected that the individuals in the Treatment Group would receive more units of service while in SU OP than those in the Control Group. Figure 2 shows the average units delivered per episode in SU OP for people in the Treatment Group and Control Group.

**Figure 2:**



The comparison-of-means test revealed a difference in average units delivered per Member episode in each group that is statistically significant at the  $p < .001$  level. This level of significance means there is a high level of confidence that the difference between groups is real and not caused by error. People who utilized the CRS (N=67) received an average of 121.82 units per episode in SU OP, this ranged from 1 unit to 455 units while in treatment. The Control Group (N=686) received an average of 25.95 units per episode in SU OP, ranging from 1 unit to 265 units. On average, 4.7 times more units were delivered per Member episode in the Treatment Group compared to the Control Group.

Further analysis examined the demographic variables of race, ethnicity, diagnosis, gender, County of residence, and PH-MCO<sup>7</sup> for differences between the two Groups on LOS and units of service received. This analysis revealed that none of the variables examined influenced the success of the CRS. Also, the gains of the CRS were observed across all variables analyzed, revealing

<sup>7</sup>The full analysis of demographic variables examined is available upon request to CABHC.

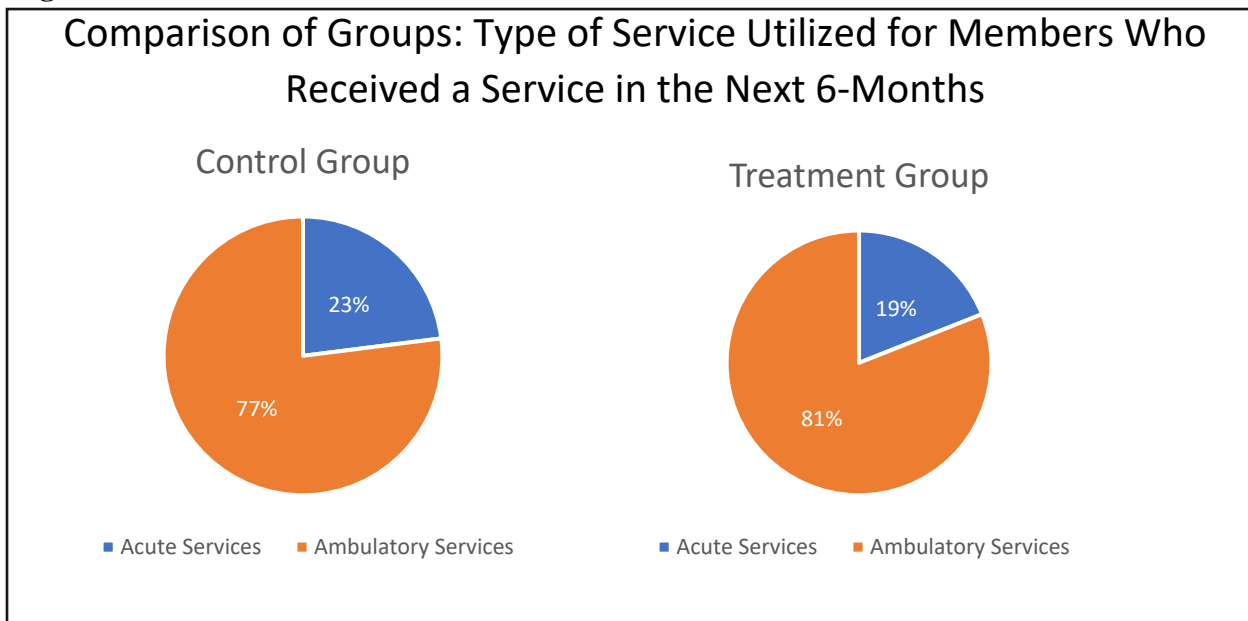
that anyone who participated with the CRS had a positive impact on their length of stay and units received in SU OP regardless of the different characteristics examined.

Service Utilization in the 6-Months After SU OP Discharge:

For this piece of the analysis, it should be noted that not every individual who met the eligibility criteria utilized a SU service in the 6-month period after discharge from SU OP. In the Control Group, of the 686 duplicated people, 268 used at least one SU service in the next 6-months. In the Treatment Group, of the 67 duplicated people, 39 used at least one SU service in the next 6-months. Likewise, a person could access multiple levels of care, even the same level of care multiple times, in the 6-month period included in the analysis. The data presented in this section is based on the frequency of services utilized by the 268 duplicated people in the Control Group and the 39 duplicated people in the Treatment Group.

It was predicted that the individuals who engaged with the CRS would utilize fewer acute substance use services in the 6-months after discharge from outpatient. Figure 3 shows the percentage of SU ambulatory and SU acute services used by each Group.

**Figure 3:**



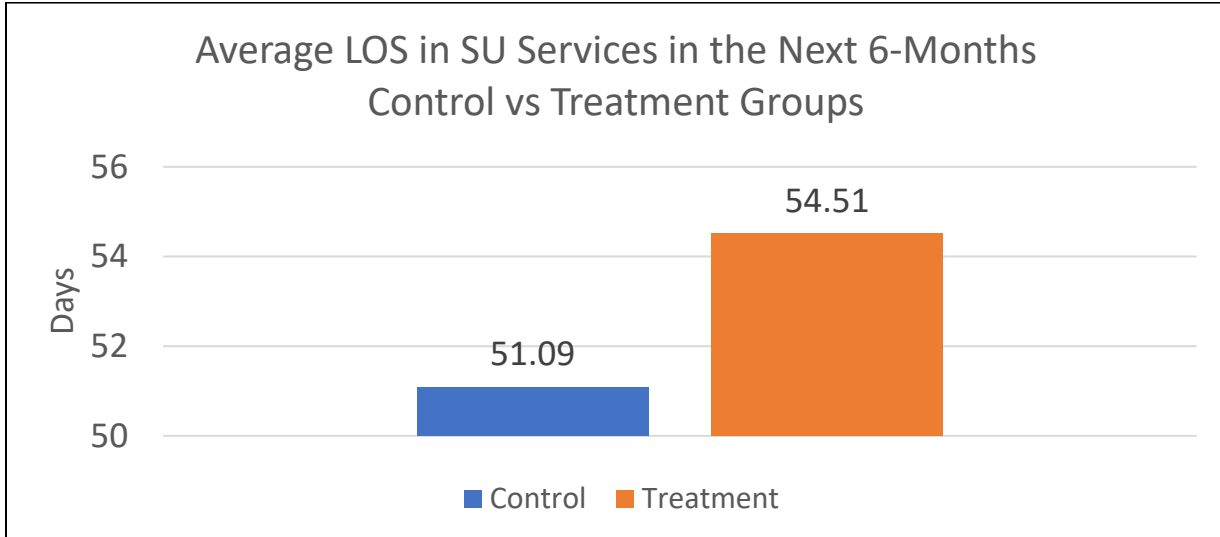
The analysis revealed that 19% of services utilized by the Treatment Group were an acute level of care as compared to 23% for the Control Group. Although the Treatment Group showed lower utilization of acute services in the 6-months after SU OP, the difference between groups was not statistically significant. The Chi-Squared test indicated that there was no relationship between engaging in CRS services and use of acute levels of care in the next 6-months, which did not support the hypothesis.

To further assess the impact of the CRS on SU service use in the next 6-months, an analysis on the average length of stay, average units delivered, average cost of services, and level of care accessed was completed.

*Length of Stay*

Figure 4 shows the average length of stay (LOS) in days per episode of SU services used in the 6-months after discharge from SU OP for each Group.

**Figure 4:**

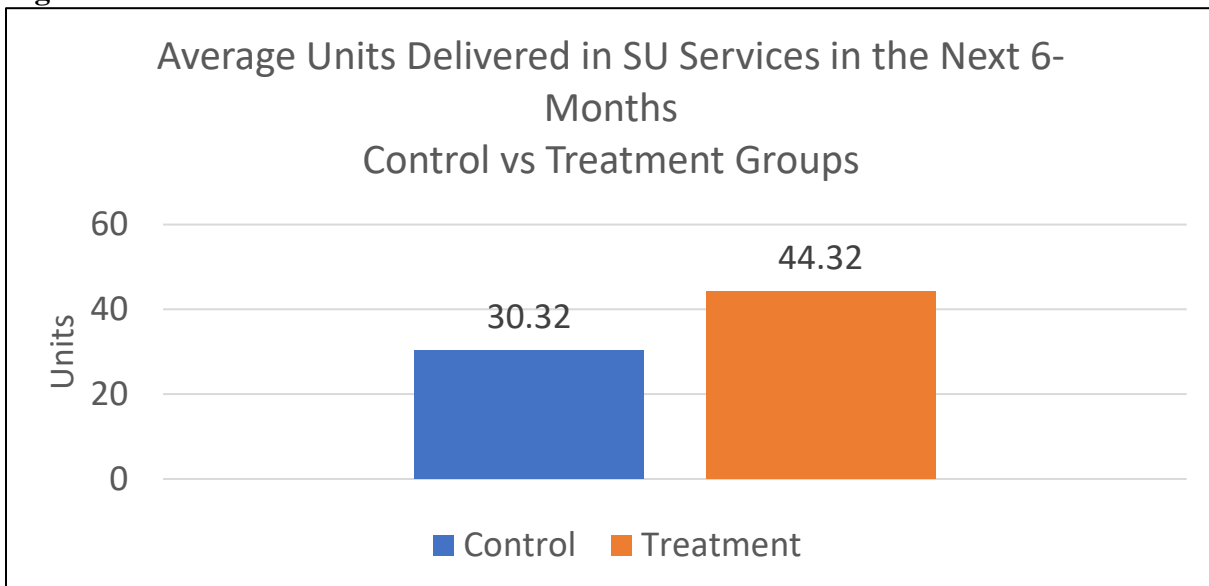


The analysis on LOS in services 6-months post discharge, shows that the Treatment Group had an average LOS 3.42 days longer per episode than the average LOS of the Control Group. Although the average LOS for the Treatment Group was about 7% longer than the Control Group, the difference between the groups was not statistically significant.

*Units Delivered*

Figure 5 shows the average units delivered per episode of SU services used in the 6-months following discharge from SU OP for the two Groups.

**Figure 5:**

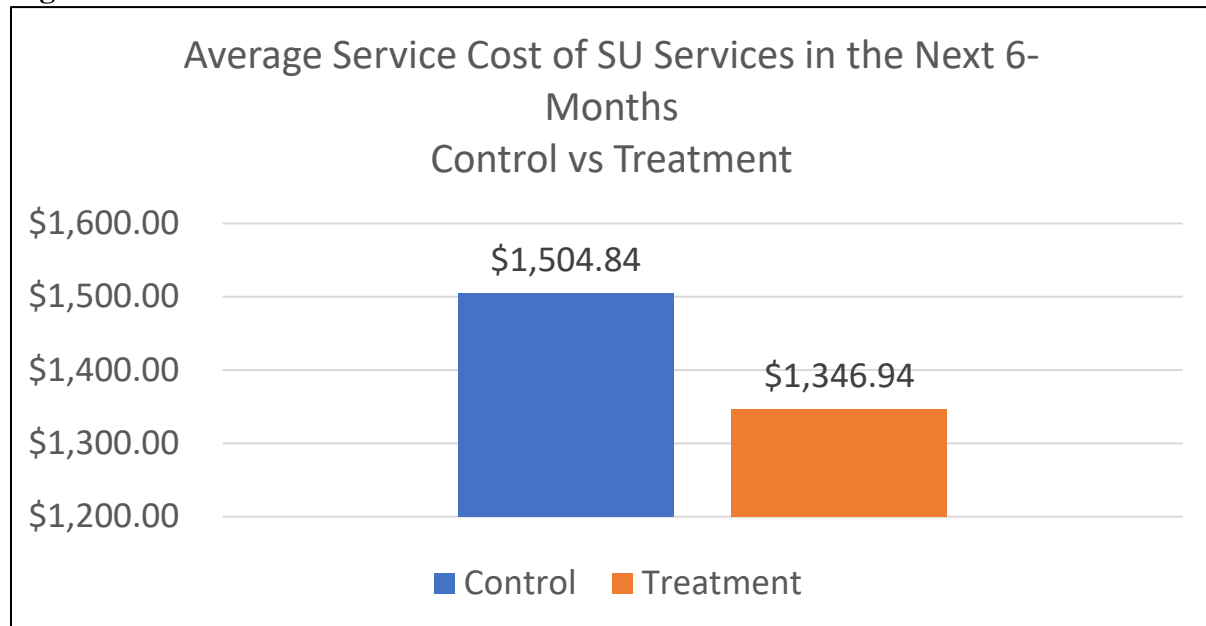


The analysis on units delivered in the next 6-months after SU OP discharge revealed that the average units received by the Treatment Group was higher than the Control Group. People who engaged with the CRS received an average of 46% more service units per episode than the people who did not. This difference in average units is statistically significant at the  $p < 0.05$  level. This indicated that the difference between groups is likely real and not caused by error.

*Cost*

Figure 6 shows the average service cost per episode in the next 6-months for each Group.

**Figure 6:**



This revealed that the average service cost per episode of the Treatment Group was lower than that of the Control Group. The average cost per episode among people who engaged with the CRS was approximately 10.5% lower than the average service cost of the people in the Control group, however this difference was not statistically significant<sup>8</sup>.

*Levels of Care Utilized in the Next 6-Months*

Finally, a breakdown of the levels of care (LOC) utilized in the 6-months after SU OP discharge was completed. Table 1 presents the SU LOC used, the number of unique Members to use each service, the number of duplicated Members to access each service, the number of times (frequency) that each service was used, the average length of stay in days, and the average number of units delivered. The data is divided into two categories, SU acute services and SU outpatient services. The service use data presented in the table is for the 286 duplicated individuals from the Control Group as compared to the 39 duplicated people in the Treatment Group who used services in the 6-months after SU OP.

<sup>8</sup> A full analysis of the demographic variables by Group broken down by LOS, units, and cost for the 6-months after SU OP discharge is available upon request to CABHC.

**Table 1: SU Levels of Care Used in the 6-Months After Discharge from SU OP for the Control Group (N=686) and Treatment Group (N=67)**

Substance Use Level of Care	Control Group					Treatment Group				
	Unique Members	Duplicated Members	Frequency of Utilization	ALOS (days)	Av. Units	Unique Members	Duplicated Members	Frequency of Utilization	ALOS (days)	Av. Units
Inpatient Detox	0	0	0	0	0	1	1	1	5	5
Inpatient Rehab	2	2	2	10	9	1	1	1	7	7
Non-Hospital Detox	30	34	36	4	4	3	3	3	5	5
Non-Hosp Rehab, Short Term	44	46	50	26	20	5	5	8	17	17
Non-Hosp Rehab, Long Term	16	16	16	61	56	1	1	1	65	65
Halfway House	6	6	6	45	45	0	0	0	0	0
<b>Total Acute SU Services</b>	<b>63</b>	<b>64</b>	<b>110</b>	<b>24</b>	<b>21</b>	<b>7</b>	<b>7</b>	<b>14</b>	<b>16</b>	<b>16</b>
Outpatient SU Clinic	201	222	234	62	15	28	28	30	73	32
Methadone Maintenance	19	20	20	155	147	2	2	2	99	82
Level of Care Assessment	41	42	43	6	7	9	9	9	7	7
SU Partial (PHP)	6	6	6	19	106	1	1	1	31	180
SU Intensive Case Management (TCM)	1	1	1	31	6	0	0	0	0	0
Intensive Outpatient (IOP)	19	20	20	44	166	6	6	6	67	229
Buprenorphine Care Coordination	44	44	44	68	30	11	11	11	79	24
<b>Total SU OP Services</b>	<b>237</b>	<b>262</b>	<b>364</b>	<b>59</b>	<b>33</b>	<b>38</b>	<b>38</b>	<b>59</b>	<b>64</b>	<b>51</b>
<i>No Services Utilized</i>	<i>397</i>	<i>400</i>	<i>400</i>	<i>0</i>	<i>0</i>	<i>28</i>	<i>28</i>	<i>28</i>	<i>0</i>	<i>0</i>
<b>Grand Total</b>	<b>257</b>	<b>286</b>	<b>474</b>	<b>51</b>	<b>30</b>	<b>39</b>	<b>39</b>	<b>73</b>	<b>55</b>	<b>44</b>

When comparing the Groups on use of acute SU services, the Treatment Group utilized an acute level of care an average of 8 days less and received 5 fewer units of service than those in the Control Group. In comparing the Groups on the use of SU outpatient services, the Treatment Group again showed more favorable results. The people in the Treatment Group spent an average of 5 more days and received 18 more units in outpatient services than the individuals in the Control Group

### Summary

Through the use of reinvestment funds, four substance use outpatient provider locations were able to embed a Certified Recovery Specialist in their clinics with a goal of increasing Member access to a CRS. It was anticipated that individuals who engaged with the CRS would show longer lengths of stay and receive more units of service during their SU OP treatment, and show decreased utilization of acute SU services in the 6-months after discharge when compared to individuals who did not access the CRS.

This analysis supported the hypothesis that Members who engaged with a CRS increased the length of stay and units received during SU OP. The individuals in the Treatment Group showed a statistically significant difference in the LOS and units received compared to the Control



Group. The detailed review of demographic variables revealed that the positive impact of the CRS was seen across all variables examined. Overall, the analysis showed that when someone engaged with the CRS, then the hypothesis of increased LOS and units received was correct. When looking at the characteristics of the individuals in the Treatment Group, the gains of the CRS were observed across all variables analyzed.

The findings related to decreased use of acute SU services in the 6-months after discharge from SU OP did not fully support the hypothesis. The data showed that the addition of CRS service resulted in use of fewer acute levels of care and longer lengths of stay in the next 6-months when compared to people who did not use the CRS, but these findings were not statistically significant. However, the significant difference in units of service received by the people in the CRS group, as well as evidence that individuals from the Treatment Group continued to utilize ambulatory services in the next 6-months at a higher rate than people in the Control Group, may indicate that involvement with the CRS reinforced the need for continued treatment to achieve and maintain recovery.

This area of the study could be further explored to include an analysis of SU service use in the 6-months *prior* to engagement with the CRS to assess if there was a change in SU service use patterns before and after engaging with the CRS. A more longitudinal analysis of SU service utilization may also be used to detect changes in acute service use patterns over time. Additionally, it may also be beneficial to include utilization of Mental Health (MH) service use in the analysis to assess if Members are using a combination of service types, or if there is a difference in service utilization of SU versus MH services between the two groups.

At the time of this study, data related to Social Determinants of Health (SDoH) was not available for analysis. This data has begun to be collected starting on 07/01/2021. The SDoH data will be fully integrated into the Behavioral Health, Physical Health, and Member demographic data, allowing for whole person analysis. Therefore, it is planned to include SDoH analysis at a later time.

**References:**

Pennsylvania Certification Board (PCB). (2020). *Certifications*. Retrieved March 15, 2021, from <https://www.pacertboard.org/certifications>

SAMHSA. (2020, April 16). *Peers*. Retrieved March 15, 2021, from <https://www.samhsa.gov/brss-tacs/recovery-support-tools/peers>

## Attachment A

Diagnoses of Individuals Included in the Analysis with Percentage of Diagnosis per Group:

		Control Group	Treatment Group
ICD10 code	Diagnosis	% Of Group	% Of Group
F1010	Alcohol abuse, uncomplicated	17.2	9.09
F1020	Alcohol dependence, uncomplicated	12.39	21.21
F1110	Opioid abuse, uncomplicated	2.77	3.03
F1120	Opioid dependence, uncomplicated	19.83	25.76
F1210	Cannabis abuse, uncomplicated	19.83	18.18
F1220	Cannabis dependence, uncomplicated	14.29	4.55
F1320	Sedative, hypnotic, or anxiolytic dependence, uncomplicated	0.87	1.52
F1410	Cocaine abuse, uncomplicated	3.79	3.03
F1420	Cocaine dependence, uncomplicated	4.96	6.06
F1510	Other stimulant abuse, uncomplicated	1.75	4.55
F1520	Other stimulant dependence, uncomplicated	2.19	3.03
F17200	Nicotine dependence, unspecified, uncomplicated	0.15	1.52

Physical Health MCO of Individuals Included in the Analysis with Percentage of PH-MCO per Group:

	Control Group	Treatment Group
PH-MCO	% Of Group	% Of Group
Aetna -LC	11.81	7.58
AmeriHealth Caritas - LC	17.2	22.73
Gateway - LC	35.71	36.36
United Healthcare - LC	13.08	13.64
Unknown	10.77	7.58
UPMC - LC	11.54	12.12