

Final Report to the Treatment Advocacy Center
Assisted Outpatient Treatment Cost Savings Study

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Limited research exists on the effectiveness of strategies to engage people with mental illness in ongoing treatment who are not amenable to voluntary treatment (1, 2). Outpatient civil commitment, also known as assisted outpatient treatment uses the authority of civil courts to mandate community-based treatment. While its use varies, assisted outpatient treatment frequently targets high utilizers of inpatient hospitalization who respond favorably to treatment, discontinue treatment when released from the hospital, and subsequently relapse and become a danger to themselves or others resulting in hospitalization (3). Assisted outpatient treatment improves treatment engagement (4, 5) and reduces hospitalization rates when sustained for at least six months and coupled with intensive treatment services (6, 7).

The effectiveness of assisted outpatient treatment is believed to be a result of the court order and the expectation that treatment providers are vigilant in maintaining individuals in treatment (6). Assisted outpatient treatment is involuntary, as the court is committing individuals who have demonstrated they do not want treatment. While referred to as “assisted outpatient treatment,” it is not clear *treatment* is actually court ordered as involuntary administration of medication is generally not included as part of these orders and the ability of the court to enforce assisted outpatient treatment orders is limited (7). In Ohio, it has come to be understood that the court is ordering close monitoring with a mechanism to order an emergency evaluation should the individual begin to decompensate (8, 9).

Assisted outpatient treatment has been used in Summit County, consistent with the Ohio civil commitment statute (O.R.C. 5122) since the early 1990s. It is almost exclusively initiated following an involuntary inpatient hospitalization for individuals with serious and persistent mental illness who have an established history of becoming ill to the point of meeting civil commitment criteria, being responsive to treatment in hospital, discontinuing treatment in the community, relapsing and repeating the cycle (3, 8). Summit County embarked on their assisted outpatient treatment program without additional or specific funding. There are costs of the program that are unaccounted. For example, the hidden costs

which may be borne by the courts in additional hearings to administer the program; by the ADM Board with its oversight activities; and the treatment agency through some paperwork and court time.

However, the costs are relatively minimal and do not involve specific funding lines.

We examined previously collected data on people who were on assisted outpatient treatment in Summit County to determine the cost effectiveness of engaging high risk individuals in community based services. We hypothesized that overall treatment costs for those on assisted outpatient treatment for at least six months was reduced **during** the period an individual was under an assisted outpatient treatment order and further reduced **after** the order ended. High cost services such as hospitalization, crisis services, and repeated clinical assessments will be reduced **during** assisted outpatient treatment and further reduced **after** assisted outpatient treatment. Outpatient services (pharmacologic management; case management) will increase **during** assisted outpatient treatment and then decrease in the **after** assisted outpatient treatment period as a result of stabilization.

Methods

Sample

The sample was composed of the people who were placed on assisted outpatient treatment through the probate court from 2001 through 2007 for at least six months. The sample was identified through the Summit County Alcohol, Drug Addiction, and Mental Health Services Board (ADM Board).

Data

Data were collected through administrative and services databases

- assisted outpatient treatment dates (The ADM Board)
- jail dates (Summit County Sheriff)
- hospitalization dates (The ADM Board)
- diagnoses (Community Support Services, the agency providing the treatment of committed individuals)

- demographics (The ADM Board)
- 2001 – 2007 service types and dates (State of Ohio Multi-Agency Community Services Information System through The ADM Board)
- services costs per unit (The ADM Board)
- death records (The ADM Board)

Inclusion criteria were

- at least 6 months on assisted outpatient treatment during 2001 – 2007,
- a triggering hospitalization for assisted outpatient treatment,
- only one time on 6 months assisted outpatient treatment, and
- no missing data on diagnosis, demographics, and services.

The resulting sample was 60. Exclusion criteria involved removal of cases who died during the period of the study (n = 58) and had at least 6 months of available data before and after assisted outpatient treatment (n = 45).

The only difference between those who were included and those who were not included in the sample was in having two in our sample with the diagnosis of depression, while none of the people excluded had that diagnosis. There was no significant difference by demographics or other diagnoses between those who were included in the final sample and the original sample.

Each program participant was assigned an index date and a separation date, based on when the court order began and ended. Services data were examined to determine if the service occurred **before**, **during**, or **after** assisted outpatient commitment. Services included alcohol and drug assessment, case management, group and individual counseling, intensive outpatient, urinalysis, Medical Community Residential Treatment non-hospital setting, pharmacologic management, and sub-acute detoxification. Mental health services included both non-physician and physician assessment, community residential, crisis care and intervention, group and individual community psychiatric support, group and individual

counseling, pharmacologic management, other non-health services, partial hospitalization, residential treatment and care, social recreation, subsidized housing, and vocational. Units of services varied from 15 minute increments to per month use depending on the service.

Service data were then aggregated by service type and time period (before, during, or after) of occurrence and merged with the hospitalizations, incarcerations, demographics, and diagnoses data. The data were then annualized by dividing the number of each type of service unit by the number of days in the period and then multiplying by 365. These data were analyzed by means and paired samples tests. Then, each type of annualized service as well as jail and hospital days were multiplied by its cost per unit. These data were then analyzed by means and paired samples tests. In addition, the costs were aggregated by time period of before, during, and after.

The project was approved by the Institutional Review Boards of Kent State University and Northeast Ohio Medical University.

Results

The sample was 33 percent female and 29 percent non-white, with an average age slightly less than 40 years old (range 20 – 77). Though the sample had a primary psychiatric diagnosis, 40 percent had a co-occurring alcohol diagnosis and 38 percent had a co-occurring drug abuse diagnosis. The sample predominately had a diagnosis of schizophrenia (78 percent) with diagnoses of bipolar, depression, or some other diagnosis (7, 9, and 7 percent, respectively). Table 1 lists the sample demographics.

Table 2 lists the costs incurred by individual services for each annualized period. As some services were listed separately (e.g., mental health pharmacologic management services by nurse, physician, and pharmacist) though the services had the same cost, these services were combined for clarity.

We then examined the differences in means by period using t-tests (Table 3). We first discuss each period comparison, then discuss the overall costs comparisons. The comparisons were set up so that when the two time periods were compared, the time period that occurred second was means tested to the time period that occurred first. Therefore, a positive number in Table 3 indicates the earlier time is greater than the later time and indicates a cost savings over time. A negative number indicates the later time had greater costs than the earlier time or a cost increase over time.

Comparison of the **before** to the **after** time periods indicated significant differences. Hospitalizations, mental health assessment by non-physician, crisis intervention, individual counseling, and mental health pharmacologic management services all significantly decreased. Only group community psychiatric support and respite services had increases in costs.

For hospitalization, assessment non physician and individual counseling the significant decrease occurred during the court order. For crisis intervention and pharmacologic management, the significant decrease occurred after the program. The costs of two services statistically increased **before** to **after**: group community support, and respite care. For respite care, the significant increase occurred after the program ended. The only difference that was significant for group community support was when the “endpoints” were compared.

There were two other statistically significant changes. Individual community support and partial hospitalization decreased from **during** to **after**.

The aggregated annualized costs per person for all services are displayed in Table 4. The mean costs were \$35,103.98 before, \$26,136.93 during and \$17,540.43 after program participation. The totals costs for the sample of 45 were \$1,579,679.31 **before**, \$1,176,161.69 **during**, and \$789,319.39 **after** or a decline in costs **before** to **during** of 25 percent and a decline in costs **before** to **after** of 50 percent. The paired samples test (Table 5) indicated that there were significant declines in the costs **after** in comparison to the costs **before** and in the costs **after** in comparison to the costs **during**.

Figure 1 is a representation of the costs by service type over the three periods. Of note, it demonstrates that the majority of the cost savings were due to the decline in hospitalizations.

Discussion

The assisted outpatient treatment program in Summit County was established under Ohio's civil commitment statute, which is considered vague and does not explicitly describe assisted outpatient treatment. Currently, legislation is proposed to make the statute clearer and to explicitly support assisted outpatient treatment. The Summit County program, unlike the well-studied Kendra's Law program in New York State, was developed locally without specific funding. The Summit County program targets individuals with severe and persistent mental disorders who are at high risk of hospital recidivism because of a pattern of non-adherence to outpatient treatment. All patients under an assisted outpatient treatment court order in Summit County receive case management and psychiatric monitoring. Additional services are offered based on the perceived needs of the individuals. The ability to enforce assisted outpatient treatment court orders in Summit County is considered weak and whether the impact of the court order would be enduring after the court order ended was unclear. This study suggests that court ordered treatment does have the intended impact of reducing hospitalizations and increasing community tenure while the court order is in force and the effect is enduring.

There were significant decreases in annualized hospitalizations when examining the **before** assisted outpatient treatment period to the **during** assisted outpatient treatment period and when examining the **before** treatment to the **after** treatment period. The biggest driver of these cost savings was the decrease in hospitalizations **during** the court order. These estimated savings are conservative underestimates because the per diem rate used was that of the state hospital, which is considerably less than the cost of community hospital days. Hospital costs did not significantly change in the **after** period. In addition to the cost implications, decreased use of hospital has enormous implications for the quality of life of the individuals in this program.

Mental health assessment by a non-physician and individual mental health counseling also declined from the **before** treatment period to the **during** treatment period and from the **before** to the **after** treatment period. In addition, other services used declined when comparing the **before** to the **after** treatment period, including crisis intervention, individual counseling, and pharmacologic management services. This may be reflective of a decrease in crisis presentations by successful participants. The increase in group community psychiatric support and respite care suggest increased engagement in voluntary, rehabilitation oriented services.

Services used declined from **during** treatment to the **after** treatment period and included crisis intervention, individual community support, individual counseling, and partial hospitalization. These services are all used to intensively manage the illness and the decreases in the **after** period may suggest that the people were more engaged in their own recovery.

It is striking that while co-occurring alcohol (40 percent) and drug (38 percent) addiction was common, there were not significant changes in any of the alcohol and drug services in any time period. It is difficult to interpret this finding.

The most important finding is that the annualized aggregated costs per person declined, not only during the period the court order was in effect, but continued after the court order ended. In fact, for the sample of 45, the costs before were almost twice that of the costs after. The decline in expensive services such as hospitalizations and crisis intervention were replaced with non-crisis-oriented services during the court order and possibly more rehabilitation oriented services after the court order ended.

Limitations

The results are limited by the small sample size, representing a single jurisdiction, which limits the generalizability of the findings. In addition, there was no information on administrative costs for assisted outpatient treatment, therefore, the results are an underestimation of costs in the **during** period. An additional limitation is that the costs of hospitalization are an underestimation as we had

access only to the costs per state hospital days, and did not have access to the actual costs per stay for the local hospitals. Nevertheless, the findings are consistent with existing literature (10). Future research should explore the relationships of assisted outpatient treatment and services for larger samples within multiple systems of care.

Conclusions

These results indicate that there were significant declines in costs for those who were on assisted outpatient treatment when comparing the costs per individual prior to, during, and after the treatment. That these costs declined in a program that has been in existence since 1994 indicates that there are significant benefits to not only the individual who is placed in the controversial treatment program, but also to the systems that administer the program through the shift from crisis oriented services to outpatient services.

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Table 1: Demographics (n = 45)

	Mean	Std. Deviation	Minimum	Maximum
Female (female = 1)	0.33	0.477	0	1
Minority (non-white = 1)	0.29	0.458	0	1
Age as of index date (in years)	39.67	13.342	20	77
Alcohol diagnosis	0.40	0.495	0	1
Drug diagnosis	0.38	0.490	0	1
Schizophrenia diagnosis	0.78	0.420	0	1
Bipolar diagnosis	0.07	0.252	0	1
Depression diagnosis	0.09	0.288	0	1
Other diagnosis	0.07	0.252	0	1

Table 2: Annualized Cost of Services Means (n = 45)

Services	Before				
	Mean	Std. Deviation	Minimum	Maximum	Sum
<i>hospitalizations</i>	23,639.64	31,551.86	1,233.94	145,038.83	1,063,784.01
<i>jail</i>	1,654.32	3,113.09	0.00	11,570.41	74,444.35
<i>Alcohol and drug services</i>					
assessment	12.56	54.45	0.00	346.21	565.18
case management	234.84	1,293.96	0.00	8,672.11	10,567.73
group counseling	23.45	85.99	0.00	457.76	1,055.30
individual counseling	24.08	103.62	0.00	595.18	1,083.64
intensive outpatient	9.91	54.78	0.00	359.06	445.81
medical community residential treatment non-hospital setting	31.85	194.80	0.00	1,303.23	1,433.21
pharmaceutical management	5.75	24.52	0.00	150.00	258.64
subacute detox	0.00	0.00	0.00	0.00	0.00
urinalysis	19.31	90.67	0.00	456.25	868.97
<i>Mental health services</i>					
assessment non-physician	237.92	370.17	0.00	1,902.67	10,706.20
assessment physician	42.04	169.48	0.00	1,102.51	1,891.73
community residential	4.18	28.03	0.00	188.03	188.03
crisis care	34.83	142.44	0.00	919.46	1,567.31
crisis intervention	184.89	320.89	0.00	1,933.76	8,320.11
employment/vocational	6.66	30.26	0.00	190.52	299.82
group community psychiatric support	204.86	600.17	0.00	3,002.03	9,218.85
group counseling	39.14	179.58	0.00	1,199.12	1,761.25
individual community psychiatric support	2,420.61	3,446.13	0.00	16,237.44	108,927.42
individual counseling	75.25	180.13	0.00	895.16	3,386.19
other 01	4.30	23.35	0.00	151.97	193.53
other non-health	0.00	0.00	0.00	0.00	0.00

	Mean	Std. Deviation	Minimum	Maximum	Sum
partial hospitalization	497.97	1,973.71	0.00	12,897.28	22,408.84
pharmaceutical management	3,046.11	3,594.47	0.00	18,183.58	137,075.05
residential treatment	2,596.12	7,380.24	0.00	45,358.67	116,825.39
social recreation	0.00	0.00	0.00	0.00	0.00
subsidized housing	53.39	258.63	0.00	1,505.33	2,402.74
Tarry House residential	0.00	0.00	0.00	0.00	0.00
Tarry House respite	0.00	0.00	0.00	0.00	0.00
vocational	0.00	0.00	0.00	0.00	0.00
			During		
<i>hospitalizations</i>	11,663.88	24,899.67	0.00	124,237.26	524,874.55
<i>jail</i>	2,345.76	6,494.26	0.00	33,945.78	105,559.00
<i>Alcohol and drug services</i>					
assessment	36.35	149.96	0.00	945.74	1,635.76
case management	274.78	1,438.68	0.00	9,538.37	12,365.15
group counseling	16.70	112.00	0.00	751.31	751.31
individual counseling	4.27	28.63	0.00	192.07	192.07
intensive outpatient	0.00	0.00	0.00	0.00	0.00
medical community residential treatment non-hospital setting	258.45	1,282.36	0.00	7,780.92	11,630.45
pharmaceutical management	7.60	31.13	0.00	166.56	342.19
subacute detox	0.00	0.00	0.00	0.00	0.00
urinalysis	12.26	62.56	0.00	409.77	551.49
<i>Mental health services</i>					
assessment non-physician	109.82	282.82	0.00	1,841.86	4,942.11
assessment physician	49.88	110.04	0.00	567.06	2,244.44
community residential	189.42	954.35	0.00	5,899.33	8,523.69
crisis care	115.32	427.85	0.00	2,525.73	5,189.60
crisis intervention	135.85	207.76	0.00	829.59	6,113.28
employment/vocational	40.18	265.02	0.00	1,778.25	1,808.25
group community psychiatric support	819.30	2,471.02	0.00	11,317.66	36,868.29

	Mean	Std. Deviation	Minimum	Maximum	Sum
group counseling	8.13	35.94	0.00	206.60	365.71
individual community psychiatric support	3,442.31	3,021.47	0.00	15,816.27	154,903.90
individual counseling	12.12	49.66	0.00	318.31	545.41
other 01	17.80	91.95	0.00	591.46	800.91
other non-health	0.75	4.67	0.00	31.26	33.76
partial hospitalization	483.94	1,169.96	0.00	5,666.99	21,777.28
pharmaceutical management	2,715.73	2,388.10	320.03	15,886.89	122,207.94
residential treatment	3,259.33	12,687.73	0.00	70,929.20	146,669.64
social recreation	0.00	0.00	0.00	0.00	0.00
subsidized housing	87.27	409.23	0.00	1,967.08	3,927.19
Tarry House residential	0.00	0.00	0.00	0.00	0.00
Tarry House respite	0.00	0.00	0.00	0.00	0.00
vocational	29.74	186.01	0.00	1,246.47	1,338.30
			After		
<i>hospitalizations</i>	7,203.92	13,598.14	0.00	51,834.58	324,176.26
<i>jail</i>	986.17	2,206.63	0.00	9,628.27	44,377.46
<i>Alcohol and drug services</i>					
assessment	9.66	36.64	0.00	217.96	434.61
case management	156.72	549.49	0.00	2,591.37	7,052.21
group counseling	13.69	48.04	0.00	275.20	615.97
individual counseling	4.83	26.08	0.00	172.72	217.26
intensive outpatient	25.20	97.87	0.00	592.39	1,133.78
medical community residential treatment non-hospital setting	251.71	1,248.10	0.00	8,062.16	11,326.92
pharmaceutical management	4.05	15.24	0.00	86.53	182.39
subacute detox	0.95	6.35	0.00	42.63	42.63
urinalysis	6.21	24.21	0.00	146.16	279.54
<i>Mental health services</i>					
assessment non-physician	82.76	185.33	0.00	1,205.89	3,724.23
assessment physician	60.16	135.23	0.00	760.07	2,707.32

	Mean	Std. Deviation	Minimum	Maximum	Sum
community residential	327.41	1,513.91	0.00	7,830.37	14,733.34
crisis care	323.56	1,188.55	0.00	6,813.45	14,560.01
crisis intervention	42.17	65.60	0.00	275.25	1,897.87
employment//vocational	58.30	294.02	0.00	1,863.91	2,623.56
group community psychiatric support	1,037.80	2,805.65	0.00	15,839.24	46,700.79
group counseling	16.47	54.25	0.00	295.84	741.20
individual community psychiatric support	2,246.59	2,728.98	0.00	9,999.69	101,096.62
individual counseling	10.71	51.10	0.00	330.38	481.91
other 01	0.13	0.87	0.00	5.85	5.85
other non-health	4.76	20.20	0.00	114.52	213.99
partial hospitalization	68.86	263.77	0.00	1,274.17	3,098.65
pharmaceutical management	1,779.90	2,532.43	0.00	14,097.38	80,095.50
residential treatment	1,610.36	4,381.74	0.00	18,993.44	72,466.34
social recreation	0.75	5.01	0.00	33.62	33.62
subsidized housing	434.85	1,238.47	0.00	5,405.19	19,568.17
Tarry House residential	574.71	2,938.58	0.00	19,242.26	25,861.80
Tarry House respite	156.45	412.50	0.00	2,364.97	7,040.44
vocational	40.65	143.39	0.00	831.83	1,829.18

Table 3: Annualized Costs of Services Used Paired Differences (n = 45)

	Mean	Std. Deviation	Std. Error Mean	Paired Differences 95% Confidence Interval of the Difference		t	Sig. (2-tailed)
				Lower	Upper		
Before and After							
<i>hospitalizations</i>	16,435.73	33,559.37	5,002.74	6,353.38	26,518.08	3.29	.002
<i>jail</i>	668.15	3,324.88	495.64	-330.75	1,667.06	1.35	.185
<i>Alcohol and drug services</i>							
assessment	2.90	66.12	9.86	-16.96	22.77	0.29	.770
Case management	78.12	1,006.62	150.06	-224.30	380.54	0.52	.605
group counseling							
individual counseling	19.25	89.37	13.32	-7.60	46.10	1.45	.155
intensive outpatient	-15.29	99.42	14.82	-45.16	14.58	-1.03	.308
medical community residential treatment non-hospital setting	-219.86	1,269.68	189.27	-601.31	161.59	-1.16	.252
pharmaceutical management	1.69	23.16	3.45	-5.26	8.65	0.49	.626
subacute detox	-0.95	6.35	0.95	-2.86	0.96	-1.00	.323
urinalysis	13.10	89.21	13.30	-13.70	39.90	0.98	.330
<i>Mental health services</i>							
assessment non-physician	155.15	424.85	63.33	27.52	282.79	2.45	.018
assessment physician	-18.12	220.54	32.88	-84.38	48.13	-0.55	.584
community residential	-323.23	1,492.85	222.54	-771.73	125.27	-1.45	.153
crisis care	-288.73	1,198.37	178.64	-648.76	71.30	-1.62	.113
crisis intervention	142.72	320.86	47.83	46.32	239.11	2.98	.005
employment vocational	-51.64	296.87	44.26	-140.83	37.55	-1.17	.250
group community psychiatric support	-832.93	2,772.39	413.28	-1,665.85	-0.01	-2.02	.050
group counseling	22.67	190.50	28.40	-34.56	79.90	0.80	.429
individual community psychiatric support	174.02	3,771.22	562.18	-958.98	1,307.02	0.31	.758
individual counseling	64.54	152.47	22.73	18.73	110.35	2.84	.007
pharmaceutical management	1,266.21	3,126.39	466.05	326.94	2,205.48	2.72	.009
other 01	4.17	23.39	3.49	-2.86	11.20	1.20	.238

	Paired Differences						Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference		t	
			Mean	Lower	Upper		
other non-health	-4.76	20.20	3.01	-10.82	1.31	-1.58	.122
partial hospitalization	429.12	1,998.05	297.85	-171.17	1,029.40	1.44	.157
pharmaceutical management	1,266.21	3,126.39	466.05	326.94	2,205.48	2.72	.009
residential treatment	985.76	7,179.63	1,070.28	-1,171.24	3,142.75	0.92	.362
social recreation	-0.75	5.01	0.75	-2.25	0.76	-1.00	.323
subsidized housing	-381.45	1,283.82	191.38	-767.16	4.25	-1.99	.052
Tarry House residential	-574.71	2,938.58	438.06	-1,457.55	308.14	-1.31	.196
Tarry House respite	-156.45	412.50	61.49	-280.38	-32.53	-2.54	.015
vocational	-40.65	143.39	21.38	-83.73	2.43	-1.90	.064
Before and During							
<i>hospitalizations</i>	11,975.77	35,200.27	5,247.35	1,400.43	22,551.10	2.28	.027
<i>jail</i>	-691.44	6,114.98	911.57	-2,528.58	1,145.71	-0.76	.452
<i>Alcohol and drug services</i>							
assessment	-23.79	149.59	22.30	-68.73	21.15	-1.07	.292
case management	-39.94	306.66	45.71	-132.07	52.19	-0.87	.387
group counseling	6.76	131.66	19.63	-32.80	46.31	0.34	.732
individual counseling	19.81	108.48	16.17	-12.78	52.40	1.23	.227
intensive outpatient	9.91	54.78	8.17	-6.55	26.36	1.21	.232
medical community residential treatment non-hospital setting	-226.61	1,285.79	191.67	-612.90	159.69	-1.18	.243
pharmaceutical management	-1.86	22.89	3.41	-8.73	5.02	-0.54	.589
urinalysis	7.06	112.34	16.75	-26.69	40.80	0.42	.676
<i>Mental health services</i>							
assessment non-physician	128.09	287.14	42.80	41.82	214.36	2.99	.005
assessment physician	-7.84	169.68	25.29	-58.82	43.14	-0.31	.758
community residential	-185.24	928.86	138.47	-464.30	93.82	-1.34	.188
crisis care	-80.50	435.53	64.93	-211.34	50.35	-1.24	.222
crisis intervention	49.04	302.69	45.12	-41.90	139.98	1.09	.283

	Paired Differences						Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference		t	
			Mean	Lower	Upper		
employment vocational	-33.52	267.63	39.90	-113.93	46.89	-0.84	.405
group community psychiatric support	-614.43	2,522.50	376.03	-1,372.28	143.41	-1.63	.109
group counseling	31.01	183.86	27.41	-24.23	86.25	1.13	.264
individual community psychiatric support	-1,021.70	3,671.27	547.28	-2,124.67	81.27	-1.87	.069
individual counseling	63.13	180.56	26.92	8.88	117.38	2.35	.024
other 01	-13.50	95.57	14.25	-42.21	15.21	-0.95	.349
other non-health	-0.75	4.67	0.70	-2.15	0.65	-1.08	.287
partial hospitalization	14.03	2,035.57	303.44	-597.52	625.59	0.05	.963
pharmaceutical management	330.38	2,916.73	434.80	-545.90	1,206.66	0.76	.451
residential treatment	-663.21	14,085.40	2,099.73	-4,894.93	3,568.52	-0.32	.754
subsidized housing	-33.88	331.32	49.39	-133.42	65.66	-0.69	.496
vocational	-29.74	186.01	27.73	-85.62	26.14	-1.07	.289
During and After							
<i>hospitalizations</i>	4,459.96	23,448.52	3,495.50	-2,584.75	11,504.68	1.28	.209
<i>jail</i>	1,359.59	6,777.63	1,010.35	-676.63	3,395.81	1.35	.185
<i>Alcohol and drug services</i>							
assessment	26.69	156.53	23.33	-20.33	73.72	1.14	.259
case management	118.07	1,071.73	159.76	-203.92	440.05	0.74	.464
group counseling	3.01	76.94	11.47	-20.11	26.12	0.26	.794
individual counseling	-0.56	39.27	5.85	-12.36	11.24	-0.10	.924
intensive outpatient	-25.20	97.87	14.59	-54.60	4.21	-1.73	.091
medical community residential treatment non-hospital setting	6.75	1,782.49	265.72	-528.77	542.26	0.03	.980
pharmaceutical management	3.55	19.71	2.94	-2.37	9.47	1.21	.233
subacute detox	-0.95	6.35	0.95	-2.86	0.96	-1.00	.323
urinalysis	6.04	43.97	6.56	-7.17	19.25	0.92	.362
<i>Mental health services</i>							
assessment non-physician	27.06	345.96	51.57	-76.88	131.00	0.52	.602

	Paired Differences						Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	
				Lower	Upper		
assessment physician	-10.29	178.64	26.63	-63.95	43.38	-0.39	.701
community residential	-137.99	660.06	98.40	-336.30	60.31	-1.40	.168
crisis care	-208.23	1,293.07	192.76	-596.71	180.25	-1.08	.286
crisis intervention	93.68	185.97	27.72	37.81	149.55	3.38	.002
employment vocational	-18.12	104.00	15.50	-49.36	13.13	-1.17	.249
group community psychiatric support	-218.50	2,294.55	342.05	-907.86	470.86	-0.64	.526
group counseling	-8.34	67.14	10.01	-28.52	11.83	-0.83	.409
individual community psychiatric support	1,195.72	3,286.32	489.90	208.40	2,183.04	2.44	.019
individual counseling	1.41	71.96	10.73	-20.21	23.03	0.13	.896
pharmaceutical management	935.83	2,112.48	314.91	301.17	1,570.49	2.97	.005
other 01	17.67	91.12	13.58	-9.71	45.04	1.30	.200
other non-health	-4.01	16.57	2.47	-8.98	0.97	-1.62	.112
partial hospitalization	415.08	1,082.21	161.33	89.95	740.21	2.57	.014
residential treatment	1,648.96	13,621.72	2,030.61	-2,443.46	5,741.38	0.81	.421
social recreation	-0.75	5.01	0.75	-2.25	0.76	-1.00	.323
subsidized housing	-347.58	1,171.37	174.62	-699.50	4.34	-1.99	.053
Tarry House residential	-574.71	2,938.58	438.06	-1,457.55	308.14	-1.31	.196
Tarry House respite	-156.45	412.50	61.49	-280.38	-32.53	-2.54	.015
vocational	-10.91	216.60	32.29	-75.98	54.17	-0.34	.737

Table 4: Total Annualized Costs of Services (n = 45)

	Costs		
	before	during	after
Mean	35,103.98	26,136.93	17,540.43
Std. Deviation	40,962.89	32,457.33	24,566.09
Minimum	2,645.60	710.73	0.00
Maximum	196,060.23	168,102.57	100,958.26
Sum	1,579,679.31	1,176,161.69	789,319.39

Table 5: Paired Samples Test of Significance

	Paired Samples Test						
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	Sig. (2-tailed)
				Lower	Upper		
costs before - costs after	17,563.55	41,097.53	6,126.46	5,216.49	29,910.62	2.867	.006
costs before - costs during	8,967.06	37,824.53	5,638.55	-2,396.69	20,330.81	1.590	.119
costs during - costs after	8,596.50	28,623.57	4,266.95	-2.98	17,195.97	2.015	.050

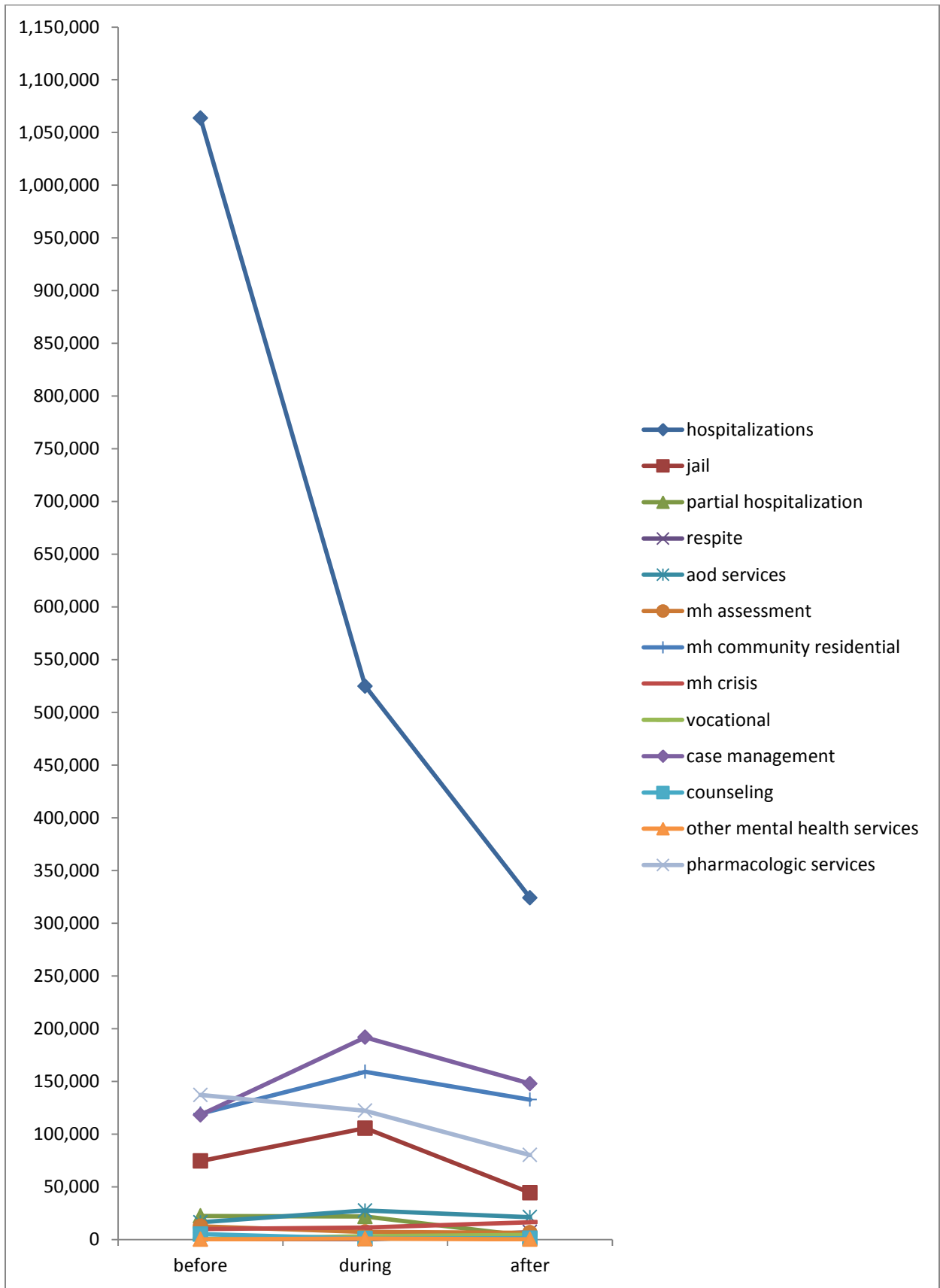


Figure 1: Sums of aggregated services by period