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Investigating the relationship between services and outcomes in a program for transition-age youth.

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Introduction

Options is the program developed by residents of Clark County Washington in response to the Partnership for Youth Transition initiative introduced by the Child and Adolescent Branch of the Center for Mental Health Services within the Substance Abuse and Mental Health Services Administration of the federal government. Under the leadership of staff from the Clark County Department of Community Services, funding was obtained and a planning year began in October 2002. The hiring and training of staff began a year later with the first youth admitted to the program in January 2004. The grant funding ended in September 2006, however the Options program continues to be funded by a combination of Medicaid and State and County general funds.

From the beginning, the program design was influenced by the use of logic modeling, although the model changed substantially over the years of the project. The Options practice model was originally based in four theoretical perspectives: *1)* Transition to Independence Process (TIP), *2)* Program for Assertive Community Treatment (PACT), *3)* Supported Employment and *4)* Core Gifts assessment. These four approaches and their supporting evidence are described in the Options Program Manuel. The emphasis on each of these perspectives shifted over the four years of the project. TIP and Supported Employment were key components of Options and remained so throughout the demonstration. .

Although extensive evaluation data were collected, for this presentation, we focused on three specific research questions: 1) In general, did youth in the program have positive outcomes? 2) What types and amounts of services did youth receive? and, 3) Was there a relationship between amount of services received and outcomes?

Method

Data were obtained in several ways. First, at intake and every 3 months thereafter, Transition Specialists collected information on the youth's life events in the areas of education, criminal justice, mental health, employment, community living skills, and housing. Second, Transition Specialists submitted daily logs to the county billing system, recording the type and length of service or activity they performed by youth. Third, we obtained the youth's lifetime juvenile records of substantiated offenses.

Using a decision algorithm developed by a member of the research team (LG), we coded the youth's progress trends in four domains over nine months of program enrollment: employment, education, housing, and criminal justice. Each youth received a code of positive, mixed, or negative change over the 9 months for each area. For instance, if a youth had been out of school at intake and then re-entered school or completed a GED over the 9 months, they were coded as having positive change in education.

Additionally, since we had no standardized instrument measuring youth functioning, we created a severity index score for each youth at intake. This index was created by combining psychiatric diagnosis, juvenile justice involvement, educational status, and the extent that mental health problems interfered with the juvenile's lives. We deemed this measure as valid because retrospective severity rankings of youth by agency staff who were blind to the severity index score were generally consistent with the severity index score.

Results

This analysis only includes those youth for whom who we had at least nine months of data. Fifty-one youth were served by Options for at least 9 months. They

ranged from 14 to 19 years old, with an average age of 16. Fifty-nine percent were male, 92% were Caucasian, and 2% each identified as Hispanic, African-American, Native American, or biracial. Youth had high levels of need at intake. At least one time in their lives, 43% had experienced homelessness, 16% had experienced psychiatric hospitalization, 67% had been in special education, 78% had received public mental health services, and 75% had been arrested.

Over the nine months that the youth were in Options, most experienced more positive changes than negative. Twenty-four percent had positive trends in all four domains (employment, education, housing, and criminal justice), 22% in three domains, 24% in two domains, 27% in one domain, and 2 youth (4%) had no positive trends. One youth (2%) had a negative trend in all four domains, 6% had a negative trend in three domains, 10% had a negative trend in two domains, 14% had a negative trend in one domain, and 68% had no negative trends. Specifically in regards to juvenile justice, significantly fewer youth had a substantiated offense in the 9 months after intake when compared to the 9 months post intake (29% to 61% respectively; McNemar $\chi^2_{(1, N = 51)}$ = .965, p = .008). For the 38 youth who had offended at any time, the average number of offenses dropped significantly between 9 months prior to intake, (M = 1.63 offenses), and 9 months after intake, (M = .71 offenses) (Paired $t_{(38)} = 2.06$, p = .046).

Table 1 depicts the percentage of staff time spent on individual services and the percentage of youth that received the services. A third of staff time was spent providing community life adjustment. This category was for activities that were to assist the youth with independent living, including such activities as developing resources, advocacy, service coordination, and teaching of skills. Employment services were the next most

often delivered, encompassing nearly 28% of staff time. These two services together accounted for 61% of staff time, with the remaining eight types of services delivered with much less frequency. Most youth received the services of community life adjustment (90%), employment (88%), assessment (87%), wraparound (63%), team staffing (55%), and educational support (50%). There was definitely a group of high-end service utilizers; approximately 10% of the youth received 25% of the staff service hours, and approximately 25% of the youth received 50% of the staff service hours.

In order to examine whether there was a possible "dose-response" relationship between service usage and changes in functioning, a series of multiple regressions were run. Each model included an independent variable of service hours, a dependent variable of change in functioning over time, and a control variable of functioning at intake. Due to our small sample size, we were limited to including only one predictor variable and one control variable. Table 2 depicts the results.

In the first model we predicted the youth's changes in education and training using the total hours of education services they received and controlling for a rating of the extent mental health problems were interfering with the child's functioning. There were no significant relationships. The second model predicted the number of arrests between intake and 9 months using the total service hours and controlling for the number of arrests 3 months prior to intake. There were no significant relationships. The third model predicted the nine-month trend in employment outcomes using employment service hours and controlling for the youth's severity index score. This model was statistically significant, ($R^2 = .24$, $p < .005$). As the number of employment service hours increased, the trend in employment outcomes became increasingly positive, even after

controlling for the severity index score at intake. The fourth model predicted the summary index of the nine month trends over all domains using the total service hours and controlling for the severity index at intake. It was not significant.

Conclusion

The Options program served youth of transitional age with serious emotional and behavioral problems. Most of these youth experienced positive improvement in several life domains that were emphasized by Options, including education, employment, criminal justice, community living skills, and housing. The portion of services that were provided by Options staff are interesting. Options was designed with nearly equal emphasis on each of the domains above. However, Options staff had considerable flexibility to individualize service provision according to the needs of youth. Nearly 60% of their time ended up being split between community life adjustment services and employment services, indicating to future transition-based programs a need to focus extensively on these issues.

Determining the relationship between services and outcome is more difficult. Practical issues of community based research prevented us from utilizing a randomized control group design, and service "dosage" is generally closely tied to service need and severity of problem. Hence, we attempted to statistically model these relationships. Of the models we ran, we found that only educational improvement was statistically related to the number of education service hours received, after controlling for severity at intake. However, our analysis was limited by a small sample size and imprecise measures. Future work in this area should employ more precise measures of functioning that are appropriate for youth in the transition to adulthood.

Table 1

Distribution of service hours and type by staff and youth

Service	**% of total staff time spent on service**	**% of youth who received service**
Community life adjustment	33.5%	90.0%
Employment services	27.5%	88.3%
Case management	9.8%	33.3%
Wraparound	7.1%	63.3%
Assessment/intake	5.8%	86.6%
Educational support services	5.7%	50.0%
Core gift statement	4.1%	41.6%
Housing support services	3.6%	46.6%
Team staffing	2.2%	55.0%
Crisis phone calls	0.02%	1.6%

Table 2

Regression Models Predicting Youth Outcome by Service Hours, Controlling for Functioning at Intake

Model	Predictor variable	Control variable	Outcome variable
1 **Education** **N=45**	Education service hours β = -.01 NS	Rating of the extent MH problems interfered with school at intake β = -.11 NS	Nine-month trend in education and training outcomes R^2 = .01 NS
2 **Arrests** **N=55**	Total service hours β = .09 NS	Number of arrests 3 months prior to intake β = .21 NS	Arrests between intake and 9 months R^2 = .05 NS
3 **Employment** **N=47**	Employment service hours β = .42 $p < .005$	Severity index at intake β = -.24 $p = .072$	Nine-month trend in employment outcomes R^2 = .24 $p < .005$
4 **Overall** **N=47**	Total service hours β = .10 NS	Severity index at intake β = -.32 $p < .05$	Summary index of nine-month trends over all domains R^2 = .11 NS