

**Community Based Management Pilot Programs for  
Youth with Mental Illness Involved in the  
Criminal Justice System**

**Program Evaluation Report: Year Four  
Legislative Report**

**October 1, 2005**

*By:*

Paul Retzlaff, PhD  
School of Psychological Sciences  
University of Northern Colorado

*Conducted for and Recommendations by:*  
Office of Research and Statistics  
Division of Criminal Justice  
Colorado Department of Public Safety

Diane Pasini-Hill  
Linda Harrison  
Kim English

Raymond T. Slaughter: Director, Division of Criminal Justice  
Joe Morales: Executive Director, Department of Public Safety

700 Kipling Street, Suite 1000  
Denver, CO 80215  
Tel 303-239-4442  
Fax 303-239-4491  
<http://dcj.state.co.us/ors/>



## **ACKNOWLEDGEMENTS**

We would like to thank those who contributed to the completion of this report.

First, thank you to the youth and their families who consented to participate in the evaluation.

Thank you to Diane Fox and Nancy Johnson-Nagel at the Division of Mental Health with whom we partner on the evaluation of this program and who have spent many hours planning with us and analyzing data.

Thank you to the clinicians, case managers, coordinators, and others at the Sterling Pilot Program and the Colorado Access/Access Behavioral Care University of Colorado Hospital Multisystemic Therapy Team. You continued to value the evaluation aspect of the project and willingly provided us with the needed data to inform program direction and decision-making.

Thank you to Anita Saranga-Coen for her hard work, dedication and commitment to this project for the past four years. Without her diligence, the evaluation would not have been nearly as informative as it is.

Finally, thank you to the many agencies that assisted with the data collection and determination of cost for various events, including: the Colorado Judicial Branch, the Division of Youth Corrections, The Denver Safe City Diversion Program, and Sterling Youth Services.

Diane Pasini-Hill  
Kim English  
Paul Retzloff



## EXECUTIVE SUMMARY

The program has served 165 criminal justice involved youth with mental illness as of the end of June 2005.

In general, those that successfully complete the program benefit a great deal from it. Those that do not complete the program do not.

The number of **revocations** does not seem to be influenced by the program.

The number of **new offenses** after the program is strongly influenced by the program. Of program completers, 46% fewer individuals received a new court case in the 12 months after the program as the 12 months before.

The number of out-of-home placements, including **hospitalizations** and Residential Treatment Center bed days are included in this evaluation. Residential Treatment Center bed days are slightly higher for program completers while hospitalization costs are slightly higher for non-completers. No program effect is seen here.

**Other correctional outcomes** show that the program appears to reduce probations, detentions, and commitments/incarcerations. Probation costs are on average \$234 per completer in the 12 months following the program compared to \$750 for non-completers. Days of detention reduced by 34% for program completers from the 12 months before treatment to the 12 months after but rose by 25% for non-completers. In terms of sentencing, time to be served beginning in the 12 months following the program was an average of 73 days per completer versus 144 days per non-completer. This equates to an estimated encumbered commitment or incarceration cost of \$13,106 per completer versus \$21,981 per non-completer.

From a **mental health outcomes** perspective, program completers are far more likely to display improved mental health than non-completers between admission and discharge. They have less depression, less anxiety, less suicidal ideation, less thought disorder, fewer self care problems, less dangerousness, and less substance abuse.

**Cost analysis** shows that the program is paying for itself in reduced criminal activity and mental health costs. For the 65 individuals with complete cost data, those that successfully completed the program cost an average of \$5,860 in the year following treatment compared to an average of \$24,317 for those that did not complete the program.

It is recommended that the program continue and be brought to scale and expanded to include at least 200 youth per year. Additionally, due to the significant differences in outcomes for program completers versus non-completers, the programs should be directed toward improving program completion rates in an attempt to better capture the positive effects of the program for all participants.

## BACKGROUND

In fiscal year 2000, The Department of Human Services along with The Department of Public Safety implemented pilot programs intended to provide family-focused and community-based services to youth with severe emotional disturbance who are involved in the juvenile justice system, as a means of reducing recidivism and averting out-of-home placements through cost-effective treatment.

As the result of a request for proposal (RFP) process, Centennial Mental Health Center in Sterling and Colorado Access/Access Behavioral Care (ABC) in Denver were selected as the rural and urban

pilot sites respectively. The Department developed rules guiding implementation of the program. Each pilot is required to provide a one-to-one cash or in-kind match for State funds provided through the program. The Department conducts regular meetings with the pilots to review progress.

### **The reporting categories required in C.R.S. 16-8-205 are:**

“(1) On or before October 1, 2002, and on or before each October 1 thereafter, each entity that is selected to operate a juvenile offender pilot program created pursuant to section 16-8-203 shall submit to the department information evaluating the program. The department shall specify the information to be submitted, which information at a minimum shall include:

- (a) The number of persons participating in the program and an overview of the services provided;
- (b) The number of persons participating in the program for whom diversion, parole, probation, or conditional release was revoked and the reasons for each **revocation**;
- (c) The number of persons participating in the program who committed **new offenses** while receiving services and after receiving services under the program and the number and nature of offenses committed;
- (d) The number of persons participating in the program who required **hospitalization** while receiving services and after receiving services under the program and the length of and reason for each hospitalization.

(2) On or before January 15, 2003, and on or before each January 15 thereafter, the department shall submit a compilation of the information received pursuant to subsection (1) of this section, with an executive summary, to the joint budget committee and the judiciary committees of the senate and the house of representatives of the general assembly. Said committees shall review the report and may recommend legislation to continue or expand the juvenile offender pilot program.

(3) The department shall forward the information received pursuant to subsection (1) of this section to the Division Of Criminal Justice in the Department Of Public Safety. The division shall review the operation of the pilot programs and submit a report on or before October 1, 2003, and on or before October 1 every two years thereafter, to the department and to the Joint Budget Committee and the judiciary committees of the senate and the house of representatives of the general assembly. At a minimum, the report prepared by the Division Of Criminal Justice shall include identification of the **cost avoidance or cost savings**, if any, achieved by the pilot programs and the **outcomes** achieved by juveniles receiving services through the programs.”

## **OVERVIEW OF SERVICES**

The Sterling Pilot Program is a community mental health center based treatment team that provides the majority of its services in a group format. The pilot program includes a low client to staff ratio of one Intensive Case Manager/Clinician to four to six youth.

The Denver pilot program is a certified MST program that delivers family based services in a natural setting. This pilot program also maintains a small family to therapist ratio of three to five families per therapist.

More comprehensive program descriptions can be found in the last report to the legislature. (Coen, Anita Saranga. October 2004. *Community Based Management Pilot Programs for Youth with Mental Illness Involved in the Criminal Justice System, Program Evaluation Report: Year Three: Technical Report*. Denver, CO: Division of Criminal Justice.).

## Description of Participants

Number of individuals who entered the program as of June 30, 2005: 165

Number of individuals discharged by June 30, 2005: 134

Number who successfully completed:	77	57.5%
Number who did not satisfactorily complete:	57	42.5%

Number of individuals with complete outcome data discharged at least 12 months by June 30, 2005: 100

Number who successfully completed:	57	57%
Number who did not complete:	43	43%

Program participants are fairly evenly distributed between the Denver and Sterling programs (see Table 1). They are mostly male. Most are ethnic minorities or multi-racial. They have relatively little education with most completing the 8th grade or less. They are also quite young with the average age about 15 years old. Several diagnostic categories are represented including behavioral, mood, and cognitive problems.

**Table 1. Program Participant Information (n=165)**

<b>Site</b>	
Denver Program	52%
Sterling Program	48%
<b>Gender</b>	
Male	70%
Female	30%
<b>Ethnicity</b>	
American Indian	1%
Black	21%
Hispanic	12%
White	40%
Multi-Racial	26%
<b>Education</b>	
8 <sup>th</sup> Grade or Less	55%
<b>Age</b>	
Average Age	15 years old
<b>Five Most Common Diagnoses</b>	
Conduct Disorder	
Adjustment Disorder	
Dysthymia	
Major Depression	
Attention Deficit Disorder	

## REVOCATIONS

Per the mandated outcome requirements, probation revocations were examined first. Court records were reviewed for all clients discharged as of June 30, 2005, totaling 100 individuals. Of these individuals, 57 had successfully completed the program and 43 had not been successful.

As can be seen in Table 2, there were relatively few revocations in the 12 months prior to treatment and a few more in the 12 months following treatment. While it would appear that the program participants engaged in more criminal behavior after the program than before, in actuality, youth who had revocations just prior to the program were likely to be ineligible for admittance into the program

because they were incarcerated. Therefore, these numbers are somewhat confounded. The numbers are also so low that it is difficult to draw any firm conclusions from these data. It is not apparent that the program reduces probation revocations.

**Table 2. Number of individuals with revocations and number of revocations in the 12 months prior to treatment compared to the 12 months following treatment (n=100)**

	Pre-Treatment	Post-Treatment
<b>Number of Individuals</b>		
Program Completers	0	7
Non-Completers	6	9
<b>Number of Revocations</b>		
Program Completers	0	9
Non-Completers	8	14

*Source: Data were extracted from the Judicial Department's Information System (ICON) via the Colorado Criminal Justice Information System (CICJIS) and maintained by the Colorado Justice Analytics Support System (CJASS).*

Reasons for revocations include four unspecified probation violations, two runaways, an unspecified new filing, an assault, and an assault and menacing charge while in placement.

## NEW OFFENSES

The second mandated reporting area is that of new offenses. As the actual number of new offenses committed is unknown, court filings are used as a proxy. Here the numbers are higher, making them more valid and more interpretable. There are several rows in Table 3. This is because an individual will commit one or more crimes that result in one or more filings. There then may be one or more charges or counts within a filing. So, an individual that robs a gas station would probably have one filing but several charges associated with that crime such as robbery, weapons, assault, etc.

There were 46% fewer individuals charged with new offenses during the 12 months after treatment than during the 12 months prior for those who completed the program. Those that did not complete the program had less benefit (11%). This trend is also seen in terms of numbers of charges with completers having 20% fewer after the program, but non-completers having 18% more charges.

**Table 3. Number of individuals committing offenses, filings, and charges in the 12 months prior to treatment compared to the 12 months following treatment (n=100)**

	Pre-Treatment	Post-Treatment	Change
<b>Number of Individuals</b>			
Program Completers	22	12	-46%
Non-Completers	19	17	-11%
<b>Number of Filings</b>			
Program Completers	26	20	-24%
Non-Completers	31	31	0%
<b>Number of Charges</b>			
Program Completers	51	41	-20%
Non-Completers	65	77	+18%

*Source: Data were extracted from the Judicial Department's Information System (ICON) via the Colorado Criminal Justice Information System (CICJIS) and maintained by the Colorado Justice Analytics Support System (CJASS).*

The types of offenses committed in the post discharge period were similar to those committed in the pre-program period and included assault, burglary, rape, theft, drug and alcohol, escape, etc.

## OTHER CORRECTIONAL OUTCOMES

### Probation Supervision

Records were reviewed for the 12 months following the program to abstract probation sentences. The data in Table 4 provide the number of individuals placed on probation during this time and the length of those probations. Those probations are seen as costs to the system and are likely reflective of the efficacy of the program. Both regular probation at \$4/day and intensive supervision probation at \$7/day are included here.

As can be seen, members of this group were sentenced to almost 10,000 days of probation as a result of new sentences or revocations in the 12 months following the program. The days and associated costs here are those that were sentenced during the 12 months following the program but not necessarily served in those 12 months. These are costs that are "encumbered" by the state during those 12 months.

Of interest, while only six program completers received probation sentences, 15 of the non-completers received probation sentences. On an average participant basis, completers cost the system \$234 each in probation, while non-completers cost \$750.

**Table 4. Probation days resulting from new sentences or revocations occurring in the 12 months following treatment (n=100)**

Post-Treatment	
<b>Number of Individuals</b>	
Program Completers	6
Non-Completers	15
<b>Number of Probation Days</b>	
Program Completers	3330
Non-Completers	6463
<b>Cost of Probation Days</b>	
Program Completers	\$13,320
Non-Completers	\$32,248
<b>Average Probation Days per Program Participant</b>	
Program Completers	58
Non-Completers	150
<b>Cost of Average Probation Days per Program Participant</b>	
Program Completers	<b>\$234</b>
Non-Completers	<b>\$750</b>

*Source: Data were extracted from the Judicial Department's Information System (ICON) via the Colorado Criminal Justice Information System (CICJIS) and maintained by the Colorado Justice Analytics Support System (CJASS).*

Diversion episodes are also often used as an outcome measure of program success. However, the post-treatment numbers are too small and unstable for interpretation in this study. While it is tempting to claim that the program is dramatically reducing the need for diversions, actually, these individuals have already penetrated the system beyond the point at which they would likely be afforded the opportunity of diversion.

### Detentions

Detentions represent a high cost outcome for these participants. As such, data on the 100 individuals in the current sample were abstracted. A single individual may have multiple detentions with each detention representing multiple days. Table 5 presents those figures.

The strongest analysis is comparing pre-treatment to post-treatment detention days for program completers and non-completers. Note that program completers have 34% fewer detention days after the program than before. Meanwhile, non-completers have 25% more detention days.

Looking at an average per individual, program completers spent an average of seven days in detention in the year following treatment compared to 22 for non-completers. The costs parallel these findings and are significant.

**Table 5. Detentions in the 12 months prior to treatment compared to the 12 months following treatment (n=100)**

	Pre-Treatment	Post-Treatment	Change
<b>Number of Individuals</b>			
Program Completers	23	17	-27%
Non-Completers	19	18	-6%
<b>Number of Detentions</b>			
Program Completers	40	36	-10%
Non-Completers	43	40	-7%
<b>Number of Detention Days</b>			
Program Completers	625	415	-34%
Non-Completers	757	950	+25%
<b>Cost of Detention Days @ \$141/day</b>			
Program Completers	\$88,125	\$58,515	
Non-Completers	\$106,737	\$133,950	
<b>Average Detention Days per Program Participant</b>			
Program Completers	11	7	
Non-Completers	18	22	
<b>Cost of Detention Days @ \$141/day per Program Participant</b>			
Program Completers	<b>\$1,546</b>	<b>\$1,027</b>	<b>-34%</b>
Non-Completers	<b>\$2,482</b>	<b>\$3,115</b>	<b>+25%</b>

Source: Data were obtained from the Colorado Department of Human Services Division of Youth Corrections.

## Commitments and Incarcerations

For the purposes of this study, “commitments and incarcerations” are broadly defined to include all forms of incarceration. DYC facility days represent about 90% of the days and costs at \$182/day. Jail days at \$90/day, DOC days at \$76/day, Community Corrections at \$35/day, and Work Release at \$35/day are also represented. It is understood that DOC sentences are typically not fully served, and so there is a slight over-estimation of costs here by about 1.2%. This is based on DOC days representing only about 3% of the costs and inmates serving on average only about 40% of their sentences. As with the probations, the days and associated costs are those that are sentenced during the 12 months following the program but not necessarily served in those 12 months. These are costs that are "encumbered" by the state during those 12 months.

Table 6 shows comparisons of completers to non-completers in the 12 months after the program. The most revealing statistic is the average number of days to be served by program completers. This is 73 days. In contrast, non-completers will serve an average of 144 days. The costs encumbered by the state here become quite dramatic with the program completers costing about \$9,000 per individual less than the non-completers during just this one 12 month period of time.

Table 6. Commitments and incarcerations in the 12 months prior to treatment compared to the 12 months following treatment (n=100)

Post-Treatment	
<b>Number of Individuals</b>	
Program Completers	6
Non-Completers	16
<b>Number of Sentence Days</b>	
Program Completers	4135
Non-Completers	6183
<b>Cost of Days Sentenced</b>	
Program Completers	\$747,050
Non-Completers	\$945,207
<b>Average Sentence Days per Program Participant</b>	
Program Completers	73
Non-Completers	144
<b>Cost of Average Sentence Days per Program Participant</b>	
Program Completers	\$13,106
Non-Completers	\$21,981

Source: Data were extracted from the Judicial Department's Information System (ICON) via the Colorado Criminal Justice Information System (CICJIS) and maintained by the Colorado Justice Analytics Support System (CJASS).

## OUT OF HOME PLACEMENTS AND HOSPITALIZATIONS

Hospitalization data are difficult to obtain due to confidentiality laws. As such, we are only able to include data on the first 65 discharges, on whom follow-up interviews were conducted and therefore more extensive data were gathered. An additional out-of-home placement is Residential Treatment Facility admissions. These data are included on all 100 subjects in this study and are examined first.

As with the revocations, the numbers for Residential Treatment Facility admissions are quite small and unstable. A single individual can account for a number of admissions and a great many bed days, making it difficult to interpret the pre-treatment versus post-treatment effect. While this is presented in Table 7, perhaps a more informative statistic is the average cost of bed days per program participant broken down by completer versus non-completer for the 12 months following the program. As can be seen, completers cost an average of \$2,717 after the program whereas non-completers actually cost less at \$2,145.

Table 7. Residential Treatment Center admissions in the 12 months prior to treatment compared to the 12 months following treatment (n=100)

	Pre-Treatment	Post-Treatment
<b>Number of Individuals</b>		
Program Completers	2	6
Non-Completers	0	3
<b>Number of Admissions</b>		
Program Completers	6	11
Non-Completers	0	4
<b>Number of Bed Days</b>		
Program Completers	222	1056
Non-Completers	0	644
<b>Cost of Bed Days at \$143/day</b>		
Program Completers	\$31,746	\$151,008
Non-Completers	\$0	\$92,092
<b>Average Cost of Bed Days at \$143/day per Program Participant</b>		
Program Completers	\$572	<b>\$2,717</b>
Non-Completers	\$0	<b>\$2,145</b>

Source: Data were obtained from the Colorado Department of Human Services Division of Youth Correction's Trails System.

Hospitalizations are presented for the first 65 youth discharged from the program in Table 8. Here again, the reader is warned that there are relatively few individuals that account for these stays and costs. Generalization, therefore, is difficult. The data show that hospitalizations are probably down from the 12 months before the program to the 12 months after. This is found in the number of bed days dropping. Indeed, the completers cost an average of 31% less after the program while the non-completers cost 13% less.

**Table 8. Inpatient mental health admissions in the 12 months prior to treatment compared to the 12 months following treatment (n=65)**

	Pre-Treatment	Post-Treatment	Change
<b>Number of Individuals</b>			
Program Completers	2	3	
Non-Completers	2	3	
<b>Number of Bed Days</b>			
Program Completers	23	16	
Non-Completers	41	36	
<b>Cost of Bed Days at \$606/day</b>			
Program Completers	\$13,938	\$9,969	
Non-Completers	\$24,849	\$21,816	
<b>Average Cost of Bed Days at \$606/day per Program Participant</b>			
Program Completers	\$422	<b>\$294</b>	-31%
Non-Completers	\$776	<b>\$682</b>	-13%

Source: Coen, Anita Saranga. November 2002. *Community Based Management Pilot Programs for Youth with Mental Illness Involved in the Criminal Justice System, Interim Report of Early Findings and Recommendations*. Denver, CO: Division of Criminal Justice.

Reasons for hospitalizations include the mood disorders such as anxiety and depression as well as behavioral problems.

## OTHER MENTAL HEALTH OUTCOMES

The criminal justice outcomes of this program are well documented above. While those outcomes and costs are important, it must be remembered that this is a mental health treatment program and mental health outcomes are equally important. As such, additional mental health variables were examined.

All program participants have mental health data collected as they are admitted to the program and as they are discharged. For the 57 program completers and for the 43 non-completers, mental health variables were abstracted and compared from admission to discharge. While many variables are collected, some of the more important are presented here. If an individual had lower scores at discharge than at admission, they were seen as improving. Table 9 presents the percentage of individuals who improved from admission to discharge. For example, 60% of program completers improved, whereas only 37% of non-completers improved. As can be seen, in every case, program completion resulted in more mental health improvement than not completing the program did. The program quite dramatically helps program completers with depression, anxiety, suicidal ideation, thought disorder, self care problems, dangerousness, and substance abuse.

**Table 9. Percent of youth who improved on mental health measures between admission and discharge (n=100)**

	<b>Program Completers</b>	<b>Non-Completers</b>
Depression	60%	37%
Anxiety	47%	16%
Suicidal Ideation	33%	23%
Thought Disorder	22%	7%
Self Care Problems	21%	9%
Dangerousness	62%	36%
Substance Abuse	46%	19%

## **COST ANALYSIS**

Complete costs are available for the 65 individuals who had been discharged from the program for at least 12 months as of June 30, 2004. These costs include probation days, intensive supervision days, parole days, Residential Treatment Center days, community corrections days, jail days, DOC days, DYC commitment days, DYC detention days, filing costs, group home care, inpatient mental health treatment, diversion, and electronic monitoring. Available data for the 100 individuals who have been discharged at least 12 months as of June 30, 2005, including the aforementioned 65 youth, include probation days, intensive supervision days, parole days, Residential Treatment Center days, community corrections days, jail days, DOC days, DYC commitment days, and DYC detention days.

The data on the original 65 youth showed that those that completed the program cost far less after the program than those that did not complete the program. The program itself costs \$8,000 per person. Using this \$8,000 figure as a threshold, it was found that the vast majority of those that completed the program cost less than \$8,000 in the 12 months following the program. Program completers cost an average of only \$5,860 in the 12 months following treatment, while non-completers cost \$24,317 (Table 10). This difference of about \$18,000 is significant.

**Table 10. Percentage of individuals costing more than or less than \$8,000 in the 12 months after the program and averages (n=65)**

	<b>&lt;\$8000</b>	<b>&gt;\$8000</b>	<b>Average Cost</b>
Program Completers	85%	15%	<b>\$5,860</b>
Non-Completers	44%	56%	<b>\$4,317</b>

*Source: Coen, Anita Saranga. (October 1, 2003). Community Based Management Pilot Programs for Youth with Mental Illness Involved in the Criminal Justice System. Program Evaluation Report: Year Two. A Report of Findings per C.R.S. 16-8-205. Denver, CO: Division of Criminal Justice.*

As presented below in Table 11, of the 100 youth discharged by June 30, 2005, Residential Treatment Center costs were slightly higher (about \$500) for those that completed the program than those that did not. Looking at probation, program completers were sentenced to less probation than non-completers in the 12 months following treatment, saving about \$500 per individual. Detentions dropped quite dramatically for those who completed saving 34% over the pre-treatment period, while those who did not complete had 25% increased costs, a difference of about \$2,000 between the two groups. Finally, looking at commitment sentences, there is about a \$9,000 per individual benefit found in program completers. Altogether, about \$11,000 of the \$18,000 savings found above for the first 65 discharged youth are modeled by these outcomes.

Table 11. Costs for RTC, Probations, Detentions, and Commitments/Incarcerations (n=100)

	Pre-Treatment	Post-Treatment	Change
<b>RTC: Average Cost of Bed Days at \$143/day per Program Participant</b>			
Program Completers	\$572	\$2,717	
Non-Completers	\$0	\$2,145	
<b>Probation Episodes: Cost of Average Probation Days per Program Participant</b>			
Program Completers	N/A	\$234	
Non-Completers	N/A	\$750	
<b>Detentions: Cost of Detention Days at \$141/day per Program Participant</b>			
Program Completers	\$1,546	\$1,027	-34%
Non-Completers	\$2,482	\$3,115	+25%
<b>Commitments/Incarcerations: Cost of Average Sentence Days per Program Participant</b>			
Program Completers	N/A	\$13,106	
Non-Completers	N/A	\$21,981	

A primary goal of a program targeting individuals with mental health, substance abuse, and criminal justice issues is that rather than further penetrating the juvenile and criminal justice systems, individuals are directed to appropriate on-going services focused on their individual needs. The costs of such programs would be incurred accordingly. As can be seen throughout this report, it appears that the pilot program is achieving this goal for the program completers, while non-completers are more often continuing in the juvenile and criminal justice systems.

## RECOMMENDATIONS

- 1) The program is currently a pilot program. As the cost savings and efficacy of this program has been well-documented over several years, it should be brought to scale and expanded with appropriations to cover at least 200 youth per year in multiple sites.
- 2) Should funding not be available for this expansion, the pilot program should continue, at a minimum, at its current level of funding.
- 3) Because program completion is critical to improved outcomes, the pilot sites should be directed to adjust components of their programs to maximize program completion.

A supplemental report will be provided to the sites by January 15, 2006. This report will address more in-depth programmatic analyses, including program completion indicators and analysis of a matched comparison sample. It will also provide additional programmatic recommendations based on these findings.