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

Interim Report of Early Findings and Recommendations

Prepared for:
The Task Force for the Continuing Examination and Treatment of People with Mental Illness in the Criminal Justice System

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By

Anita Saranga Coen, LCSW

Focus Research & Evaluation

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

Diane Pasini-Hill, Manager, Special Projects and Kim English, Research Director

700 Kipling Street, Suite 1000
Denver, CO 80215
Tel 303-239-4442
Fax 303-239-4491
www.cdpsweb.state.co.us/dcj

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Anita Saranga Coen
Diane Pasini-Hill
Kim English

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Executive Summary

This report describes the status of two legislatively established pilot programs that were implemented in urban and rural areas of Colorado. The report is primarily descriptive in nature, a reflection of the small number of youth and families that have been enrolled thus far. Since the programs are so new, only limited outcome data will be provided in this report. The report with program outcome findings will be available on October 1, 2003 as required by statute.

Background

THE LEGISLATION

In Fiscal Year 2000, the Colorado General Assembly passed C.R.S. 16-8-205, authorizing the establishment of the Community-Based Management Pilot Programs for Persons with Mental Illness Who are Involved in the Criminal Justice System. This legislation resulted from the work of the Colorado Legislative Interim Committee on the Study of the Treatment of Persons with Mental Illness in the Criminal Justice System, established by House Joint Resolution 99-1042 (1999). The Pilot Programs were intended to target youth who have co-occurring mental health and criminal/juvenile justice involvement and were designed specifically to reduce incarceration, out of home placement, and hospitalization rates among these groups of high-risk juveniles.

PROGRAM REQUIREMENTS

The legislation directed the Department of Human Services to implement two teams, one urban and one rural, which would provide:

§ Integrative, cost-effective, family-based treatment;
§ Services designed to reduce delinquent activity and other destructive behaviors such as drug and alcohol abuse;
§ Psychiatric services, medication supervision, and crisis intervention as necessary;
§ A low client-to-staff ratio;
§ Treatment focused on the offender, the offender's family and peers, and the offender's educational and vocational performance;
§ The promotion of the development of neighborhood and community support systems for offenders and their families;
§ Documentation of research regarding the cost effectiveness and/or cost avoidance of the service proposed .

EVALUATION REQUIREMENTS

The legislation also directed the Department of Public Safety, Division of Criminal Justice (DCJ), to evaluate of the Pilot Programs. The evaluation would report, at a minimum.

§ An overview of services provided
§ The number of youth participating in the Pilot Programs
§ Revocations, new Offenses, and hospitalizations
§ Identification of the cost avoidance/cost savings
§ Outcomes achieved by juveniles receiving services

COSTS ACCRUED PRIOR TO ADMISSION

- § The youth in the pilot programs cost Colorado over $800,000 in pre-pilot system involvement costs. The range of costs for individual youth varied from $0 costs for five youth to almost $200,000 for one youth. It is likely that without successful intervention, these costs will grow.
- § Mental Health Sector accounted for the largest portion of total costs (39%). This figure would be closer to half of the total if all or a portion of the Residential Treatment Center (RTC) costs were assigned to Mental Health rather than Child Welfare.
- § Child Welfare costs comprised almost one-third of the total costs (32%), followed by Criminal/Juvenile Justice costs at 28%.
- § Special education costs comprised only 2% of the total costs.
- § With regard to cost events, the most frequently documented costs for the 47 youth were arrests (28 youth), detention and probation (12 youth each), diversion (9 youth), and State inpatient psychiatric days (8 youth).
- § Five youth had no documented system involvement prior to participation in the pilots.
- § The average career system involvement cost for the 42 youth who had some involvement is $19,450. By the standards of prior research into "career costs" for high end users (Colorado Foundation for Families and Children, 1995, Dresser, E. & Utsumi, D., 1991), this may be low[1], demonstrating that overall, these youth are in the early stages of their careers, the most promising time to intervene with specific programming. However, the range of "career costs" for these 42 youth is between $26.00 and $186,150, suggesting that at least some of the youth are approaching averages cited for youth at a higher level of overall severity.

The Selected Sites

Both programs became fully operational during the first year of implementation, with trained staff and adequate infrastructure to enroll youth and provide services. Since the Pilot Programs were implemented differently in substantially disparate parts of the state, each will be described separately.

PROGRAM IMPLEMENTATION AND FIDELITY

1. *Centennial Mental Health Center Pilot Program in Sterling*
    - Developed from broad based and robust community collaboration that is nurtured and strengthened continuously;
    - Demonstrates small staff to client ratios;
    - Involves integrated alcohol and drug services;
    - Has areas that need to be strengthened, specifically, 1) the amount of family involvement in the overall treatment program, which needs to be increased; and 2) the location of the delivery of services, almost all of which occur on the site of the Community Mental Health Center. It is likely that these two issues are in fact related and that efforts to address either will impact the other.

[1] See Dresser, 1991. Ten San Francisco children ranging from ages 5 to 16, with an average age of 12.8, were considered to have "severe emotional problems." The "average career cost per child (all service use prior to research) was $215,447 and the average annual service expenditure was $50,246.

2. *Access/Access Behavioral Care (CA/ABC), University of Colorado Hospital Multisystemic Therapy Team in Denver*
   - In spite of startup delays, CA/ABC has implemented a Multisystemic Therapy Team that demonstrates full fidelity to the MST model and legislative requirements

The Sterling Centennial Mental Health Center Pilot Program

THE PROGRAM

- Began enrolling youth in February 2001
- Implemented with intensive community collaboration
- Provided services primarily on Mental Health Center grounds in group format
- Offered limited family-oriented treatment to enrollees and families
- Integrated alcohol and drug treatment into the pilot.

THE YOUTH AND THEIR FAMILIES AT ADMISSION

During their first year of implementation, the Pilot Program admitted 35 youth and discharged 25.

Socio-Demographic Characteristics

- 13 – 17.5 years, mean age of 15.5
- 74% Male
- 34% Hispanic; 66% White
- Most living at home with one or more parents
- Most referred to program as a condition of probation
- Median family income = $25,999

Youth Involvement with Service Systems/Programs Prior to Admission

- 86% had prior involvement with Juvenile Justice
- Most prior arresting charges were for non-violent felonies; 8 youth had been arrested for violent felonies
- Property offenses accounted for 37% of the prior offenses; 20% had been arrested for violence or threats against persons
- Only one youth had been committed to DYC prior to admission
- Over half had received prior drug/alcohol and mental health services
- Only 6% were identified as Special Education students
- 60% had a history of inpatient hospitalization; 30% with RTC placement history

School Enrollment and Performance at Admission

- Sixty-one percent were enrolled in school, 28% were not (one had been expelled, the others dropped out)
- Almost half were failing half or more than their classes

Costs Accrued Prior to Admission

- The 34 Sterling youth accrued $448, 051 in Criminal/Juvenile Justice, Inpatient, Residential, and Special Education costs prior to enrolling in the Pilot Program
- We documented substantial variability among the youth, with the amount of accrued costs ranging from 0 for two youth to almost $120,000 for another.
- Fifty-six percent of the costs were attributable to mental health related events or cost units
- Youth are distributed relatively evenly across cost groups (i.e. high, medium, low)

Alcohol and Drug Use at Admission

- Alcohol and marijuana were the most commonly reported drugs used;
- Pilot youth reported relatively low amounts of actual drugs used, but
- Reported high rates of substance use-related problems, particularly in areas of Family Disruption, Psychological Problems, and Peer Influence.

THE YOUTH AND THEIR FAMILIES AT DISCHARGE

- Enrollment periods varied from 46 to 412 days, with an average of 181 days.
- Mean scores on 10 of 12 mental health related scales were lower (i.e. improved) at discharge. For two scales (Legal and Aggressive/Dangerous), the differences appear to be statistically significant.
- Alcohol and substance use was about the same.
- One youth received a GED while enrolled in the program.
- More youth were receiving Cs and Bs in school at discharge, a notable improvement from admission.
- Only 2% of time spent in service delivery involved families.

THE YOUTH AND THEIR FAMILIES SIX-MONTHS AFTER DISCHARGE

Eight semi-structured interviews were conducted with caregivers of youth who had been out of the program for at least six months.

- Several parents cited the Sterling Pilot Program and probation as the most helpful services their child had ever received. They discussed the commitment of the professional staff to their kids and the changes they saw in the youth and in the home.
- Regarding involvement in the Pilot Program, Caregivers were almost unanimous in saying they would have preferred to have been more involved and cited several barriers to greater involvement. These included perceptions that the program did not include parents, transportation problems, and long working hours that interfered with their involvement.
- Few Caregivers reported receiving any help for their child from any of the youth service systems **prior to his/her adolescence;** those who did rated the help as poor. Prior (to the Pilot Program) help for their **adolescent** children was cited more frequently, but was rated even lower than the help received in childhood. Most prior help was reported to have come from schools or social services.

- In contrast, however, Caregivers praised the current probation officers. They spontaneously brought up the names of the officers and frequently identified their intervention as the most helpful service the youth had ever received. They mentioned the officer's commitment to the youth, willingness to "do whatever it takes," and their relentless efforts to locate their children when they ran away.
- Caregivers recommended the following in the way of program improvements:
  - Assistance with transportation
  - More parent involvement
  - More convenient hours for parents who work
  - Provide more information the program
  - Let parents attend groups and participate in activities

Cost and youth outcome data are not yet available.

The Colorado Access/Access Behavioral Care Multisystemic Therapy Team

THE PROGRAM

- Began enrolling youth October 2001, following startup delays due to organizational changes, contracting issues, and staff turnover
- Followed the MST program design, in which all services are intended to be managed through its fully integrated design
- Provided all services in the community, mostly in the home
- Almost all services are family-oriented

THE YOUTH AND THEIR FAMILIES AT ADMISSION

During their first year of implementation, the Pilot Program admitted 13 youth and discharged 7.

Socio-Demographic Characteristics

- 12.8 – 17.2 years, mean age of 14.5
- 75% Male
- 67% Hispanic; 17% African American, 8% White
- Most living at home with one or more parents
- Referral sources are diverse and include Social Services (33%) and Law Enforcement (25%)
- Median family income = $13,365

Youth Involvement with Service Systems/Programs at Admission

- 83% had prior involvement with Juvenile Justice
- Almost half of the youth had a least one prior arrest, with a total of 13 charges for the admission group
- Most arresting charges were for non-violent felonies; 1 youth was arrested for a violent felony
- None of the youth had been committed to DYC prior to admission
- 42% were identified as Special Education students
- Two-thirds had received prior mental health services
- 8% were identified as having prior involvement with alcohol and drug programs
- 23% had a history of inpatient hospitalization; none had prior RTC placements

School Enrollment and Performance at Admission

- 77% were enrolled in school, 23% were not (two had been expelled, one dropped out)
- One-third were failing half or more than their classes

Costs Accrued Prior to Admission

- The 13 MST youth accrued $369,837 in Criminal/Juvenile Justice, Inpatient, Residential, and Special Education costs prior to enrolling in the Pilot Program
- We documented substantial variability among the youth, with the amount of accrued costs ranging from 0 for two youth to almost $200,000 for another.
- Over 90% of the costs were attributable to mental health related events or cost units
- Almost half of Denver's pilot youth fall into a High Cost Group

Alcohol and Drug Use at Admission

- Alcohol and marijuana were the most common drugs used
- Pilot youth reported relatively low amounts of actual drugs used, but
- Reported high rates of substance use-related problems, particularly in areas of Family Disruption, Psychological Problems, and Peer Influence

THE YOUTH AND THEIR FAMILIES AT DISCHARGE

- Enrollment periods varied from 90 to 169 days, with an average of 121 days.
- 86% of the discharged youth completed the program.
- Mean scores on 12 of 12 mental health related scales were lower (i.e. improved) at discharge. For four scales, (Depression, Aggressive/Dangerous, Attention Deficit, and Family Problems) the differences appear to be statistically significant.
- Alcohol and substance use mean scores were lower in most areas at discharge.
- Alcohol and Drug Treatment was the most common referral at discharge
- No youth were reported to be failing classes at the time of discharge.
- More youth were receiving Cs and Bs in school at discharge, a notable improvement from admission

THE YOUTH AND THEIR FAMILIES AT SIX-MONTH FOLLOW-UP

No MST youth were due for follow-up when this report was prepared.

Recommendations

The findings reported have attempted to characterize the implementation and early results of two Pilot Programs for Youth with mental health and criminal/juvenile justice involvement. Based on the information presented, the Division of Criminal Justice Office of Research and Statistics makes the following recommendations:

Department of Human Services, Office of Child and Family Services, Children's Health and Rehabilitation Unit

- **Provide technical assistance to the Sterling Pilot Program Staff to ensure the full implementation of the objectives in C.R.S. 16-8-205 and the RFP that require a family-based approach to services** by addressing the following:
  - **Conducting meetings with staff** to review program operation with specific emphasis on the extent of family involvement in Youth services.
  - **Reviewing with Pilot Staff the barriers** to full family involvement identified within this report (see page 56) as well as others identified by program staff.
  - **Developing a strategic plan** with measurable objectives and timelines that address the barriers and strategies and that can be tracked by the evaluator.
  - **Monitoring the implementation** of the strategic plan by conducting quarterly site visits and documenting progress.

- **Provide technical assistance to Colorado Access/Access Behavioral Care (CA/ABC) regarding their strategy for securing regular non-Medicaid referrals and the required matching funds and services** by addressing the following:
  - **Conducting meetings with key staff** to review program operations related to obtaining match funds.
  - **Reviewing with pilot staff the barriers** to implementing the match funding scenario as proposed as well as identifying additional or alternative strategies.
  - **Developing a strategic plan** with measurable objectives and timelines that address the barriers and strategies and that can be tracked by the evaluator.
  - **Monitoring the implementation** of the strategic plan by conducting quarterly site visits and documenting progress.

- **Document how matching funds and services are obtained and used in both sites.**

Sterling Pilot Program, Centennial Mental Health Center

- **Fully implement a family-based intervention rooted in outreach that includes home-based services as a substantial portion of the service model.** According to the Surgeon General's Mental Health Report (U.S. DHHS, 2001) and others (Woolfenden, Williams, & Peat, 2002), home-based family services have a strong record of effectiveness for children, Youth, and families with a wide variety of problems. The Sterling Pilot Program, however, faces unique and substantial challenges, including:
  - A rural economy in an economic downturn, leaving Youth and their Caregivers with a dearth of employment opportunities.
  - Many of the jobs that do exist require long shifts, sometimes with multiple days, followed by a few days off, leaving Caregivers exhausted and with limited opportunities for adequate supervision and participation in treatment.
  - The employment conditions and the lack of Caregivers supervision leave Youth with too much leisure time.
  - Families often live a significant distance from jobs and from the Community Mental Health Center, making travel time consuming and expensive for families and staff.

  There is empirical evidence that family and home-based services can be implemented successfully in rural communities (Scherer, Brondino, Henggeler, Melton, & Hanley, 1994; Brondino, Henggeler, Rowland, Pickrel, Cunningham, & Scheonwald, 1997) and efforts should be made to learn from other implementation efforts.

- **Build on the Pilot Program's considerable strengths**, including:
  - **An extremely strong community-based collaboration**, evidenced by the Pilot Program's responsiveness to Probation's needs to begin implementation with older Youth who had already penetrated the criminal/juvenile justice system.
  - **Creative solutions** to enormously challenging family situations, such as the development of programming that provides constructive and therapeutic interventions for Youth whose families are not providing the level of supervision needed for this population.
  - **Staff commitment, energy, resourcefulness, and expertise** as demonstrated by the Pilot Program's strong start, their work with the community, and their efforts to enroll Youth.
  - **The ongoing and continuing enthusiastic approach to implementing this program.**

- **Consider adding a routine follow-up capacity.**
- **Develop strategies to increase the number of referrals of younger Youth** who are less involved in the criminal/juvenile justice system.
- **Continue training to improve mental health diagnostic skills** among program staff.

Colorado Access/Access Behavioral Care (CA/ABC),
University of Colorado Multisystemic Treatment Team

- **Continue successful implementation of MST** with commitment to fidelity to model, including therapist adherence to MST principles.
- **Evaluate the role and value of the Family Resource Coordinator.** The role of the Family Resource Coordinator has changed from that described in the proposal. CA/ABC should document the evolution of the position, including addressing the original intention of providing routine follow-up services. The evaluation should include how the services provided by the FRC are different from those usually provided by MST therapists, and what benefits have accrued to families by virtue of this addition.
- **Review the original intention and barriers to hiring a Spanish-speaking therapist. Determine the current needs and develop a strategic plan to address the issue.**
- **Continue to develop strategies for increasing the flow of non-Medicaid referrals and match dollars and services**. Creating a regular flow of matching funds will help to ensure the sustainability of the program.
- **Continue training to improve mental health diagnostic skills** of program staff.

Next Steps for the Evaluation

1. Continue collecting outcome data, and expanding the base of discharge and follow-up data.
2. Collect and confirm monetized units occurring during enrollment and post discharge.
3. Finalize the methodology for determining program costs and integrate into cost models.
4. Begin to examine the associations between the characteristics of Youth, the services they receive, and their outcomes, with the method (i.e., quantitative vs. qualitative) determined by the number of available cases.
5. Attempt to identify a natural comparison group that will provide information about the outcomes of Youth who are similar to those of the Youth in the Pilot Sites, but who have not received intensive interventions.

I. Introduction and Background

This is the interim report of early findings from the implementation of The Community-Based Management Pilot Programs for Persons with Mental Illness Who are Involved in the Criminal Justice System. These programs target Youth who have co-occurring mental health and criminal/juvenile justice involvement and were to be designed specifically to reduce incarceration, out of home placement, and hospitalization rates. They were established by the Colorado General Assembly with the passage of C.R.S. 16-8-205 in fiscal year 2000 (Appendix 1). This legislation was the direct result of the work of the Colorado Legislative Interim Committee on the Study of the Treatment of Persons with Mental Illness in the Criminal Justice System, established by Colorado House Joint Resolution 99-1042 (1999). The Advisory Task Force of the Committee published a Report of Recommendations on November 3, 1999 (Colorado Legislative Interim Committee, 1999), which included a recommendation to introduce legislation to expand intensive community management approaches, including Assertive Community Treatment (ACT) and Multisystemic Therapy (MST) programs, for persons with mental illness who are involved in the justice system.

This interim report includes:

§ A summary of the legislative requirements contained within C.R.S. 16-8-205
§ An overview of the program evaluation approach, design, and methods
§ An in-depth description of the program implementation and the Youth who were enrolled during the first year of operation of the Sterling Pilot Program and the Colorado Access/Access Behavioral Care-University of Colorado Hospital Multisystemic Therapy Team
§ Early findings based on Youth who completed the programs and six-month follow-up data
§ Summary and Conclusions
§ Recommendations and Next Steps

C.R.S. 16-8-205 Legislative Requirements: The stated purpose of the Community-Based Management Pilot Program for Juvenile Offenders is "*to provide supervision and management services to eligible juvenile offenders who are charged with or adjudicated for an offense or who are found not guilty by reason of insanity.*" The legislation defined "Eligible Juvenile Offender" as a person:

§ *"Who has been diagnosed by a mental health professional as having serious mental illness"*
§ Is under age 18
§ Is involved with the criminal justice system or has been committed to the Division of Youth Corrections
§ Who has not been adjudicated for or convicted of a Class 1 Felony or sexual assault

C.R.S. 16-8-205 also established:

- Program standards
- Direction as to what activities the programs might provide
- A requirement for collaboration across numerous community agencies
- Cost sharing among the collaborative agencies
- Specific reporting and evaluation requirements

The legislation required the Colorado Department of Human Services to issue a Request for Proposals and select one program in a rural community and one in an urban community for implementation. The Pilot Programs were mandated to provide, at a minimum:

§ Integrative, cost-effective, family-based treatment
§ Services designed to reduce delinquent activity and other destructive behaviors such as drug and alcohol abuse
§ Psychiatric services, medication supervision, and crisis intervention, as necessary
§ A low client-to-staff ratio
§ Treatment focused on the offender, the offender's family and peers, and the offender's educational and vocational performance
§ The promotion of the development of neighborhood and community support systems for offenders and their families
§ Documentation of research regarding the cost effectiveness and/or cost avoidance of the service proposed[2]

In addition, C.R.S. 16-8-205 mandated that:

§ The programs operate collaboratively with key agencies, including the District Attorney, The Division of Youth Corrections, Child Welfare Services, Judicial, Community Corrections, local law enforcement, substance abuse treatment agencies, county departments of social services, community mental health centers, and others
§ The collaborating agencies contribute money, services, or a combination of both equal to the amount provided by State General Fund for program operation

Lastly, the legislation required and funded an evaluation of the Pilot Programs, whose requirements and implementation are detailed in the Section II.

[2] This requirement was added by the Department of Human Services in RFP # IHANC109053CMHS

The Request for Proposals/Award of Contracts: The Department of Human Services developed a Request for Proposals (RFP) in consultation with key Youth-serving agencies. The RFP (RFP # IHANC109053CMHS) solicited proposals from rural and urban areas of the state and was published on the State bids web site on September 27, 2000, with a submission deadline of October 31, 2000 (Appendix 2). A team of cross-systems experts evaluated the proposals; those submitted by Colorado Access/Access Behavioral Care in Denver (urban) and Centennial Mental Health Center in Sterling (rural) were selected for funding.

A team of cross-systems experts evaluated the proposals; those submitted by Colorado Access/Access Behavioral Care in Denver (urban) and Centennial Mental Health Center in Sterling (rural) were selected for funding.

Dollars became available for program implementation January 1, 2001. Meetings of key stakeholders and staff representing both newly funded sites began in early February 2001. Stakeholders included representatives of Children's Health and Rehabilitation Services, the Division of Youth Corrections, and the Alcohol and Drug Abuse Division (all in the Colorado Department of Human Services - CDHS), the Division of Criminal Justice in the Department of Public Safety, the Denver District Attorney Diversion Program, the Denver Department of Social Services, the Mental Health Corporation of Denver, and the Treatment Accountability for Safer Communities (TASC) program of the Denver Juvenile Justice Integrated Treatment Network (DJJITN). The meetings were designed to identify implementation barriers and strategies to facilitate implementation in both sites. This included clarifying legislative intent, language, and financing, and defining terminology, eligibility requirements, and timelines. Meetings continued throughout the first year, with regular representation from Children's Health and Rehabilitation, Youth Corrections, Criminal Justice, the program evaluator, and both sites.

The meetings were designed to identify implementation barriers and strategies to facilitate implementation in both sites. This included clarifying legislative intent, language, and financing, and defining terminology, eligibility requirements, and timelines.

II. Program Evaluation Approach & Methods: Program and Individual Outcomes

Legislative Requirements: While dollars for the programs were appropriated to the Department of Human Services, dollars for the evaluation component were appropriated to the Department of Public Safety, Division of Criminal Justice (DCJ). As with the program component, the legislation detailed several requirements for the evaluation component, including:

- Collection and reporting information evaluating the program, to include at a minimum:
  - # Participating
  - Overview of services provided
  - Revocations
  - New offenses
  - Hospitalizations
- Identification of the cost avoidance/cost savings
- Outcomes achieved by juveniles receiving services

Evaluation Planning Process: The Division of Criminal Justice contracted with Focus Research & Evaluation to conduct the evaluation of the Community Based Pilots. Beginning in the spring of 2001, the evaluator met with DCJ and the various stakeholders to discuss the requirements of the legislation, determine the evaluation needs of the various agencies involved in the project, and reach consensus on the evaluation questions and scope.

While most of the legislative language is defined, the requirement to report "outcomes achieved by Youth" and "costs avoided or cost savings" necessitated that both constructs be operationalized and their scope defined. This was accomplished primarily through examination of relevant mental health and criminal justice literature, which documents the risks, outcomes, and costs that are most often associated with this population. Experts who work in Criminal Justice, Public Mental Health, and Substance Abuse as administrators and direct service providers augmented this information by sharing their experience-based expectations for the two pilot programs.

Focus of the Evaluation

Domains: The domains selected for outcome measurement reflect areas that, through either legislative mandate or program design, ought to be affected by the interventions. These include:

> The domains selected for outcome measurement reflect areas that ought to be affected by interventions.

- Mental health symptoms
- Criminal behavior, sentencing, revocations
- Alcohol and drug use
- School Enrollment and performance
- Parenting and discipline
- Family relationships
- Strength and risk factors, as indicators of likelihood of Youth outcome
- Out of home placement, hospitalizations
- Cost avoidance and savings

In addition to these outcome domains, the evaluation also selected Program Fidelity as a key process domain. The process evaluation includes a description of the program models, services provided, and their fidelity to the parameters detailed in the legislation.

> The key evaluation questions focus on program implementation, Youth and family characteristics, outcomes, and cost.

Evaluation Questions*:* The key evaluation questions focus on program implementation, Youth and family characteristics, outcomes, and cost.

1. Do the program models implemented reflect the requirements set forth in the legislation?
2. What type and amount of services do the Youth and families enrolled in the programs receive?
3. Do the Youth served in the programs meet the eligibility requirements of the legislation?
4. What are key characteristics of the Youth and families served by the programs? In what ways are these Youth like or different from other Youth who receive services in the criminal justice system, especially in areas that are thought to be particularly relevant for this population: mental health, criminal justice involvement, education, and substance abuse?
5. What outcomes are achieved by Youth at the time of discharge and how do these outcomes change at six, twelve, and eighteen months after discharge from services? Specifically,
   a. Do Youth engage in less delinquent behavior, commit fewer crimes, and experience fewer revocations during and subsequent to receiving services?
   b. Do Youth spend fewer days in out-of-home placement, including psychiatric hospitals, during and subsequent to receiving services?
   c. Do Youth show improvement in other critical domains, including
      - Mental Health (problem and symptom severity)
      - Criminal/Juvenile Justice
      - Education (performance, attendance, school completion)
      - Substance Use (amount and type of substances, impact on functioning)

- § Family Functioning (parenting skills {supervision, involvement, and discipline}, cohesion, and basic needs/resources)
- § Risk Factors/Behaviors
- § Strengths/Resiliency

6. What are the costs avoided or saved by these programs?

a. Are the program costs per Youth, in the two programs, offset by the savings (cost averted) from reductions in out-of-home placement and/or incarceration?
b. Is the total cost per Youth for out-of-home placement and/or incarceration less than the costs incurred for the same Youth prior to the intervention?
c. Is the total cost per Youth for out-of-home placement and/or incarceration less than the average cost for similar Youth during the same period?
d. Are other high cost events (teen child birth, school failure, substance abuse) avoided during the intervention and follow-up period, and how much would it have cost, had they occurred at expected frequencies?

Evaluation Approach and Design:

The current design includes the collection of repeated measures (follow-up data) from Youth, families, and agencies at 6, 12, and 18 months post discharge.

Program Fidelity: Using the required elements and characteristics established by the legislation, the evaluator developed a qualitative methodology, including site visits and interviews, to determine the programs' adherence to the legislative intent.

Youth/Individual Outcomes: Since the use of control groups (a group of Youth with equivalent characteristics who did not participate in the new program) was beyond the scope of this evaluation, two strategies are used to examine these programs.

1. The first is a pretest-posttest design (Admission/Discharge) to measure change in delinquency behavior, criminal justice involvement, mental health symptoms and problems, school performance, attendance, and completion. Substance use, family functioning, risks, and strengths are also examined. In addition, the current design includes the collection of repeated measures (follow-up data) from Youth, families, and agencies at 6, 12, and 18 months post discharge.
2. Without a control group, it is challenging to determine cost avoidance or savings. However, the literature in the field, as well as information about the experiences of Youth in Colorado, should provide realistic estimates of critical areas that impact cost, e.g., recidivism rates, school dropout rates, psychiatric hospitalizations, and residential treatment. These rates will provide context as well as a yardstick against which we can measure Youth served by the pilot programs.

Table 1 lists each questionnaire/data collection instrument and its source. The Evaluation Plan, which includes a complete description of each instrument, the domains it is designed to capture, as well as administration and data collection procedures, is in Appendix 3. A complete set of instruments is in Appendix 4

TABLE 1. COMMUNITY BASED PILOT PROGRAM EVALUATION: DATA COLLECTION INSTRUMENTS AND SOURCE

Data Collection Instrument	Source
The Colorado Client Assessment Record (CCAR)	Therapist/Case Manager
The Community Based Pilot Record (CBPR)	Therapist/Case Manager
The Adolescent Self Assessment Profile II (ASAP II), modified with permission of Ken Wanberg, Ph.D.	Self-report by Youth
The Family Resource Scale (FRS)[3]	Self-report by Caregiver
The Family Assessment Device (FAD)	Self-report by Caregiver and Youth
The Parenting Measure	Self-report by Caregiver and Youth
Monthly Tracking/Cost-related (monitized) Units	Therapist/ Case Manager Evaluator through agency contact
Program Evaluation/Satisfaction Follow-Up Interview	Self-report by Caregiver and Youth

[3] In 1999, The Colorado Department of Human Services received funding from the National Center for Mental Health Services (CMHS) to create a System of Care in Clear Creek, Denver, and Jefferson Counties. Known as Colorado Cornerstone, this initiative addresses the needs of Youth with serious emotional disturbance involved or at-risk of involvement, with juvenile justice (see: http://www.coloradocornerstone.org). The Colorado Cornerstone Initiative is using the Colorado Client Assessment Instrument, the Family Assessment Device, and the Family Resource Scale, and thus will provide comparative data.

III. Program Evaluation Approach & Methods: Cost Avoidance & Cost Savings

Background

Cost studies differ from performance evaluations in that they do not document the degree of success of the interventions. Rather they examine the participants, their system involvement, the program interventions, and the outcomes achieved from the perspective of what they cost and what savings can be inferred. In the business world, the relationship between costs expended and results achieved is expressed as profit. In human services, the relationship is more complex, and other measures must be employed to look at the relationship between costs and outcomes (Edwards & Thalanany, 2001, Wolf, 1999).

Different Approaches to Studying Costs

Unit Cost—looks at the costs per participant by dividing the total cost by the total number of participants (Edwards & Thalanany, 2001; Wolf, 1998).

> If a program serves 100 children and the total cost of the program is $40,000, then the unit cost or cost per participant is $400. This approach is not concerned with how many of the children achieve a desired outcome.

Cost-Effectiveness—relates program costs to units of outcome achieved and is often used to compare programs (Rand, 1998b; Rand, 1996; Washington State Institute for Public Policy, 1998).

> Two public programs are designed to raise reading levels and both achieve a one grade level average increase across all students. If one program costs $100 per student while the other costs $50 per student, taxpayers would probably choose to support the less costly program as more cost effective.

Cost-Benefit—attributes a dollar value to both program costs and benefits achieved (Barnett, 1996; Currie, 2000; Juvenile Justice Evaluation Center, 2002; Rand, 1998a; Washington State Institute for Public Policy, 2001).

> The statement that $500 per participant spent in Job Training results in a $1000 average increase in annual salary in the first year reflects a cost-benefit ratio of 2 to 1.

Cost-Saving or Cost Offset—compares current intervention expenditures with cost savings achieved by avoidance of later problems (Barnett, 1995; Barnett, 1996; Select Committee on Children, Youth and Families, 1988).

> The statement that a $1 investment in prenatal care saves $3.38 in the cost of care for low birth weight infants uses a cost-savings approach.

Cost Accrual—establishes the costs associated with a negative outcome (Barnett, 1996; Bruner, 2002; Cohn, 1996; The Finance Project, 2000; National Campaign to Prevent Teen Pregnancy, 2002; Pacific Institute for Research and Evaluation, 1999; Prevent Child Abuse America, 2001; Rand, 1996).

> The statement that "each birth to a teenage mother causes almost $40,000 in public costs for medical care, welfare, food stamps, foster care and lost tax revenue" reflects a cost accrual approach.

Cost of Failure—applies the cost-benefit, cost-saving offset and cost accrual approaches to prevention and early intervention programs with documented effectiveness to delineate the societal costs associated with a failure to prevent negative outcomes for children and Youth (Bruner, 1995b; Bruner, 1995a; Bruner, 2002; Gould & O'Brien 1995; Gould, 2000; Gould, 2002).

> The statement that "juvenile diversion programs could potentially save Colorado more than half a million dollars for each Youth it assisted" uses a cost of failure approach based on the estimate that the monetary value of saving one high-risk Youth (drop-out, drugs, crime) is between $0.7 million - $2.0 million (Cohn, 1996).

Cost Profiling—looks, either prospectively or retrospectively, at a group of individuals and calculates the *actual* public expenditures for the group. This approach develops a "system use" profile of the individuals studied (Dresser et all, 1991; Shern, Coen, Bradley, Vasby, & Wilson, 1998).

> The statement that "the average expenditure per year of system involvement per child is over $50,000" (Dresser & Utsumi, 1991) is an example of cost profiling.

Principles and Assumptions for the Current Cost Study

Certain principles and assumptions guide this cost study:

- It is possible (and important) to attribute dollar amounts to various program services and outcomes.
- Cost expended in human service programs should generate at least an equivalent amount of savings from problems lessened or additional services avoided.
- Program dollars spent at one point in time can potentially save money at a later time.
- Youth with extensive public system involvement prior to participation in an intervention will probably have different outcomes from Youth with lower prior system involvement.
- The best predictor of future behavior is past behavior. Youth prior to intervention, therefore, can serve as their own comparison following intervention.
- In the absence of actual dollar amounts, useful comparisons can be made between participant costs and program specific State average costs as well as national estimates for high cost events such as teen pregnancy or school failure.

Overall Cost Methodology:

During the course of the full evaluation of the community-based management pilots, all cost analysis approaches will be employed. For this report, however, only admission data are available and the cost profiling approach is the most appropriate to be employed.

Only those system involvement indicators that can be "monitized" will be included, for example, number of days in foster care or number of arrests. Each of these items has an established average cost that can be multiplied by the number of occurrences. Since the greatest cost for high-risk Youth involve out-of-home placements, these constitute the bulk of the items. While it is an acceptable approach to include "victim cost" or "quality of life" costs, these are more theoretical and will not be employed here.

Appropriate program staff provided system costs. A table, Documentation of Average Costs Per Unit – Year One, is included in Appendix 5. In most instances, staff were asked to specify their service population and provide the average daily rate and average length of stay.

In some instances, for example special education, the available cost was annual. In that case, the researcher estimated a 30-day month for a nine-month program year and calculated the average daily rate. These average rates were then applied to the "actual" days of service for individual Youth.

Can the Youth be characterized as high, medium, or low system users?

Research Questions and Operational Definitions

Research questions and operational definitions facilitate a cost analysis. The research questions for this **first phase** of the cost study are:

> What are the system involvements and cost profiles of the Youth prior to participating in the community-based management pilots? Can the Youth be characterized as high, medium, or low system users?

Operational definitions of the key variables are:

- *Total (Lifetime) Pre-Program System Utilization Costs* = total number of days of system involvement (out of home placement, hospitalization, incarcerations, arrests, etc.) prior to participation in the program for all Youth x per day (or per incident) cost for each (based on system figures for 2001 or 2002).

- *Average Per Site Per Youth Pre-Program System Utilization Cost Profile* = Total Pre-Program Cost (based on system figures for 2001 or 2002) divided by the number of Youth per program.

- *Specific Per Youth Pre-Program System Utilization Cost* = Cost for individual Youth in the designated period preceding participation in the program (based on system figures for 2001 or 2002).

- *Average Daily/ Incident Rate* = average per day or per incident cost as determined annually by each system (see Appendix 5).

IV. Context and Literature

This section highlights published literature and key information that provided the context and basis for the evaluation approach and methods. In some instances, the information is about instrument characteristics that guided the data analysis and interpretation of the results, but is included here to avoid repetition in the two results sections.

Strengths and Risks

In 1999, Colorado Mental Health Services and the Colorado Department of Corrections (CDOC) collaborated on a qualitative retrospective study of adult, male, first-time inmates of CDOC with Serious Mental Illness (SMI) (Morris, Barrett, Coen, Demmler, Gysin, & Hromas, 1999). The study examined individuals' lifetime mental health, criminal justice, education, and child welfare characteristics. For those whose early histories were available, there were almost always indications of significant past trauma, including physical and sexual abuse, and neglect. These were accompanied by many instances of out of home placement, including foster care, residential treatment, orphanages, and reformatories. A few were relinquished and subsequently adopted. The study also documented early identification of poor social skills, significant problems in school with many dropping out of high school, suicidal gestures and attempts, dangerousness to others, low socio-economic backgrounds, and early interactions with the juvenile justice system.

In 1997, the Colorado Department of Human Services, Alcohol and Drug Abuse Division, completed the Center for Substance Abuse Prevention (CSAP) funded Colorado based study analyzing the risk and protective factors associated with Colorado's school dropout population Akerlund, Mendelson, Littlefield, Stein, Diana, Auger, et al. (1997). The results were compelling, documenting consistent differences between in-school and dropout Youth, with dropout Youth demonstrating:

- Lower school functioning (e.g., discipline problems, suspensions, expulsions, changing schools)
- More significant life events/transitions (e.g., recent moves, new adult in the home, fired from job)
- More Substance Use (e.g., rate of use and dependency, particularly with alcohol and marijuana)
- Less likelihood of involvement in sport and recreational activities
- High percentage of family violence

When the data were examined within a Risk and Protective Factor Model, in-school Youth were:

- Consistently higher on protective and lower on risk factors
- More bonded to social institutions
- Demonstrated greater personal skills, including resilience
- Less likely to be delinquent, to use substances, and to be sexually active

Perhaps one of the most notable findings was the strong, consistent, and predictive relationship of exposure to delinquent peers, with dropout Youth demonstrating much higher rates of such exposure. More information related to high school graduation is presented later in this section.

Consistent with the strengths and resiliency literature (Hawkins, & Catalano, 1995) and prior use of that approach by the Division of Criminal Justice's Office of Research and Statistics (The Piton Foundation, 1999; U.S. DHHS, 2001), strengths and risks were conceptualized as existing in individuals, families, and communities. Individual strengths represent dimensions such as Character (e.g., responsibility, honesty), Interpersonal/Peer Relationship Skills (e.g., work out conflict, part of a team, listens to others), and their access to Role Models. Family strengths include Love and Support, Communication, Pro-social Behaviors, Values, Involvement, Problem Solving, and Rules. Community strengths primarily focus on Services and Values.

Considerable study has been undertaken to understand and document the relationship between risk factors manifested in individuals, families, and communities and problem behaviors, particularly those related to crime and violence (Hawkins, & Catalano, 1995; U.S. DHHS, 1999; U.S. DHHS, 2001). The list of risk factors presented to clinicians to check was assembled from that literature and represents those factors that have empirical support. One area that has received significant attention is the age of onset for antisocial behavior, with the early onset being predictive of a more serious criminal career (Loeber, Farrington, Stouthamer-Loeber, & Van Kammen, 1998; Butts, Snyder, 1997). According to a study group on serious and violent juvenile offenders convened by Office of Juvenile Justice and Delinquency Prevention (OJJDP), while the average age of first contact with the juvenile justice system was 14.5 years, at least minor problems were reported to have started at age 7, moderate problems at age 9½, and by age 12 Youth had committed serous delinquent offenses. They also reported that an average of seven years had passed between the onset of problem behaviors and the Youths' first court appearance. Recent research has sought to establish that antisocial behaviors that start in childhood (before age 12) have a greater genetic link than those that begin in adolescence (Taylor, Iacono, & McGue, 2000).

Most of the strength information was collected with a checklist in the Community Based Pilot Record (CBPR), which is completed by the clinician at admission. In an effort to reduce redundancy, the Pro-social scale of the Adolescent Self Assessment Profile II (ASAP II), which is completed by Youth at admission, was used to document individual strengths. Since each strength item carries its own implications for building strengths and resiliency, scales were not developed.

Mental Health Symptoms and Functioning

In the last ten years, considerable progress has been made in the documentation of the co-occurrence of mental disorders among Youth who are involved in the Juvenile Justice System. While the prevalence of mental health disorders in Youth in the general population is commonly cited at about 20% (U.S DHHS, 2001), comparable estimates among Youth in the juvenile justice system have been estimated to be as high as 73% (ABT Associates, 1994, cited in Coalition for Juvenile Justice, 2000). Some studies have suggested that the prevalence of mental health disorders in girls may be considerably higher than that of boys, 84% vs. 27% (Timmons-Mitchell, et al., 1997, cited in Potter & Jenson, in press).

In a Colorado study Potter, C., & Jenson, J. conducted an exploratory study to examine the prevalence of co-occurrence of mental health and substance abuse in a sample of detained Youth. The study used the Colorado Client Assessment Record (CCAR), which is also being used in the Community Based Pilot Program evaluation and which is described below to screen for mental health problems. The Brief Symptom Inventory (BSI) (Derogatis, 1994, cited in Potter & Jenson, in press) was used to further assess mental health problems for those Youth who met the screening criteria. The Substance Use Survey (SUS) (Wanberg, 2000) was used to screen for substance abuse; it's partner instrument, also developed by Dr. Wanberg, is being used in the Community Based Pilot Program evaluation as well. The study found that 41% had documented clinical level mental health problems, with symptoms of depression and psychoticism being most prevalent. A startling 34% had considered suicide and 22% indicated a previous suicide attempt (Potter & Jenson, in press).

As stated earlier, all Youth who enroll in the Pilot Program are required to have a serious mental illness,[4] more commonly referred to as Serious Emotional Disturbance (SED) when discussing children and Youth. Within that guideline, individuals may demonstrate a wide range of symptoms and problems. The Colorado Client Assessment Instrument (CCAR) is the primary instrument used to measure and document mental health related characteristics and was completed by clinicians at each Youth's admission to and discharge from the Pilot Program (Ellis, Wackwitz, & Foster, 1991). The CCAR has been used by State Mental Health Services (MHS) has for over 20 years as its primary source of administrative, demographic, and clinical information. Over the past two years, MHS has conducted psychometric tests, including internal consistency, interrater, and test-retest reliability tests, which provides confidence in the instrument as a useful measure (Altschul, Wackwitz, Coen, & Ellis, 2001). As such, it provides rich contextual information and allows comparisons with individuals served in Colorado's public mental health system. A copy of the CCAR is included in Appendix 4.

The CCAR is a multidimensional screening and assessment instrument that assesses functioning in 20 problem and 7 strength domains, using a problem severity rating scale and a set of related checklist items for each. Colorado MHS developed scales for each dimension by

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[4] The Community Based Pilot Programs are using the definition of Serious Emotional Disturbance (SED) that is used by State Mental Health Services and that is determined by an algorithm based on Colorado Client Assessment (CCAR) data. First, the Youth must have a mental health diagnosis as his or her primary or main diagnosis (excluding Mental retardation, Alcohol or Drug Use, Autism, or Dementia as the **Primary Diagnosis**). Second, the Youth must also meet criteria in any one (1) of three (3) criteria: Problem Severity, Problem Type, or Residential (Youth lives out of the family home).

combining the rating scale and checklist ratings. Based on factor analysis, internal consistency, and inter-rater reliability, twelve problem scales and three strength scales were selected for use in cluster analysis to define types. The analysis determined 13 Problem Types (2 unique to Youth, 3 unique to adults, and 8 in common) and 5 Strength Types (all common to both age groups). Standard scores (Z Scores)[5] were calculated for all scales and types, based on a CCAR file of over 35,000 admissions and almost 19,000 annual updates in the public mental health system database (Wackwitz & Ellis, 2002).

The Problem and Strength types are listed below. While the labels given the types are descriptive of the domain or domains that most clearly distinguishes one type from another, a complete description of each Youth Problem and Strength Type is included in Appendix 6.

Youth Problem Types		Youth Strength Types
Low Problems	Broad Behavioral	Low Strengths
Family	Suicide/Depression	Supports
Depression	High Problems	Economic Supports Only
Legal/Substance Use	Disrespect/Attention Deficit	Personal Strengths
Mania/Attention Deficit	Anti-Social	High Strengths

Alcohol and Drug Use Measurement

Although involvement with drugs and alcohol was not a specific eligibility requirement for enrollment into the Pilot Program, the co-occurrence of substance abuse with criminal and mental health problems is extremely high and was of concern to the legislature (U.S. DHHS, 2001; OJJDP, Nov 2000; Loeber, Farrington, Stouthamer-Loeber, & Van Kammen, 1998; National Mental Health Association, 1998; Piton Foundation, 1999; Prescott, 1997). In the Colorado-based detention study cited earlier (Potter & Jenson, in press), 94% of the Youth reported prior substance use, primarily alcohol and marijuana. Of note is that the average age of onset of substance use was about 12 years old, reporting almost daily use in the year prior to detention.

The Adolescent Self Assessment Profile II (ASAP II) (Wanberg, 1999) has been used extensively in Colorado for over ten years and has rich psychometric documentation, including normative data for several Colorado based groups of Youth. Consequently, the ASAP II was selected to measure several dimensions of substance use in the Pilot Youth.

The ASAP II provides twenty basic scales, 15 supplementary scales, the Global Adolescent Disruption Scale (GADS), and a set of family history questions. The twenty basic scales, the GADS, and several family history questions were the primary focus of analysis. The ASAP II, along with a brief description of each of the scales, is included in Appendix 4.

[5] Standard scores, in this case Z Scores, specify the distance of a score from the mean in terms of standard units. A positive Z Score means a score is above the mean of the group, a negative score, below the mean. When raw scores from different scales or measures are converted into Z Scores, the scores can be compared more easily.

The reader is referred to *A Guidebook to the Use of the Adolescent Self Assessment Profile* (Wanberg, 1992) for a complete description of the theoretical and psychometric development of and the scoring protocols for the ASAP II Scales. An advantage of using an instrument that has established scores from a normative group[6] is that it allows us to compare the scores of the Pilot Youth with those of the group that was used to set the norms. To the extent that the two groups are comparable, we gain important context for the target Youth. Therefore, it is important to know the characteristics of the group to which we are comparing the Pilot Youth as well as how to interpret the comparison scores.

The Normative Group: Except for the Prosocial, Motivation, and Defensive Scales, scale scores were based on norms from Juvenile Justice (JJ) clients referred to Treatment Accountability for Safer Communities (TASC) after being screened by the Juvenile Justice Integrated Treatment Network (DJJITN) agencies as having possible alcohol and other drug use problems. The Prosocial Scale is normed on a combined group of Juvenile Justice and community subjects not in the Juvenile Justice System. Motivation is normed on Juvenile Justice subjects in a Residential Treatment Center and Defensiveness is normed on Juvenile Justice clients.[7]

High School Completion and Other Transition to Adulthood Issues

The benefits of high school completion or the receipt of a General Equivalency Degree (GED) Certificate have been well documented (Green, 2002). Economically, high school graduates' median annual earnings are 91% greater than those of non-graduates (U.S. Department of Commerce, 2000, Schwartz, 1995). Those who do not graduate are more likely to become single parents, have children at a young age, and are more likely to receive public assistance or be in prison (Kaufman, Kwon, & Klein, 2000).

In a 1995 report, Coley reports a number of school and personal factors as the most frequent reasons for students in the general population to drop out.

School Factors

- Didn't like school in general or a particular transfer school.
- Was failing, getting poor grades, or couldn't keep up with schoolwork. (Only 18 percent reported having passed their last year of school.)
- Didn't get along with teachers and/or students.
- Had disciplinary problems, was suspended, or expelled.
- Didn't fit in.
- Didn't feel safe.

Personal Factors

- Got a job, had a family to support, or had trouble managing both school and work.
- Got married, got pregnant, or became a parent.
- Had a drug or alcohol problem.

[6] Norm-referenced scores are based on the actual performance scores of a group of individuals on a test or questionnaire. This is in contrast to setting a standard based on a specified level of performance such as having to get 90% of the items correct on a test to receive an A.

[7] Other norming groups that are available include Adolescent admissions into outpatient drug and alcohol programs and Juvenile offenders committed to the DYC who were screened for needing alcohol or other drug intervention or treatment services.

It is also well known that the addition of emotional or behavioral problems impacts graduation rates (Vander Stoep, Davis, & Collins, 2000; Greenbaum, Dedrick, Friedman, Kutash, Brown, et al., 1998). Table 3 was replicated from that contained in a landmark review of outcomes for Youth in transition to adulthood and includes information for key outcome domains across several studies (Vander Stoep, Davis, & Collings, pp 13, 2000). Studies are listed in approximate decreasing order of severity, with the McGraw study subjects having the most severe mental health-related disorders and treatment history. As Table 2 dramatically displays, emotional disturbance has severe consequences on Youth achieving important developmental expectations, including graduation from high school. It is interesting to note that young adults with emotional disturbances are less likely to be living at home than their non-emotionally disturbed peers, a characteristic the author suggests might in part be due to increased homelessness among this population (Vander Stoep, Evens, & Taub, 1997).

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> *Youth with SED enter the transition phase [to adulthood] delayed in their developmental maturation and face additional challenges relative to their nondisabled peers. As a group, they are undereducated, underemployed and have limited social supports. Homelessness, criminal activity, and drug use are prevalent (Davis, Vander Stoep, 1997, p 400).*

Table 2. Outcomes For Young Adults: Comparison of US General Population to Youth With Different Levels of Psychiatric Impairment and Prior Treatment of Youth of Ages 18-21 Years

Outcome Domain	U.S. General Pop. [8]	McGraw: Received Long Term Residential Treatment[9]	NACTS: Half Received Residential; Half Received Special Ed. [10]	NLTS: Seriously Emotionally Disturbed (SED); All Received Special Ed.[11]	CICS: Community Study: Youth W/ Psychiatric Disorders[12]	CICS: Community Study: Youth W/O Psychiatric Disorders[11]
High School Completion	81%	23%	26%	48%	61%	93%
Employed	78%	46%	52%	48%	59%	80%
Resides w/ Family	56%	43%	45%	45%	68%	74%
Recent Police Incident/ Arrest	13%	37%	22%	21%	24%	11%
Pregnancy for Women	17%	50%	38%	48%	29%	14%

Source: Vander Stoep, A., et al., pp. 13, 2000

8 U.S. Department of Commerce, 1993

9 The McGraw Center Study, Vander Stoep, 1992

10 The National Adolescent and Child Treatment Study; Kutash, Greenbaum, Brown , & Foster-Johnson, 1995

11 National Longitudinal Transition Study; Valdes, Williamson & Wagner, 1990

12 Children in Community Study; Vander Stoep, Bresford, Weiss, McKnight, Cauce, & Cohen, 2000

V. Findings

Since the two Pilot Programs differ substantially from one another in key characteristics such as geography, Youth characteristics, program design, and services provided, each will be described thoroughly within its own sub-section. In order to provide additional context for the Community Based Pilot data, comparable Colorado and local community information will be provided when it is available.

Sterling Pilot Program

Many of the organizational and infrastructure resources that were needed to initiate start-up were in place early, including office space and supervisory staff. The Sterling Pilot began enrolling Youth in February 2001.

This section of the report will present:

- § Program implementation and fidelity to the legislative and RFP requirements
- § The characteristics of the Admission Cohort along ten dimensions
- § Changes documented from Admission to Discharge where available
- § A qualitative review of early findings from the six-month follow-up data collection

Program Description and Fidelity to Legislative Requirements

The Sterling Pilot Program was developed within Centennial Mental Health Center, Inc. (CMHC), a private not-for-profit Community Mental Health Center. Through a contract with Colorado Mental Health Services, Centennial Mental Health Center provides public mental health services to a ten county region of northern and eastern Colorado. It is also a partner in the Northeast Behavioral Health (NBH) Mental Health Assessment and Service Agency (MHASA), which provides mental health services to Medicaid recipients in the same region. As such, many of the organizational and infrastructure resources that were needed to initiate start-up were in place early, including office space and supervisory staff. The Sterling Pilot began enrolling Youth in February 2001. Descriptive information about the program through June 30, 2002 was assembled from telephone and on-site interviews, meetings, and program documents, and is summarized in the chart below. A full description of the Pilot Program is provided in Appendix 7.

The Pilot Program began operation in February 2001 as a community based program designed to serve Youth with co-occurring criminal justice and mental health problems. The program model was expected to meet specific requirements set forth in the funding legislation and the RFP. As is shown in Table 3, the program model demonstrates several areas of fidelity to the requirements, including the low client to staff ratio of one Intensive Case Manger/Clinician to four to six Youth. It is impossible to calculate the exact ratio because within this model, a Youth will have one of the Intensive Case Manager/Clinicians as his/her primary provider, but is likely to also be involved in groups run by a therapist and in family therapy with another.

TABLE 3. KEY PROGRAM CHARACTERISTICS OF THE STERLING PILOT PROGRAM

PROGRAM CHARACTERISTICS	*DESCRIPTION*
Staffing & Client/Staff Ratio	2 FTE Intensive Case Manager/ Clinicians, each carrying 4-6 Youth and conducting groups (one of whom is in the process of CAC III certification), Plus: approximately .3 FTE Therapist (Licensed MA level) from Centennial CMHC overseeing 4 staff conducting individual, family, group, and substance abuse treatment.
Research Basis	Proposal refers to research asserting the effectiveness of integrated treatment models over sequential and concurrent models; also states that the proposed pilot is based on the principles of Multisystemic Therapy; cites articles demonstrating reduced likelihood of Juvenile Justice contact for Youth enrolled in Colorado's Medicaid Mental Health Managed Care Program.
Location of Services/Infrastructure	Over 99% of the services are provided on the site of the Community Mental Health Center[13]. This includes a large open space on the 2nd floor with a meeting table & recreational equipment, plus the meeting rooms & therapists' offices of the CMHC.
Services Provided[14]	
Group Therapy and Activities	80% of Services; Includes Substance Abuse, Anger Management, Vocational/Job Skills, Strategies for Self Improvement and Change, Psycho-educational, Recreational, Community Service, Boys Group, Girls Group, Drop-in Center, Parenting Classes
Individual Therapy	9%
Long Days	5%
Family Therapy	2%
Psychiatric, Medication, Crisis	All provided through Centennial MHC
Service Integration	Centennial MHC has a state-licensed Alcohol and Drug Treatment Program (A/DTP). Pilot Youth are screened for SA and participate in and have access to services of Certified Alcohol Counselors. Pilot Program staff have frequent (up to 6 x per day) contact with Probation officers coordinating interventions and sharing information.
Community Collaboration	Monthly meetings/case reviews with Community Mental Health, Logan County Department of Social Services, 13th Judicial District, Sterling Middle School, Chief District Judge, and Sterling Youth Services SB 94. Probation contributes in-kind support in terms of grants and additional services; Logan County Extension Services contributes in-kind services. Pilot staff deliver presentations and education to the community.

[14] All service type and location of service information was derived from Centennial MHC's Management Information System. Most services are categorized by time, with Individual services being at least 30 minutes in length and Long Days defined as comprising more than four hours of service in one day.

Perhaps the most notable strength is community collaboration. Since the program's inception, Community Mental Health Center and Pilot Program staff worked to build a strong coalition of community support and participation. In fact, interviews with staff indicate that the program purposefully admitted Youth identified by Probation officers as challenging and most in need of additional services. This is a clear reflection of the Pilot Program's commitment to the collaboration and addressing local community needs. The monthly program/case review meetings combined with frequent contacts between the staff and Probation in particular are additional indicators of solid community collaboration.

Since the program's inception, Community Mental Health Center and Pilot Program staff worked to build a strong coalition of community support and participation.

The co-location of a state certified alcohol and drug program set the stage for service integration in this challenging area. All Youth entering the program are screened for substance abuse problems and, if appropriate, provided complete evaluations. Until recently, a therapist from the Alcohol and Drug Treatment Program ran groups focused on substance abuse, with continuous information sharing and integrated treatment planning between the Pilot Program and the A/DTP. As a sign of further integration, one of the Pilot Program's full time staff is close to completing Certified Alcohol Counselor (CAC III) Training and will be conducting the treatment group.

There were some areas, however, which demonstrated some departure from the requirements, specifically the nominal amount of family participation, the lack of a strong family basis for the interventions, and the on-site location of the services provided. Although the program hired an individual to work with families, family therapy is offered to all families, and family involvement has increased over time, only two percent of the overall services provided involve families, with at least eighty percent being conducted within group modalities. Additionally, the proposal states the site's intention of building the basis for the pilot on the principles of Multisystemic Therapy (MST), which requires family involvement, but no evidence of elements of MST have been demonstrated thus far.

There were some areas which represented some departure from the requirements, specifically the nominal amount of family participation, the lack of a strong family basis for the interventions, and the on-site location of the services provided. Only two percent of the overall services provided involve families.

For all intents and purposes, services are provided on the grounds of the community mental health center in Sterling. Although the Sterling model is community based rather than institutionally based, the intention of the legislation, which is supported in the literature (U.S. DHHS, 2001), was to provide services within the Youth's natural community, building on family, peer, and community strengths.

Amount and Type of Data Submitted Through June 30, 2002

By June 30, 2002, Sterling had enrolled thirty-four (34) Youth into the Pilot Program. As a result of their early start up, eight (8) Youth were admitted and discharged from the Pilot Program prior to the evaluation protocols being in place, about September 2001. An additional eleven (11) were admitted prior to the evaluation start-up but discharged after start-up. Since the site was not required to gather the evaluation data retrospectively, admission and discharge data were required for only fifteen (15) Youth. These circumstances, combined with unplanned turnover in

a key position that affected data submission, resulted in a very uneven distribution of data that were available to analyze. The Discharge ASAP II (the alcohol and drug measure) and the Youth and Caregiver Discharge Forms (Parenting/Discipline, Family Relationships, Resources) were not submitted for any Youth. Because the CCAR is used routinely at Centennial MHC by virtue of its contract with State Mental Health Services, data from this instrument were available for all Youth at admission and discharge.

It should also be noted that one Youth was readmitted to the program six months after his first discharge. Given that both were complete episodes, each was counted as a separate episode. Logically, the costs will be attributed to one individual in the long term cost analysis.

CHARACTERISTICS OF YOUTH AND FAMILIES PRIOR TO ADMISSION TO THE STERLING PILOT PROGRAM FOR YOUTH ADMITTED THROUGH JUNE 30, 2002

This section of the report describes the characteristics of Youth admitted to the Sterling Pilot Program in the areas described below.[15]

- Socio-demographic Characteristics
- Strength & Risk Factors
- Service System Involvement
- Mental Health
- Criminal/Juvenile Justice involvement
- Substance Abuse
- Education
- Family Resource Needs
- Service System Costs accrued prior to admission

Socio-demographic Characteristics at Admission

Table 4 shows the socio-demographic characteristics of the Sterling Youth at the time of their admission to the program. For many of these characteristics, comparable statewide and Centennial Mental Health Center data were obtained from Colorado Mental Health Services and included in the table. Most of the 35 enrollees were male, a substantially higher rate than is usual for CMHC or the State. About one-third were Hispanic, higher than usual for the center, and almost all were living at home with one or both Parents (90%), a reflection of the narrower scope of referrals and Youth than of Youth with SED in general. Their average age was 15½, about one year older than the state or CMHC Youth. The overwhelming majority was referred to the program by Probation or Parole and attended the program under court order (83%), i.e., Court Directed Voluntary, a striking contrast to the state and local Youth served.

[15] It is important to note that in most instances, the number of Youth enrolled and discharged from the programs was too small to perform statistical tests.

Table 4. Socio-demographic Characteristics of Sterling Youth at Admission to Pilot with Comparisons to Statewide and Centennial Mental Health Center Characteristics[16]

Characteristic	Pilot Number	Pilot %[17] (n=35)	Statewide % (n=9532)	Centennial % (n=337)
Number Admitted	35			
Number Discharged	25	71%		
Gender: Male	26	74%	55%	49%
Mean Age		15.5 Yrs.	14.5 Yrs.	14.4 Yrs.
Ages 12-13	5	14%		
Ages 14-15	15	43%		
Ages 16-17	15	43%		
Ethnicity				
White	23	66%	61%	77%
Hispanic	12	34%	26%	20%
African American	0	NA	7%	1%
Residence				
At Home	34	97%	65%	83%
Foster Home	1	3%	13%	10%
Residential	0	NA	5%	2%
Who lives with Youth				
Mother	19	54%		
Father	3	9%		
Both Parents	9	26%		
Relatives	2	6%		
Unrelated Individuals	2	6%		
Admission/Legal Status				
Voluntary	5	14%	72%	84%
Court Directed Vol.[18]	29	83%	15%	15%
Forensic Involuntary	1	3%	1%	0%
Referral Source				
Probation/Parole	22	62%		5%
Social Services	4	11%		40%
Court	2	6%		9%
Self	1	3%		7%
Family/Relative	0	NA		23%
Family Income (n=17)	Mean = $20,097 Median = $17,000			
Medicaid Status	4	11%		

Source: Colorado Client Assessment Record (CCAR)

[16] Colorado Mental Health Services, CCAR Database: Youth ages 12-17 with Serious Emotional Disturbance (SED) served in FY 01, from Admission CCAR if completed after June 30,2000, or earliest completed CCAR after June 30, 2000.

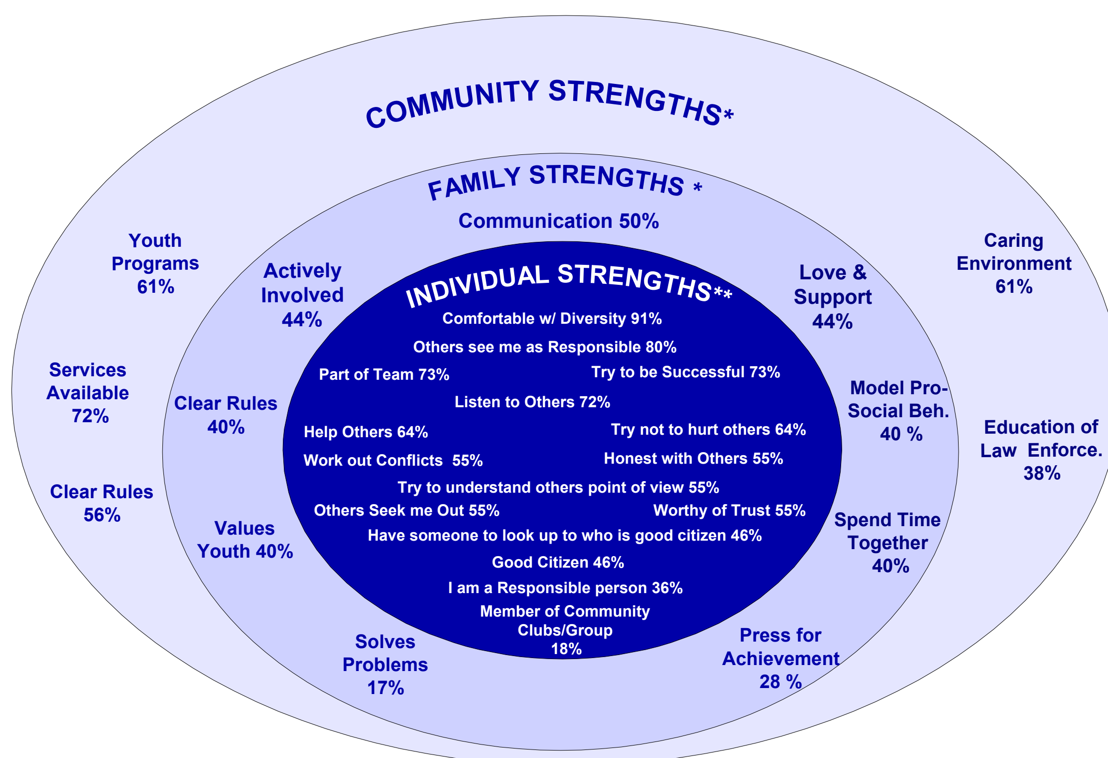
[17] Please note that the relatively small number of Youth enrolled in both programs makes the use of percents misleading at times. They are provided in most tables and figures to provide context for the reader, but caution should be used in their interpretation.

[18] Includes treatment as a condition of probation/parole or deferred prosecution.

Strengths Identified at Admission

Figure 1 presents a conceptual frame and visual representation of Individual, Family, and Community strengths for the Youth admitted to the Sterling Pilot.

Figure 1. Individual, Family, and Community Strengths at the Time of Admission to the Sterling Pilot Program (n=18)



Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

** From Youth Perspective (n=10); Percent Identifying how youth sees him/herself "often" or "always"
* From Clinician Perspective (n=18)

The chart is organized such that the items are listed in approximate descending order, reflecting the percent of Youth who endorsed each item positively. Most Youth identify themselves as Being Seen by Others as Responsible (80%) but only 36% identified themselves as being responsible – an interesting contrast with which Youth may feel uncomfortable. Ninety-one percent report being Comfortable with Diversity, i.e., people who are different from themselves, and 73% report they are Trying to be Successful. About half to three-quarters of the Youth see themselves as having positive qualities to offer in their relationships. Less than half the Youth have Someone to Look up to Who is a Good Citizen and 18% are Members of Community Groups or Clubs.

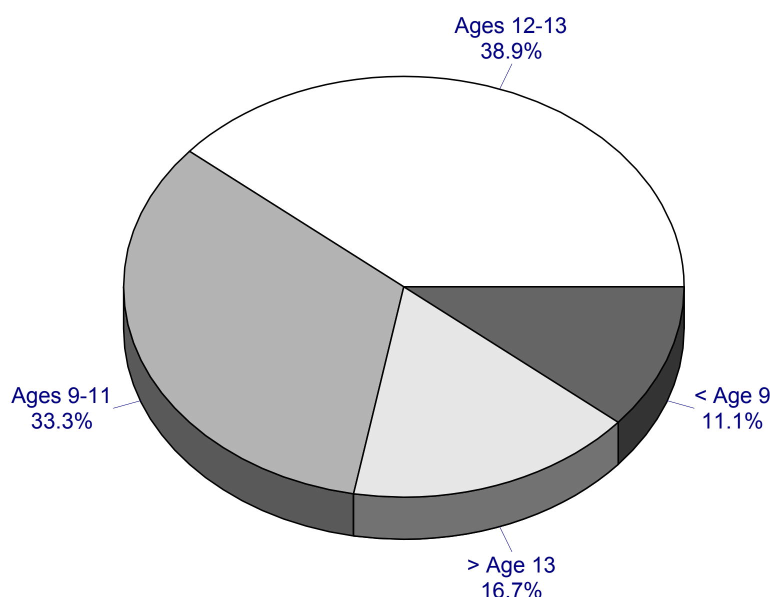
Regarding family strengths, the highest level of endorsement is 50% (Communication) considerably lower than the highest level of endorsement for the individual strengths. Since clinicians rated the family strengths and the Youth rated their own individual strengths, we are not able to interpret this difference in magnitude. There is, however, substantial variability in the responses, with only 17% endorsing Problem Solving as a family strength. Community factors

cluster in the mid-range, varying between 72% for the Availability of Services and 39% for the Education of Law Enforcement.

Risks Identified at Admission

Clinicians, using a checklist, rated individual, family, and community risk factors at admission. Figure 2 illustrates that almost half (44%) of the Youth for whom data were available first demonstrated antisocial behavior prior to age 12, a significant indicator of risk, with another 39% at ages 12-13.

Figure 2. Sterling: Age of Onset of Anti-Social Behavior (n=18)



Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

Table 5 displays the full range of individual risk factors that were examined, followed by Tables 6 and 7, which display the family and community risk factors, respectively. The factors in all tables are listed in descending order by the percent of Youth for whom the factor was endorsed by Case Managers and Clinicians.

As shown in Table 5, clinicians rated Low Self-esteem and Ineffective Coping (both at 72%) as the most prevalent risk factors among the Youth at enrollment, followed by Poor Peer Refusal Skills (68%), and Poor Social Skills, Divorce of Caregivers, and Ineffective Coping Skills, all at 61%. In contrast, relatively few Youth (less than 22%) were thought to Own a Weapon, be a Victim of Violent Crime or Bullying, or Associate with Gang Members.

TABLE 5. INDIVIDUAL RISK FACTORS IDENTIFIED BY CASE MANAGERS AND CLINICIANS FOR STERLING YOUTH AT ADMISSION TO PILOT

YOUTH RISK FACTORS (N=18)	
% Endorsed	***Factor***
72% (n=13)	Low Self-Esteem
	Ineffective Coping
68% (n=12)	Poor Peer Refusal Skills
61% (n=11)	Poor Social Skills
	Divorce of Parents/Caregivers
	Ineffective Communication Skills
56% (n=10)	Runaway Behavior
	Early Association w/ Drug Using Peers
44% (n=8)	Externalizes Problems
	Moved 2 or more times in last two years
40% (n=7)	Recent Change in Caregiver
	Recent Change in Schools
	Victimization
33% (n=6)	Early School Failure
	Born to a Teenage Mother
Less than 33%	Complications of Birth
	Access to a Weapon
	Significant Negative Event
Less than 22%	Owns a Weapon
	Recently Injured or Seriously Ill
	Victim of Violent Crime
	Associate with Gang Members
	Death of a Close Person
	Victim of Bullying

Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

As shown in Table 6, Family Risk Factors, Caregiver Drug Use was identified as a risk factor for over two-thirds of the Youth. Sibling Drug Use, Caregiver Criminal Behavior and Incarceration, the Psychiatric Hospitalization of Caregiver, and the Out of Home Placement of a Sibling were identified for slightly over one-third of the Youth.

TABLE 6. FAMILY RISK FACTORS FOR STERLING YOUTH AT ADMISSION TO PILOT

FAMILY RISK FACTORS (N=18)	
% Endorsed	***Factor***
68% (n=12)	Caregiver Drug Use
56% (n=10)	Negative Life Events
50% (n= 9)	Inconsistent Rules Regarding Drugs
44% (n= 8)	Sibling Criminal Behavior
	Family Social Isolation
	Low Commitment to Education
39% (n=7)	Sibling Drug Use
	Caregiver Criminal Behavior
	Caregiver Incarceration
	Psychiatric Hospitalization of Caregiver
	Out of Home Placement of Sibling
Less than 33%	Felony Conviction of Caregiver
	Felony Conviction of Sibling
	Incarceration of Sibling
	Favorable Caregiver Attitudes toward Behaviors
	Significant Life Change

Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

Table 7, Community Risk Factors, shows that clinicians rated the Easy Availability of Alcohol and Drugs in the surrounding community as a risk for half of the Youth, followed by Limited Employment Opportunities for 44%. Several factors, including Easy Access to Firearms, Poverty, and Inadequate Youth Services, were thought to be risk factors for less than 22% of the cohort.

TABLE 7. COMMUNITY RISK FACTORS FOR STERLING YOUTH AT ADMISSION TO PILOT

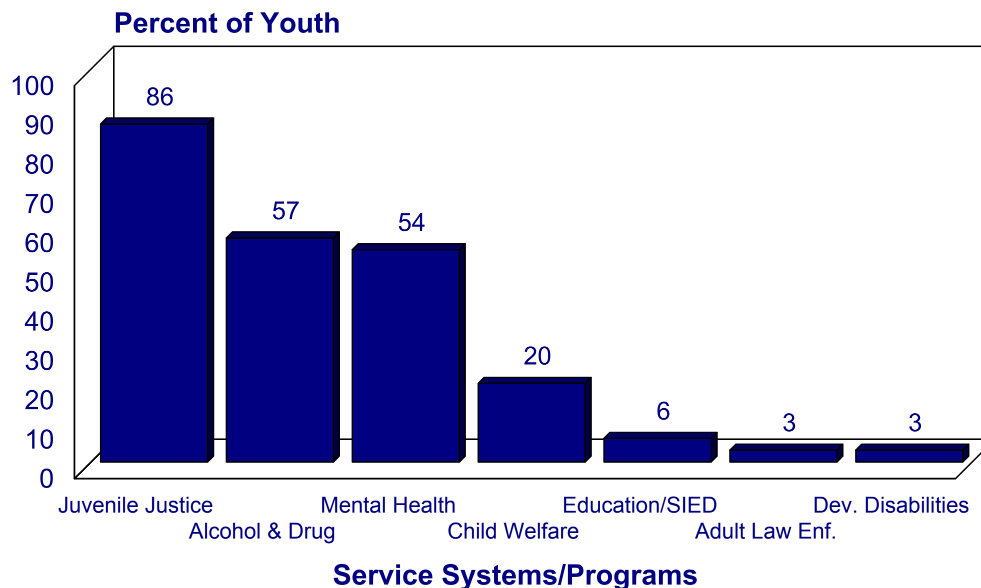
COMMUNITY RISK FACTORS (N=18)	
% Endorsed	***Factor***
50% (n=9)	Easy Availability of Alcohol and Drugs
44% (n= 8)	Limited Employment Opportunities
39% (n=7)	Inadequate Laws Regarding Drugs
33% (n=6)	Poor Community Bonding
	Positive Attitudes toward Drugs
	Positive Attitudes toward Criminality
Less than 22%	Poverty
	Easy Access to Firearms
	Disorganization in the Community
	Lack of Cultural Pride
	High Population Density
	Inadequate Youth Services

Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

Youth Involvement with Service Systems at Admission

Figure 3 displays the percent of enrolled Youth who had received services in selected human and criminal justice systems prior to enrollment. This information was collected from the administrative section of the Colorado Client Assessment Record (CCAR). The overwhelming majority (86%) of Youth had already been involved with the Juvenile Justice System by the time they were admitted to the Pilot Program. More than half had been involved with Alcohol and Drug (57%) and/or Mental Health Programs (54%). Only 20% had prior involvement with Child Welfare Services and somewhat surprisingly, only 6% (2) Youth were designated as meeting the criteria for Significant Identifiable Emotional Disability (SIED) in the public school system.

Figure 3. Sterling: Percent of Youth with at Least One Previous or Concurrent Involvement with Service Systems and Programs at Admission (n=35)



Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

Mental Health Characteristics at Admission

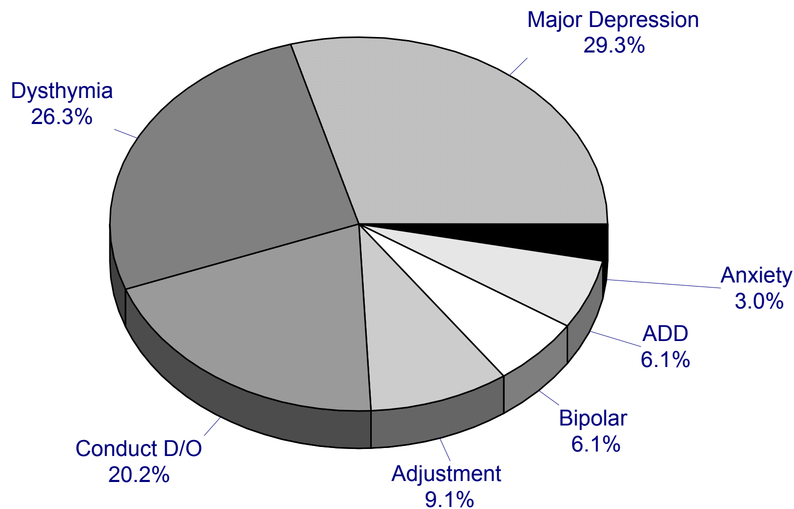
Based on data from the CCAR, mental health status at admission will be described in the following areas:

- Diagnosis
- Medications
- Out of Home Placement episodes/days
- High-risk mental health history and behaviors
- A CCAR-based typology that captures the most salient characteristics of different groups or types of Youth

Diagnosis at Admission[19]

Figure 4 shows that more than half of the Youth were diagnosed with some level of Depression, about one-fifth with Conduct Disorder, and 6% with bipolar disorder.

Figure 4. Sterling: Diagnosis at Admission (N=35)



Due to low n, please use caution in interpretation
Source: Colorado Client Assessment Record

Psychoactive Medication Use

Figure 5 shows the extent which medication was prescribed to treat mental health disorders for Youth prior to their admission to the Pilot Program. About 20% were taking anti-psychotic medication, less than 10% were taking other types of psychoactive medications, but most (71%) were not taking any.

Out of Home Placement History at Admission

Figure 6 shows the percent of Youth who experienced various Out of Home Placements prior to their admission to the Pilot Program. The number of days in various settings will be presented in the cost section of the report. More than half the Youth had experienced inpatient psychiatric hospitalization and nearly one-third had a prior residential treatment center placement.

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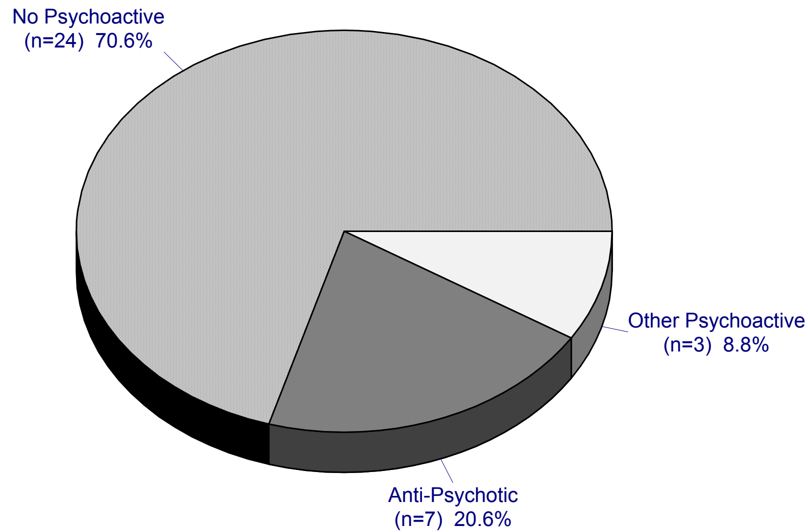
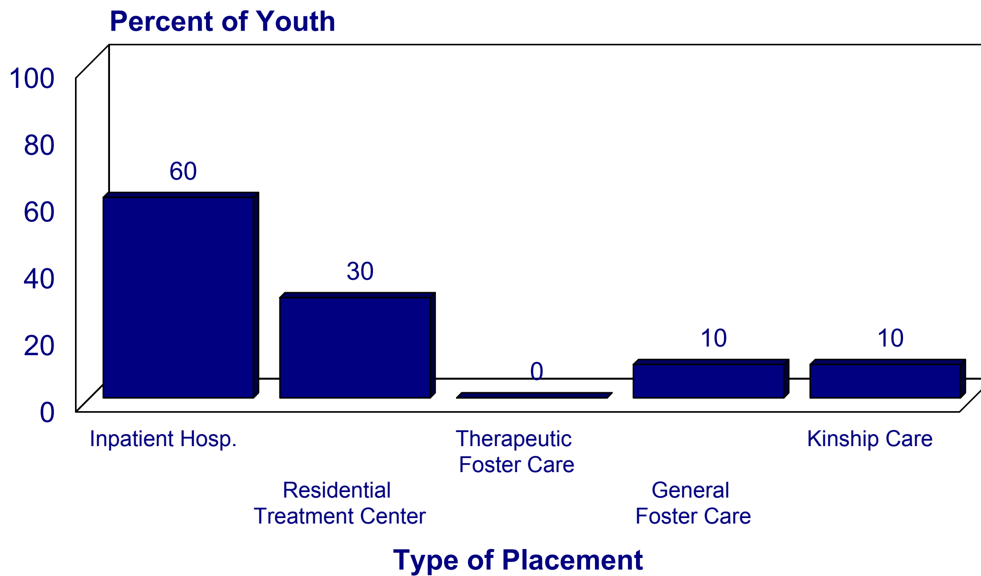
19 D/O is a common abbreviation for Disorder; ADD for Attention Deficit Disorder

Figure 5. Sterling: Psychoactive Medication Use at Admission (N=35)



Due to low n, please use caution in interpretation
Source: Colorado Client Assessment Record

Figure 6. Sterling: Percent of Youth with at Least One Mental Health Related Out of Home Placement (n=11)



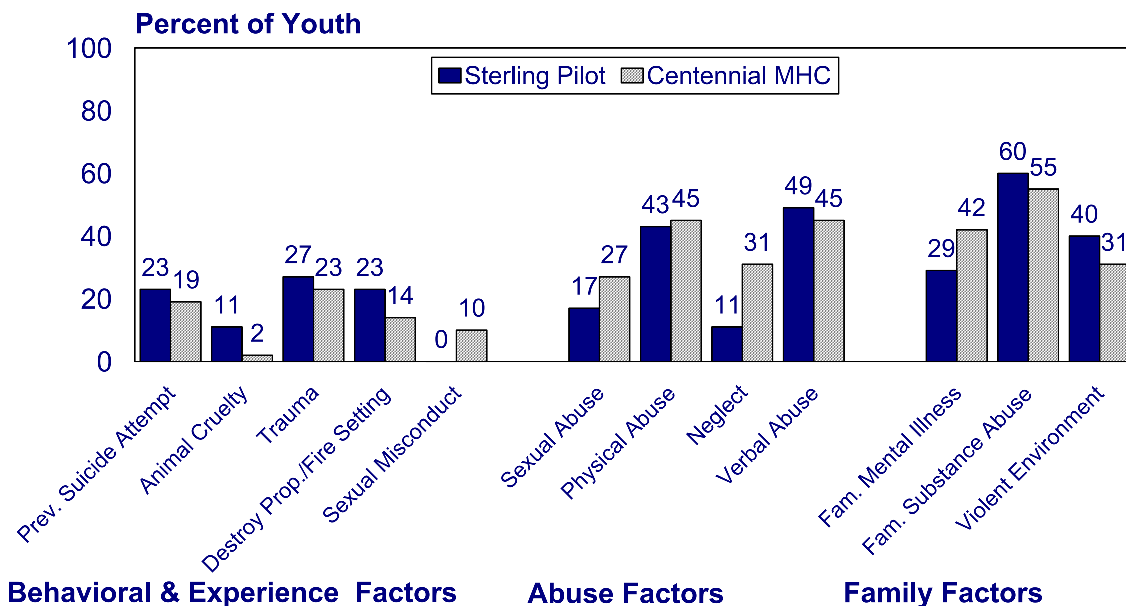
Due to low n, please use caution in interpretation
Source: Community Based Client Record

High-Risk Behaviors/Experiences, Abuse, and Family Factors at Admission

Figure 7 displays the rate at which Pilot Youth demonstrated specific mental health related Behaviors, Experiences, Abuse, and Family factors known to be indicators of higher levels of severity and risk. As shown, more than half the Youth were identified as having Substance Abuse in the family, close to half had suffered Physical and/or Verbal Abuse, more than a third were living in a Violent Environment, almost a third reported Mental Illness in the family, and almost 20% were victims of Sexual Abuse. With regard to Youth's high-risk behaviors and experiences, 27% had experienced Trauma[20], and over 20% had made a Previous Suicide Attempt or Destroyed Property/Set Fires. About 10% had a history of Animal Cruelty. There was no reported history of Sexual Misconduct by Youth.

When compared to the Youth with Serious Emotional Disturbance (SED) who are usually admitted to Centennial MHC, the Pilot Program Youth were reported to have more history of Suicide Attempts, Animal Cruelty, Trauma, and Property Destruction. Overall, they demonstrated less Sexual and Physical Abuse, much less Neglect, and about the same level of Verbal Abuse. They were also rated as having a higher proportion of Family Substance Abuse and Violence and a lower proportion of Family Mental Illness than the Centennial MHC Group.

Figure 7. Sterling: Percent of Pilot Youth with High-Risk Behaviors, Experiences, Abuse, and Family Factors at Admission (n=35) Compared to Centennial MHC (n=332)



Due to low n, please use caution in interpretation
Source: Colorado Client Assessment Record

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[20] History of trauma is defined as being exposed to traumatic event(s) and environment(s) in which the individual experienced, witnessed or confronted event(s) that involve threat of death or serious physical injury outside of the home (e.g., earthquake, shooting, torture, or bombing). CCAR Training Manual. (Colorado Mental Health Services, May 2000).

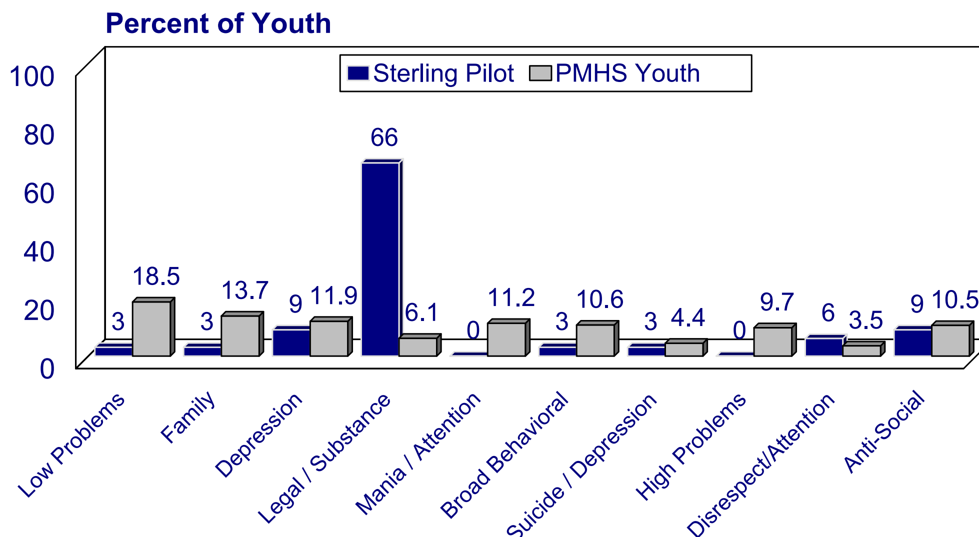
The CCAR-Based Youth Typology[21]

As described earlier the typology was developed from the scales and individual problem checklist items on the CCAR; diagnosis is not part of the analysis that determines types. The labels given the types are descriptive of the domain or domains that most clearly distinguishes the type from the other types. A more complete description of each Problem and Strength Type is included in Appendix 5.

Youth Problem Types		Youth Strength Types
Low Problems	Broad Behavioral	Low Strengths
Family	Suicide/Depression	Supports
Depression	High Problems	Economic Supports Only
Legal/Substance Use	Disrespect/Attention Deficit	Personal Strengths
Mania/Attention Deficit	Anti-Social	High Strengths

Figures 8 and 9 display the distribution of Problem and Strength Types, respectively, for Youth at the time of their admission into the Sterling Pilot Program, compared to the distribution of Youth in the Public Mental Health System (PMHS) in FY 01 who were not hospitalized at the time of assessment.

Figure 8. Sterling: Distribution of CCAR Problem Typology at Admission to Pilot vs. Colorado Public MH System (PMHS) Youth (Non-hospitalized) (n=35)



Due to low n, please use caution in interpretation
Source: Colorado Client Assessment Record

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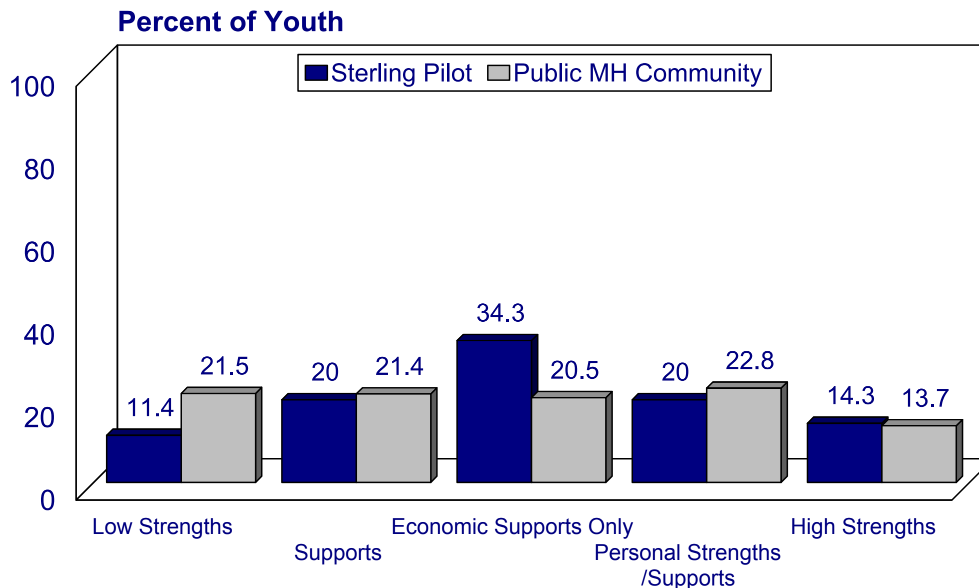
[21] Wackwitz & Ellis, 2002. CCAR based typology. See Appendix 5 for a description of each Youth Problem and Strength Type.

The Youth enrolled in the Sterling Pilot Program are remarkably different from the Youth enrolled in the Public Mental Health System as a whole with regard to their specific problems and their severity. Except for similarities in the percent of the Depression and Anti-Social Types, the overall distributions are extremely different. Most striking is that there is a significantly greater proportion (ten times) of the Legal/Substance Use Type in the Pilot Youth (66%) compared to the PMHS Youth (6.1%).

The Youth enrolled in the Sterling Pilot Program are remarkably different from the Youth enrolled in the Public Mental Health System as a whole with regard to their specific problems and their severity. Most striking is that there is a significantly greater proportion (ten times) of the Legal/Substance Use Type in the Pilot Youth (66%) compared to the PMHS Youth (6.1%).

The distribution of Strength Types compared to the same PMHS Youth is displayed in Figure 9. In contrast to the distributions of Problem Types, these distributions are more similar, except that the Pilot Youth show a higher proportion of the Economic Supports Only type (34%) versus 21% for the PMHS Youth, and a lower proportion of Low Strength Type (11.4%) versus 22%. These findings are an indication of less broad-based supports and more basic economic supports.

Figure 9. Sterling: Distribution of CCAR Strength Typology at Admission to Pilot vs. Colorado Public MH System (PMHS) Youth (Non-hospitalized) (n=35)



Due to low n, please use caution in interpretation
Source: Colorado Client Assessment Record

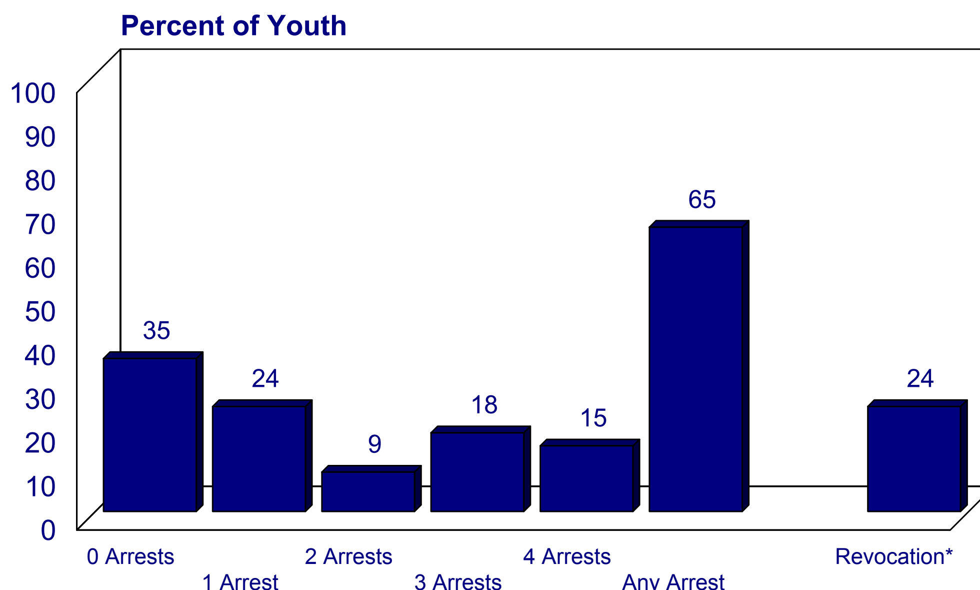
Criminal/Juvenile Justice Involvement at Admission

Criminal/Juvenile Justice Involvement will be presented for the following:

- Number of Arrest Episodes
- Charges by Class and Violent vs. Non Violent
- Sentencing Dispositions and Revocations

In Sterling, the mean age of Youth at the time of their first arrest was 14.9 years. Figure 10 displays the number of Pilot Youth who had 0-4 Arrests, the total who had any arrest prior to admission, and number of revocations. A total of 22 Pilot Youth had documented arrests, with eight having one arrest, six having three arrests, and five having four arrests.

Figure 10. Sterling: Percent of Youth with Prior Arrest or Revocation Episodes (n=34)



Due to low n, please use caution in interpretation
Source: Colorado On-Line Network (ICON), CBPR

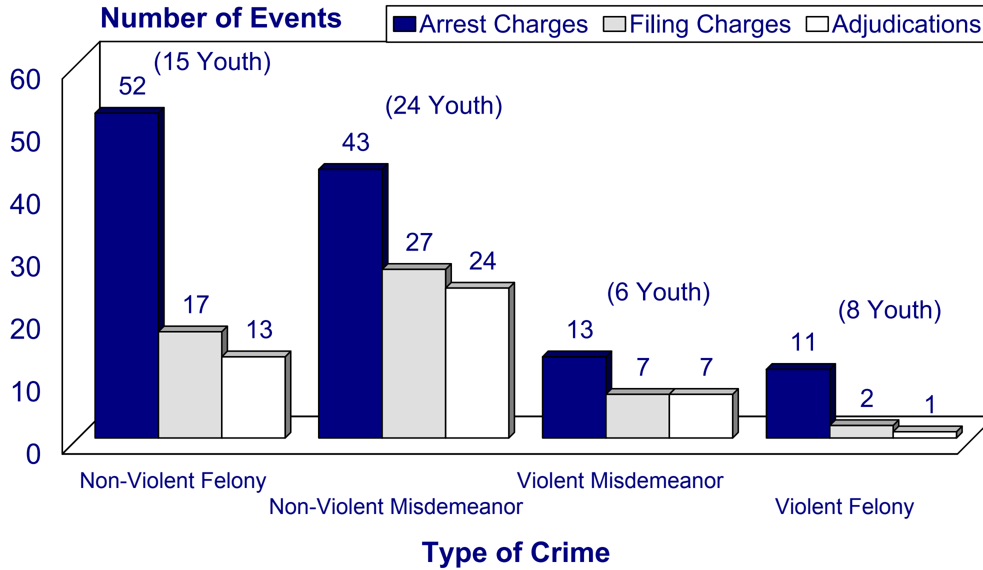
*** 8 Youth had a total of 13 Revocations**

Figure 11 displays the number of prior Arrest Charges, Filing Charges, and Adjudications according to their Class (Felony vs. Misdemeanor) and whether the charge was Violent or Non-Violent. This figure shows that most of the Arrest Charges were for Non-Violent Felonies, and most of the Filing and Adjudications Charges were for Non-Violent Misdemeanors. Some of this difference reflects the amount of evidence available to the District Attorney for filing purposes and some reflects the Criminal Justice System's general policy of seeking to keep Youth out of the deep end of the system through pleas to lesser crimes.

Type of Offenses

In order to provide more detail about the types of offenses with which Youth were charged at the time of arrest, arresting charges were categorized. The results are displayed in Table 8, which shows that the majority of offenses were Property Offenses (37%) followed by Violence or Threats Against Persons (20%).

Figure 11. Sterling: Arrest Charges, Filing Charges, and Adjudication, sorted by Violent & Non-Violent Felonies & Misdemeanors (n=34)



Due to low n, please use caution in interpretation
Source: Colorado On-Line Network (ICON), CBPR

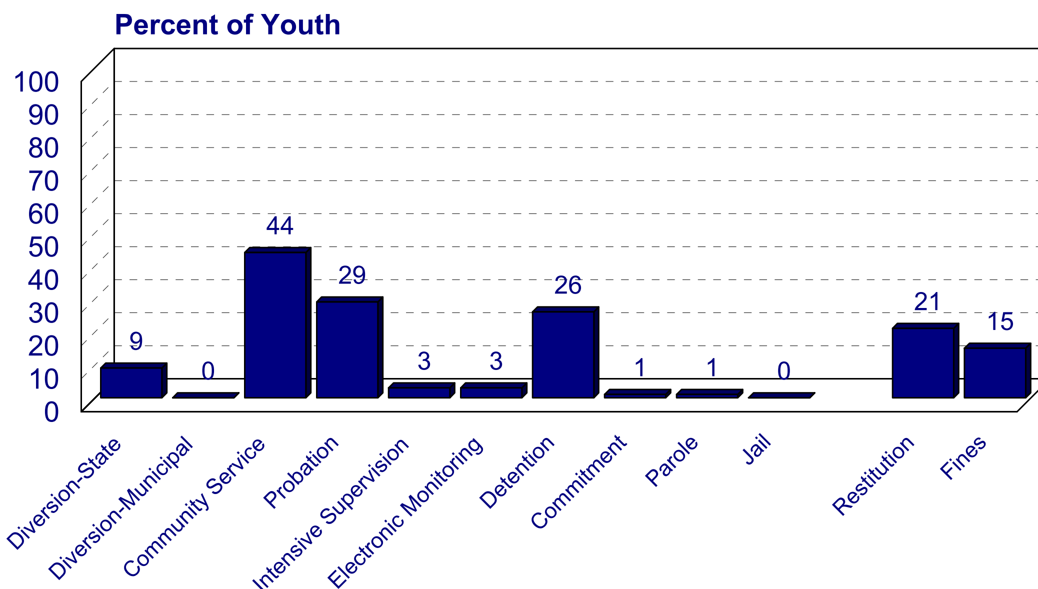
TABLE 8. CLASSIFICATION OF ARREST CHARGES BY TYPE OF ARREST

Type of Offense	*Percent of Total (n=119) Arrest Charges*
Violence/Threat against Persons	20%
Assault	13%
Robbery	1%
Menacing	6%
Drug and Alcohol	19%
DWI/DUI	5%
Possession	14%
Property Offenses	37%
Theft	15%
Forgery	4%
Arson	1%
Criminal Mischief	8%
Weapons	9%
Miscellaneous	24%
Trespass	6%
Burglary	4%
Other (including traffic violations)	14%

Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

Figure 12 shows the number of Youth who were sentenced to each of 10 Criminal/Juvenile Justice dispositions prior to their admission to the Pilot Program. The most common sentence was Community Service, followed by Probation and Detention. Only one Youth had been committed to the Division of Youth Corrections prior to admission. Restitution and Fines are reported, but information as to whether they had been paid was not available at the time of this report.

Figure 12. Sterling: Percent of Youth Sentenced to Selected Dispositions*, Prior to Admission (n=34)



* Youth may have been sentenced to more than one disposition
Due to low n, please use caution in interpretation
Source: Colorado On-Line Network (ICON), CBPR

Drug and Alcohol Use at Admission

Data were collected from the Adolescent Self Assessment Profile II (Wanberg, 1999). Information will be provided for:

- Selected family history variables
- Pilot Youth's level of substance use/involvement as compared to a Normative Group

As shown in Table 9, almost three-quarters of the Youth report that their Parents were divorced and that the divorce occurred when the Youth were young (mean age = 4.7 years). The data also show significant family substance abuse (41% Birth Father, 31% Aunt/Uncle, and 14% Mothers) and incarceration (52% Aunt/Uncle, 48% Birth Father, 31% Stepfather, and 24% Mother). While none reported a suicide of Parents or Grandparents, 21% reported the suicide of an Aunt or Uncle.

TABLE 9. SELECTED SELF-REPORTED FAMILY HISTORY CHARACTERISTICS OF STERLING YOUTH AT ADMISSION TO PILOT

SELECTED CHARACTERISTIC	NUMBER (N=29)	PERCENT
Parents Divorced	21	73%
Mean Age of Youth at Divorce	4.7 Years	
Family Substance Abuse Problems		
Birth Mother	4	14%
Birth Father	12	41%
A Grandfather or Grandmother	2	7%
An Aunt or Uncle	9	31%
Family w/ Jail or Prison History		
Mother	7	24%
Father	14	48%
Stepmother	0	NA
Stepfather	9	31%
Brother or Sister	5	17%
Uncle or Aunt	15	52%
Family Members Committed Suicide		
Mother	0	NA
Father	0	NA
Grandparent	0	NA
Stepmother or Stepfather	0	NA
Brother or Sister	0	NA
Uncle or Aunt	6	21%

Due to low n for the Pilot, please use caution in interpretation
Source: Adolescent Self Assessment Profile II (ASAP II)

The ASAP II Scales

Table 10 displays the mean ASAP II scale scores for the Sterling group at admission and how they compared to the Normative Group. For 8 of the 13 problem-specific scales, the mean scores (bolded) for the Sterling Youth were higher than the estimated means of the Normative Group (i.e., Youth referred to TASC as having possible alcohol or drug problems). They also averaged higher scores on the Global Scale, a composite of five key scales. Considering that Youth from the Normative Group were being referred for possible alcohol or other drug problems, the Pilot Youth show a substantial level of severity. For the two strengths-based scales, Prosocial and Motivation (bolded), the Sterling Youth averaged lower scores than the Normative Group. It is notable that the Pilot Youth scored lower than the Normative Group on Defensiveness, which is considered an indicator that they were more honest in their responses than the Normative Group.

TABLE 10. MEAN ASAP II SCALE SCORES FOR STERLING YOUTH AT ADMISSION COMPARED TO THE ESTIMATED MEAN OF THE NORMATIVE GROUP[22]

ASAP II SCALE[23]	ADMISSION MEAN	ASAP II NORMATIVE GROUP[24]
Family Adjustment	15	12-13
Psych. Adjustment	15	9-10
Peer Influence	7	5-6
School Adjustment	13	12-13
Deviancy	18	15-16
Attitude	10	10-11
Drug Exposure	16	11-12
Drug Involvement	5	4-5
Sustained Use	4	3-4
Benefits from Use	19	10-11
Disruption from Use	16	8-9
Dependency	6	2-3
Defensive	4	6-7
Prosocial Attitudes & Behaviors*	37	38-39
Motivated *	15	19-20
Global Adolescent Adjustment Scale (GADS): Sum of Family, Psych., School, Deviancy, Disruption	78	62-63

Due to low n for the Pilot, please use caution in interpretation
Source: Adolescent Self-Assessment Profile II

***** *These scales are scored such that higher numbers represent positive functioning.***

[22] There is what appears to be an artifactual problem with the Motivation Scale. The ASAP II questionnaire does not allow for skip patterns. In this set of questions, Youth are asked about their motivation to work on alcohol and drug problems. If the Youth does not use substances currently, they usually select an answer that indicates lack of motivation in this area. This will be discussed with the author for direction, such as only calculating the scale for those who report usage in the past three months.

[23] Each of the ASAP II Scales has a different number of items and is scored additively. Therefore, the magnitudes of the mean on one scale cannot be compared to the magnitude of another scale.

[24] ASAP scores are usually presented in the form of normed percentile or decile scores. For ease of understanding, however, these scores are being presented as means. Since the *actual* means were not available at the time of this report, mean ranges are presented.

Table 11 displays mean scores for the use of specific substances for the Sterling Pilot Youth and the Normative Group. Except for alcohol use, which was reported by Sterling Youth to about equal to the Normative Group, the means for the Sterling Group are notably lower than the Normative Group. The contrast between their self-reported low functioning as a result of substance use and low actual use is interesting to note.

TABLE 11. MEAN ASAP II SCALE SCORES FOR SPECIFIC SUBSTANCES FOR STERLING YOUTH AT ADMISSION COMPARED TO THE ESTIMATED MEAN OF THE NORMATIVE GROUP

ASAP II SUBSTANCE USE SCALES	*ADMISSION MEAN*	*ASAP II NORMATIVE GROUP*[25]
Alcohol	7	7-8
Marijuana	9	12-13
Cocaine	2	5-6
Methamphetamine	4	5-6
Hallucinogenics	2	5-6
Inhalants	2	5-6
Other Drugs (Heroin, Pain Killers, and Tranquilizers)	3	5-6

Due to low n for the Pilot, please use caution in interpretation
Source: Adolescent Self-Assessment Profile II

School Enrollment and Performance at Admission

Figure 13 shows that for the 18 Youth for whom the Community Based Pilot Record was collected, almost two-thirds were enrolled in school and 2 Youth had already obtained their GEDs at the time of admission to the Pilot Program. Of the 5 (28%) who were not enrolled, four had dropped out and one had been expelled prior to admission.

Figure 14 displays the academic performance information of the Youth who were enrolled in school at the time of admission. Since some schools do not provide letter grades, Satisfactory and Unsatisfactory were options on the questionnaire. Almost 10% were receiving B grades, half were achieving C grades or Satisfactory Ratings, and 46% were failing half or more of their classes.

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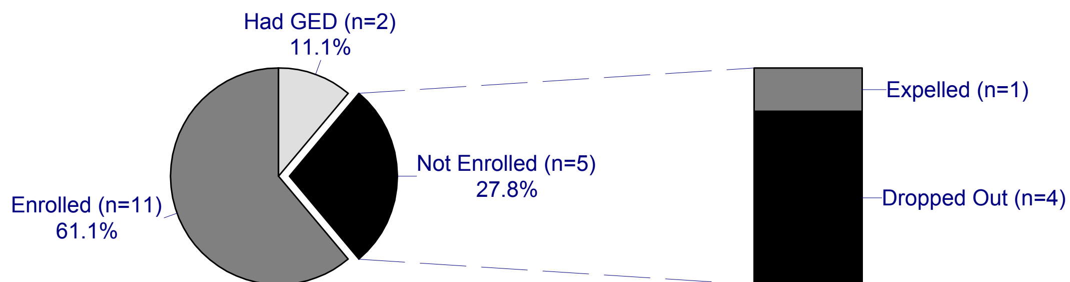
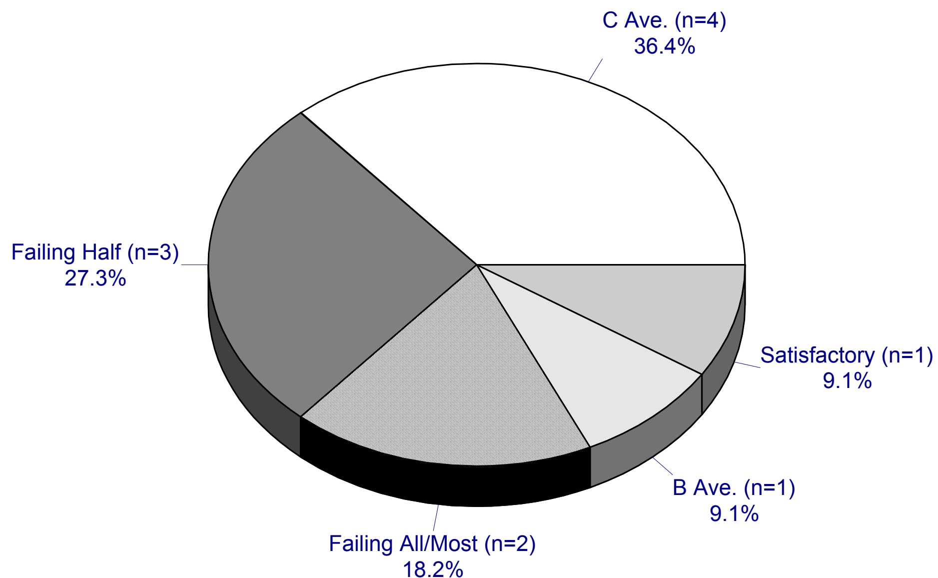
[25] ASAP scores are usually presented in the form of normed percentile or decile scores. For ease of understanding, however, these scores are being presented as means. Since the actual means were not available at the time of this report, mean ranges are presented.

Figure 13. Sterling: School Enrollment at Admission and Reasons for Non-Enrollment (n=18)



Due to low n, please use caution in interpretation
Source: Community Based Client Record

Figure 14. Sterling: Academic Performance of Youth Enrolled in School at Admission (n=11)



Due to low n, please use caution in interpretation
Source: Community Based Client Record

Family Resource Needs at Admission

Adequacy of day-to-day resources can present a barrier to intervention by limiting access to services (e.g., transportation) or by contributing to families' feelings of being overwhelmed (e.g., money to pay monthly bills), making it difficult for them to focus on treatment. Conversely, identification of inadequacies may also provide an entrée into the family for the treatment team.

The Family Resource Scale (FRS) is used to measure adequacy in 30 specific areas, each rated on a five-point scale, with higher numbers indicating greater adequacy. As noted earlier, the Colorado Cornerstone Initiative, which is part of the Federal Center for Mental Health Services' National Evaluation[26], is also using the FRS. As part of the analysis of the national data, six scales were developed from the 30 items on the questionnaire: Cash and Recreation, Time and Support, Basic Needs, Health Care/Social Services, Secondary Needs, and Child Care (ORC Macro, 2002). Figure 15 displays mean scores for each scale for Sterling Pilot Program Youth, the CMHS National Evaluation, and for Cornerstone Youth.

Sterling Pilot Program Caregivers reported their Basic Needs (i.e., food, house/apartment, clothing, heat, plumbing, and money for necessities) to be adequate, as do the comparison groups. Secondary Needs (i.e., transportation, telephone, furniture, and a good job) are less so, particularly for the Sterling Pilot Caregivers. Pilot Caregivers reported a higher level of adequacy for Child Care, and may reflect the older age of their Youth (15.5 years compared to 12 years for Cornerstone and 13 years for the national group).

However, many of the resources related to quality of life and morale found in the Cash and Recreation and Time and Support Scales (e.g., time to be with children, time for the family to be together, time to be with a spouse or close friend, money to save, money for entertainment), were reported to be the most inadequate by all groups of Caregivers.

Costs Accrued Prior to Admission to the Sterling Pilot Program

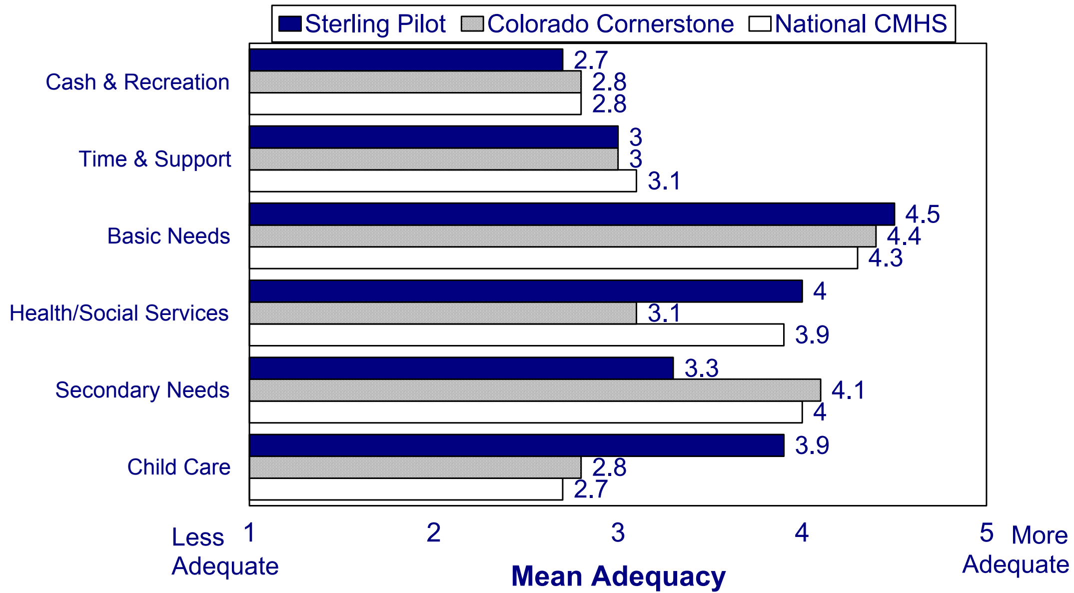
As stated earlier, events triggering cost were captured primarily with the Community Based Pilot Record, which was completed by the Pilot Program staff at the time of admission. Pilot staff used a combination of family and Youth self-report, documents collected from specific agencies and direct contact with other providers (e.g., schools, probation officers).

Several sources were used to document the cost per event or unit. Appendix 7 contains a chart that shows the source of data and unit cost for each event/unit for which a cost could be determined.

The total system involvement costs for Youth in Sterling range from no cost for two Youth to almost $120,000 for another. The 34 Youth together incurred documented lifetime costs of $448,051 in the period prior to enrolling in the pilot program. The totals represent the sum of the costs for diversion, probation, detention, commitment, electronic surveillance, parole, intensive supervision, inpatient state hospitalization, inpatient non-state hospitalization, residential treatment center, foster care, therapeutic foster care, family care, special education, day treatment and arrest. Figure 16, shows this variability in total costs by displaying the total costs for each of the 34 Youth.

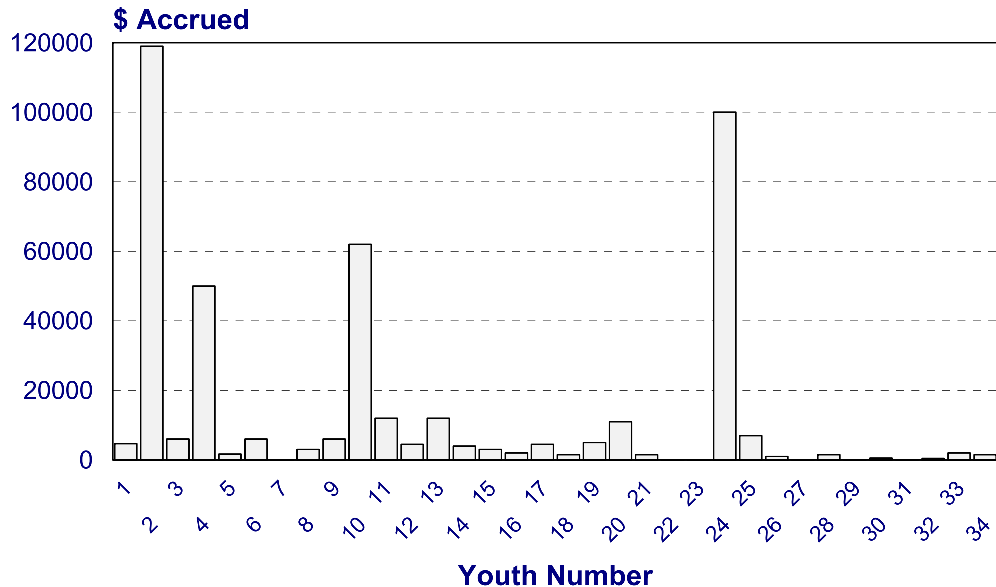
[26] The National Evaluation of the Comprehensive Community Mental Health Services for Children and Their Families Program is funded by the Center for Mental Health Services (CMHS), Substance Abuse and Mental Health Services Administration (SAMHSA).

Figure 15. Sterling: Resource Adequacy at Admission (n=15), Compared to Colorado Cornerstone Initiative (n=66) & The CMHS National Evaluation (n=856)



Due to low n, please use caution in interpretation
Source: Family Resource Scale

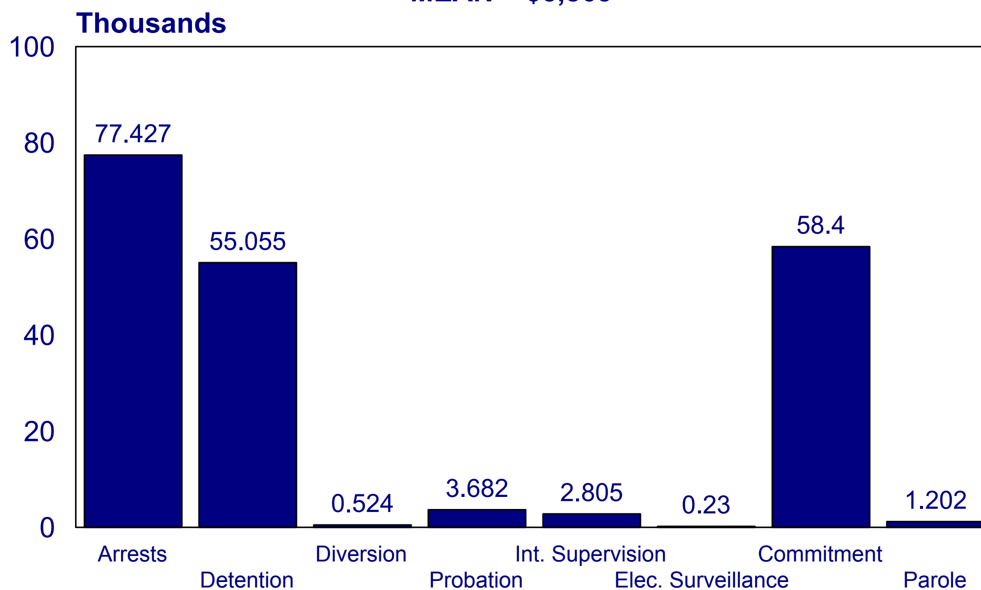
Figure 16. Sterling: Cross-System Prior (Pre-Admission) Costs Accrued per Youth, Rounded to the Nearest $1,000 (n=34)



Due to low n, please use caution in interpretation
Source: CBPR, ICON

In order to understand how Youth accumulated costs, individual cost profiles were created for each Youth. This entailed documenting each sector's prior costs, including Criminal/Juvenile Justice Costs, Mental Health Placement and Special Education Costs, and Combined Total Costs (Appendix 8). When the Criminal/Juvenile Justice Costs were examined (not shown), only 17 of the 34 Youth had any sentencing costs, but 22 had been arrested, a result of charges being dropped. Figure 17 shows the prior Criminal/Juvenile Justice costs for the Sterling group. Arrests are the most costly criminal justice category.

Figure 17. Sterling: Prior (Pre-Admission) Criminal/Juvenile Justice Costs for the Admission Cohort For Arrests & Eight Sentencing Dispositions (n=34)

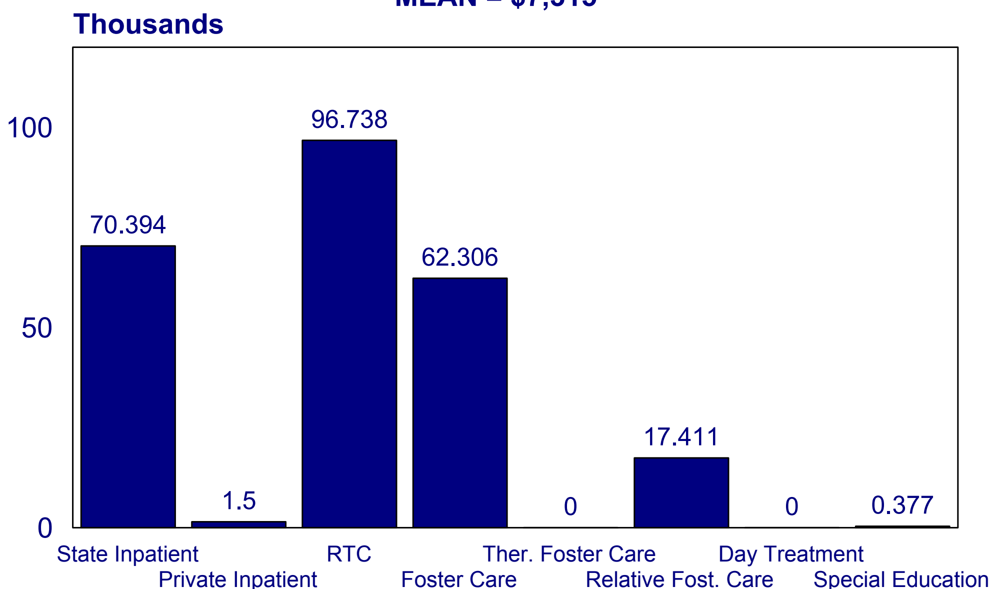


Due to low n, please use caution in interpretation
Source: CBPR, ICON

The individual cost profiles (not shown) for inpatient mental health treatment, special education, and out of home placement reveal that only 9 Youth had been placed out of their home (three Youth with more than one type of placement) prior to admission. Only one Youth had a brief stay in a special education program, and this Youth did not experience hospitalization. Figure 18 shows the total inpatient, placement, and special education costs for Sterling Youth accrued prior to admission.

Figure 18: Sterling: Total Prior (Pre-Admission) Inpatient, Placement, and Education Costs for the Admission Cohort (n=34)

TOTAL INPT, PLACEMENT, EDUC. COSTS ACCRUED FOR STERLING: $248,725
MEAN = $7,315



Due to low n, please use caution in interpretation
Source: CBPR, ICON

When the individual Criminal/Juvenile Justice Costs, Mental Health and Special Education Cost Profiles are examined together (not shown), several Youth seemed to move from one intervention to another, with the majority of Youth having had only one or two types of interventions before being referred to the pilot.

CHARACTERISTICS OF YOUTH AND FAMILIES AT DISCHARGE FROM THE STERLING PILOT PROGRAM

As described earlier, the distribution of available data for Sterling was uneven. Discharge data that were available for analysis included CCARs for all discharged Youth and limited amounts of Community Based Pilot Records. From these data, the length of the service episode, the reason for and average age of discharge, and changes in mental health functioning and symptoms were examined. In addition, since there are no Discharge ASAP II data substance use variables on the CCAR at admission and discharge as an alternative, and school related data were explored.

Episode Information

As is shown in Table 12, there was substantial variability in the length of time Youth were enrolled in the pilot, from 46 to 412 days. There was also wide variability in the ages of Youth at discharge, ranging from 14 to almost 19 years old. While this high variability makes means and medians less helpful, it helps to start building an understanding of the characteristics of the group.

TABLE 12. COMPLETED STERLING PILOT PROGRAM EPISODES: LENGTH, AGE OF YOUTH AT DISCHARGE

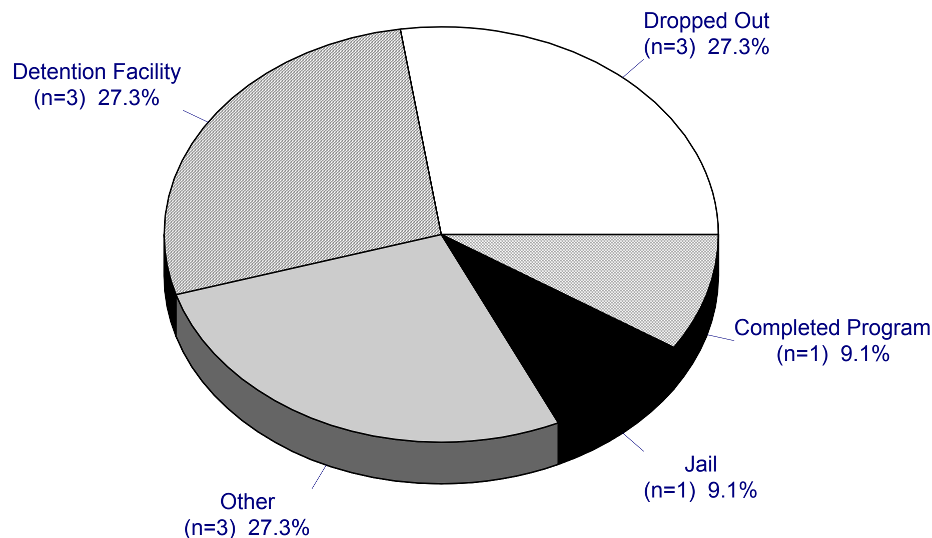
LENGTH OF EPISODE	
Range	46 – 412 Days
Mean	181 Days
Median[27]	151 Days
Age at Discharge	
Range	14 Years to 18.6 Years
Mean	16.8 Years
Median	17 Years

Source: Colorado Client Assessment Record

[27] Median is the midpoint of the scores; it is the point at which 50% of the scores fall above and 50% fall below.

Figure 19 shows us that for the 11 Youth for whom this level of detail is available, most of the Youth who were discharged did not complete the program[28]. Four Youth re-offended and three dropped out. For the three who are listed as "Other," one moved from the area, one was removed from the program by the probation officer because s/he was not appropriate for the program, and one aged out of the program and elected to not return.

Figure 19: Sterling: Reason for Discharge (n=11)



Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

Youth Involvement with Service Systems at Discharge

We can see from Figure 20 that most of the discharged Youth were involved with multiple service systems at the time of discharge, particularly with Probation and Alcohol and Drug Services (70% each). The high (90%) involvement with Mental Health reflects the Pilot Program itself, which is situated in a Community Mental Health Center. It is interesting to note that no involvement is reported with Child Welfare, Special Education, or Youth Corrections. Figure 21 shows that almost 80% of the discharged Youth were referred for continued alcohol and drug related services.

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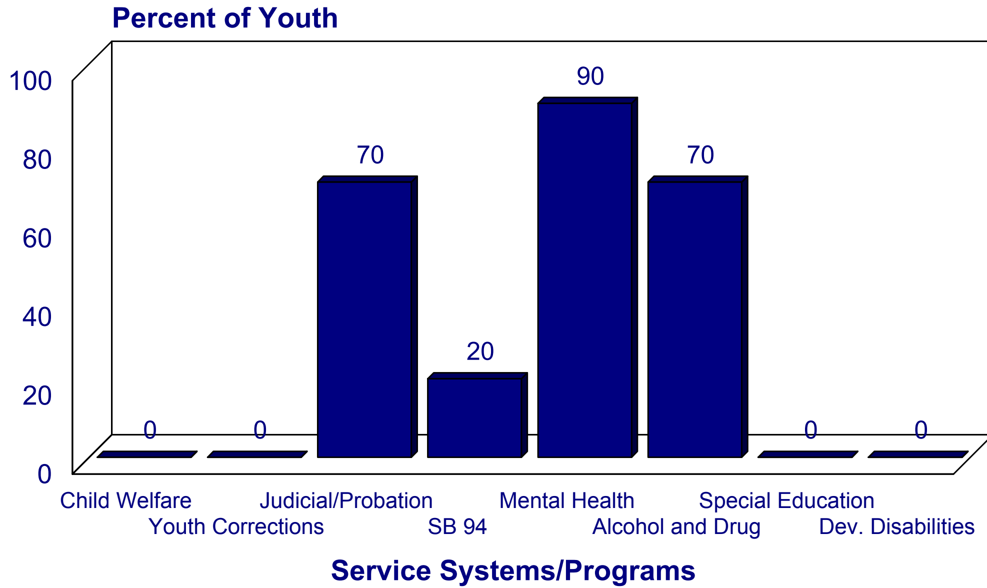
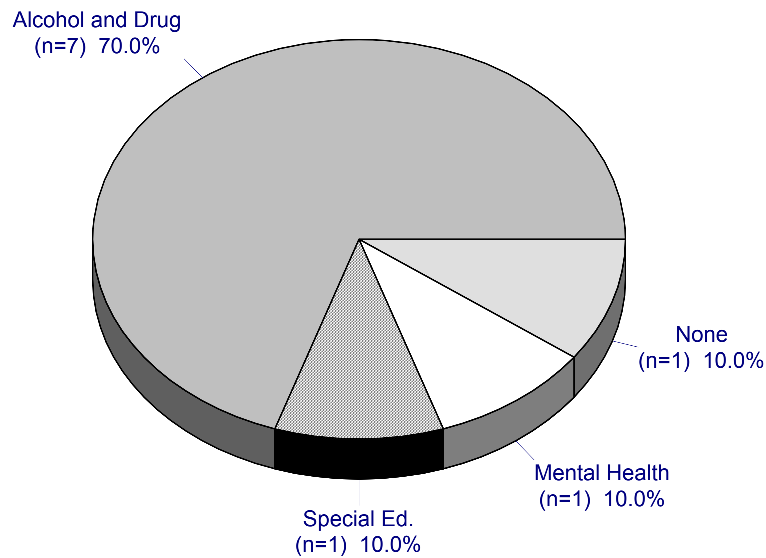
[28] There are 14 additional Youth for whom Reason for Discharge data were not available, therefore caution is strongly advised in the interpretation of these data.

Figure 20. Sterling: Percent of Youth with Involvement with Systems & Programs at Discharge (n=10)



Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

Figure 21: Sterling: Referral at Discharge (n=10)

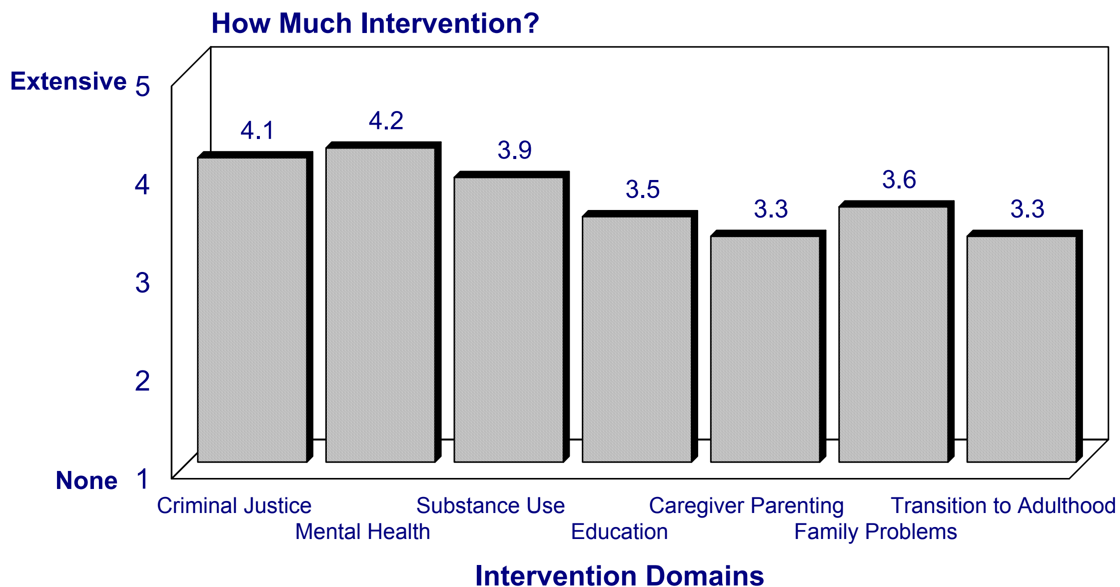


Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

Clinician Assessments by Domains at Discharge

In the Discharge Community Based Pilot Record, clinicians were asked to review the Youth's experience in the program and judge if and how their problems had changed, how serious their problems were at discharge, how much intervention had been provided, and how much the clinician thought the Youth would improve over the next year. Clinicians were asked to think about this in seven domains: Criminal/Juvenile Justice, Mental Health, Substance Abuse, Education, Parenting, Family Problems, and the Transition to Adulthood. Figure 22 shows how much intervention was apportioned in each of these areas. While there is not tremendous variability, there is almost a full point difference between Mental Health (mean = 4.2 on a five-point scale) and Caregiver Parenting and Transition to Adulthood (mean=3.3 for both).

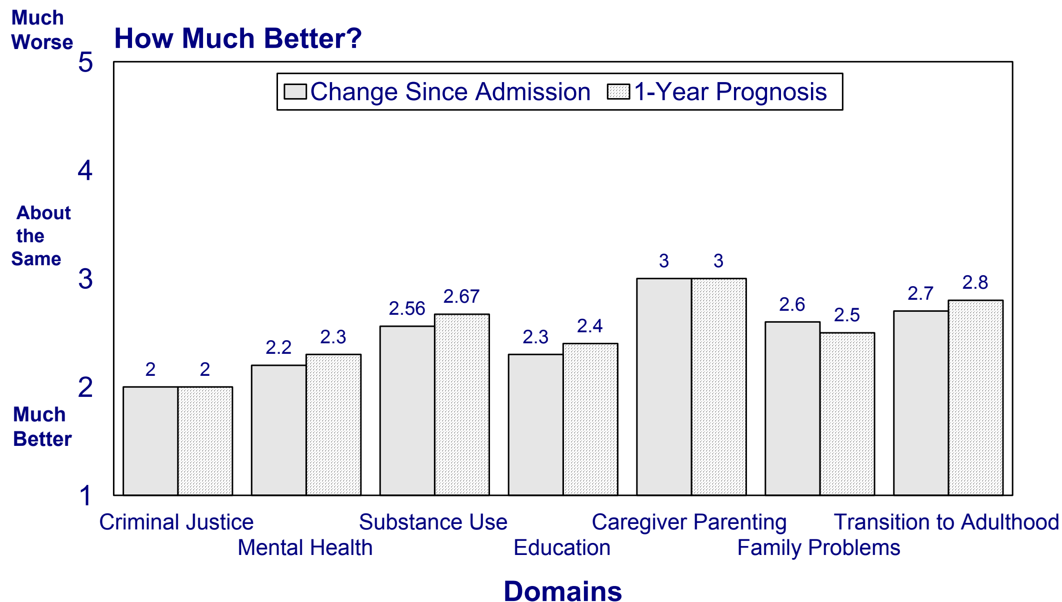
Figure 22. Sterling: Amount of Intervention During Episode for Seven Domains (n=10)



Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

Next we looked at how Youth had changed and how they were expected to do in these domains one year after discharge. Figure 23 shows that there is less change and optimism about future functioning in Parenting, Transition to Adulthood, and Substance Use. The most progress was in the areas of Criminal Justice and Mental Health.

Figure 23. Sterling: Clinician Assessment of Change since Admission & Prognosis for Seven Domains (n=10)



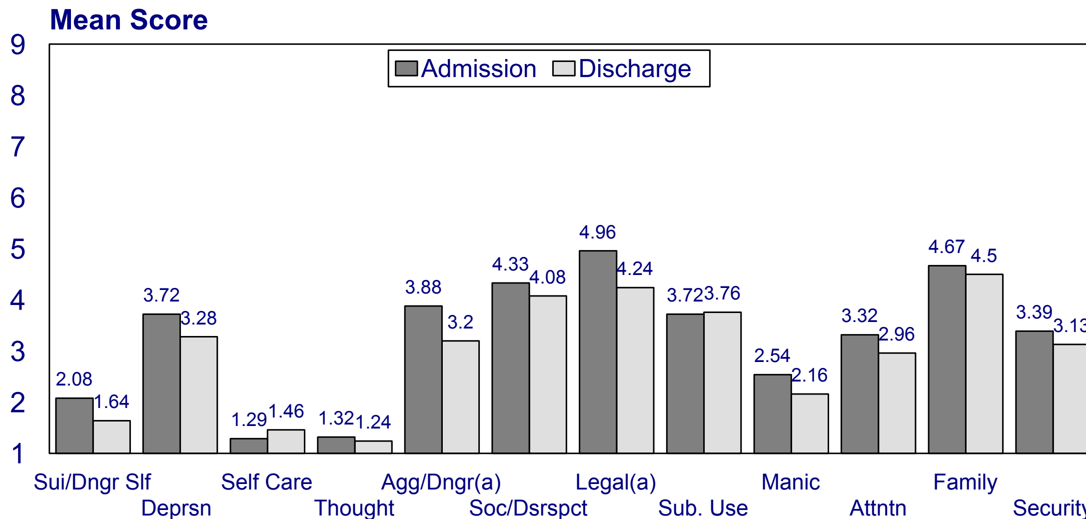
Mental Health Status at Discharge

The CCAR provides the richest source of data for measuring Mental Health Status. As was discussed earlier, twelve CCAR scales (rated from one to nine) were found to be the most rigorous and were used in the development of the CCAR-based typologies. The means for each of these scales at admission and discharge were compared. The results are displayed in Figure 24. Almost all of the scales show some improvement at discharge and two, Legal and Aggressive/Dangerous, approached statistical significance.

> Almost all of the scales show some improvement at discharge and two, Legal and Aggressive/Dangerous, approached statistical significance.

The CCAR also provides a description of the psychoactive medications prescribed for individuals. There was an increase in the number of Youth who were prescribed anti-psychotic medication at discharge. This is shown if Figure 25.

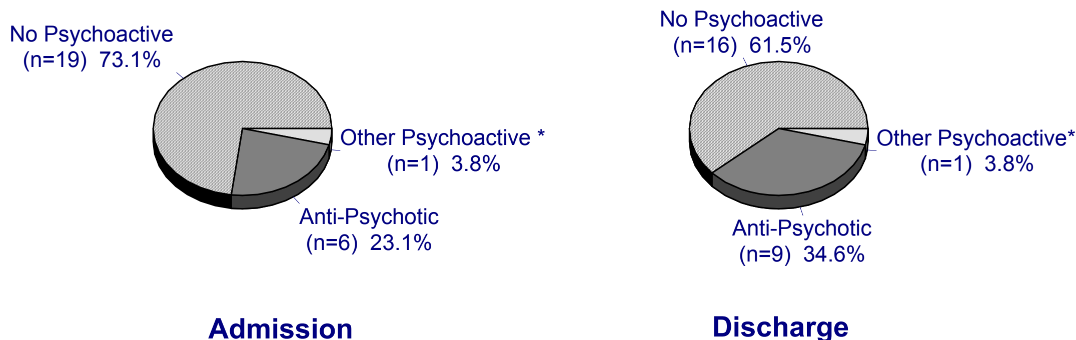
Figure 24. Sterling: Change in Mean Scale Scores for CCAR Scales used in the CCAR Problem Typology (n=25)



Due to low n, please use caution in interpretation
Source: Colorado Client Assessment Record

*** p value for 2-tailed Paired Samples Test approaches significance (Agg/Dngr=.051; Legal=.059)**

Figure 25. Sterling: Psychoactive Medication Use at Admission vs. Matched Discharge (N=25)



Admission **Discharge**

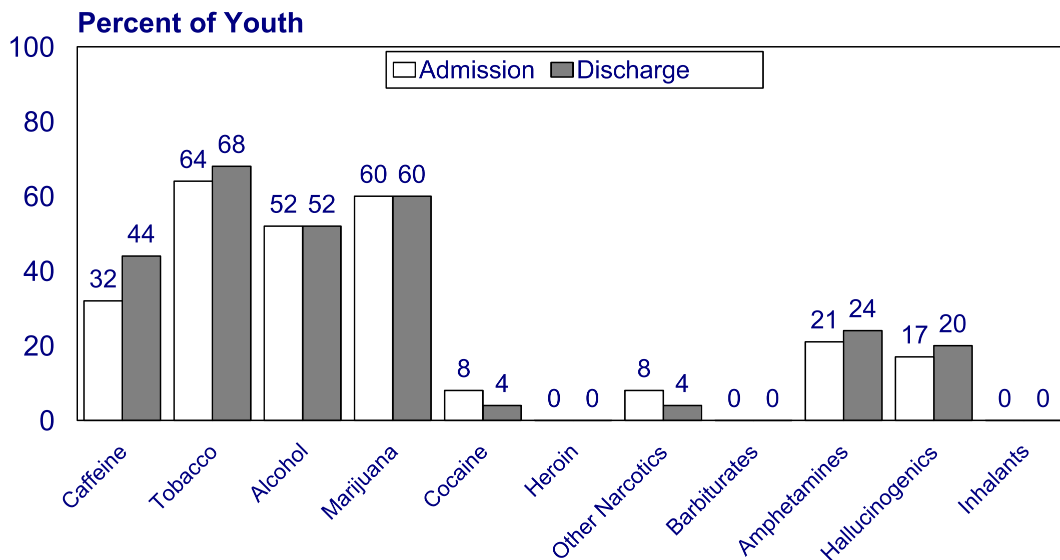
Due to low n, please use caution in interpretation
Source: Colorado Client Assessment Record

*** The n of 25 reflects the number of Youth studied; the total of 26 in the pie charts reflects the number of drugs used. One Youth used Anti-Psychotic and another Psychoactive Medication and is duplicated in both charts.**

Alcohol and Drug Use at Discharge

The CCAR includes a list of eleven drugs, including alcohol, each of which is checked as either being used or not used; it does not provide an indicator of amount of use. Figure 26 displays the rate at which these drugs were used at admission and discharge, showing no change in the use of either alcohol or marijuana, the most prevalent drugs used in this cohort. There was a slight decline in the use of other narcotics.

Figure 26. Sterling: Percent of CCAR-Based Alcohol and Drug Use at Admission to Pilot vs. Matched Discharge from Pilot (n=25)

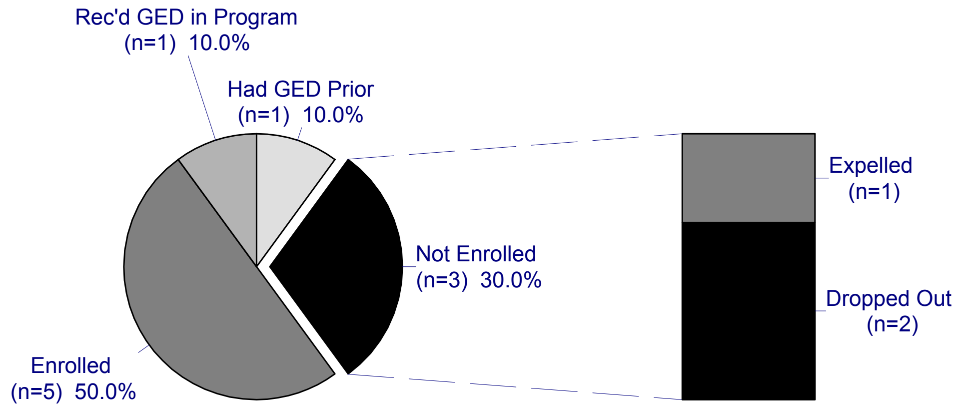


Due to low n, please use caution in interpretation
Source: Colorado Client Assessment Record

School Enrollment

Figure 27 shows that one of the discharged Youth obtained a GED during enrollment in the Pilot Program, one had a GED at admission, and five Youth were enrolled in school at the time of their discharge. Three Youth were not enrolled, one had been expelled, and two had dropped out. When these Youth were matched to the admission data that were available, four Youth were in both files. One was enrolled in school at admission and remained enrolled. The other three dropped out of school prior to admission and remained unenrolled.

Figure 27. Sterling: School Enrollment (Matched) at Discharge and Reasons for Non-Enrollment (n=10)



Due to low n, please use caution in interpretation
Source: Community Based Client Record

Costs Accrued During Program Enrollment

Since the costs that accrued during enrollment were not yet available and some had not been confirmed, a cost analysis was not conducted. In future analyses, program costs and system utilization costs will be examined to document the costs that accrued during enrollment. Program costs can be determined on a per/slot basis, which, according to the RFP, is up to a maximum of $8,000, half of which is State General Fund and half are provided by the sites through match in the form of cash or services. Alternatively, the units of service documented by the Sterling Pilot Program together with audited unit costs, which are available from all Community Mental Health Centers, may provide a more accurate estimate of program cost. For the most part, service utilization costs will be obtained directly from agencies, with the consent of Youth and their families.

The Six-Month Follow-up after Discharge from the Sterling Pilot Program

Prior to July 30, 2002[29], 17 Youth were six months past their discharge date and due for their first program evaluation follow-up. Based on the original design, written consent to allow post-discharge contact by the program evaluator and location information was to be obtained by the sites prior to the Youth's discharge from the program. Approximately six months post-discharge, the evaluator would contact the family with the goal of administering/collecting:

- A Program Evaluation/Satisfaction interview with the Caregiver and Youth (Appendix 4)
- Family Assessment Device (FAD) and Parenting Instruments
- An Adolescent Self Assessment II (ASAP II)
- Selected questions from the Community Based Pilot Record (CBPR), including employment/income, education, current risks factors, and pregnancy information
- Signed Agency-Specific Release of Information Forms that would allow the tracking of service/cost units in multiple systems

Table 13 documents consent and contact information. While the data from this effort are very limited at this time, there are three areas where valuable information was obtained:

- Methodological procedures for the evaluation
- Caregiver Program Evaluation/Satisfaction Interviews
- Youth Program Evaluation/Satisfaction Interviews

Table 13. Six Month Post-Discharge Follow-Up Contact Summary for Sterling Youth as of July 30, 2002

Status	#	Notes
Due for follow-up	17	
Refused at the site level to participate in follow-up	5	Youth were discharged before evaluation was in place. When recontacted by Site Staff, some were noted to have had more legal contact and one or two were in DYC – may be able to get consent at a later time.
Site was Unable to Contact for Consent	3	
Available for Follow-up	9	
Contacted by Evaluator	8	
Evaluator was Unable to Locate	1	
Of those contacted by Evaluator		
Obtained Caregiver Interview	8	
Obtained Youth Interview	4	
Obtained Agency-Specific Consent	5	

[29] The date for inclusion in this report was extended one month so as to include more six-month follow-up data.

Methodological Procedures

Consent: There were instances where Youth left the program prior to program staff obtaining the consent for follow-up. Pilot Program staff cooperated with the evaluator to attempt to locate the family and obtain written or at least verbal consent for the follow-up. There were several cases where staff were either unable to contact the family or when they did, the Caregiver refused to agree to the contact. In a few of these cases, the Caregiver shared that the Youth had re-offended, was involved with Youth Corrections, and they stated they did not want to be bothered.

In light of the real and potential loss of important outcome and cost information, procedures were changed so that the Agency-Specific Release of Information Form would be completed at the time of admission to the program along with the consent for follow-up. Location information has always been collected at admission and discharge and includes information about family friends and close relatives as well. Nonetheless, this has been a challenging cohort to stay in touch with. Caregivers often work extremely long hours, including weekend and evening shifts, ten days on – four days off schedules. There have also been several cases of disconnected phones and seemingly unplanned moves.

Interviews: At the beginning of the follow-up period, the evaluator traveled to Sterling and conducted face-to-face interviews with Caregivers and Youth. This was ideal in terms of capturing important qualitative information and for ensuring that all the paperwork was handled and signed properly. Unfortunately, this is a very time consuming and expensive type of follow-up, especially in light of the difficulty of scheduling multiple contacts on the same day. In subsequent contacts, the evaluator conducted the Caregiver and Youth Program Evaluation/Satisfaction Interviews and collected other information over the telephone. Other instruments and the release form were then mailed to the family with a letter and a postage paid return envelope. This has been mostly successful when accompanied with follow-up phone calls and letters. Attempts have been made and will continue to be made to find a local Sterling-based person to assist with the follow-up data collection efforts.

Instrumentation: Some Youth had been emancipated from their families/caregivers at the six-month follow-up. Three of the family-related instruments were therefore not appropriate to administer in those circumstances: the Family Resource Scale, the Family Assessment Device, and the Parenting Measure.

Program Evaluation/Satisfaction Interviews

The follow-up interview is designed to document Caregiver and Youth perspectives and information in the following areas:

- The reason for enrollment in the program
- Expectations of the program
- Onset of Youth problems and how they were manifested
- How much help was received, in general, as a child and as an adolescent
- How helpful the Pilot Program was and why
- How involved family members were in the Pilot Program and their satisfaction with that level of involvement
- Changes for Youth and family since leaving the program
- What additional services were needed but were not received from Pilot and why
- Recommendations for program improvement
- Most helpful and unhelpful service experiences overall
- Recommendations for other families going through similar challenges
- Recommendations for improving the system of overall care
- What is still needed to transition to adulthood successfully
- What help/services are still needed

The interview takes twenty to thirty minutes to complete. Youth and Caregivers were given $10 each as a thank you for their time. Some Caregivers and Youth clearly appreciated the opportunity to discuss their situation, experiences, and point of view. Since data from only four Youth are available, and reporting on such a low number is not a sound research practice, their data were not reported here.

Caregiver Interviews

Eight interviews were conducted with Caregivers, two face-to-face and six over the telephone. In this early stage of follow-up, it was noted anecdotally that three Youth were married, three were over the age of eighteen, four were not living with their Parents/Caregivers, and one had become pregnant or caused someone else to become pregnant. It was also noted that employment was a formidable problem for these Youth. Those who were working were receiving very low wages and working very long hours. Several were unemployed.

While a full analysis has not yet been performed, the following information, comments, and themes were extracted from the interviews:

- Except in one case, families came to the program through probation. Caregivers were often confused as to whether the Pilot Program was court-ordered or just very strongly recommended.
- Expectations were mostly for the Youth to get “straightened out” and to get along with their Parents better.
- Caregivers had few expectations of the Pilot Program for themselves or others in the family; rather they thought the program was only for their child. Two Caregivers were hoping for a better family life and stronger relationships with their child.

- The age of onset of problems varied from age six to age fourteen, with most identifying seventh and eighth grades as being the beginning of serious problems. Most identified loss of interest in and skipping school as the first indicator. Several reported that their child began using marijuana at that time, unbeknownst to them. Defiance, depression, and drug use were common themes around the time of onset.

- Few Caregivers reported receiving any help for their child **prior to his/her adolescence** and rated the help as a two/three on a five-point scale. Prior (to the Pilot Program) help for their **adolescent** children was cited more frequently, but was rated even lower, at the one/two range. Most prior help was reported to have come from schools or social services.

> Caregivers praised current probation officers and mentioned a commitment to Youth, willingness to "do whatever it takes," and their relentless efforts to locate their children when they ran away.

- In contrast, however, Caregivers praised the current probation officers. They spontaneously brought up the officer's names and frequently identified their intervention as the most helpful service the Youth had ever received. They mentioned the officer's commitment to the Youth, willingness to "do whatever it takes," and their relentless efforts to locate their children when they ran away.

- Several Parents cited the Sterling Pilot Program and Probation as the most helpful services their child had ever received. They discussed the commitment of the professional staff to their kids and the changes they saw in the Youth and in the home, including:
    - Getting along better with each other at home
    - More communication
    - Child is off drugs and off probation
    - Child is out of trouble
    - No police knocking at my door
    - Parent learned to be more accountable

> Several parents cited the Sterling Pilot Program and Probation as the most helpful services their children had ever received.

- Regarding involvement in the Pilot Program, Caregivers were almost unanimous in saying they were involved only minimally in the treatment program, with only a few stating that they participated in regular family sessions. When asked whether they would have preferred "Less, More, or About the Same Involvement," almost all said they would have preferred to have been more involved and cited the following as barriers to greater involvement:
    - Gas was too expensive and they were not able to get assistance with cost
    - Hours offered weren't late enough to accommodate work schedule
    - Thought the program was just for the kids and not for the Parents
    - Didn't seem like the Parents were supposed to be there; just dropped him/her off or waited in the waiting area
    - Didn't really know how the program worked, what was going on day-to-day or how s/he could be more involved
    - Conflict with "liberal" thinking of therapist
    - Nobody really reached out

- Recommendations for program improvement included:
  - More Parent involvement
  - Assistance with transportation
  - More convenient hours for Parents who work
  - More information about what the program is really about, how it works, what Parents are supposed to do
  - Let Parents attend groups
  - Let Parents attend “Dinner and a Movie Night, “ which would be nice to do with their child

- Regarding the most unhelpful service or event with the service system, Caregivers mentioned:
  - Seeing their child in chains
  - Schools; once the kid starts ditching, they write them off
  - Probation was too lax early on, kid got away with too much

- Recommendations for other Parents included:
  - Go to the Mental Health Center as soon as you think there might be problems
  - Become involved in the programs your child attends
  - Show love
  - Stay on them
  - Know who they are with

- Recommendations to improve the system included:
  - Schools should be more aware, don’t let kids fall through the cracks; staff don’t see the connection between school problems, behavior problems, and mental health problems
  - More Special Education
  - Tougher penalties for ditching school, smoking
  - Provide lots more information about available resources
  - Earlier intervention, before kids cross the line
  - Welfare should work harder to find family placements when kids need to leave the home

Denver Multisystemic Therapy (MST) Team

Program Description and Fidelity to Legislative Requirements

In their original proposal, Colorado Access/Access Behavioral Care proposed augmenting an already existing MST for the Denver program. The Forensic Adolescent Consultation and Treatment Services Multisystemic Therapy Team (FACTS/MST) was operated by faculty of the University of Colorado Health Sciences Center (UCHSC), Department of Psychiatry, Programs for Public Psychiatry. Early in the implementation phase of the contract, the MST services were moved from the faculty side of the Department of Psychiatry into the University of Colorado Hospital (UCH). Consequently, the team became a hospital outpatient service. This transition led to significant turnover and organizational changes in the team. In addition, complex contracting circumstances caused delays in full program implementation. UCH MST was not fully operational until October 2001.

> Colorado Access/ Access Behavioral Care proposed augmenting an already existing MST for the Denver program.

The UCH MST administrative offices are located in the North Pavilion facility of the UCHSC. Descriptive information about the program is provided below in Table 14. The information was gathered from meetings and interviews with UCH MST staff as well as the MST literature. A full description of the program is provided in Appendix 9.

> Since the legislative and the RFP requirements were modeled after those of a Multisystemic Therapy Team Model, it follows that the UCH MST demonstrates fidelity with all of the requirements.

In addition to the legislative and RFP requirements, implementation of an MST Program requires the completion of a full site assessment to determine that the site has all the elements in place to be certified by MST Services as an MST site. The team is certified and has regular contact with MST, Inc. for ongoing consultation and training. The team also collects data that measures therapist adherence to MST core principles. Since the legislative and the RFP requirements were modeled after those of a Multisystemic Therapy Team Model, it follows that the UCH MST demonstrates fidelity with all of the requirements.

> As part of the MST treatment philosophy and protocols, the MST Therapist takes responsibility for all families' needs in all service areas, including substance abuse. As such, service integration is a de facto feature of the MST intervention.

The addition of the half-time Spanish-speaking Family Resource Coordinator (FRC) position was intended to be an enhancement to MST Therapy, providing follow-up services specifically to aid in families' linkage to transitional services. This position has evolved somewhat during implementation, with the FRC taking on some data collection and case management responsibilities. Routine follow-up services have not been built into the model, but are provided on an as needed basis.

TABLE 14. KEY PROGRAM CHARACTERISTICS OF THE UCH MULTISYSTEMIC THERAPY (MST) TEAM

PROGRAM CHARACTERISTICS	DESCRIPTION
Staffing & Client/Staff Ratio	2.6 FTE (Licensed MA level) MST Trained Therapists, each FTE carrying 4-6 families .5 FTE Tri-lingual (Spanish, Italian, English) Family Resource Coordinator, providing non-clinical services, including wraparound. Proposal indicates this position would provide follow-up services at the completion of MST Therapy. Proposal also indicated intention of hiring bi-lingual (Spanish) therapist.
Research Basis	Proposal cites published articles that address the treatment and cost effectiveness of MST.
Location of Services/Infrastructure	All services are provided in the community: about 60% in the family home, 20% in courts, about 10% in schools, and another 10% in sites of convenience (e.g., other service agencies, appointments). Therapists have office space that is used for meetings and administrative work.
Population Focus	Special focus on Latino Youth and families who are Spanish speaking, either monolingual or bilingual, or Youth with co-occurring mental health and substance abuse disorders
Services Provided	
Family Therapy	90% of total services About 50% of services with full family configuration 10% with Caregivers and Youth, without siblings 30 % with Caregivers only
Individual Therapy	About 10% with Youth
Psychiatric, Medication, Crisis	Provided as needed through Team's Medical Director, UCHSC Dep't of Psychiatry and UCH Child Outpatient Clinic
Respite Services	Provided through the Mental Health Corporation of Denver
Service Integration	As part of the MST treatment philosophy and protocols, the MST Therapist takes responsibility for all families' needs in all service areas, including substance abuse. As such, service integration is a de facto feature of the MST intervention.
Community Collaboration	The key collaboration efforts are focused on encouraging referrals from and building fiscal partnerships with Denver DHS, Probation, Denver Regional DYC, and Denver DA/Diversion. The ABC and MST partners also present the MST model in educational formats to other community agencies (e.g., SB 94, Human Services). Colorado ABC has worked closely with the Colorado Cornerstone Children's Mental Health Initiative toward building MST services into the options available for Cornerstone Youth.

Amount and Type of Data Submitted

By June 30, 2002, the UCH MST had submitted admission data on thirteen (13) enrolled Youth; therefore readers must review data with caution. Since the program was not fully operational until after the evaluation component was in place, there are no systematic missing data. The following data were submitted: Complete admission and discharge data on six Youth and families, complete admission data on an additional five, and complete admission data except for one item on the remaining two.

By June 30, 2002, the UCH MST had submitted admission data on thirteen (13) enrolled Youth.

Characteristics of Youth and Families Prior to Admission to Denver's UCH MST Program for Youth Admitted through June 30, 2002

This section of the report will describe the characteristics of Youth admitted to the Pilot Program in the following areas:

- § Socio-demographic
- § Strengths
- § Risk Factors
- § Service System Involvement
- § Mental Health
- § Criminal/Juvenile Justice involvement
- § Substance Abuse
- § Education
- § Family Resource Needs
- § Service System Costs accrued prior to admission

Socio-demographic Characteristics at Admission

For many of these characteristics, comparable statewide and Denver area data were obtained from Colorado Mental Health Services and are included in Table 15. Three-quarters of enrollees were male, a substantially higher rate than is usual for CMHC or the State. About two-thirds were Hispanic, considerably higher than usual for Denver (42%) and more than twice the average rate for the State. Almost all were living at home, with 33% living with both Parents. Their average age was 14½, about the same as that for the state or Youth enrolled in the public mental health system in Denver. Referral sources were varied: Social Services (33%), Law Enforcement (25%), Outpatient Mental Health and Self/Family (both at 17%), and 8% from Probation or Parole. Forty-two percent attended the program under court order.

About two-thirds of enrollees were Hispanic, considerably higher than usual for Denver (42%). Their average age was 14 1/2, about the same as that for the state or Youth enrolled in the public mental health system in Denver.

TABLE 15. SOCIO-DEMOFGRAPHIC CHARACTERISTICS OF DENVER MST YOUTH AT ADMISSION TO PILOT (N=12)[30] WITH COMPARISONS TO STATEWIDE AND DENVER AREA CHARACTERISTICS[31]

CHARACTERISTIC	PILOT NUMBER	PILOT %[32] (N=12)	STATEWIDE % (N=9532)	DENVER % (N=606)
Number Admitted	12			
Number Discharged	7	71%		
Gender: Male	9	75%	55%	57%
Mean Age		14.5 Years	14.5 Years	14.3 Years
Ages 12-13	4	33%		
Ages 14-15	7	58%		
Ages 16-17	1	8%		
Ethnicity				
White (non Hispanic)	1	8%	61%	25%
Hispanic	8	67%	26%	42%
African American	2	17%	7%	28%
Multi Ethnic	1	8%	2%	2%
Residence				
At Home	12	100%	65%	73%
Foster Home	0	NA	13%	6%
Who lives with Youth				
Mother	5	42%		
Father	2	17%		
Both Parents	4	33%		
Relatives	1	8%		
Admission/Legal Status				
Voluntary	7	58%	72%	91%
Court Directed Voluntary[33]	5	42%	15%	8%
Forensic Involuntary	0	NA	1%	
Referral Source				
Probation/Parole	1	8%	1%	5%
Law Enforcement	3	25%	2%	1%
Social Services	4	33%	23%	15%
OP Mental Health	2	17%	1%	4%
Self/Family	2	17%	28%	36%
Family Income	Mean = \$25,999 Median = \$13,365			
Medicaid Status	10	83%		

Due to low n, please use caution in interpretation of Pilot data
Source: Colorado Client Assessment Record (CCAR)

[30] Owing to their late start-up, data from Denver submitted by mid-July was accepted. Thirteen Youth were admitted, twelve CCARs were submitted.

[31] Colorado Mental Health Services, CCAR Database: Youth ages 12-17 with SED served in FY 01, from Admission CCAR if completed after June 30, 2000, or earliest completed CCAR after June 30, 2000. Denver data include individuals served by the Mental Health Corporation of Denver and Access Behavioral Care (ABC).

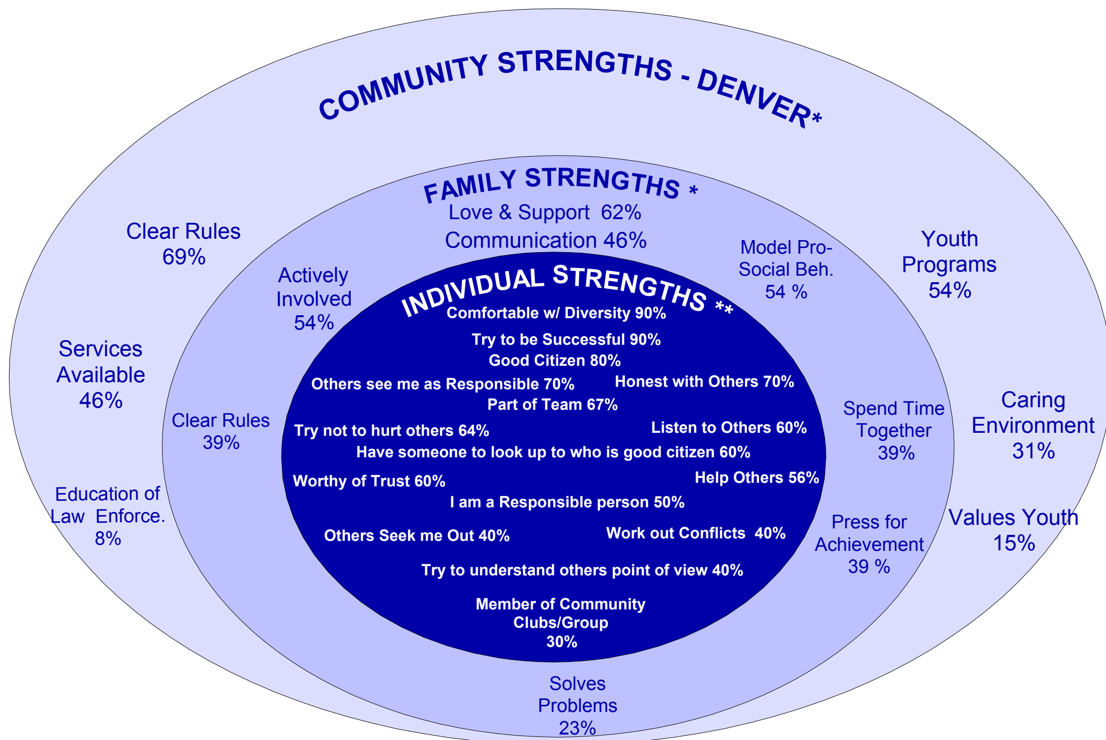
[32] Please note that the relatively small number of Youth enrolled in both programs makes the use of percents misleading at times. They are provided in most tables and figures to provide context for the reader, but caution should be used in their interpretation.

[33] Includes treatment as a condition of probation/parole or deferred prosecution.

Strengths

Figure 28 presents a conceptual frame and visual representation of strengths. Almost all Denver Youth identify themselves as being Comfortable with Diversity, i.e., people who are different from themselves (90%) and Trying to be Successful (90%), being a Good Citizen (80%), Seen by Others as Responsible (70%), and being Honest (70%). Almost two-thirds of the Youth have Someone to Look Up To Who is a Good Citizen and see themselves as having positive qualities to offer in their relationships, including Listening to Others, Worthy of Trust, and Trying not to Hurt Others. Thirty percent are Members of Community Groups or Clubs.

Figure 28. Individual, Family, and Community Strengths at the Time of Admission to the UCH MST Program (n=18)



Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

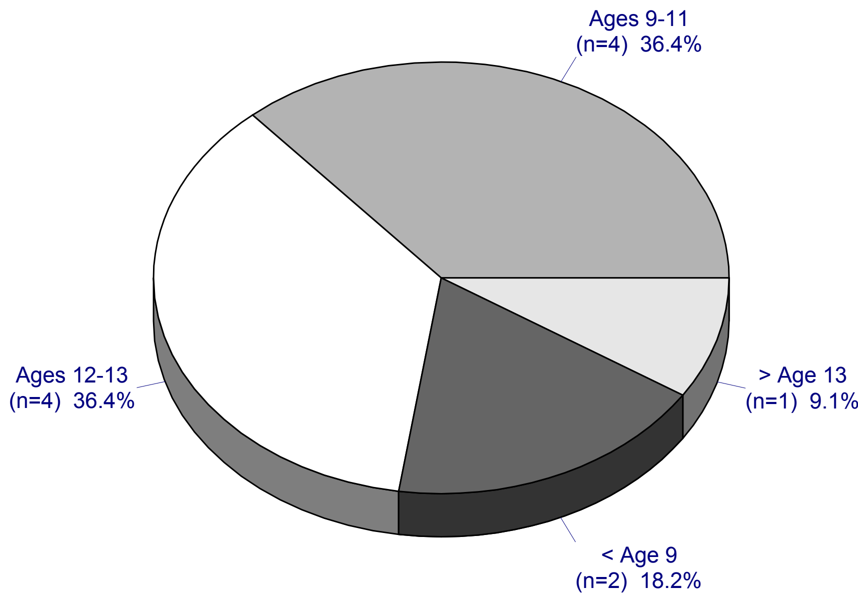
** From Youth Perspective (n=10); Percent Identifying how youth sees him/herself "often" or "always"
* From Clinician Perspective (n=13)

Regarding family strengths, the highest level of endorsement is 62%, Love and Support, somewhat lower than that for the individual strengths. Since clinicians rated the family strengths and the Youth rated their individual strengths, we are not able to interpret this difference in magnitude. There is substantial variability in the responses, with 23% endorsing Problem Solving as a family strength. Community factors cluster in the mid-range, varying between 8% for Education of Law Enforcement and 69% for Clear Rules.

Risks Identified at Admission

Figure 29 shows that over half (55%) of the MST Youth initiated their anti-social behavior prior to age 12, a significant risk factor, with another third at ages 12-13.

Figure 29. Denver: Age of Onset of Anti-Social Behavior (n=13)



Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

Table 16 displays the full range of individual risk factors that were examined, followed by Tables 17 and 18, which display the family and community risk factors, respectively. The factors in all tables are listed in descending order by the percent of Youth for whom the factor was endorsed. At enrollment, clinicians rated Ineffective Communication Skills as the most prevalent risk factor among the Youth (85%), followed by Ineffective Coping (70%). Low Self Esteem, Poor Social Skills, and the Death of a Close Person were all identified for about half of the Youth. Few Youth (less than 22%) were thought to Associate with Gang Members or be a Victim of Violent Crime or Bullying. In contrast, no Youth were identified as having access to or owning a weapon.

TABLE 16. INDIVIDUAL RISK FACTORS FOR DENVER YOUTH AT ADMISSION TO PILOT

YOUTH RISK FACTORS (N=13)	
% Endorsed	***Factor***
85% (n=11)	Ineffective Communication Skills
70% (n=9)	Ineffective Coping
54% (n=7)	Low Self-Esteem
	Poor Social Skills
46% (n=6)	Death of a Close Person
39% (n=5)	Early Association w/ Drug Using Peers
	Externalizes Problems
	Poor Peer Refusal Skills
	Runaway Behavior
	Recent Change in Schools
	Victimization
Less than 33%	Complications of Birth
	Divorce of Parents/Caregivers
	Born to a Teenage Mother
	Early School Failure
Less than 22%	Victim of Violent Crime
	Associate with Gang Members
	Recent Change in Caregiver
	Significant Negative Event
	Victim of Bullying
None Identified	Moved 2 or more times in last two years
	Recently Injured or Seriously Ill
	Access to a Weapon
	Owns a Weapon

Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

As shown in Table 17, Family Risk Factors, Caregiver Drug Use was identified as the highest family risk factor, (64%), followed by general Negative Life Events for almost half. Sibling Drug Use and Caregiver Criminal Behavior was identified for about a third of the Youth, with all the remaining family risk factors identified for less than 22% of the families.

TABLE 17. FAMILY RISK FACTORS FOR DENVER YOUTH AT ADMISSION TO PILOT

FAMILY RISK FACTORS (N=13)	
% Endorsed	***Factor***
64% (n=7)	Caregiver Drug Use
46% (n=6)	Negative Life Events
39% (n=5)	Inconsistent Rules Regarding Drugs
31% (n=4)	Sibling Drug Use
	Caregiver Criminal Behavior
Less than 22%	Felony Conviction of Caregiver
	Felony Conviction of Sibling
	Incarceration of Sibling
	Caregiver Incarceration
	Out of Home Placement of Sibling
	Significant Life Change
	Family Social Isolation
	Sibling Criminal Behavior
	Unrealistic Development Expectations
	Psychiatric Hospitalization of Caregiver
	Low Commitment to Education
	Favorable Caregiver Attitudes toward Behaviors

Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

Table 18, Community Risk Factors, shows that clinicians rated the Easy Availability of Alcohol and Drugs in the surrounding community as a risk for almost two-thirds of the Youth, followed by Positive Attitudes Towards Criminality (46%). Inadequate Laws and Positive Attitudes Toward Drugs were identified for more than one-third of the Youth. Several factors, including Easy Access to Firearms, Poverty, and Community Disorganization, were thought to be risk factors for less than 22% of the cohort.

TABLE 18. COMMUNITY RISK FACTORS FOR DENVER YOUTH AT ADMISSION TO PILOT

COMMUNITY RISK FACTORS (N=13)	
% Endorsed	**Factor**
62% (n=8)	Easy Availability of Alcohol and Drugs
46% (n= 6)	Positive Attitudes toward Criminality
39% (n=5)	Inadequate Laws Regarding Drugs
	Positive Attitudes toward Drugs
Less than 33%	Limited Employment Opportunities
	High Population Density
	Inadequate Youth Services
Less than 22%	Disorganization in the Community
	Lack of Cultural Pride
	Poor Community Bonding
	Poverty
	Easy Access to Firearms

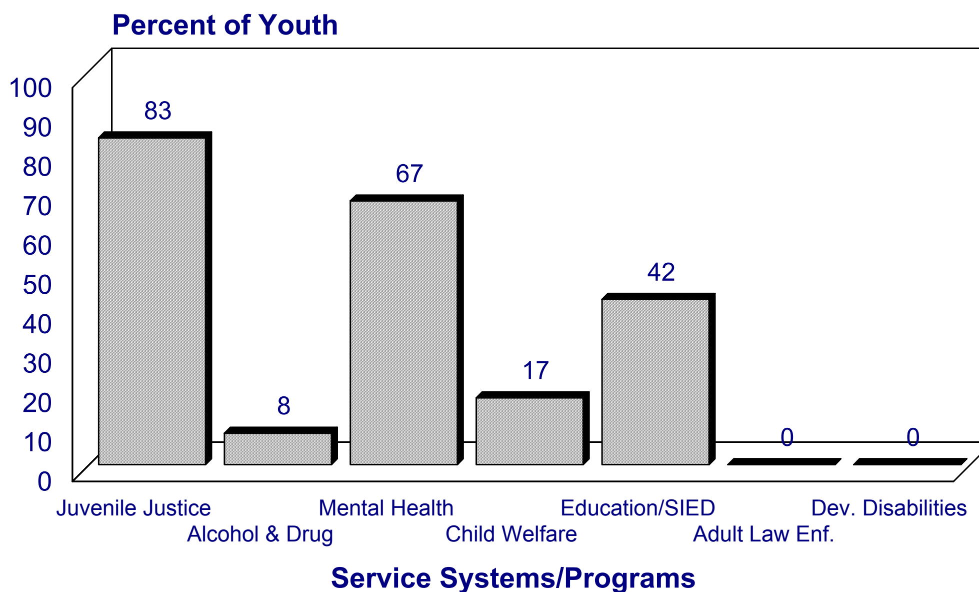
Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

Youth Involvement with Service Systems at Admission

Figure 30 displays the percent of enrolled Youth who had received services in selected human and criminal justice systems prior to admission. The majority (83%) of Youth had already been involved with the Juvenile Justice System by the time they were admitted to the Pilot Program. Two-thirds had been involved with Mental Health and 42% were designated as meeting the criteria for Significant Identifiable Emotional Disability (SIED) in the public school system. Only 17% had prior involvement with Child Welfare Services and 8% with prior Alcohol and Drug Programs.

83% of Youth had already been involved with the Juvenile Justice System by the time they were admitted to the Pilot Program. Two-thirds had been involved with mental health.

Figure 30. Denver: Percent of Youth with Previous or Concurrent Involvement with Systems & Programs at Admission (n=13)



Due to low n, please use caution in interpretation
Source: Colorado Client Assessment Record

Mental Health Characteristics at Admission

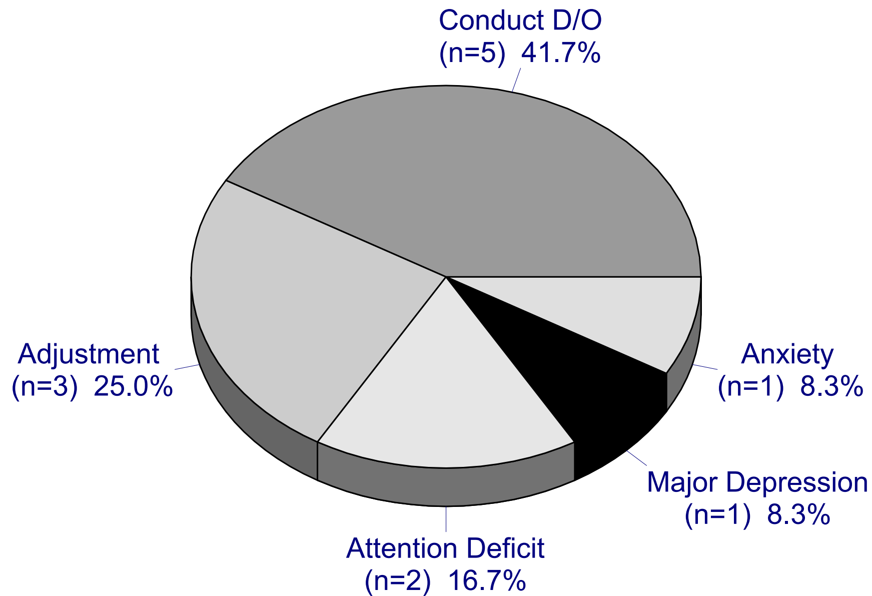
Mental health status will be described in the following areas:

- Diagnosis
- Medications
- Out of Home Placement episodes/days
- High-risk mental health history and behaviors
- A CCAR-based typology that captures the most salient characteristics of different groups or types of Youth

Diagnosis at Admission

As shown in Figure 31, over 40% of the Youth were diagnosed with Conduct Disorder, and one-quarter with Adjustment Disorder. Three Youth were taking psychoactive medications at the time of admission, none of which were anti-psychotic medications (not shown).

Figure 31. Denver: Diagnosis at Admission (n=12)

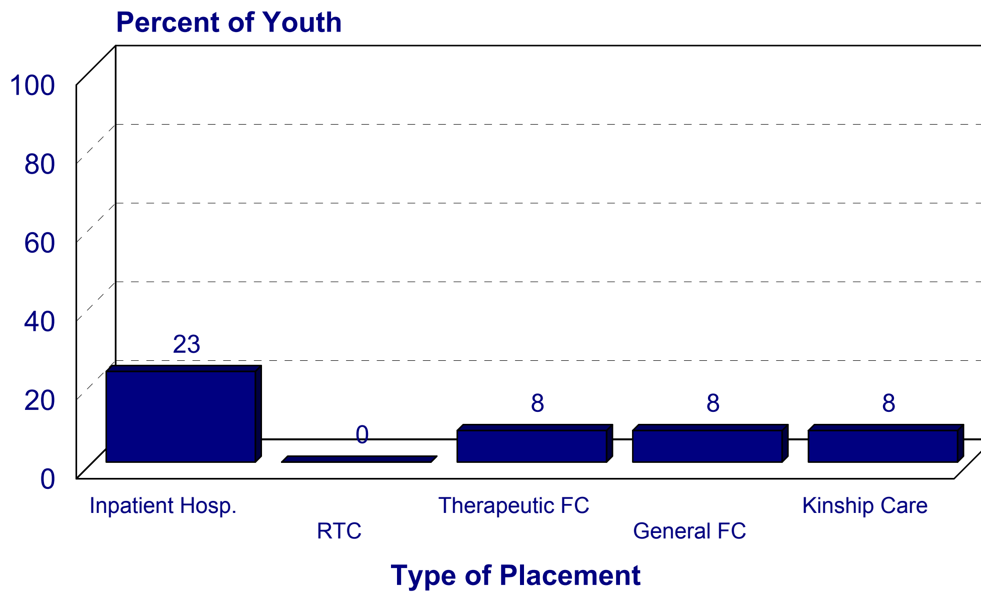


Due to low n, please use caution in interpretation
Source: Colorado Client Assessment Record

Out of Home Placement History at Admission

Figure 32 shows the number of Youth who experienced various Out of Home Placements prior to their admission to the UCH MST Program. The number of days in various settings will be presented in the cost section of the report. Overall, very few of the Youth had experienced any out of home placement, with only three of the thirteen having inpatient psychiatric hospitalization.

Figure 32. Denver: Percent of Youth with Mental Health Related Out of Home Placement (n=13)

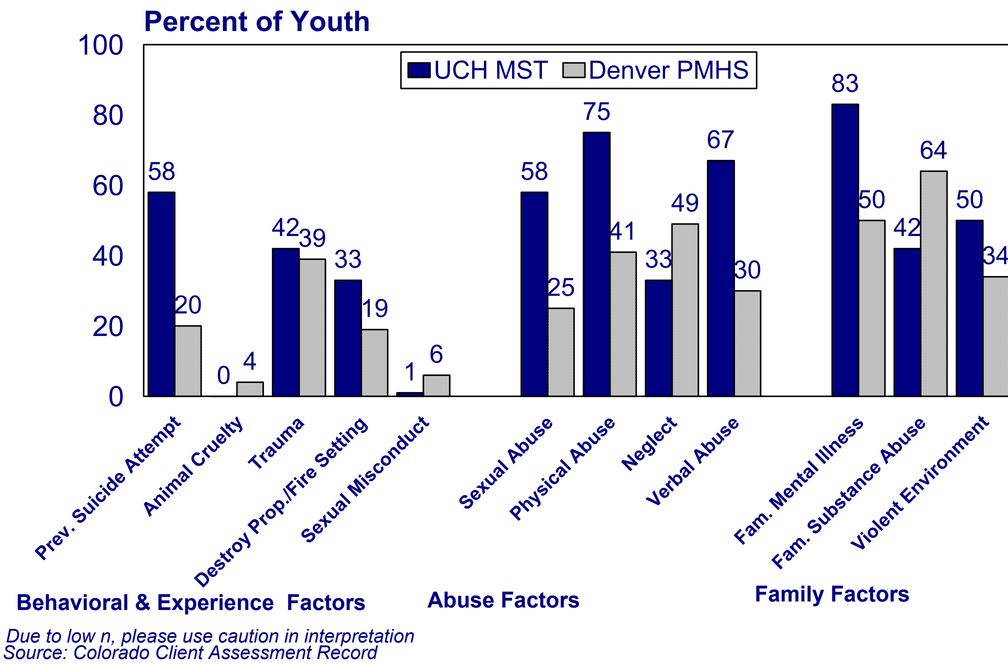


Due to low n, please use caution in interpretation
Source: Community Based Client Record

High-Risk Behaviors, Experiences, Abuse, and Family Factors at Admission

Figure 33 displays selected characteristics for which we were able to obtain comparable data for Youth enrolled in the Public Mental Health System (PMHS) and for those enrolled in Denver. When compared to Youth admitted to the PMHS in Denver, the UCH MST Youth demonstrated more than three times the rate of Previous Suicide Attempt (58%), a much higher rate of Property Destruction (33%), about the same amount of Trauma (42%), and lower rates of Sexual Misconduct and Animal Cruelty by Youth. With regard to abuse and neglect, the Pilot Youth were judged to have about twice the rate of Sexual Abuse (58%), Physical Abuse (75%), and Verbal Abuse (67%), and a lower rate of Neglect than Denver PMHS Youth. UCH MST Youth had substantially more Family Mental Illness (83% vs. 50% for PMHS Youth), somewhat more Violence in their Environment, and less Family Substance Abuse than the overall PMHS Youth.

Figure 33. Denver: Percentage of Pilot Youth with High-Risk Behaviors, Experiences, Abuse, and Family Factors at Admission (n=13) Compared to Denver PMHS (n=606)



Due to low n, please use caution in interpretation
Source: Colorado Client Assessment Record

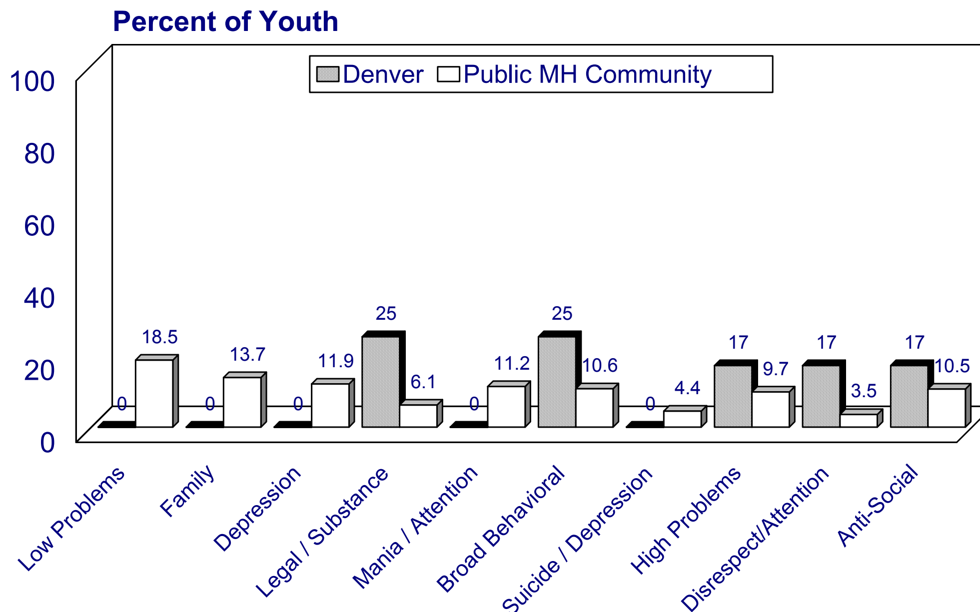
The CCAR-Based Youth Typology

The labels given the types are descriptive of the domain or domains that most clearly distinguishes the type from the other types. A more complete description of each Problem and Strength Type is included in Appendix 5.

Youth Problem Types		Youth Strength Types
Low Problems	Broad Behavioral	Low Strengths
Family	Suicide/Depression	Supports
Depression	High Problems	Economic Supports Only
Legal/Substance Use	Disrespect/Attention Deficit	Personal Strengths
Mania/Attention Deficit	Anti-Social	High Strengths

Figures 34 and 35 display the distribution of Problem and Strength Types, respectively, for Youth at the time of their admission into the Denver MST, compared to the distribution of Youth in the Public Mental Health System (PMHS) in FY 01 who were not hospitalized at the time of assessment.

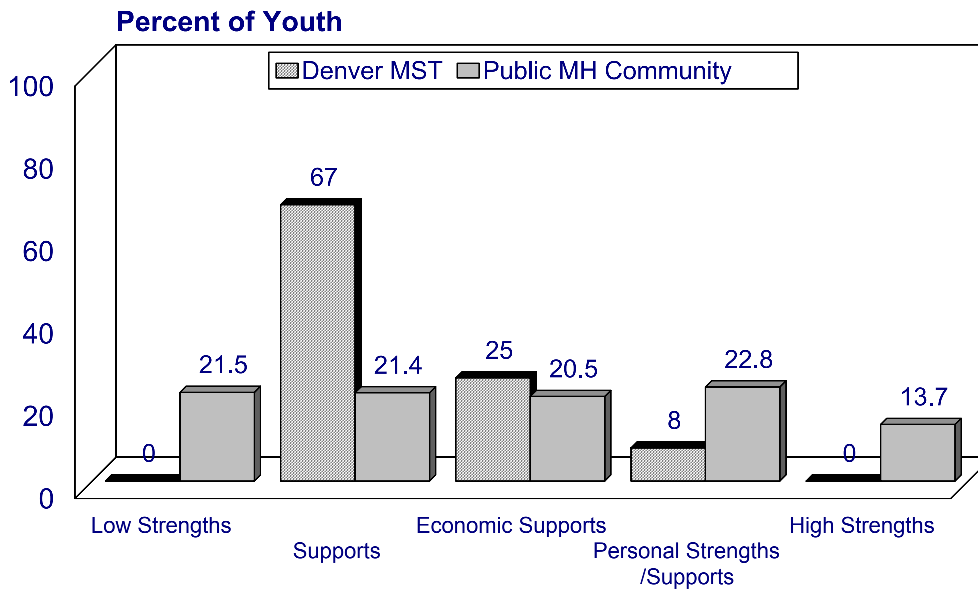
Figure 34. Denver: Distribution of CCAR Problem Typology at Admission to Pilot vs. (Non-hospitalized) Colorado Public MH System (PMHS) Youth (n=12)



The distributions of Problem Types are extremely different from one another, with the Youth enrolled in the Denver MST representing substantially higher proportions of Legal/Substance Abuse, Broad Behavioral, High Problems, and Disrespect/Attention Deficit Types. Overall, this suggests that the group of Youth enrolled in the Denver MST Program is notably different from the Youth enrolled in the Public Mental Health System as a whole with regard to their problems.

The distribution of Strength Types, compared to the same PMHS Youth, is displayed in Figure 35. For the most part, the distribution of Denver's Strength Types is also quite different from that of the PMHS Youth, with the Denver Youth showing substantially higher proportions of the Support Type (67% vs. 21% for the PMHS). In contrast, the Denver Youth are notably lower than the PMHS Youth on Low Strengths (0% vs. 22%), Personal Strengths/Supports (8% vs. 23%), and High Strengths (0% vs. 14%).

Figure 35. Denver: Distribution of CCAR Strength Typology at Admission to Pilot vs. (Non-hospitalized) Colorado Public MH System (PMHS) Youth (n=12)



Due to low n, please use caution in interpretation
Source: Colorado Client Assessment Record

Criminal/Juvenile Justice Involvement at Admission

Criminal/Juvenile Justice Involvement will be presented for the following:

- Number of Arrest Episodes
- Charges by Class and Violent vs. Non-Violent
- Sentencing Dispositions and Revocations

In Denver, the mean age of Youth at the time of their first arrest was 13.83 years. Figure 36 displays the percent of MST Youth who had 0-4 Arrests and the total who had any arrest prior to admission. Arrests were documented for six MST Youth, with 23% having one arrest, 15% having two arrests, and 8% having three arrests. One Youth had a total of two revocations.

Figure 36: Denver: Percent of Youth with Prior Arrest and Revocation Episodes (n=13)

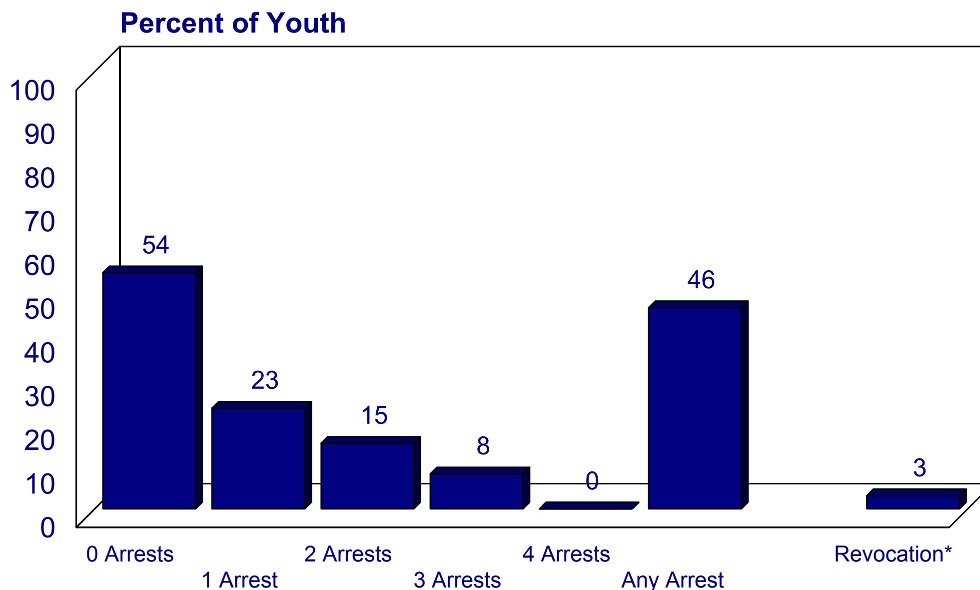
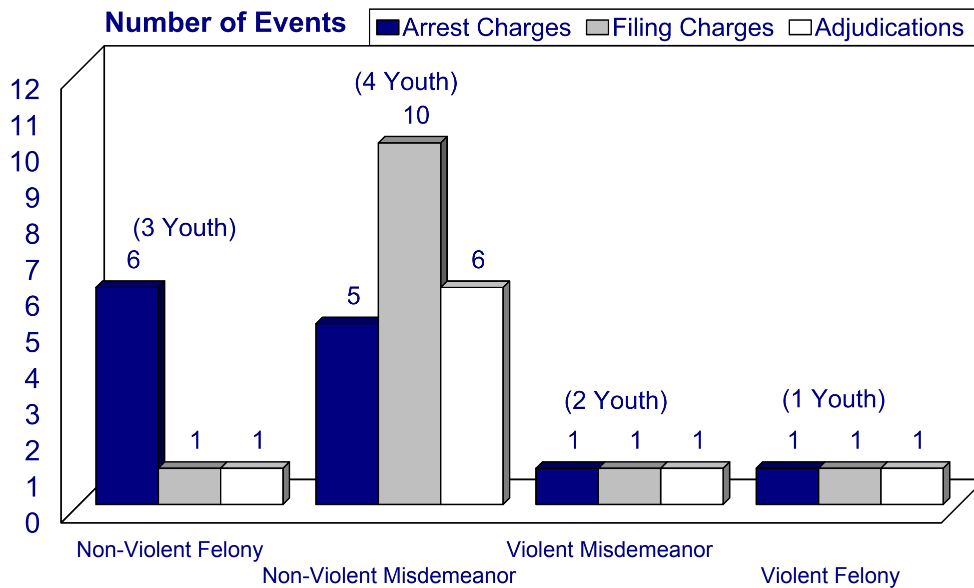


Figure 37 displays the number of prior Arrest Charges, Filing Charges, and Adjudications according to their severity (Felony vs. Misdemeanor) and whether the charge was classified as Violent or Non-Violent. The figure shows that most of the Arrest Charges were for Non-violent Felonies and most of the Filing and Adjudications Charges were for Non-Violent Misdemeanors. Some of this difference reflects the amount of evidence available to the District Attorney for filing purposes and some reflects the criminal justice's general policy of seeking to keep Youth out of the deep end of the system through pleas to lesser crimes.

Figure 37. Denver: Arrest Charges, Filing Charges, and Adjudication, sorted by Violent & Non-Violent Felonies & Misdemeanors (n=13)

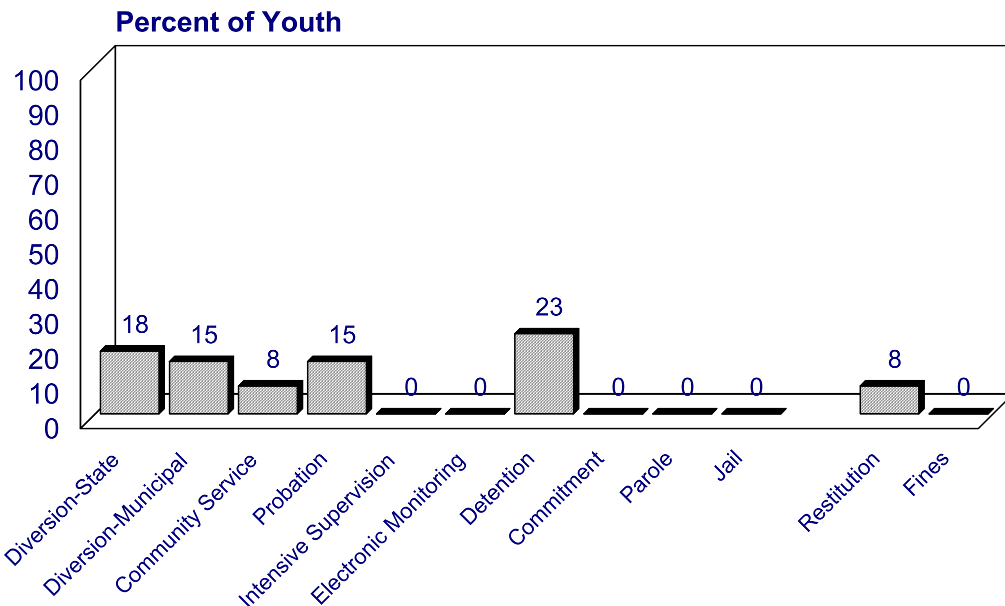


Due to low n, please use caution in interpretation
Source: Colorado On-Line Network (ICON), CBPR

Of the 13 charges, 43% were for Possession (Marijuana), and 29% were for Theft, and another 39% for Menacing (not shown).

Figure 38 shows the percent of Youth who were sentenced to each of 10 Criminal/Juvenile Justice dispositions prior to their admission to the MST Program. The number of sentences is very low, reflecting the low number of arrests, with the most common sentence being to a State Diversion Program, followed by Detention. Two Youth had been on probation and none had been committed to the Division of Youth Corrections prior to admission.

Figure 38. Denver: Percent of Youth* Sentenced to Selected Dispositions, Prior to Admission (n=13)



Due to low n, please use caution in interpretation
Source: Colorado On-Line Network (ICON), CBPR

*** Youth may have been sentenced to more than one disposition**

Drug and Alcohol Use at Admission

Data were collected from the Adolescent Self Assessment Profile II (Wanberg, 1999). Information will be provided for:

- Selected family history variables
- UCH MST Pilot Youth's level of substance use/involvement as compared to a normed sample

As shown in Table 19, almost three-quarters of the Youth report that their Parents were divorced and that the divorce occurred at an average age of 10 years. The data also show family substance abuse (Father 33%) and a high rate of family member incarceration (Father 80%, Mother 33%, Sibling 40%, Aunt/Uncle 40%, and 20% Stepfather). Only one Youth reported a suicide in the family, that of an Aunt or Uncle.

TABLE 19. SELECTED SELF-REPORTED FAMILY HISTORY CHARACTERISTICS OF DENVER MST YOUTH AT ADMISSION TO UCH MST PILOT

Selected Characteristic	*Number (n=10)*	*Percent*
Parents Divorced	7	70%
Mean Age of Youth at Divorce	10 Years	
Family Substance Abuse Problems		
Birth Mother	0	NA
Birth Father	3	33%
A Grandfather or Grandmother	1	10%
An Aunt or Uncle	2	20%
Family w/ Jail or Prison History		
Mother	3	33%
Father	8	80%
Stepmother	0	NA
Stepfather	2	20%
Brother or Sister	4	40%
Uncle or Aunt	4	40%
Family Members Committed Suicide		
Mother	0	NA
Father	0	NA
Grandparent	0	NA
Stepmother or Stepfather	0	NA
Brother or Sister	0	NA
Uncle or Aunt	1	10%

Due to low n, please use caution in interpretation
Source: Adolescent Self Assessment Profile II

The ASAP II Scales[34]

Table 20 displays the Denver group at admission and how it compared to the Normative Group. For 11 of the 13 problem-specific scales, the mean scores for the Denver were lower than the Normative Group (i.e., Youth referred to TASC as having possible alcohol or drug problems). Their only higher mean scores (bolded) were on Family and Psychological Adjustment. They also scored lower on the Global Scale, a composite of five key scales. Overall, the Pilot Youth show a substantially lower level of severity than the Normative Group. For the two strengths-based scales, Prosocial and Motivation, the Denver scored lower than Normative Group, indicating less of these strengths.

Table 20. Mean ASAP II Scale Scores for UCH MST Youth at Admission Compared to the Estimated Mean of the Normative Group (n=10)

ASAP II Scale[35]	Admission Mean	ASAP II Normative Group[36]
Family Adjustment	17	12-13
Psych. Adjustment	13	9-10
Peer Influence	6	5-6
School Adjustment	12	12-13
Deviancy	15	15-16
Attitude	10	10-11
Drug Exposure	8	11-12
Drug Involvement	2	4-5
Sustained Use	3	3-4
Benefits from Use	10	10-11
Disruption from Use	5	8-9
Dependency	2	2-3
Defensive	6	6-7
Prosocial Attitudes & Behaviors*	34	38-39
Motivated *	10	19-20
Global Adolescent Adjustment Scale (GADS): Sum of Family, Psych., School, Deviancy, Disruption	61	62-63

Due to low n, please use caution in interpretation
Source: Adolescent Self Assessment Profile II

*** These scales are scored such that higher numbers represent positive functioning.**

[34] There is what appears to be an artifactual problem with the Motivation Scale. The ASAP II questionnaire does not allow for skip patterns. In this set of questions, Youth are asked about their motivation to work on alcohol and drug problems. If the Youth does not use substances currently, they usually select an answer that indicates lack of motivation in this area. This will be discussed with the author for direction, such as only calculating the scale for those who report usage in the past three months.

[35] Each of the ASAP II Scales has a different number of items and is scored additively. Therefore, the magnitudes of the mean on one scale cannot be compared to the magnitude of another scale.

[36] ASAP scores are usually presented in the form of normed percentile or decile scores. For ease of understanding, however, these scores are being presented as means. Since the actual means were not available at the time of this report, mean ranges are presented.

Table 21 displays mean scores for the use of specific substances for the Sterling Pilot Youth and the Normative Group. The means for the Denver Group are notably lower than the Normative Group for all substances.

TABLE 21. MEAN ASAP II SCALE SCORES FOR SPECIFIC SUBSTANCES FOR UCH MST YOUTH AT ADMISSION COMPARED TO THE ESTIMATED MEAN OF THE NORMATIVE GROUP

ASAP II Substance Use Scales	*Admission Mean*	*ASAP II Normative Group*[37]
Alcohol	4	7-8
Marijuana	8	12-13
Cocaine	1	5-6
Methamphetamine	0	5-6
Hallucinogenics	1	5-6
Inhalants	0	5-6
Other Drugs (Heroin, Pain Killers, and Tranquilizers)	0	5-6

Due to low n, please use caution in interpretation
Source: Adolescent Self Assessment Profile II

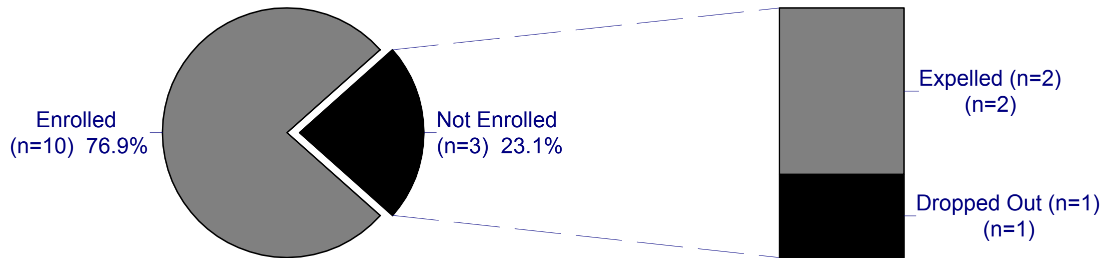
School Enrollment and Performance at Admission

Figure 39 shows that three-quarters of the MST Youth were enrolled in school. Of the three who were not enrolled, two had been expelled and 1 had dropped out.

Figure 40 displays the academic performance information of the MST Youth who were enrolled in school at the time of admission: About one-third were failing half or more of their classes and more than one- third were achieving C grades or Satisfactory Ratings.

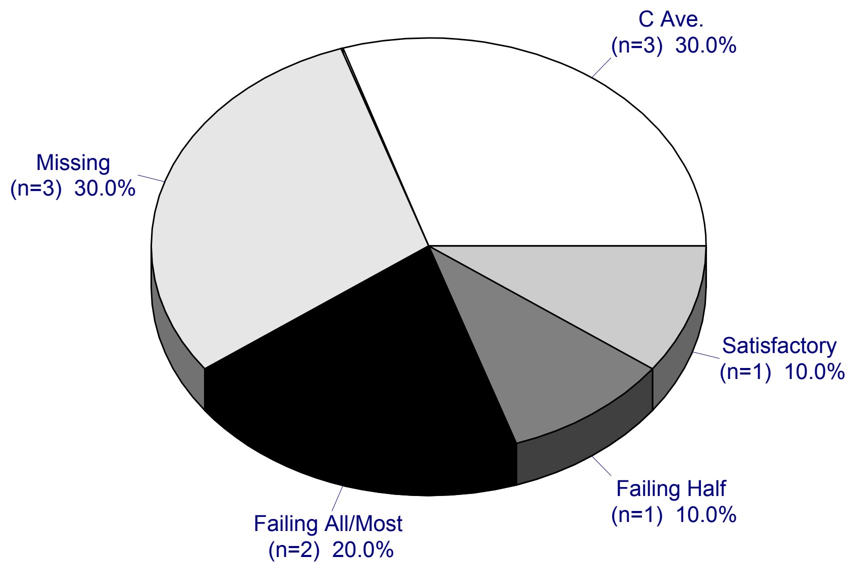
[37] ASAP scores are usually presented in the form of normed percentile or decile scores. For ease of understanding, however, these scores are being presented as means. Since the actual mean was not available at the time of this report, mean ranges are presented.

Figure 39. Denver: School Enrollment at Admission and Reasons for Non-Enrollment (n=13)



Due to low n, please use caution in interpretation
Source: Community Based Client Record

Figure 40. Denver: Academic Performance of Youth Enrolled in School at Admission (n=10)



Due to low n, please use caution in interpretation
Source: Community Based Client Record

Family Resource Needs at Admission

The Family Resource Scale (FRS) is used to measure adequacy in 30 specific areas, each rated on a five-point scale, with higher numbers indication greater adequacy. As noted earlier, the Colorado Cornerstone Initiative, which is part of the federal Center for Mental Health Services' National Evaluation[38] is also using the FRS. As part of the analysis of the national data, six scales were developed from the 30 items on the questionnaire: Cash and Recreation, Time and Support, Basic Needs, Health Care/Social Services, Secondary Needs, and Child Care (ORC Macro, 2002). Figure 41 displays mean scores for each scale for the UCH MST Youth, the CMHS National Evaluation, and for Cornerstone Youth.

Many of the resources related to quality of life and morale (e.g., time to be with children, time for the family to be together, time to be with spouse or close friend, money to save, money for entertainment) were reported to be most inadequate.

Using the Family Resource Scale (FRS), Caregivers reported their Basic Needs (i.e., food, house/apartment, clothing, heat, plumbing, and money for necessities) to be adequate, as do the comparison groups. Secondary Needs (i.e., transportation, telephone, furniture, and a good job) are less so, particularly for the Sterling Pilot Caregivers. Pilot Caregivers reported a higher level of adequacy for Child Care, and may reflect the older age of their Youth (14.5 years compared to 12 years for Cornerstone and 13 years for the national group).

However, many of the resources related to quality of life and morale that are found in the Cash and Recreation and Time and Support Scales (e.g., time to be with children, time for the family to be together, time to be with spouse or close friend, money to save, money for entertainment), were reported to be the most inadequate by all groups of Caregivers.

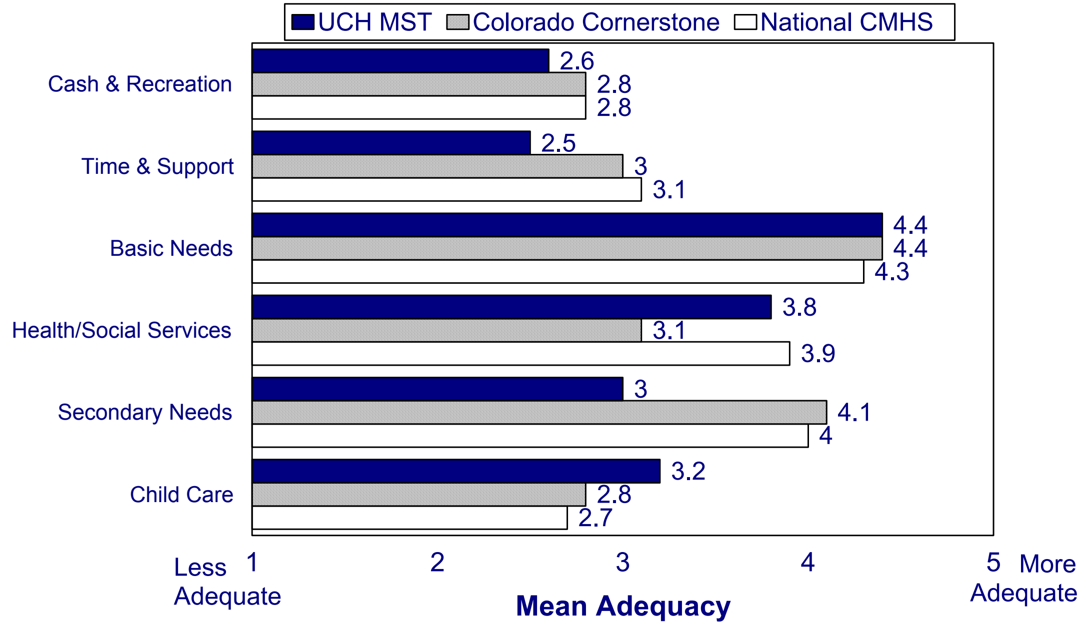
Costs Accrued Prior to Admission

The total system involvement costs for Youth in Denver range from no cost for two Youth to almost $200,000 for another. The total lifetime cost for the 13 Youth together was $368,837 prior to entering the UCH MST Pilot program. The totals represent the sum of the costs for diversion, probation, detention, commitment, electronic surveillance, parole, intensive supervision, inpatient state hospital, inpatient non-state hospital, residential treatment center, foster care, therapeutic foster care, family care, special education, day treatment and arrests. Figure 42 shows this variability by child in total costs.

In the period of time *before* they entered the UCH MST Pilot Program, the total system involvement costs for Youth in Denver range from no cost for two Youth to almost $200,000 for another.

[38] The National Evaluation of the Comprehensive Community Mental Health Services for Children and Their Families Program is funded by the Center for Mental Health Services (CMHS), Substance Abuse and Mental Health Services Administration (SAMHSA).

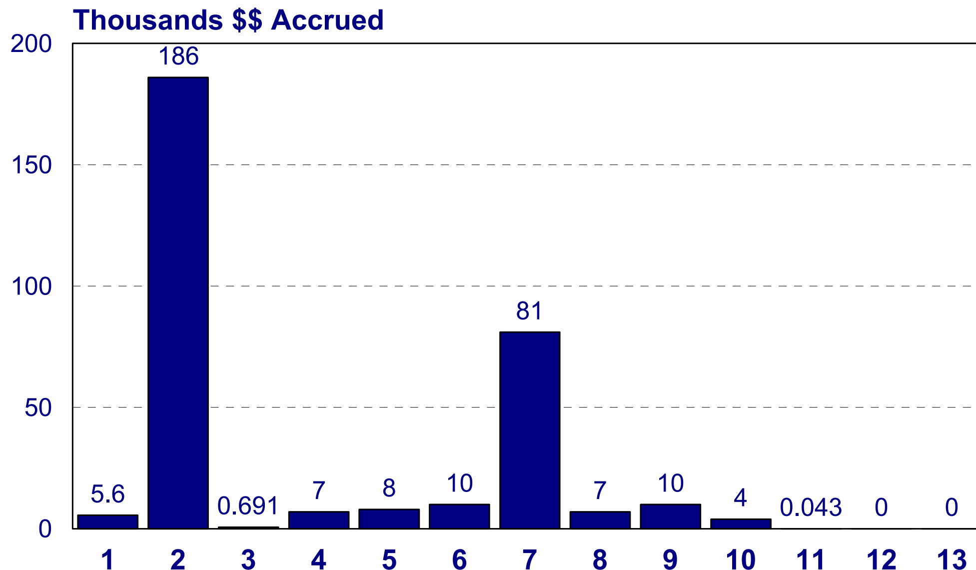
Figure 41. Denver: Resource Adequacy at Admission (n=13), Compared to Colorado Cornerstone Initiative (n=66) & The CMHS National Evaluation (n=856)



Due to low n, please use caution in interpretation
Source: Family Resource Scale

Figure 42. Denver: Cross-System Prior (Pre-Admission) Costs Accrued per Youth, Rounded to the Nearest $1,000 (n=13)

TOTAL COST ACCRUED FOR DENVER: $368,837
MEAN = $28,372; MEDIAN = $6,817

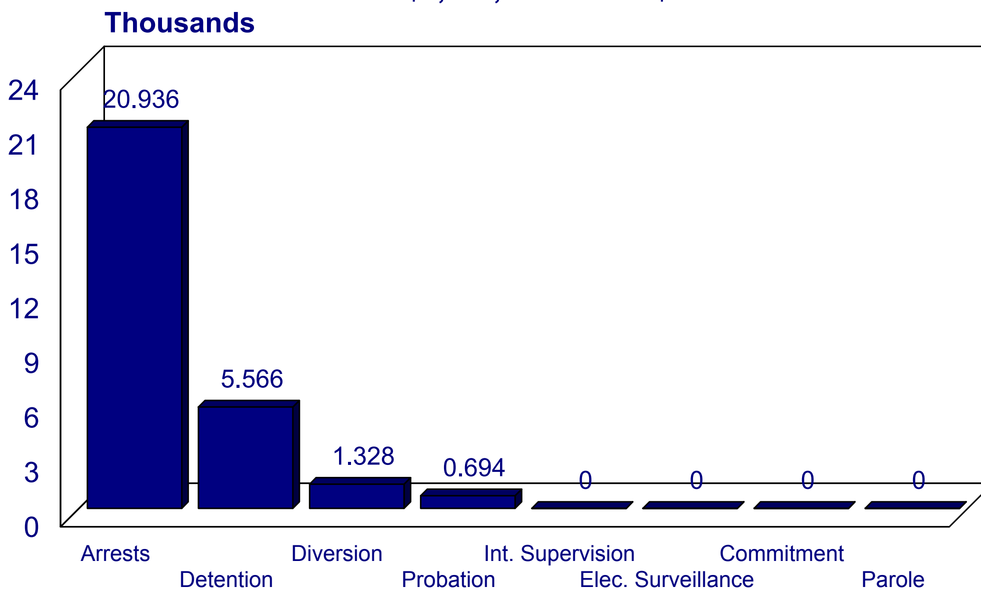


Due to low n, please use caution in interpretation
Source: CBPR, ICON

In order to understand how Youth accumulated costs, individual cost profiles were created for each Youth, documenting each sector's prior costs, one each for Criminal/Juvenile Justice Costs, Mental Health Placement and Special Education Costs, and Combined Total Costs (Appendix 8). When the Criminal/Juvenile Justice Costs were examined (not shown), only 8 of the 13 had any criminal justice costs and only 6 had been arrested. Figure 43 shows the prior Criminal/Juvenile Justice costs for the Denver group, including arrests, which are the most costly criminal justice category.

> Only eight Youth had any criminal justice and costs and only six had been arrested.

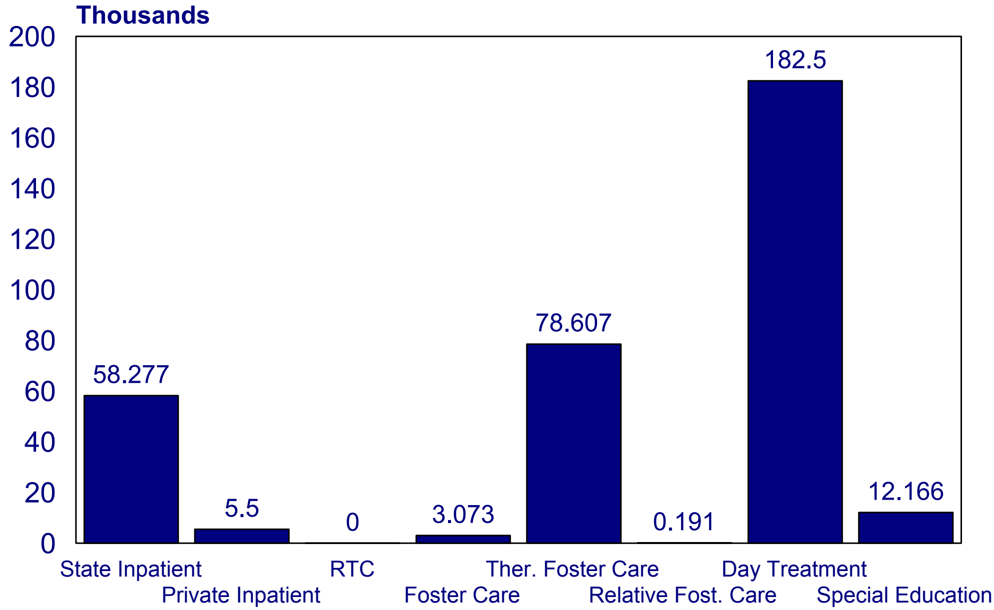
Figure 43. Denver: Prior (Pre-Admission) Criminal/Juvenile Justice Costs for the Admission Cohort For Arrests & Eight Sentencing Dispositions (n=13)



The cost profiles of Mental Health Placement and Special Education Costs (Appendix 8) show a similar breakdown (not shown). Only six had been placed out of their home, one had been in day treatment, and three had been designated as special education students. It is not clear from these data if the special education occurred at the time of the hospitalization. Figure 44 shows the Mental Health Placement and Special Education Costs for the Denver cohort prior to admission. When the criminal justice and the treatment tables were combined (Appendix 8), it was determined that these Youth did not go from one intervention to another, rather they had one or two types of interventions before being referred to the UCH MST Pilot.

When the criminal justice and the treatment tables were both examined, it was determined that these Youth did not go from one intervention to another, rather they had one or two types of interventions before being referred to the UCH MST Pilot.

Figure 44: Denver: Total Prior (Pre-Admission) Inpatient, Placement, and Education Costs for the Admission Cohort (n=13)



CHARACTERISTICS OF YOUTH AND FAMILIES AT DISCHARGE FROM THE DENVER MST PROGRAM

Episode Information

TABLE 22. COMPLETED DENVER UCH MST PILOT PROGRAM EPISODES: LENGTH, AGE OF YOUTH AT DISCHARGE

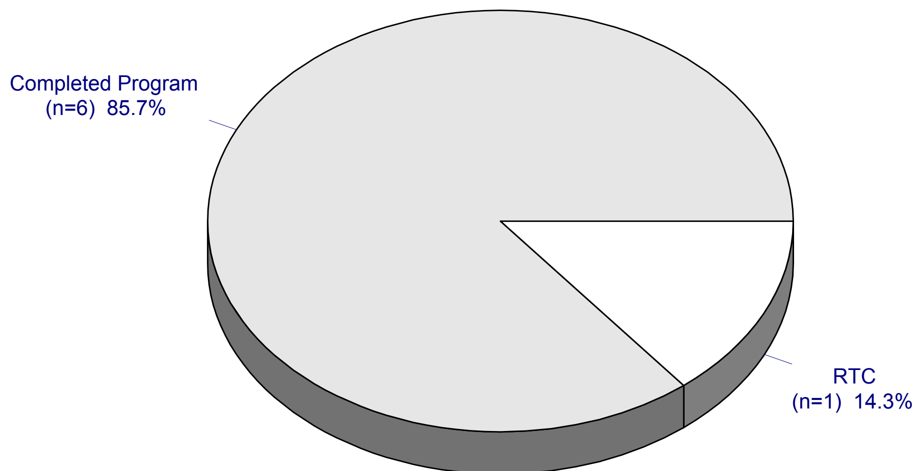
Length of Episode	
Range	90-169 Days
Mean	121 Days
Median[39]	113 Days
Age of Youth at Discharge	
Range	13 Years to 16 Years
Mean	14.4 Years
Median	15 Years

The episode length for MST services ranged from three to about five months, within the range expected for MST services (Schoenwald, Brown, & Henggeler, 2000).

Figure 45 shows that six of seven discharged Youth completed the program and one was admitted to a Residential Treatment Center.

The episode length for MST services ranged from three to about five months, within the range expected for MST services (Schoenwald, Brown, & Henggeler, 2000).

Figure 45: Denver: Reason for Discharge (n=7)



Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

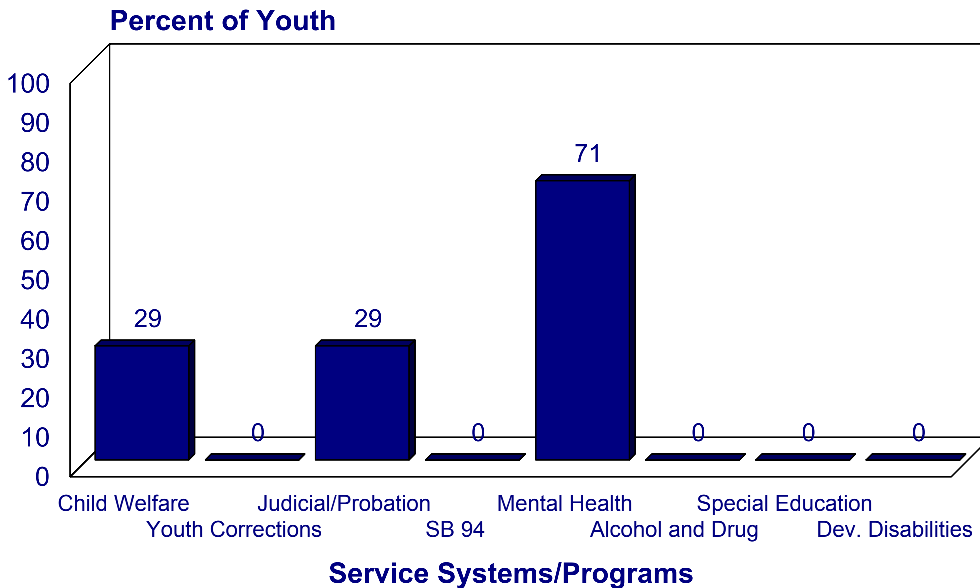
[39] Median is the midpoint of the scores, i.e., the point at which 50% of the scores fall above and 50% fall below.

Youth Involvement with Service Systems at Discharge

We can see from Figure 46 that almost one-third of the discharged Youth were involved with multiple service systems at the time of discharge, specifically with Probation and Child Welfare (26% each). The involvement with Mental Health likely reflects the MST Program itself, which is a subcontracted team of Colorado Access Behavioral Care, a mental health managed care organization. No involvement is reported with Alcohol and Drug Programs, Special Education, or Youth Corrections. Of the seven Youth discharged, two were referred to other services, one to Mental Health, and one to a religious organization (not shown).

Almost 80% of the discharged Youth were referred for continued alcohol and drug related services.

Figure 46. Denver: Percent of Youth with Involvement with Systems & Programs at Discharge (n=7)

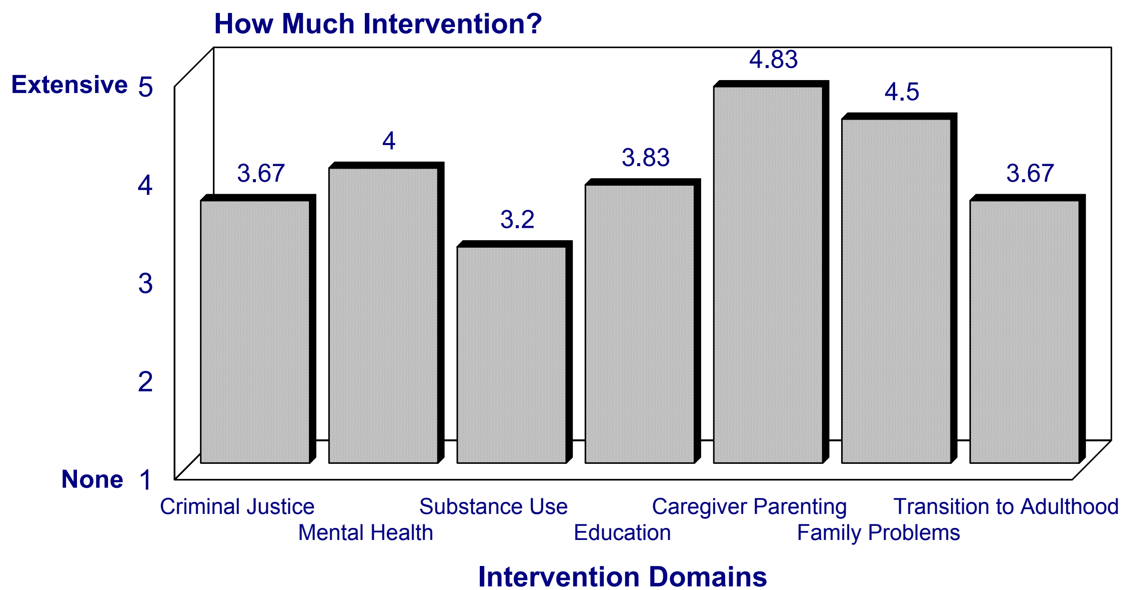


Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

Clinician Assessments by Domains at Discharge

Figure 47 shows how much intervention was apportioned in each of seven domains. There is some variability demonstrated, with Caregiver Parenting and Family Problems being given the highest levels of intervention and Substance Abuse and Transition to Adulthood the lowest. The lower emphasis on Transition to Adulthood may reflect the relatively young average age of these Youth, 14.4 years.

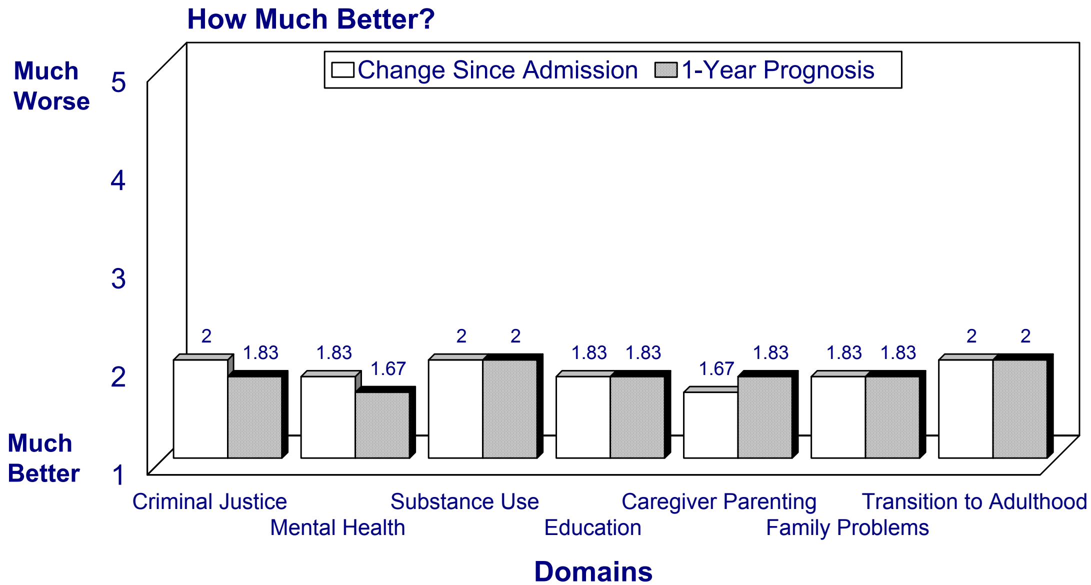
Figure 47. Denver: Amount of Intervention During Episode for Seven Domains (n=7)



Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

Next we looked at clinician's ratings of how much Youth had changed and how they were expected to do in the year after discharge. Figure 48 displays these results. There is little or no variability across domains or assessments of change and prognosis, with clinicians seeing the Youth as better since admission and optimistic about their functioning in all domains over the next year.

Figure 48. Denver: Clinician Assessment of Change since Admission & Prognosis for Seven Domains (n=7)



Due to low n, please use caution in interpretation
Source: Community Based Pilot Record

Mental Health Status at Discharge

Psychoactive Medication Use

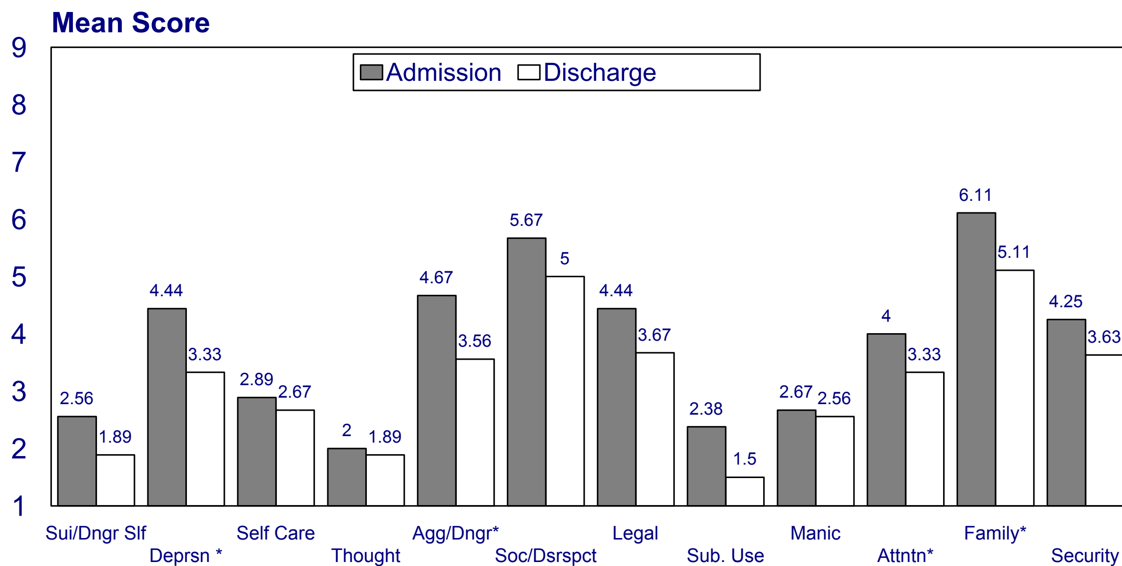
There was no change from Admission to Discharge in the overall use of medications used for mental health symptoms. No Youth were using anti-psychotic medication at either time and three Youth were using other psychoactive medications at both times.

The CCAR Scales

As was described earlier, 12 CCAR scales (rated from one to nine) were used to develop the CCAR-based Youth Typology. The admission and discharge means for each of the twelve CCAR scales were compared. The results are displayed in Figure 49. Almost all of the scales show some improvement at discharge for the seven Youth. Four—Depression, Aggressive/Dangerous, Attention Deficit, and Family Problems—were statistically significant.

> Almost all of the scales show some improvement at discharge for the seven Youth. Four—Depression, Aggressive/Dangerous, Attention Deficit, and Family Problems—were statistically significant.

Figure 49. Denver: Change in Mean Scale Scores for CCAR Scales used in the CCAR Problem Typology (n=9)



Due to low n, please use caution in interpretation
Source: Colorado Client Assessment Record

*** p < .05 (2-tailed Paired Samples Test)**

Alcohol and Drug Use at Discharge

The Adolescent Self Assessment Profile II (ASAP II) was used to measure thirteen dimensions of alcohol and drug use at both admission and discharge. In the admission section of this report, the admission group was compared to a Normative Group. In order to look at change from admission to discharge, the means from admission to discharge are compared in Table 23. It is important to note that the low number of individuals in this analysis makes the conduct of a statistical test inappropriate. Overall, the means at discharge are lower than the admission means.

Table 23. Mean ASAP II Scale Scores at Admission & Discharge (n=5)

ASAP II Scale[40]	Admission Mean	Discharge Mean
Family Adjustment	8.8	6.6
Psych. Adjustment	9.8	6.6
Peer Influence	7.2	5.8
School Adjustment	7.0	7.4
Deviant	13.0	7.25
Attitude	8.25	5.5
Drug Exposure	7.0	4.8
Drug Involvement	2.2	1.2
Sustained Use	2.5	1.25
Disruption from Use	1.8	1.8
Prosocial Attitudes & Behaviors*	37.0	41.6
Motivated *	10.75	13.75
Defensive	4.2	7.6
Global	37.8	29.6

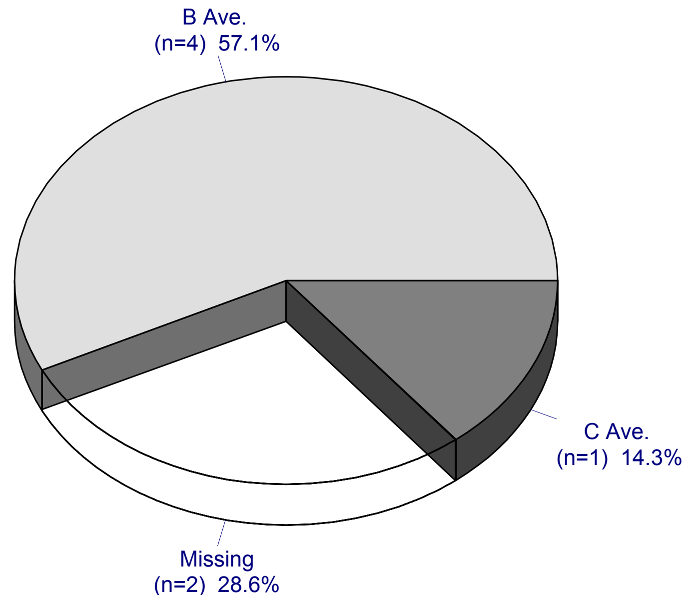
Due to low n, please use caution in interpretation. **** Higher numbers represent positive functioning.***
Source: Adolescent Self Assessment Profile II

[40] Each of the ASAP II Scales has a different number of items and is scored additively. Therefore, unless using standard scores as were used in the comparison to the Normative Group, the magnitudes of the scales cannot be compared to one another. Comparisons of the same scale from one time to another, however, is appropriate.

School Enrollment and Performance at Discharge

All Denver MST Youth were enrolled in school at the time of their discharge from the program. Their performance is displayed below in Figure 50, and shows the Youth to be achieving Bs and Cs in school.

Figure 50. Denver: Academic Performance of Youth Enrolled in School at Discharge (n=7)



Due to low n, please use caution in interpretation
Source: Community Based Client Record

Costs Accrued During Program Enrollment

Since the costs that accrued during enrollment were not yet available and some have not been confirmed, a cost analysis was not conducted. In future analyses, program costs and system utilization costs will be examined to document the costs that accrued during enrollment. Program costs can be determined on a per/slot basis, which, according to the RFP is up to $8,000, half provided by State General Fund and half by the sites through match in the form of cash or services from Colorado Access/Access Behavioral Care and its partners. Since MST costs are typically calculated on a per/slot basis as well, we will use the per/slot method for determining program costs. Other service utilization costs will be obtained directly from agencies, with the consent of Youth and their families.

The Six-Month Follow-up after Discharge from the UCH MST Pilot Program

There was no follow-up with Denver MST families prior to the preparation of this report.

VI. Summary and Conclusions

This report has described the status of two legislatively established pilot programs that were implemented in urban and rural areas of Colorado. The report is primarily descriptive in nature, a reflection of the small number of Youth and families that have been enrolled overall. Accordingly, readers are advised throughout the report to use caution in interpreting the results at this early phase of program operations. The report format, which presented each program in its own right, was a reflection of the striking differences both in how the Pilot Programs were implemented and in the characteristics of the Youth who enrolled in the programs. In this summary, however, contrasts will be drawn if there are implications for conclusions or recommendations. In addition to examining the program models and their fidelity to the legislative and RFP requirements, important information about the Youth who are served by the pilot programs was also presented. This summary will provide a review of those findings as well as some early information about changes Youth showed at discharge and limited qualitative information that was captured at the six-month follow-up.

Significant startup delays were experienced in the Denver site. As a result, services were not fully implemented until September 2001, nine months after the dollars became available.

Program Implementation and Fidelity

Both programs became fully operational during the first year of implementation, with trained staff and adequate infrastructure to enroll Youth and provide services.

Denver: This report detailed significant startup delays in the Denver site, officially known as the University of Colorado Hospital Multisystemic Treatment Team (UCH/MST), a sub contractor of Colorado Access/Access Behavioral Care (CA/ABC). As the result of the reorganization of the University's Department of Psychiatry, a two-tiered contract/sub-contract arrangement, and significant staff turnover at the therapist and administrative levels, services were not fully implemented until September 2001, nine months after the dollars became available. The assembled team, however, is a fully licensed MST that was found to demonstrate fidelity to the prescribed requirements. There were, however, two program elements that were not implemented as intended: the hiring of a Spanish-speaking therapist, and the provision of routine follow-up services through the Family Resource Coordinator.

Denver's assembled team is a fully licensed MST that was found to demonstrate fidelity to the prescribed requirements.

Sterling: The Sterling Pilot program had no startup problems. As a team within the infrastructure of Centennial Community Mental Health Center, they were able to begin enrolling Youth in the program in February 2001. The program demonstrated important elements that reflected the legislative intent, including very robust community collaboration, which is nurtured and strengthened continuously, small staff to client ratios, and integrated treatment, specifically with alcohol and drug services. The evaluator observed, however, that there were other areas that need to be strengthened. Most noteworthy is the minimal amount of family involvement in the overall treatment program. The small proportion of family therapy services that were provided substantiated this finding. The finding was corroborated by six-month follow-up interviews with the Youths' Parents and Caregivers, who clearly expressed the desire for knowledge about and involvement in the program. It should be noted, however, that they also highlighted barriers to their participation that will be challenging for the program to address (e.g., long working hours, transportation constraints, and financial issues). Another program component that was identified as problematic was the location of the delivery of services, almost all of which occurred on the site of the Community Mental Health Center. It is likely that these two issues are in fact related and that efforts to address either will impact the other.

The Sterling Pilot program had few implementation problems.

The Sterling Pilot program had a very high level of community collaboration and support, small staff to client ratios, and integrated treatment, specifically with alcohol and drug services.

Sterling did, however, have some areas that need strengthening. Most noteworthy is the minimal amount of family involvement in the overall treatment program. The small proportion of family therapy services that were provided substantiated this finding.

Another program component that was identified as problematic was the location of the delivery of services, almost all of which occur on the site of the Community Mental Health Center.

The Youth and their Families

During the first year of pilot implementation, 48 Youth were admitted and 32 were discharged. Significant variability was documented in all areas that were studied, including prior costs, again within and between sites.

During the first year of implementation of the pilots, 48 Youth were admitted and 32 were discharged.

Data are presented for both sites in the following areas:

- Socio-demographic Characteristics
- Strength & Risk Factors
- Service System Involvement
- Mental Health
- Criminal/Juvenile Justice involvement
- Substance Abuse
- School Enrollment and Performance
- Family Resource Needs
- Service System Costs accrued prior to admission

Socio-demographics

Overall, the Youth ranged in age from 12 to 17 at the time of admission, with 75% being male and over half representing non-white cultures. Almost all of the Youth were living at home with one or both Parents. Three quarters of the Youth were admitted under a Court Directed Voluntary Status, which usually indicates that the intervention is a condition of parole, probation, or a deferred sentence. Almost two-thirds of the referrals came from Probation in Sterling, with the UCH/MST referral sources being somewhat more diversified.

Strength & Risk Factors

Youth entered the pilots with strengths that contribute to resiliency, better outcomes, and provide a base on which programs can build. For example, more than half the Youth describe themselves as

- Being Comfortable with Diversity
- Trying to Be Successful
- Part of a Team
- Listening to Others
- Helping and Not Trying to Hurt Others

Therapists cited the provision of Love and Support, Active Involvement, and Communication as present for many families. Of note was the low endorsement of Problem Solving, judged to be a strength for only a few families. As might be expected, the community strengths varied between the sites, with Denver citing Clear Rules as most prevalent and Sterling selecting the Availability of Services. Both cited Education of Law Enforcement as the lowest area of strength.

Youth also came with significant individual, family, and community risk factors that threaten their overall well-being and pose challenges for the programs. These include:

- Almost half of the Youth first demonstrated their anti-social behavior prior to age 12
- Ineffective Communication and Coping Skills
- Poor Social and Peer Refusal Skills
- Early Association with Drug Using Peers
- Death of a Close Person

Caregiver Drug Use and Inconsistent Rules Regarding Drugs were the most cited Family Risks. Not surprisingly then, the Easy Availability of Drugs was cited as the most prevalent Community Risk.

Prior Service System Involvement

As expected, these Youth came to the pilots with prior system or treatment program involvement, primarily in Criminal/Juvenile Justice, Mental Health, and Substance Abuse. Only a few of the Sterling Youth were identified by the public school system as having a Significant Identifiable Emotional Disability (SIED). Almost half of the Denver Youth had that designation.

Mental Health characteristics were examined by looking at Colorado Client Assessment Record (CCAR) data for:

- Diagnosis
- The use of psychoactive medications
- The presence of high risk behaviors, experiences, abuse and family factors
- The distribution of the CCAR-based empirically derived "types" in the pilot groups compared to Youth in the public mental health system
- Mental health-related out of home placements

The diagnoses that were most common in either site include Conduct Disorder, Major Depression, Dysthymia, and Adjustment Disorder. Anecdotal information from the sites suggested substantial variability in training and approach to diagnosis, suggesting regional preferences. The evaluator recommended to both sites that they enhance their training in diagnosis. About one-quarter of the Youth were taking psychoactive medications at the time of admission. Both sites reported prior use of Mental Health related placements.

With regard to high-risk mental health characteristics, one or both sites identified the following as a factor for half or more Youth:

- Previous Suicide Attempt
- Family Mental Illness
- Sexual Abuse
- Physical Abuse
- Verbal Abuse
- Family Mental Illness
- Family Substance Abuse
- Violent Environment

When Pilot Youth were compared to the Public Mental Health System (PMHS) Youth in each site's geographic area, Pilot Youth in both sites were higher than the PMHS Youth for Previous Suicide Attempts, Trauma, Destroying Property/Fire Setting, Verbal Abuse, Violent Environment. The Denver site was also higher than the PMHS Youth in Sexual Abuse, Physical Abuse, and Family Mental Illness and the Sterling site had higher Family Substance Abuse rates than PMHS Youth.

When Youth were compared to the Youth in the public mental health system using an empirically derived typology developed by Colorado Mental Health Services:

- The Pilot Youth showed a notably higher proportion of types with high Legal and Substance Abuse Problems, Behavioral Problems, and problems with Disrespect and Attention Deficit

Criminal/Juvenile Justice

- The Sterling Youth were significantly deeper in the criminal/juvenile system, having a much higher rate of arrests, adjudications, and sentences
- The majority of arresting charges in Sterling were for Property Offenses, at 37%, followed by Violence/Threats against Persons at 20% and Drug and Alcohol Offenses at 19%
- Between a half and two-thirds of all Youth had a prior arrest, with a few Youth having had as many as four arrests
- As one would expect, Youth are adjudicated on a relatively small proportion of the crimes with which they are charged, with non-violent misdemeanors being the most prevalent adjudication and violent felonies being the least
- Probation and Community Service were the most common dispositions
- About one-quarter of the Youth had been sentenced to Detention
- Only one Youth had previously been committed to the Division of Youth Corrections
- A total of 9 Youth had 15 revocations prior to admission

Alcohol and Drug

Substance Use and additional risk factors were identified with the Adolescent Self Assessment Profile (ASAP II) and showed that:

- Caregivers had significant incarceration and substance abuse histories
- Alcohol and marijuana were the most commonly reported drugs used among Youth
- Pilot Youth reported relatively low amounts of actual drugs used, but
- Reported substance use-related problems, particularly in areas of Family Disruption, Psychological Problems, and Peer Influence
- The more direct substance use measures showed problems in Exposure to Drugs, Benefits and Disruption from Use, and Dependency
- Pilot Youth showed moderate scores on a pro-social scale of positive behaviors, a measure of self-perceived responsibility towards peers, adults, and the community

School Enrollment and Performance

- The majority of Youth were enrolled in school at the time of admission
- Two Youth had obtained a GED prior to admission to the pilot
- Three of the 47 Youth had been expelled prior to admission
- Five had dropped out without obtaining a GED
- For those who were enrolled, almost 30% were failing all or most of their classes and another 15-20% were failing half of their classes

Family Resource Needs

Inadequacy of day-to-day resources can present a barrier to intervention by limiting access to services (e.g., transportation) or by contributing to families' feelings of being overwhelmed (e.g., money to pay monthly bills), making it difficult for them to focus on treatment. These stresses, when combined with the pressures and strain of caring for one or more youth with serious emotional disturbance, some level of criminal behavior, substance abuse problems, and school problems can put a considerable drain on energy, relationships, and respite. All of this can contribute to exhaustion, depression, and feelings of hopelessness.

> As a Family Member/Family Advocate writes (not from the Pilot Program):
>
> *One of the toughest aspects of the caretaking role is the way that worries and frustration tend to overwhelm us. We frequently must make life adjustments as we shoulder a long-term burden of care. Stress, anxiety, isolation, and muted emotions become a permanent part of our day-to-day existence. We find that our daily lives are complicated, leisure and spontaneity are eradicated, and our hopes and plans for a "care free" future for our loved ones and ourselves are derailed (S. Garascia. Personal Communication, 2002).*

For these analyses, we had access to comparable data for Youth with serious emotional disturbance (SED) from National Evaluation of the Comprehensive Community Mental Health Services for Children and Their Families Program and the Colorado Cornerstone Initiative, one of the national sites.

- Most Pilot Caregivers rated their Basic Needs as Almost Always Adequate
- Secondary Resources (e.g., reliable transportation, a good job) were rated as Sometimes Adequate or less for both sites
- Both sites identified areas of need that are related to quality of life and morale that were, on average, between Seldom Adequate and Sometimes Adequate, including:
    - Money to save
    - Time to socialize
    - Someone to talk to
    - Money to buy things for yourself
    - Money for family entertainment

> One Youth's commitment costs nearly $60,000—an amount that would cover the full program costs of 7 or, with match, 14 Youth, suggesting the potential savings that could be accrued from early intervention.

Costs Accrued Prior to Admission

The Youth in the pilots cost Colorado over $800,000 in pre-program system involvement costs. The range of costs for individual Youth varied from $0 costs for five Youth to almost $200,000 for one Youth. It is likely that without successful intervention, these costs will grow.

When we look at specific service sectors and cost events, as shown in Table 24, we see that the Mental Health Sector accounted for the largest portion of total costs (39%). This figure would be closer to half of the total if all or a portion of the Residential Treatment Center (RTC) costs were assigned to Mental Health rather than Child Welfare. While the Mental Health costs include the cost of Day Treatment Services, it does not include prior costs for outpatient services. Child Welfare costs comprise almost one-third of the total costs (32%), followed by Criminal/Juvenile Justice costs at 28%. Special Education costs comprised only 2% of the total

costs, a somewhat surprising finding. With regard to cost events, the most frequently documented for the 47 Youth were arrests (28 Youth), detention and probation (12 Youth each), diversion (9 Youth), and State inpatient psychiatric days (8 Youth). Five Youth had no documented system involvement prior to participation in the pilots.

TABLE 24. TOTAL PRIOR SYSTEM INVOLVEMENT COSTS BY SERVICE SECTOR FOR ALL YOUTH (N=47)

SERVICE SECTOR	NUMBER OF YOUTH (N=47)	TOTAL COST	PERCENT OF TOTAL
Criminal/Juvenile Justice			
Arrests	28	$98,362	12%
Diversion	9	$1,852	< 1%
Probation	12	$4,375	1%
Intensive Supervision	1	$2,805	< 1%
Electronic Surveillance	1	$230	< 1%
Detention	12	$60,621	7%
Commitment	1	$58,400	7%
Parole	1	$1,202	< 1%
Subtotal		$227,847	28%
Mental Health Treatment			
State Hospital	8	$128,671	16%
Non-State Hospital	2	$7,000	1%
Day Treatment	1	$182,500	22%
Subtotal		$318,171.00	39%
Child Welfare			
Residential Treatment Center[41]	3	$96,738	12%
Foster Care	2	$65,378	8%
Therapeutic Foster Care	1	$78,607	10%
Relative Foster Care Placement	2	$17,601	2%
Subtotal		$258,324.00	32%
Education			
Special Education	4	$12,543	2%
TOTAL COSTS		$816,885	
TOTAL YOUTH WITH PRIOR SYSTEM COSTS (UNDUPLICATED)	42		
MEAN COSTS ACCRUED	42	$19,450	
MEDIAN COSTS ACCRUED	42	$4,730	
NUMBER OF YOUTH WITH NO PRIOR SYSTEM INVOLVEMENT COSTS	5		

Due to low n, please use caution in interpretation.

Source: Community Based Pilot Record; Colorado On-Line Network (ICON)

[41] Residential Treatment Center (RTC) costs were assigned to Child Welfare simply because the vast majority of RTC placements are through Child Welfare; at this time we do not know which system actually paid for these specific placements.

In addition to the methodological challenges involved in collecting reliable cost data, the question of how to frame the data so as to make it meaningful and useful is key. A common strategy when looking at cohorts is to present measures of central tendency, as has been done in this report. This becomes more meaningful if the cohort can be defined in such a way that its average costs would be helpful for planning program interventions and estimating cost savings.

For example, the average career system involvement cost for the 42 Youth who had some involvement is $19,450. By the standards of prior research into "career costs" for high end users (Colorado Foundation for Families and Children, 1995, Dresser & Utsumi, 1991), this may be low[42], demonstrating that overall, these Youth are in the early stages of their careers. It is important to keep in mind, however, that the range of "career costs" for these 42 Youth is between $26 and $186,150 suggesting that at least some of the Youth are approaching averages cited for Youth at a higher level of overall severity.

Another approach to looking at the distribution of costs is to think about the cohorts as having High, Medium, or Low Service Utilization as reflected in a similar distribution of costs. When the combined distribution, including those with no documented system costs, is divided into three equal ranges[43], we get the following cut off points:

High Costs = Over $7017
Medium Costs = $1489 to $7017
Low Costs = Less than $1489

Table 25 displays the distributions for High, Medium, and Low Cost Groups when these cut points are applied to the individual sites. Almost half of Denver's pilot Youth fall into the High Cost Group; the groups in the Sterling site are distributed more evenly. At this stage the determination of High, Medium and Low cut-points is somewhat arbitrary and eventually may be set higher or lower, based on more complete data.

TABLE 25. DISTRIBUTION OF TOTAL SYSTEM COSTS ACROSS HIGH, MEDIUM, AND LOW COST GROUPS BY SITE FOR ALL YOUTH (N=47)

LEVEL OF COST GROUP	*DENVER (N=13)*		*STERLING (N=34)*	
	Number	**Percent**	**Number**	**Percent**
Low	4	31%	13	38%
Medium	3	23%	12	35%
High	6	46%	7	26%

[42] See Dresser & Utsumi, 1991. Ten San Francisco children, ranging from ages 5 to 16, with an average age of 12.8, were considered to have "severe emotional problems." The "average career cost per child (all service use prior to research) was $215,447 and the average annual service expenditure was $50,246.

[43] The cost ranges for the High, Medium, and Low system utilization categories that were applied to each pilot site, were established based on the three cut points developed from the combined cost total for both sites. It is important to note that the figures in the table below are based on the total population of 47 and include the five Youth for whom there was no prior documented system involvement and therefore no costs.

The Six-Month Follow-up

As a result of follow-up efforts, several methodological changes were made to increase follow-up contact rates. In addition, instrumentation was adapted to accommodate older Youth who were no longer living with their Parents or Caregivers. There were eight qualitative Caregiver Program Evaluation/Satisfaction Interviews available from one site, Sterling, for the six-month follow-up analysis. Some early findings focused on Caregiver reports of their:

- Expectations for the Pilot Program for themselves and their child
- Prior experience with service systems
- Recommendations for program improvement
- Recommendations for system improvement

For these early findings, Caregivers:

- Saw the program as focused on their children rather than themselves. As such, they had few expectation of the program for themselves but were hoping to see their children "straightened out"
- Identified the Pilot Program, along with their recent experiences with Probation, as the most helpful services their children had received
- Wanted to know more about the program and be more involved in the program, both with their children and for interventions focused on themselves
- Identified important barriers to their participation that need to be addressed

Caregivers recommended:

- Parents get help for their children as soon as they suspect there might be a problem
- Schools should intervene early and get tougher with kids who skip school
- All interventions should be early, before kids cross the line or slip through the cracks
- Show their children love, know who they are with, and be involved in their activities

Some Preliminary Notes about Outcomes

While there were thirty-two discharges, the distribution of available discharge data was such that only limited discharge information was reported.

- Most Youth were involved with at least two other systems or services at the time of discharge, primarily Probation
- Alcohol and Drug Treatment was the most common referral at discharge
- Caregiver Parenting and Family Problems were reported by Denver as receiving the most intervention during admission
- Criminal Justice and Mental Health were reported by the Sterling team as receiving the most intervention during admission
- CCAR-based scales showed improvement in almost all areas; in some areas the improvement was statistically significant or approached significance
- Substance Abuse scale scores for the Denver Cohort were in the direction of improvement on almost all scales
- CCAR-based drug and alcohol items showed no change from admission to discharge for the Sterling cohort

- A Sterling Youth received his/her GED while enrolled in the program
- More Youth were receiving Cs and Bs in school at discharge, a notable improvement from admission

Matching Funds

This phase of the cost analysis did not include the calculation of program costs or the documentation and use of matching funds. Some information has been collected, however, that lays the groundwork for future analysis. State General Fund dollars allocated for this program were intended to be used by non-Medicaid Youth, since mental health services provided to Medicaid eligible individuals are covered under the Medicaid Mental Health Capitation Program. Medicaid covers virtually all mental health services provided by the Pilots, while stand-alone alcohol and drug related treatment services (e.g., urinalysis) are not covered. Drawing down General Fund dollars for services covered by the Capitation program is prohibited.

Sterling's match comes primarily from in-kind contributions of services from the Community Mental Health Center, Northeast Behavioral Health (NBH) Mental Health Assessment and Service Agency (MHASA), and other community agencies, with 86% of the Youth served being non-Medicaid. All services provided to Medicaid Youth qualify as match. Future analysis will focus more on documentation of the source and expenditure of these matching funds.

CA/ABC, on the other hand, structured their contribution as in-kind from ABC, the Mental Health Assessment and Service Agency (MHASA) for Denver, as well as cash from partner community agencies. While ABC always intended to provide match in the form of services to Medicaid eligible Youth, two factors have resulted in this portion being substantially larger than planned. First, the economic downturn of this past year has put additional stress on these partners, making it difficult for them to contribute the promised dollars. Second, partner agencies have been slower than expected in identifying non-Medicaid Youth for services. Thus, most of the available referrals in the Denver pilot were funded directly by capitation funds, all of which qualify as match. ABC has worked to increase the number of contributing partner community agencies. In addition, referral patterns in the beginning quarter of the current year have shifted toward non-Medicaid Youth. This will be a critical area of focus for CA/ABC in the next year of operation.

VII. Recommendations

The findings reported have attempted to characterize the implementation and early results of two Pilot Programs for Youth with mental health and criminal/juvenile justice involvement. Based on the information presented, the Division of Criminal Justice Office of Research and Statistics makes the following recommendations:

Department of Human Services, Office of Child and Family Services, Children's Health and Rehabilitation Unit

- **Provide technical assistance to the Sterling Pilot Program Staff to ensure the full implementation of the objectives in C.R.S. 16-8-205 and the RFP that require a family-based approach to services** by addressing the following:
  - **Conducting meetings with staff** to review program operation with specific emphasis on the extent of family involvement in Youth services.
  - **Reviewing with Pilot Staff the barriers** to full family involvement identified within this report (see page 56) as well as others identified by program staff.
  - **Developing a strategic plan** with measurable objectives and timelines that address the barriers and strategies and that can be tracked by the evaluator.
  - **Monitoring the implementation** of the strategic plan by conducting quarterly site visits and documenting progress.

- **Provide technical assistance to Colorado Access/Access Behavioral Care (CA/ABC) regarding their strategy for securing regular non-Medicaid referrals and the required matching funds and services** by addressing the following:
  - **Conducting meetings with key staff** to review program operations related to obtaining match funds.
  - **Reviewing with pilot staff the barriers** to implementing the match funding scenario as proposed as well as identifying additional or alternative strategies.
  - **Developing a strategic plan** with measurable objectives and timelines that address the barriers and strategies and that can be tracked by the evaluator.
  - **Monitoring the implementation** of the strategic plan by conducting quarterly site visits and documenting progress.

- **Document how matching funds and services are obtained and used in both sites.**

Sterling Pilot Program, Centennial Mental Health Center

- **Fully implement a family-based intervention rooted in outreach that includes home-based services as a substantial portion of the service model.** According to the Surgeon General's Mental Health Report (U.S. DHHS, 2001) and others (Woolfenden, Williams, & Peat, 2002), home-based family services have a strong record of effectiveness for children, Youth, and families with a wide variety of problems. The Sterling Pilot Program, however, faces unique and substantial challenges, including:
  - A rural economy in an economic downturn, leaving Youth and their Caregivers with a dearth of employment opportunities.
  - Many of the jobs that do exist require long shifts, sometimes with multiple days, followed by a few days off, leaving Caregivers exhausted and with limited opportunities for adequate supervision and participation in treatment.
  - The employment conditions and the lack of Caregivers supervision leave Youth with too much leisure time.
  - Families often live a significant distance from jobs and from the Community Mental Health Center, making travel time consuming and expensive for families and staff.

  There is empirical evidence that family and home-based services can be implemented successfully in rural communities (Scherer, Brondino, Henggeler, Melton, & Hanley, 1994; Brondino, Henggeler, Rowland, Pickrel, Cunningham, & Scheonwald, 1997) and efforts should be made to learn from other implementation efforts.

- **Build on the Pilot Program's considerable strengths**, including:
  - **An extremely strong community-based collaboration**, evidenced by the Pilot Program's responsiveness to Probation's needs to begin implementation with older Youth who had already penetrated the criminal/juvenile justice system.
  - **Creative solutions** to enormously challenging family situations, such as the development of programming that provides constructive and therapeutic interventions for Youth whose families are not providing the level of supervision needed for this population.
  - **Staff commitment, energy, resourcefulness, and expertise** as demonstrated by the Pilot Program's strong start, their work with the community, and their efforts to enroll Youth.
  - **The ongoing and continuing enthusiastic approach to implementing this program.**

- **Consider adding a routine follow-up capacity.**
- **Develop strategies to increase the number of referrals of younger Youth** who are less involved in the criminal/juvenile justice system.
- **Continue training to improve mental health diagnostic skills** among program staff.

Colorado Access/Access Behavioral Care (CA/ABC), University of Colorado Multisystemic Treatment Team

- **Continue successful implementation of MST** with commitment to fidelity to model, including therapist adherence to MST principles.
- **Evaluate the role and value of the Family Resource Coordinator.** The role of the Family Resource Coordinator has changed from that described in the proposal. CA/ABC should document the evolution of the position, including addressing the original intention of providing routine follow-up services. The evaluation should include how the services provided by the FRC are different from those usually provided by MST therapists, and what benefits have accrued to families by virtue of this addition.
- **Review the original intention and barriers to hiring a Spanish-speaking therapist. Determine the current needs and develop a strategic plan to address the issue.**
- **Continue to develop strategies for increasing the flow of non-Medicaid referrals and match dollars and services**. Creating a regular flow of matching funds will help to ensure the sustainability of the program.
- **Continue training to improve mental health diagnostic skills** of program staff.

VIII. Next Steps for the Evaluation

6. Continue collecting outcome data, and expanding the base of discharge and follow-up data.
7. Collect and confirm monetized units occurring during enrollment and post discharge.
8. Finalize the methodology for determining program costs and integrate into cost models.
9. Begin to examine the associations between the characteristics of Youth, the services they receive, and their outcomes, with the method (i.e., quantitative vs. qualitative) determined by the number of available cases.
10. Attempt to identify a natural comparison group that will provide information about the outcomes of Youth who are similar to those of the Youth in the Pilot Sites, but who have not received intensive interventions.

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Appendix 1

C.R.S. 16-8-205

Appendix 2

State of Colorado
Department of Human Services
Request for Proposal RFP # IHANC109053CMHS
Community-Based Management Pilot Programs

Appendix 3

Community Based Pilot Management Programs

Evaluation Plan and Methods

Appendix 4

Community Based Pilot Management Programs

Evaluation Instruments and Consent Forms

The Colorado Client Assessment Record
The Community Based Pilot Record
The ASAP II – Modified
The Caregiver Family Resource Scale
The Family Assessment Device
The Parent/Caregiver Questionnaire
The Monthly Tracking Form
The Caregiver Follow-up Interview
The Youth Follow-up Interview

The Community Based Pilot Programs Consent Form for Program Evaluation
Community Based Pilot Follow-up Consent to Release Location/Contact Information for Follow-up Study

Appendix 5

Documentation of Cost Units

Appendix 6

Children and Youth CCAR Problem and Strength Types

Appendix 7

Sterling Pilot Program: Program Description

Appendix 8

Individual Cost Profiles for Sterling and Denver Youth

Appendix 9

Colorado Access/Access Behavioral Health Pilot Program: UCH/MST Program Description

MST Overview

MST Guidelines