OUTCOME TRAJECTORIES FOR YOUTH SERVED IN RESIDENTIAL TREATMENT FACILITY SETTINGS OR THE COMMUNITY THROUGH THE HOME AND COMMUNITY BASED SERVICES MEDICAID WAIVER

Office of Performance Measurement & Evaluation & Division of Integrated Community Services for Children and Families in the New York State Office of Mental Health
  In collaboration with the New York State Coalition for Children’s Mental Health Services
  Presented at the Children’s Mental Health Services Staff Development Training Forum, Saratoga NY
12/3/2013
Background: Previous Research


- Conducted among Residential Treatment Facility providers in a Western State during 1990’s- analyses suggested that the effectiveness of residential treatment may be limited to the reduction of risk behaviors and depression and improved management of psychosis.

- There was little evidence that the facilities in this study were successful at improving functioning. In addition, the study indicated that residential treatment may have unintended adverse outcomes on anxiety and hyperactivity.

- The study also found significant variation in outcomes across sites, with adolescents in one site getting reliably worse during the course of residential treatment.
Study Objectives

- To replicate previous study Lyons et al., 2001 and extend analysis by including a comparison of changed trajectories for youth in Residential Treatment Facilities (RTF) and Home and Community Based Waiver Services (HCBS-Waiver).
- To profile the psychiatric symptoms, risk behaviors and functional impairment of youth served in RTF and HCBS-Waiver using existing administrative data;
- To examine the trajectories of change in symptoms, risk behavior, functional impairments, child strengths and family strengths over the course of an episode of care;
- To examine demographic factors associated with these change trajectories.
Background: Setting

- NYS Office of Mental Health offers Residential Treatment Facility (RTF) and Home and Community Based Services Waiver (HCBS-Waiver) services for youth ages 5 - 21 who have higher behavioral health needs within the public mental health system.
- RTF serves approximately 960 youth per year in residential treatment settings and HCBS-Waiver serves approximately 2,700 youth per year in community settings using a wraparound-like program model.
- Both programs are central components of New York State’s (NYS) public mental health system of care for youth.
- NYS is transitioning public mental health services to Medicaid Managed Care. Important policy questions need to be addressed regarding how to effectively serve youth in the least restrictive setting.
Method: Population & Data Source

- **Population & Study Design:**
  
  Youth receiving services in RTF (N=2,419, 99.8%) or HCBS-Waiver (N=7,817, 100%) during 2008-2102 with at least one set of CAIRS Admission indicators;
  
  The Study is a repeated measures within and between group design.

- **Data Source:**
  
  - All data were extracted from CAIRS (Child & Adult Integrated Reporting System)
  
  - Admission, follow-up and discharge assessments on youth symptoms, behaviors and functional impairment as well as youth and family strengths domains were included.
  
  - Youth demographics, primary diagnosis at admission, custody status and family characteristics were also obtained from CAIRS.
Method: Statistical Analysis

- **Descriptive**
  T-test were used to compare average level of youth symptoms, risk behaviors and functional impairment at admission were compared between RTF and Waiver

- **Multivariable**
  Mixed random effect repeated analysis was used to model each child’s change trajectory on each indicator as a log-linear function of time over the course of the episode. Change trajectories were examined separately for youth in HCBS-Waiver or RTF settings.

  Models included the main effects of log transformed time, **controlling for effects of Program (Waiver vs. RTF), Unit (RTF provider or Waiver provider), age, gender, custody status, primary diagnosis at admission and family characteristics.** *(In progress)*
Method: Analytical Constructs

Dependent variables were: youth symptoms, risk behaviors, functional impairment, child and family strengths

- Prevalence of symptoms, risk behaviors and functional impairment were coded as having any indication of problem or as having a severe level of problem;
- Symptoms, risk behaviors and functional impairment domain items were coded on a 5-point Likert scale ranging from 0 (not-evident) to 4 (severe).
- Risk behaviors were coded on a 5 point Likert scale from 0 (never) to 4 (always)
- Child and family strengths were coded on a 4-point Likert scale with 1 indicating the most need (Not true/not like the child) and 4 indicating the greatest strength (very true/very much like the child).
Method: Analytical Constructs

- Independent variables:
  - Time: time since admission was log transformed to show the predicted amount of change within 9 months of admission (also from 9 to 24 months)

  (Models controlling for below are IN PROGRESS)
  - Program Type (RTF or Waiver)
  - Program (RTF provider or Waiver provider)
  - Custody status: In foster care (Y/N)
  - Primary Diagnosis at admission was categorized as: ADHD, Mood, Schizophrenia, Disruptive Behavior, Anxiety or other
  - Age was categorized as: 5-12, 13 and older
  - Gender
Table 1: Comparisons of domain-level mean scales at admission between youth served in RTF and Waiver using t-test.

| Domain                | RTF (n=2419) | Waiver (n=7817) | t value | p>|t| |
|-----------------------|--------------|-----------------|---------|------|
| Behavioral Symptoms   | 1.21         | 1.03            | -11.23  | <.0001 |
| Risk Behavior         | 0.66         | 0.56            | -6.65   | <.0001 |
| Functional Impairment | 1.86         | 1.51            | -18.35  | <.0001 |
| Child Strength        | 2.31         | 2.38            | 6.99    | <.0001 |
| Family Strength       | 2.86         | 3.11            | 8.73    | <.0001 |
## Table 2: Average Length of Stay (LOS)

<table>
<thead>
<tr>
<th>Program</th>
<th>At least 1 Assessment</th>
<th>At least 2 Assessments</th>
<th>At least 3 Assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N  Avg LOS (days)</td>
<td>N  Avg LOS (days)</td>
<td>N  Avg LOS (days)</td>
</tr>
<tr>
<td>Residential Treatment Facility - Children &amp; Youth</td>
<td>2419  515.8</td>
<td>2280  529.4</td>
<td>1021  617.4</td>
</tr>
<tr>
<td>Home and Community Based Services (HCBS) Waiver</td>
<td>7817  350.4</td>
<td>7744  351.4</td>
<td>4965  448.0</td>
</tr>
</tbody>
</table>
Behavioral Symptoms Domain

Consists of 25 items Grouped into the following categories:

**Emotional Symptoms**: Suicidal ideation, Psychotic symptoms, Depression, Anxiety, Phobias, Eating disorder, Hyperactive, and Impulsive.

**Behavioral Symptoms**: Temper tantrums, Sleep disorders, Enuresis / Encompresis, Physical complaints, Developmental delays, Peer interactions, Self-injury and Runaway.

**Dangerous/Aggressive Behavior**: Dangerous to self, Dangerous to others, Verbally aggressive, and Physically aggressive.

**Substance Abuse**: Alcohol abuse and Drug abuse.

**Sexually Related**: Sexually inappropriate, Sexually acting out and Sexually aggressive.
CAIRS – Behavioral Symptom Domain

**Symptoms / Behaviors (Select one response)**

Indicate the degree to which each of the following interfere with this child's performance of daily activities and/or major role requirements ON ADMISSION to this program.

**Scale:**
- 0 - Not evident
- 1 - Mild
- 2 - Moderate
- 3 - Marginally severe
- 4 - Severe
- U - Unknown
- Y - Yes
- N - No

<table>
<thead>
<tr>
<th>Current</th>
<th>History</th>
<th>Current</th>
<th>History</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suicidal ideation</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Psychotic symptoms (e.g. hallucinations)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Depression</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Anxiety</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>Phobias</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Dangerous to self</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Dangerous to others</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Temper tantrums</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Sleep disorders</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Enuresis / Encompresis</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Physical complaints</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Alcohol abuse</td>
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<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Drug abuse</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Developmental delays</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Sexually inappropriate</td>
<td>✔</td>
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<td>✔</td>
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<tr>
<td>Sexually acting out</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Sexually aggressive</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Verbally aggressive</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Physically aggressive</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Eating disorder</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Peer interactions</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Hyperactive</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Impulsive</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Self-injury</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Runaway</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Other, please specify</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

[Reset Other]
Symptom Domain: Prevalence of Any Problem and Prevalence of Severe Problem at Admission to RTF

Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.
Symptom Domain: Prevalence of Any Problem and Prevalence of Severe Problem at Admission to RTF (Continued)

Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.
Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.

Showing top 15 RTF items with highest problem rate.
Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment. Showing top 15 RTF items with highest severe problem rate.
RTF vs HCBS-Waiver: Change Trajectory on Behavioral Symptoms Domain—Items related to Emotional Symptoms

Graph 1.1-1: RTF Change Trajectory on Behavioral Symptoms Domain—Items related to Emotional Symptoms*  
Graph 1.1-1: Waiver Change Trajectory on Behavioral Symptoms Domain—Items related to Emotional Symptoms*

*All items are significant at 0.05 level.
Youth served in RTF during 11/1/2006-12/31/2012, with at least 1 assessments (N=2410)

*All items are significant at 0.05 level.
Youth served in Waiver during 11/1/2006-12/31/2012, with at least 1 assessments (N=7817)
RTF vs HCBS-Waiver: Change Trajectory on Behavioral Symptoms
Domain– Items related to Behavioral Symptoms

Graph 1.1.2: RTF-Change Trajectory on Behavioral Symptoms Domain– Items related to Problem Behavior

Graph 1.1.2: Waiver Change Trajectory on Behavioral Symptoms Domain– Items related to Problem Behavior

Average Item Scale

Months Since Admission

DESCRIPTION

- Domain-Avg (25 items)
- Developmental delays
- Enuresis / Enurepsis
- Peer interactions
- Runaway
- Physical complaints
- Sleep disorders
- Self-injury
- Temper tantrums

*All items are significant at 0.05 significance level.
Youth served in RTF during 1/1/2008-12/31/2012, with at least 1 assessments (N=2419)

*All items are significant at 0.05 significance level.
Youth served in Waiver during 1/1/2008-12/31/2012, with at least 1 assessments (N=7817)
RTF vs HCBS-Waiver: Change Trajectory on Behavioral Symptoms
Domain–Items related to Dangerous/Aggressive Behavior

Graph 1-3: RTF-Change Trajectory on Behavioral Symptoms Domain–Items related to Dangerous/Aggressive Behavior

Graph 1-3: Waiver-Change Trajectory on Behavioral Symptoms Domain–Items related to Dangerous/Aggressive Behavior

*All items are significant at 0.05 level.
Youth served in RTF during 1/1/2008-12/31/2012, with at least 1 assessments (N=2419)

*All items are significant at 0.05 level.
Youth served in Waiver during 1/1/2008-12/31/2012, with at least 1 assessments (N=7817)
RTF vs HCBS-Waiver: Change Trajectory on Behavioral Symptoms Domain—Items related to Substance Abuse

*All items are significant at 0.05 level
Youth served in RTF during 1/1/2008-12/31/2012, with at least 1 assessments (N=2419)

*All items are significant at 0.05 level except Drug Abuse.
Youth served in Waiver during 1/1/2008-12/31/2012, with at least 1 assessments (N=7817)
**RTF vs HCBS-Waiver: Change Trajectory on Behavioral Symptoms**

**Domain—Sexually Related Items**

*Graph 1.1-5: RTF-Change Trajectory on Behavioral Symptoms Domain—Sexually related items*

*Graph 1.1-5: Waiver-Change Trajectory on Behavioral Symptoms Domain—Sexually related items*

Average Item Scale

- **DESCRIPTION**: Domain-Avg(25 items), Sexually acting out, Sexually aggressive, Sexually inappropriate

*All items are significant at 0.05 level.*

Youth served in RTF during 01/2003-12/31/2012, with at least 1 assessments (N=2419)
Risk Behavior

Suicide attempts
Destruction of property
Cruelty to animals
Fire setting
CAIRS - Risk Behaviors Domains

<table>
<thead>
<tr>
<th>Symptoms / Behaviors continued... (Select one response)</th>
<th>Scale: 0 - Never  1 - Rarely  2 - Sometimes  3 - Often  4 - Always  U - Unknown  Y - Yes  N - No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suicide attempts</td>
<td>Current</td>
</tr>
<tr>
<td></td>
<td>0 1 2 3 4 U Y N U</td>
</tr>
<tr>
<td>Destruction of property</td>
<td>Current</td>
</tr>
<tr>
<td></td>
<td>0 1 2 3 4 U Y N U</td>
</tr>
<tr>
<td>Cruelty to animals</td>
<td>Current</td>
</tr>
<tr>
<td></td>
<td>0 1 2 3 4 U Y N U</td>
</tr>
<tr>
<td>Fire setting</td>
<td>Current</td>
</tr>
<tr>
<td></td>
<td>0 1 2 3 4 U Y N U</td>
</tr>
</tbody>
</table>
Risk Behaviors Domain: Prevalence of Any Problem and Prevalence of Severe Problem at Admission to RTF

Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.
Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.
Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.

RTF vs Waiver - Risk Behavior Domain: Prevalence of Severe Problem at Admission

- Destruction of property: 30% RTF, 18% Waiver
- Suicide attempts: 6% RTF, 3% Waiver
- Cruelty to animals: 2% RTF, 1% Waiver
- Fire setting: 1% RTF, 1% Waiver

Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.
RTF vs HCBS-Waiver: Change Trajectory on Risk Behavior Domain

Graph 2.1: RTF-Change Trajectory on Risk Behaviors Domain

*All items are significant at 0.05 level.
Youth served in RTF during 1/1/2008-12/31/2012, with at least 1 assessments (N=2419)

Graph 2.1: Waiver-Change Trajectory on Risk Behaviors Domain

*All items are significant at 0.05 level.
Youth served in Waiver during 1/1/2008-12/31/2012, with at least 1 assessments (N=7017)
Functional Impairment

- Self-care
- Social relationships / functioning
- Cognitive functioning / communication functioning
- Self-direction
- Motor functioning
### CAIRS Functional Impairment Domain

#### Areas of functional impairment (Select one response)

<table>
<thead>
<tr>
<th>Scale</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>U</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - Not evident</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - Mild</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 - Moderate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 - Marginally severe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 - Severe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U - Unknown</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Self-care
- Social relationships / functioning
- Cognitive functioning / communication functioning
- Self-direction
- Motor functioning
Functional Impairment Domain: Prevalence of any Problem and Severe Problem at admission (RTF)

Social relationships / functioning: 98% (Problem), 63% (Severe)
Self-direction: 93% (Problem), 47% (Severe)
Cognitive functioning / communication functioning: 84% (Problem), 33% (Severe)
Self-care: 79% (Problem), 26% (Severe)
Motor functioning: 30% (Problem), 4% (Severe)

Valid N= 2357

Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.
RTF vs Waiver - Functional Impairment Domain: Prevalence of Any Problem at Admission

Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.
RTF vs Waiver - Functional Impairment Domain: Prevalence of Severe Problem at Admission

<table>
<thead>
<tr>
<th>Domain</th>
<th>RTF-Severe (%) (N=2419)</th>
<th>Waiver-Severe (%) (N=7817)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social relationships / functioning</td>
<td>63%</td>
<td>12%</td>
</tr>
<tr>
<td>Self-direction</td>
<td>47%</td>
<td>18%</td>
</tr>
<tr>
<td>Cognitive functioning / communication</td>
<td>33%</td>
<td>43%</td>
</tr>
<tr>
<td>Self-care</td>
<td>26%</td>
<td>54%</td>
</tr>
<tr>
<td>Motor functioning</td>
<td>4%</td>
<td>31%</td>
</tr>
</tbody>
</table>

Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.
RTF vs HCBS-Waiver: Change Trajectory on Functional Impairment Domain

Graph 3.1: RTF-Change Trajectory on Functional Impairment Domain

Graph 3.1: Waiver-Change Trajectory on Functional Impairment Domain

Average Item Scale

Months Since Admission

DESCRIPTION
- Domain-Avg
- Cognitive functioning / communication functioning
- Motor functioning
- Self-care
- Self-direction
- Social relationships / functioning

*All items are significant at 0.05 level.
Youth served in RTF during 1/1/2006-12/31/2012, with at least 1 assessments (N=2418)

DESCRIPTION
- Domain-Avg
- Cognitive functioning / communication functioning
- Motor functioning
- Self-care
- Self-direction
- Social relationships / functioning

*All items are significant at 0.05 level.
Youth served in Waiver during 1/1/2003-12/31/2012, with at least 1 assessments (N=7017)
Child Strength

- Child identifies personal strengths
- Maintains positive family relations
- Uses anger management skills
- Expresses remorse for behavior that hurts or upsets others
- Considers consequences of own behavior
- Accepts closeness and intimacy of others
- Attends school regularly
- Respects the rights of others
- Accepts responsibility for own actions
- Enjoys a hobby and / or special interest
- Has friends / is popular with peers
- Performs well in school
CAIRS: Child Strength Domains

<table>
<thead>
<tr>
<th>Child Strengths (Select one response)</th>
<th>Scale:  1 - Not at all like the child  2 - Not much like the child  3 - Like the child  4 - Very much like the child  U - Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child identifies personal strengths</td>
<td>○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>Maintains positive family relations</td>
<td>○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>Uses anger management skills</td>
<td>○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>Expresses remorse for behavior that hurts or upsets others</td>
<td>○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>Considers consequences of own behavior</td>
<td>○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>Accepts closeness and intimacy of others</td>
<td>○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>Attends school regularly</td>
<td>○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>Respects the rights of others</td>
<td>○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>Accepts responsibility for own actions</td>
<td>○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>Enjoys a hobby and/or special interest</td>
<td>○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>Has friends/is popular with peers</td>
<td>○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>Performs well in school</td>
<td>○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>Other, please specify</td>
<td>○ ○ ○ ○ ○</td>
</tr>
</tbody>
</table>

Reset Other
Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.
RTF vs HCBS-Waiver: Change Trajectory on Child Strength Domain

Graph 4.1: RTF-Change Trajectory on Child Strength Domain

Graph 4.1: Waiver-Change Trajectory on Child Strength Domain

DESCRIPTION
- Domain-Avg
- Accepts closeness and intimacy of others
- Child identifies personal strengths
- Considers consequences of own behavior
- Expresses remorse for behavior that hurts or upsets others
- Maintains positive family relations
- Uses anger management skills

*All items are significant at 0.05 level.
Youth served in RTF during 1/1/2005-12/31/2012, with at least 1 assessments (N=2419)

*All items are significant at 0.05 level.
Youth served in Waiver during 1/1/2005-12/31/2012, with at least 1 assessments (N=7617)
RTF vs HCBS-Waiver: Change Trajectory on Child Strength Domain

Graph 4.1: RTF-Change Trajectory on Child Strength Domain (Cont.)

Graph 4.1: Waiver-Change Trajectory on Child Strength Domain (Cont.)

*All items are significant at 0.05 significance level.
Youth served in RTF during 1/1/2008-12/31/2012, with at least 1 assessments (N=2419)

*All items are significant at 0.05 significance level.
Youth served in Waiver during 1/1/2008-12/31/2012, with at least 1 assessments (N=7917)
Family Strength

Primary caregiver provides food, clothing, shelter
Primary caregiver provides age-appropriate supervision
Primary caregiver is able to give medications as ordered
Primary caregiver responds supportively to this child’s emotion
Primary caregiver is able to manage / protect child
Primary caregiver is motivated to help with treatment
**CAIRS: Family Strength Domains**

**Family Strengths (Select one response)**
Indicate the strengths of the person(s) primarily responsible for the child. If the child is currently in a community residential program, refer to the adult(s) in the child’s primary living situation just prior to admission.

**Scale:**
- **0** - Not at all true
- **1** - A little true
- **2** - Somewhat true
- **3** - Usually true
- **4** - Very true
- **NA** - Not applicable
- **U** - Unknown

<table>
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<td>Primary caregiver provides food, clothing, shelter</td>
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<td>Primary caregiver provides age-appropriate supervision</td>
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<td>Primary caregiver is able to give medications as ordered</td>
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<td>Primary caregiver responds supportively to this child’s emotional / behavioral state</td>
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<td>Primary caregiver is able to manage / protect child</td>
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<td>Primary caregiver is motivated to help with treatment</td>
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RTF vs Waiver - Family Strength Domain: Prevalence of Strength at Admission

Cohort: Youth Served during 1/1/2008-12/31/2012 with at least 1 assessment.
RTF vs HCBS-Waiver: Change Trajectory on Family Strength Domain

Graph 5.1: RTF-Change Trajectory on Family Strength Domain

- Domain Avg
- Primary caregiver is able to give medications as ordered
- Primary caregiver is able to manage/protect child
- Primary caregiver is motivated to help with treatment
- Primary caregiver provides age-appropriate supervision
- Primary caregiver provides food, clothing, shelter
- Primary caregiver responds supportively to this child’s emotional/behavioral state

Graph 5.1: Waiver-Change Trajectory on Family Strength Domain

- Domain Avg
- Primary caregiver is able to give medications as ordered
- Primary caregiver is able to manage/protect child
- Primary caregiver is motivated to help with treatment
- Primary caregiver provides age-appropriate supervision
- Primary caregiver provides food, clothing, shelter
- Primary caregiver responds supportively to this child’s emotional/behavioral state

*All items are significant at 0.05 level except Primary caregiver responds supportively to this child’s emotion.
Youth served in Waiver during 1/1/2006-12/31/2012, with at least 1 assessments (N=781)
Conclusion & Discussion

- Youth served in RTF had significantly higher scores (more severe) in symptoms, risk behaviors and functional impairment when admitted compared with youth served in HCBS-Waiver.

- In terms of youth & family strengths, youth served in RTF had significantly lower scores (more need) when admitted compared youth served in HCBS-Waiver.

- Change trajectory analysis showed statistically significant improvement in all symptoms, risk behaviors and functioning items for youth served in either RTF or HCBS-Waiver programs.

- Notable were significant improvements in symptoms/behavior found with peer interactions, impulsive, verbally aggressive, anxiety, social relationships/function and self-direction which each had an average admission score of 2+ (moderate/marginal severity).
Conclusion & Discussion (continued)

- Among child strength items, on ‘uses anger management skills’ and ‘considers consequences of own behavior’ had the most noticeable improvements with a change of 0.32, 0.31 for RTF youth in 9 months and 0.22, 0.16 for Waiver youth.
- The overall Family Strength level had improved significantly for youth in RTF, however, it declined slightly for youth in Waiver.
- In all the five selected domains, youth served in RTF had greater improvement in level of indicators within 9 months of admission compared to Waiver youth, which can be visualized by the steeper slopes of scale trajectories.
- The slope of trajectory becomes flatter over time, implying more effective treatment during the beginning stage. The scales of change in each item were more noticeable during the first-year of services.
Limitations/Future Study

- Youth served in either RTF or HCBS-waiver had positive change trajectories over time in care in terms of symptoms, risk behaviors, functioning and strengths. Differences in the psychiatric profiles of children served in RTF and Waiver were also noted which may help in the future to determine children’s effective placement in the mental health system.
- The effects of demographics, custody status, primary diagnosis and family characteristics on change trajectories will be examined in future analysis.
- Proc Mixed procedure is used for predicting the continuous outcome change, but the dependent variable “scale” is discrete.
- The Glimmix procedure may be utilized to fit generalized linear mixed models with discrete outcomes.