Using Indicators of Child & Adolescent Functioning to Guide Management of Children's Behavioral Health Services:

Examples from Three Care Systems

20th Annual System of Care for Children's Mental Health Conference
March 6, 2007, Tampa, FL

Session Goals

- To demonstrate the utilization of the Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1998) within the context of broader evaluation efforts by three systems of care for children and families
  - Rhode Island
  - Ontario
  - Michigan
- Compare ways in which policy makers have used the CAFAS and other clinical information to implement performance improvement strategies and increase accountability in a challenging budget climate.
- Examples will relate to both programmatic and system-level applications and demonstrate the utility of such approaches for effective performance monitoring.

The Presenters

- Christian M. Connell & Christopher Counihan: Utilizing CAFAS Data to Understand Service Delivery within an Intensive Home-based Program for Children and Adolescents with SED
- Melanie Barwick: Using encounter and outcome data to guide management of behavioral health services in Ontario
- Kay Hodges: Outcome Indicator "Dashboard" Helps Sustain Continuous Quality Improvement Efforts at the Provider Level

Use of the CAFAS in Children's Intensive Services: Implications for clinical service and outcomes

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Overview of Presentation

- Describe CIS evaluation methods and CAFAS sample selection
- Demographic and Clinical Characteristics of CIS clients in CAFAS sample
- Results of CAFAS Analyses
  - CAFAS Scores
  - Using the CAFAS to identify clinical groups
  - Changes in functioning at discharge
- Implications and use of CAFAS and evaluation results to inform service delivery

What is CIS?

- Intensive community & home-based mental and behavioral health program for children with SED
- Intended to fit within the broader "continuum of care" for medically necessary services
- Designed to address needs of the child within his/her environmental context

Evaluation Methodology

- Monthly MIS Data Extraction covering all children active in CIS during previous month
  - New Admissions
  - Total Population Updates
  - CIS Level Changes
  - Service Data
  - Discharges
  - Clinical Functioning

CAFAS Sample Selection

- Admission between July 2004 and September 2005
- Eligibility for CAFAS at Admission based upon age and length of stay:
  - Age 7 or older
  - Enrolled 30 days or more
- 1,597 active clients were eligible for CAFAS administration at admission
- CAFAS data was available for 67% of eligible cases (1,076 children)

Demographic Characteristics (Admission)

Age (mean 12.8 yrs)	%
< 10	20
10-11	16
12-13	24
14-15	24
16+	14

Gender	%
Males	56
Females	44

Race/Ethnicity	%
African American	10
American Indian	1
Asian/Pac. Island	1
Caucasian	54
Hispanic	21
Other	4
2+ Races	10

Repeat episode (since standards)	%
	10

Clinical Characteristics (Admission)

Diagnosis	%
Adjustment	16
Anxiety	20
Behavior	60
Develop/LD	7
Mood	36
Psychosis	1
Personality	<1
Substance Use	3

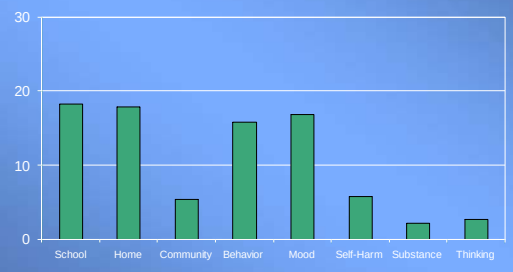
- Recent Psych. Hosp. 11

M-CGAS (Mean: 43)	%
10-30	1
31-40	22
41-50	69
51-60	3
61-100	1

Ohio Scales Risk	%
Problem (Mean: 35)	77
Functioning (Mean: 38)	84

CAFAS Analyses

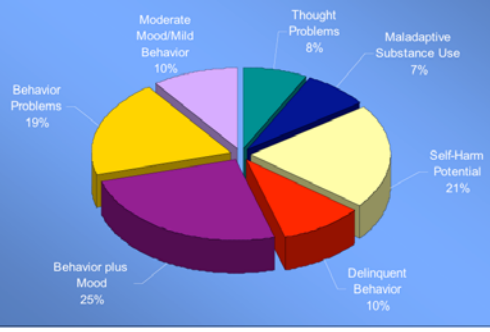
Admission CAFAS Scale Means



Classifying CAFAS scores into tiers

- Thought Problems: 20 or higher on the Thinking subscale
- Maladaptive Substance Use: 20 or higher on the Substance Use subscale
- Self-Harmful Potential: 20 or higher on the Self-Harmful subscale or 30 on the Mood/Emotions subscale
- Delinquent Behavior: 20 or higher on Community subscale
- Behavior Problems with Moderate Mood Disturbance: 20 or higher on School/Work, Home, or Behavior Toward Others subscale; **and** 20 on Mood/Emotions subscale
- Behavior Problems: 20 or higher on School/Work, Home, or Behavior Toward Others subscales
- Moderate Mood/Mild Behavior Problems: No subscales higher than 10 except for Mood/Emotions, which can be as high as 20

Admission CAFAS Tiers



Differences among CAFAS Groups

	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
Percent of Total	8%	7%	21%	10%	25%	19%	10%
Demographic							
Mean Age (years)	12.9	15.1	13.2	13.1	11.7	11.7	12.2
Male (%)	48.3	42.6	33.6	65.8	54.5	61.4	51.5
Clinical							
Behavior Dx (%)	50.0	63.8	44.3	74.7	62.6	71.2	57.4
Mood Dx (%)	38.3	46.8	50.3	24.1	31.6	11.4	27.9
Substance Abuse Dx (%)	5.0	34.0	0.0	2.5	0.0	0.8	0.0
Psychosis Dx (%)	6.7	0.0	0.7	0.0	0.5	0.0	0.0
Recent Hospitalization	15.0	12.8	19.5	3.8	5.3	0.8	2.9
Clinical Functioning							
MCGAS	39.9	41.2	40.4	40.5	42.6	42.8	43.4
Ohio Problem	36.3	39.3	38.4	35.0	35.5	32.2	28.8
Ohio Functioning	32.4	33.7	37.1	35.4	37.2	37.3	44.0
CAFAS Total Score	113.7	131.3	97.9	106.6	79.5	61.1	34.1

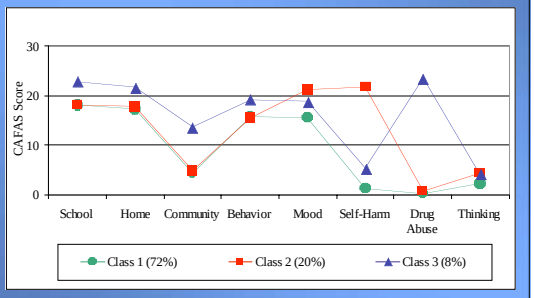
Note: Group 1(Thought Problems), Group 2 (Maladaptive Substance Use), Group 3 (Self-Harmful Potential), Group 4 (Delinquent Behavior), Group 5 (Behavior Problems with Moderate Mood Disturbance), Group 6 (Behavior Problems), Group 7 (Moderate Mood/Mild Behavior Problems).

Latent Class Analysis of CAFAS

What is LCA and why use with CIS?

- LCA is a method for identifying sub-groups (classes) within a larger population based upon similar patterns of responding to measures
- Why use with CIS?
  - CAFAS tiers were developed from patterns observed in general outpatient treatment settings
  - CIS serves a more severe SED population than the typical outpatient treatment model
  - As a result, sub-groups of CIS clients based on CAFAS may be different from what would be expected in a broader treatment setting

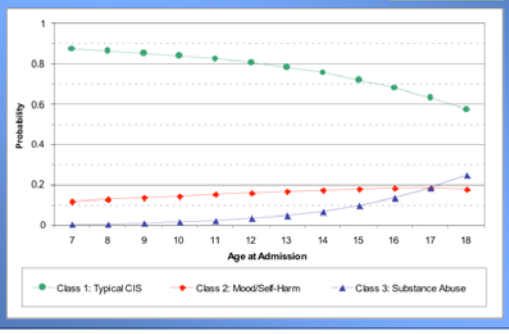
Admission CAFAS Latent Classes



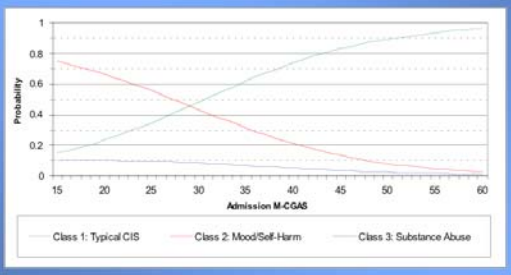
Differences among CAFAS LCA Classes

	Mod. Behavior and Mood	Self-harm Potential	Substance Abuse
Percent of Total	72%	20%	8%
Demographic			
Mean Age (years)	12.3	13.3	15.1
Male (%)	58.1	39.8	49.2
Clinical			
Behavior Dx (%)	67.2	42.8	53.8
Mood Dx (%)	28.6	59.6	38.5
Substance Abuse Dx (%)	0.3	1.2	29.2
Recent Hospitalization	6.3	22.9	13.8
Clinical Functioning			
MCGAS	43.3	40.3	41.4
Ohio Problem	33.3	39.2	38.0
Ohio Functioning	38.5	36.7	34.2
CAFAS Total Score	75.1	104.5	129.4

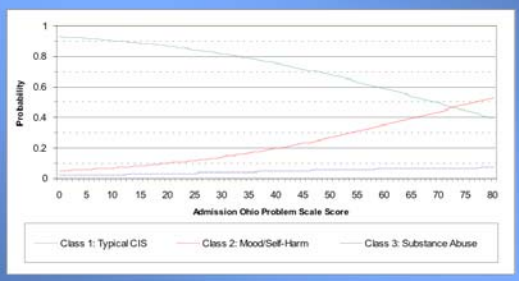
Effect of Age on Class Probabilities



Effect of Admission M-CGAS on Class Probabilities



Effect of Admission Ohio Problem Scale on Class Probabilities



Service Utilization Differences Among CAFAS LCA Classes

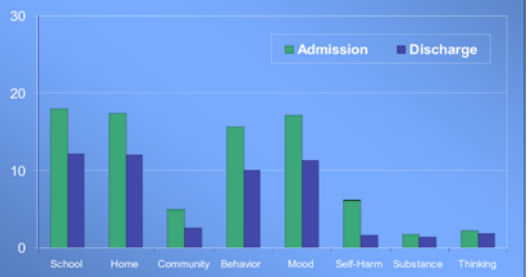
- Examined Service Utilization rates and types of service during first 5 weeks in CIS
- Amount of Service
  - No differences observed in average amount of weekly service across CAFAS Classes
- Receipt of Intensive Services
  - Self-harm Potential group most likely to use emergency and medication services
  - No differences in assessment service utilization

Discharge from CIS

Discharge CAFAS Sample

- Eligibility for CAFAS at Discharge based upon age and length of stay:
  - Enrolled 90 days or more
  - Age 7 or older
- 707 clients were eligible for discharge CAFAS, 52% were located
- A total of 277 clients had both an admission and discharge CAFAS available

Admission & Discharge CAFAS Means



Improvements from Admission to Discharge by CAFAS Class

Summary of CAFAS Results

- CAFAS and other indicators of clinical functioning confirm that CIS is serving a population of children and adolescents with serious emotional disorders and complex clinical needs
- Diagnostic and clinical data identify significant levels of behavioral and mood problems, and difficulty in home and school settings. These patterns are also observed in the CAFAS results
- Comparisons of the hierarchical tiers and Latent Class Analysis show some similarities, though LCA results suggest fewer distinct patterns among CIS cases. Two common groups of clients that may require special consideration:
  - A group of children with significant mood problems and potential for self-harm
  - A smaller group of substance involved adolescents

Summary of CAFAS Results (Continued)

- Comparisons across three identified CAFAS groups reveals significant variation in demographic and clinical characteristics, and indicators of functioning
- CAFAS groups do not appear to have a significant impact on service utilization – though there greater use of emergency and medication services for children identified in the Self-harm potential group
- Similarly, CAFAS groups do not differ with respect to length of stay.
- There is significant variation in outcomes among CAFAS groups – although all groups significantly improve, levels of improvement are strongest among those with the greatest levels of impairment (particularly on the scales that were most impaired).

Thoughts for Discussion

- What are some potential ways that identified CAFAS groups might guide treatment planning within CIS?
  - What are some of the unique challenges associated with serving youth with severe mood disturbance or self-harmful potential?
  - What strategies have providers used to serve adolescents with significant substance involvement?
- CIS Program Standards appear to have a much stronger effect on amount of service use and length of stay than CAFAS and other clinical indicators. What differences might we expect in service utilization among groups based upon CAFAS classes?
- What other indicators of program outcome might we expect to differ across identified CAFAS groups?

Thoughts for Discussion

- From the perspective of the state official overseeing the operation of this program in the context of the full system of care, three broader conclusions can be drawn:
  - CAFAS outcome data can help to validate the cost of the CIS program and the method of managing the providers through service authorization and network management practices.
  - The state can establish standards for access, value and outcomes and manage providers according to those standards. The findings demonstrate compliance in the lion's share of activities under CIS and the value of the service authorization and network management strategies – including quality improvement.
  - The combination of the outcome data and the active management of providers has afforded DCYF the opportunity to establish and implement performance improvement strategies in key areas such as access to services (i.e. no waiting list), increased focus on family assessment and family treatment, and prioritizing services for populations most at risk, including children who are discharged from inpatient hospitalization and score very high on CAFAS.

Thoughts for Discussion

- Reporting of results to providers and stakeholders has implications for improving the capacity of the state to establish and implement accountability and performance improvement initiatives.
- This reporting provides an accepted platform to discuss, debate and plan for the continued development of the Rhode Island system of care.
- The Division of Children's Behavioral Health continues to review the implications of the evaluation results (including CAFAS analyses) for CIS to inform the allocation of resources, refine performance improvement strategies, and become more effective in the management of the full continuum of the children's behavioral health system.
- The growing "data culture" established among stakeholders have served as a credible platform in the establishment and implementation of the standards for Children's Emergency Services and helped the Department build working relationships with all stakeholders.

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