

## Exploring Relationships Among Child Outcomes in Kentucky's System of Care

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## Context

- Emphasis on adoption of evidence-based practices and ongoing assessment of outcomes to monitor effectiveness
- Development of outcomes management systems that provide "clinically actionable" information
- Examination of outcomes to assess system and provider performance, including fiscal accountability

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## Purpose

- Ascertain the relationship among commonly used measures in outcomes management systems
- Determine which outcome indicators are most predictive of improvement in functioning
- Understand the relationship among outcomes reported by multiple stakeholders
- Utilized data from two behavioral health programs in Kentucky
  - Bridges Project – CMHS-funded system of care site implementing a schoolwide positive behavior support model in Eastern KY
  - IMPACT Plus – statewide Medicaid program designed to expand community-based options for children and youth with SED at risk of out of home placement or hospitalization

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## Analysis of Bridges Project Data

- CMHS-funded system of care community (1998)
- Designed to enhance the existing children's system of care (KY IMPACT)
- Implemented in 3 rural, Appalachian regions of Eastern Kentucky

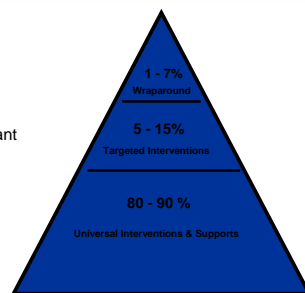


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## School-Based Mental Health Model

- School-based Staff
  - Family Liaison
  - Intervention Specialist
  - Service Coordinator
  - Regional Behavioral Consultant
- 20 campuses
  - all grade levels (PK-12)
  - alternative schools
- Continuum of positive behavior interventions and supports (PBIS)



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## Sample Characteristics

<b>GENDER</b> (n=115)		<b>MOST COMMON PRESENTING PROBLEMS</b> (n=113)	
Male	63%	Noncompliance	47%
Female	37%	Hyperactive/Impulsive	45%
<b>AGE</b> (n=115)		Poor peer interaction	45%
$\bar{X}$ = 11.4 (SD=3.28)		Physical Aggression	41%
<b>RACE</b> (n=115)		Attentional Difficulties	40%
White/NonHispanic	96%	Academic Problems	37%
<b>FAMILY INCOME</b> (n=108)		<b>MOST COMMON PRIMARY DIAGNOSES</b> (n=114)	
<\$15,000/Year	72%	ADHD	26%
\$15,000+/Year	28%	ODD	17%
<b>MEDICAID</b> (n=115)		Mood Disorders	15%
Yes	90%	Disruptive Behavior Disorder	11%
No	10%	<b>SPECIAL EDUCATION</b> (n=115)	
<b>CAREGIVER EDUCATION</b> (n=113)		Yes	43%
Less than HS	43%	No	57%
HS or Higher	57%	<b>SCHOOL PERFORMANCE</b> (n=113)	
<b>HEALTH PROBLEMS</b> (n=115)		C or better	58%
Yes	48%	Below C average	42%
No	52%		

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## Sample Characteristics

LIFETIME CHILD RISK FACTOR HISTORY (n=113-115)	
Previous psychiatric hospitalization	18%
Physical Abuse	16%
Sexual Abuse	15%
Runaway	18%
Suicide Attempt	10%
Substance Use	9%
Sexually Abusive	3%

LIFETIME FAMILY RISK FACTOR HISTORY (n=110-115)	
Domestic Violence	39%
Mental Illness in Biological Family	61%
Criminal Conviction	29%
Substance Abuse in Biological Family	56%

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## Instrumentation

Child Behavior Checklist (CBCL)	Achenbach (1991)	Symptomology
Child and Adolescent Functional Assessment Scale (CAFAS)	Hodges (1990)	Functioning
Behavioral and Emotional Rating Scale (BERS)	Epstein & Sharma (1997)	Strengths
Caregiver Strain Questionnaire (CGSQ)	Brannan, Heflinger, & Bickman (1997)	Caregiver Strain

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## Correlations

(n=115)

Outcome Measure	CAFAS T1	CAFAS T2	CBCL	BERS	CGSQ
1. CAFAS T1	-	.54**	.53**	-.47**	.49**
2. CAFAS T2		-	.39**	-.30*	.48**
3. CBCL			-	-.48**	.52**
4. BERS				-	-.36**
5. CGSQ					-

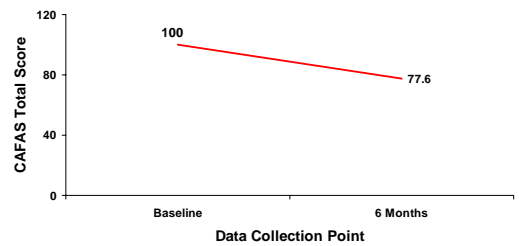
\*p < .01  
\*\*p < .001

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## Change in Functioning

(n=115)



t (114) = 6.18, p = .000

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## Model Summary

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	S.E.	Beta	t	p
1	CAFAS T1	.54	.08	.54	6.89	.000
2	CAFAS T1	.39	.10	.39	4.01	.000
	CGSQ T1	.26	.09	.27	2.83	.006
	CBCL T1	.04	.10	.04	.429	.668
	BERS T1	-.001	.09	-.001	-.016	.987

Note. Adj R<sup>2</sup> for Model 1 = .29, F(1,113) = 47.4, p = .000  
Note. R<sup>2</sup> change for Model 2 = .06, F(3,110) = 3.48, p = .02

Dependent Variable: CAFAS T2

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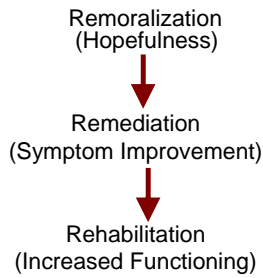
## Analysis of IMPACT Plus Data

- Medicaid funded state-wide network implemented in 1997. Designed to enhance the existing system of care (KY IMPACT)
- Adoption of managed care principles in 2000
- Wide range of provider characteristics and service array options

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## Phase Theory Model (Howard et al., 1993)



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## Measures

- Ohio Youth Scales (Ogles, 1999)
  - Youth Form (Hopefulness & Functioning)
  - Parent Form (Hopefulness & Functioning)
- Child Behavior Checklist (Achenbach, 1991)
  - Parent Report (Symptom Severity)

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## IMPACT Plus (Sub-Sample)

- Medicaid Recipient
- Severe Emotional Disability
- “Problems” functioning in home, school, and community

Respondents (n = 84)	
<b>Sex</b>	
Male	53.6%
Female	46.4%
<b>Age</b>	
12-14 yo.	59.5%
15-17 yo.	40.5%
<b>Race</b>	
Black	05.9%
White	89.3%
Native American	00.0%
Hispanic	00.0%
Asian	00.0%
Other	02.4%
Unknown	02.4%

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## Correlations

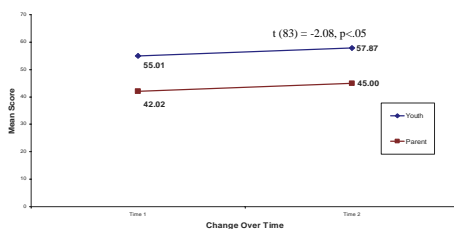
Subscale	1	2	3	4
Respondents (n = 84)				
1. Total Problem T1	-	-.19	-.19	-.13
2. Functioning T1		-	.71**	.59**
3. Hopefulness T1			-	.47**
4. Functioning T2				-

\*\*p < .01

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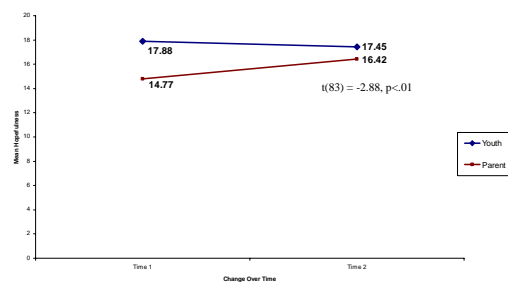
## Change in Functioning



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## Hopefulness



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## Model Summary

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	S.E.	Beta	t	P
1	Functioning T1	.63	.09	.60	6.78	.000
2	Functioning T1	.55	.13	.53	4.10	.000
	Problem Score T1	-.02	.08	-.02	-.17	.867
	Hopefulness T1	.10	.13	.10	.77	.443

Note. R2 for Model 1 = .35, F(1, 82) = .00, p < .001  
 Note. R2 change for Model 2 = .36, F(2, 80) = .73, p < .001

Dependent Variable: Functioning T2

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## Summary

- Majority of outcome domains were significantly correlated and in the expected direction
- Only Time 1 Functioning and Caregiver Strain were found to be significant predictors of Time 2 Functioning
- Parents and youth differ with respect to their perception of youth status at enrollment and follow-up

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## Implications

- Despite significant relationships among the outcome domains, they are different constructs
- Significant predictive value of caregiver strain to improved functioning validates the importance of family support
- Hopefulness may operate differently within the treatment context for youth than adults (Phase Model)

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## Future Research Endeavors

- Analyze with larger sample size
- Examine change over a longer period of time
- Assess magnitude of change rather than functional status
- Determine differential patterns of change by subgroups (e.g., level of severity, by diagnoses, by gender)
- Include other factors that may influence change
- Employ additional multivariate analytical techniques

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