


## Characteristics of Children Who Deteriorate or Improve in System of Care Communities

February 26, 2008


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Paper presented at  
the 21th Annual Research Conference—A System of Care for  
Children’s Mental Health: Expanding the Research Base




## Overview

- Outcomes of children served in systems of care has been well-documented
- System of care services produce better outcomes for some children than others
- Definitive determination of predictors of improvement or deterioration remains unclear




## Purpose

- Investigate deterioration or improvement in multiple outcomes of children and their families enrolled in systems of care
- Examine the influence of child, family, and clinical characteristics on the likelihood of deterioration or improvement across time




## Methods

- Data from outcome study in 45 SOC communities funded between 1997 and 2000
- Children 0 – 22 years old
- 2,717 children and families with complete data on the Behavioral and Emotional Rating Scale – Strengths Quotient (BERS)
- 2,709 children and families with complete data on the Child Behavior Checklist – Total Problems T-scores (CBCL)
- 2,702 children and families with complete data on the Caregiver Strain Questionnaire – Global Strain (CGSQ)




## Analysis Sample Characteristics

	BERS (n = 2,717)	CBCL (n = 2,709)	CGSQ (n = 2,702)
American Indian	2.5%	2.1%	2.6%
Black	21.8%	21.8%	21.9%
White	58.5%	59.2%	58.7%
Hispanic	6.4%	6.5%	6.3%
Other Race	10.7%	10.4%	10.5%
Male	67.6%	67.7%	67.8%
Age - Mean (sd)	11.8 (3.2)	11.8 (3.2)	11.8 (3.2)
Lives w/ at least one biological parent	80.0%	80.1%	80.3%
Income < \$20K	56.8%	56.9%	57.0%
Caregiver Some College	42.6%	42.9%	42.7%
Child in Home Past 6 Months	75.7%	76.0%	76.4%
# Different Services Prior - Mean (sd)	5.9 (2.9)	5.9 (2.9)	5.9 (2.9)



## Presenting Problems

	BERS (n = 2,717)	CBCL (n = 2,709)	CGSQ (n = 2,702)
Suicidal Tendencies	26.1%	26.1%	25.9%
Depression	45.5%	45.9%	44.9%
Hyperactivity	51.9%	51.9%	52.0%
Conduct Problems	70.9%	70.9%	70.5%
Delinquency	53.2%	53.0%	52.3%
Adjustment	62.4%	62.6%	62.3%
Other Problems	43.5%	43.2%	43.4%



## Reliable Change Index

- **Reliable change index (RCI)**
  - Meaningful change
  - Corrects for measurement error
  - Improvement or deterioration classified relative to 95% CI
  - Results in three categories: improved, remained stable, and deteriorated
  - For current study, RCI calculated from intake to 6 months



## Analysis

- **Multinomial logistic regression**
  - RCIs as DVs
  - Characteristics and presenting problems as covariates
  - Analysis simultaneously tests covariates' associations with likelihood of being in the improved or deteriorated categories relative to the remained stable category
  - All models adjusted for scores at intake
    - highly significant for all three measures
    - worse scores at intake = greater improvement & less deterioration vs. remained stable



## Results: Percentage of Sample in Each RCI Category

RCI category	BERS (n = 2,717)	CBCL (n = 2,709)	CGSQ (n = 2,702)
Improved	40.6%	35.8%	30.0%
Remained stable	37.3%	54.8%	61.8%
Deteriorated	22.1%	9.4%	8.2%



## Results: Predictors of Improvement in BERS Strengths Quotient

Covariate	Unstandardized coefficient	p-value
Age	-.047	.002
Male	.211	.041
Income < \$20K	.246	.011
CG some college	-.208	.028
Child in home past 6 months	-.244	.030
Suicidal tendencies	.223	.048
Hyperactivity	-.271	.009



## Results: Predictors of Deterioration in BERS Strengths Quotient

Covariate	Unstandardized coefficient	p-value
Black	.295	.032
Other Race	.379	.030
Child in home past 6 months	-.357	.007



## Results: Predictors of Improvement in CBCL Total Problems

Covariate	Unstandardized coefficient	p-value
Age	.031	.033
# Different Services Prior	-.099	.000



### Results: Predictors of Deterioration in CBCL Total Problems

Covariate	Unstandardized coefficient	p-value
Other Race	.533	.015
Male	-.474	.003
Conduct Problems	.361	.046



### Results: Predictors of Improvement in CGSQ Global Strain

Covariate	Unstandardized coefficient	p-value
CG some college	-.235	.016
Child in home past 6 months	-.308	.006
# Different Services Prior	-.125	.000
Conduct Problems	-.311	.006



### Results: Predictors of Deterioration in CGSQ Global Strain

- None of the covariates were significantly associated with deterioration in CGSQ Global Strain



### Summary

- Variables that predict improvement differ more across measures than variables that predict deterioration
- Predictors of improvement or deterioration also differ within measures
- Suggests that mechanisms for improvement or deterioration are potentially independent processes



### Programmatic and Policy Implications-1

- Findings provide insight into the complexity of identifying children and youth who are "at-risk" for deterioration
- Results can be used to help identify those children and youth most likely to benefit from services
- Understanding differences between these groups of children and youth can help providers and organizations tailor treatment to those most at-risk



### Programmatic and Policy Implications-2

- Goal: to be able to identify youth who are at-risk upon program entry so providers can customize services and intervene with youth and family quickly to minimize likelihood of deterioration
- This requires very early intervention to stem decline - perhaps an intake assessment tool to help identify predictors associated with youth at-risk



### Programmatic and Policy Implications-3

- Specialized programmatic interventions and services need to be developed so they are available for youth who are at risk
- Additional studies needed to identify more completely predictors associated with youth at-risk for deterioration; similarly, knowledge about predictors of improvement can provide a more complete picture



### Limitations-1

- Inclusion of “remained stable” as reference category in this study means findings do not shed light on predictors of the likelihood of deterioration relative to improvement directly
- RCIs reflect meaningful change over time without respect to initial level of severity / strengths (but models controlled for scores at intake)



### Limitations-2

- This study examined predictor data collected at 6 months after baseline – would results be replicated at 12 months? 24 months?
- Listwise deleted sample definition means results can be meaningfully generalized only to children and youth with characteristics similar to those with complete data



### Future Directions

- Studies of potentially important predictors not included in these models
- For example, these models did not include influence of current services which will be examined in subsequent analyses
- Studies that examine longer follow-up periods and morphology of change and that account for missing data

