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Invest in Children Cuyahoga County

INVEST IN CHILDREN EVALUATION
PROGRAM BRIEFING REPORT
CUYAHOGA COUNTY, OHIO

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EARLY CHILDHOOD MENTAL HEALTH SERVICES: OUTCOME EVALUATION UPDATE

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KEY FINDINGS

Based on data from 930 cases served between January 1, 2007 and December 31, 2012:

- Families served via six agencies administering Early Childhood Mental Health (ECMH) Services exhibit a range of child diagnoses. The most prevalent diagnoses were regulatory, adjustment, and affective disorders. In addition, as many as 60% of the children served by some agencies presented with relationship disorders (Axis II).
- Though there is variability across the six provider agencies, on average, ECMH cases were open for 8 months and received 34 hours of service, or approximately 4 hours of service per month.
- Across all agencies, parents reported significant reductions in child internalizing and externalizing behavior problems following ECMH treatment.
- At three agencies, parent-child relationship functioning improved significantly following ECMH treatment.
- Outcomes for cases that completed ECMH treatment were substantially better than for cases closed for other reasons, showing a 16% decline in behavior problems and 24% improvement in parent-child relationship functioning.
- Parents reported great benefit from ECMH services indicating they were pleased with the progress made by the child/family while in ECMH services.

INTRODUCTION

Serious emotional and behavioral concerns in the early childhood period affect between 9-14% of the general population of children (Brauner & Stephens, 2006) and as much as 24% of low-income children (Brown, Copeland, Sucharew, & Kahn, 2012). Unfortunately, emergent mental health concerns among toddlers and preschoolers often go unidentified and untreated (Breitenstein, Hill, & Gross, 2009). As long-term research has illustrated the negative impact of untreated mental health issues in early childhood on the child's later health, social-emotional functioning, and academic success (Zero to Three, 2012), identification and intervention with families facing such concerns offer significant opportunities to positively impact the trajectory of these issues. Many emotional and

behavioral concerns in early childhood are directly linked to parental coping, adjustment, and mental health issues (Huaqing Qi & Kaiser, 2003; Martin, McConville, Williamson, Feldman, & Boekamp, 2013; Stacks, 2005). Therefore, one promising treatment model involves treatment of the parent and child as a dyad.

As part of a larger community initiative on child well-being, the Early Childhood Mental Health (ECMH) pilot project effort became a part of the Cuyahoga County Office of Early Childhood/Invest in Children (IIC). ECMH services were delivered by six community-based agencies in Cuyahoga County, Ohio. The current agencies are: Achievement Centers for Children, Applewood Centers, Inc., Beech Brook, and Guidestone. Bellefaire JCB and Positive Education Program offered ECMH services until June 30, 2011. Data from these two agencies are included in the analyses with a reminder that they ended their participation in this initiative early. Each agency offers a continuum of programs and services for young children and families dealing with physical, emotional, neurological and developmental disabilities that range in severity. The ECMH treatment models implemented by each agency vary slightly from site to site, but generally focus on the parent-child relationship from a strengths-based, child-centered, and developmentally appropriate approach. Some agencies have adapted psychodynamic therapy to the parent-child dyad while others have adopted a family-systems framework or a person-centered approach. Several agencies deliver services in the home.

This evaluation was designed to examine the delivery of service and changes in functioning among young children with mental health issues served by Achievement Centers for Children, Applewood Centers, Inc., Guidestone, Beech Brook, Bellefaire JCB, and Positive Education Program. Funding for this evaluation was provided by The Cleveland Foundation.

EVALUATION RESEARCH QUESTIONS

This study addresses two key questions as they relate to ECMH services:

1. What are the characteristics of the children and families served with ECMH services?
2. Do children show improved functioning and mental health status following treatment?
3. For whom were ECMH services most effective?

METHOD

The data for this evaluation were extracted from agency records by staff at each of the six community agencies and entered into an Excel file format provided by the evaluation team. The sample was comprised of ECMH prevention cases involving children under age 3 at the start of services (or between 3-4 years for case with no identified funding source) opened between January 1, 2007 and December 31, 2012. In total, data on 930 cases were available for analysis.

In addition to basic demographic information on each child and family, the outcome information collected by the agencies involved two standardized measures:

- *Child Behavior Checklist* (CBCL)[1] – The CBCL is one of the most widely used, psychometrically sound measures in child psychology. The form, completed by a parent or parent surrogate, captures information on 20 competence items and 118 problem items using a 0-1-2 (0 = not true, 1= somewhat or sometimes true, 2= very true or often true) scale on behaviors in the past 6 months. The scale produces a reliable overall score, as well as two reliable subscales on internalizing (i.e., anxious, depressive, and overcontrolled) and externalizing (i.e., aggressive, hyperactive, noncompliant, and undercontrolled) behaviors. The CBCL raw scores are converted into normed values (i.e., T-Scores) using data from the scale developer. T-

[1] Achenbach, T. (1991). Child Behavior Check List. University of Vermont.

Score values of less than 60 are considered subclinical, 60-63 are considered borderline clinical, and above 63 are considered clinical.

- *Parent-Infant Relationship- Global Assessment Scale* (PIR-GAS)[2] – The PIR-GAS is an assessment scale, completed by the early childhood mental health therapist, for children under the age of 6 that focuses on the global quality of the parent-child/infant relationship. Relationships are described along a continuum of 10 levels of adaptedness, from "well-adapted" to "severely impaired." PIR-GAS scores range from 0, indicating a severely impaired relationship, to 100, indicating a well-adapted relationship. Relationships described by scores in the middle range (i.e., around 50) are affected by stressors but still maintain some adaptive qualities. Additionally, the 10 sub-ranges (i.e., documented maltreatment, grossly impaired, severely disordered, disordered, disturbed, distressed, significantly perturbed, perturbed, adapted, and well adapted) can be collapsed into three overarching categories: adapted (scores between 81-100), features of a disordered relationship (41-80), and disordered (0-40). The PIR-GAS has been shown to share concurrent validity with the CBCL for children age 1½- 5.

FINDINGS

In total, 930 records were available for the present analysis. Baseline data for the cases are shown in **Tables A-C**. Data for cases opened in 2007 were combined with those opened in 2008 for ease of presentation.

EVALUATION RESEARCH QUESTION 1: WHAT ARE THE CHARACTERISTICS OF THE CHILDREN AND FAMILIES SERVED WITH ECMH SERVICES?

Table A provides data on the number of cases opened per year by each agency and the referral source of the cases. Guidestone and Achievement Centers for Children served the majority of cases and both agencies substantially increased their caseloads from 2011 to 2012. In regard to the referral sources, from 2007 to 2012 Help Me Grow (HMG) provided the majority of referrals. Referrals from social service organizations and self-referrals were the next largest source of referrals.

Table A

Percentage of Children Served by Provider and Referral Source

	2007 & 2008 (N = 280)	2009 (N = 206)	2010 (N = 150)	2011 (N = 174)	2012 (N = 116)	Total (N = 930)
Provider						
Achievement Centers for Children	21.8	14.1	20.7	25.3	31.0	21.6
Applewood Centers, Inc.	14.6	24.8	17.3	9.8	9.5	16.1
Beech Brook	16.8	10.7	18.0	24.7	6.9	15.8
Bellefaire JCB	12.5	3.4	8.0	3.4	*	6.5
Guidestone	26.4	41.3	24.7	31.6	52.6	33.5
Positive Education Program	7.9	5.8	11.3	5.2	*	6.5
Referral Source						
Self/Parent	12.1	13.6	14.7	12.6	8.6	12.6
Medical Provider	6.4	4.9	2.7	4.0	9.5	5.5
Social Service Organization (own agency)	12.1	15.0	17.3	11.5	18.1	14.2
Social Service Organization (other agency)	7.9	5.8	14.7	27.6	16.4	13.2
Help Me Grow Service Coordinator	27.5	25.2	14.7	20.7	25.9	23.3

[2] Zero to Three. (2005). Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood, Revised (DC:0-3R).

(own agency)						
Help Me Grow Service Coordinator (other agency)	30.7	28.2	33.3	14.9	11.2	25.2
Child Care Provider	0.4	1.0	0.7	0.0	0.0	0.4
Moms First	0.0	1.5	0.7	0.0	1.7	0.6
Other	2.1	2.4	1.3	6.3	6.9	3.4
Unknown/Missing	0.7	2.4	0.0	2.3	1.7	1.5

* Bellefaire JCB and Positive Education Program stopped offering ECMH services as part of this initiative on June 30, 2011.

Table B provides summary data on characteristics of the children and families served by each agency. Across all agencies, the children who were the focus of services were majority male. The children ranged in age at the initiation of services from less than 1 year to over 5 years of age, but the majority of children were between 2 and 3 years of age at the start of service. Whereas Achievement Centers for Children, Beech Brook, Bellefaire JCB, Guidestone, and Positive Education Program tended to serve a relatively young population, with the vast majority of children under age 3, Applewood Centers served a slightly older population. Children served by Applewood, Guidestone, and Positive Education Program were primarily parented by a single caregiver. Achievement Centers, Beech Brook, and Bellefaire saw more two caregiver households. Across 4 of the 6 agencies, children were almost exclusively parented by a biological parent. Approximately 16% of children served by Beech Brook were cared for by a relative and 13.5% of children from Guidestone were living with foster parents or non-relatives.

Table B also provides summary data on the clinical diagnoses of children at the start of ECMH services. There is considerable variation in the frequency with which different disorders were diagnosed across the agencies. For example, at Applewood Centers and Beech Brook, children were most often diagnosed with disorders of affect whereas regulatory disorders were most frequently diagnosed at the remaining agencies. Similarly, Achievement Centers, Bellefaire, and Guidestone served a large number of children with Axis II diagnoses of relationship disorders, 57.7%, 56.7, and 46.2, respectively. Very few children (less than 14%) at the remaining three agencies received an Axis II diagnosis. Based on available data, it is difficult to determine whether this variation represents an actual difference in the populations of children serviced by each agency, a difference in the clinical orientation of therapists at each agency, or an artifact of Medicaid reimbursement realities.

Lastly, few parents were referred to adult mental health services by each agency but some (between 1.3% and 28.6%) were already referred or involved in treatment.

Table B

Percentage of Children Served by Demographic Characteristics

	Achievement Centers for Children (N=201)	Applewood Centers, Inc. (N=150)	Beech Brook (N=147)	*Bellefaire JCB (N=60)	Guidestone (N=312)	*Positive Education Program (N=60)	Total (N= 930)
Gender							
Male	61.7	67.3	59.9	55.0	60.3	70.0	61.8
Female	37.8	32.0	40.1	45.0	39.1	30.0	37.8
Missing/Unknown	0.5	0.7	0.0	0.0	0.6	0.0	0.4
Child's Age at Case Opening							
Less than 12 months	7.5	4.0	0.0	1.7	3.5	0.0	2.7
12 - 18 months	5.0	3.3	13.6	6.7	8.7	11.7	7.4
19 - 23 months	15.4	9.3	15.0	13.3	14.7	11.7	12.7
24 - 35 months	58.7	44.0	57.8	55.0	67.6	65.0	59.5
36 - 47 months	8.5	24.0	8.8	21.7	2.6	6.7	10.9
48 months or greater	5.0	14.7	4.8	1.7	2.8	1.7	4.7
Missing/Unknown	0.0	0.7	0.0	0.0	0.0	3.3	0.5
Number of Parents(s) /Caregivers(s) per Child							

One	40.3	59.3	38.8	45.0	46.2	51.7	46.0
Two	59.7	36.7	50.3	51.7	40.4	45.0	46.7
More than two	0.0	2.0	6.8	1.7	1.9	3.3	2.4
Missing/Unknown	0.0	2.0	4.1	1.7	11.5	0.0	4.9
Relationship of Parents(s) /Caregiver(s) to Child							
Biological Parent	87.1	90.0	73.5	86.7	76.9	86.7	81.8
Relative	4.0	4.0	15.6	3.3	6.7	6.7	7.0
Foster Parent or Non-Relative	9.0	2.7	7.5	8.3	13.5	6.7	9.0
Missing/Unknown	0.0	3.3	3.4	1.7	2.9	0.0	2.2
Axis I: Clinical Disorders							
100: Traumatic Stress Disorder	4.0	2.7	4.8	5.0	6.1	6.7	4.8
200: Disorders of Affect	5.0	40.7	40.1	30.0	20.8	23.3	24.4
300: Adjustment Disorder	10.9	9.3	19.7	10.0	16.7	6.7	13.7
400: Regulatory Disorder	32.8	10.0	19.7	35.0	34.0	51.7	29.0
500: Sleep Behavior Disorders	1.0	1.3	1.4	3.3	0.6	0.0	1.1
700: Disorders of Relating and Communicating	1.0	1.3	3.4	5.0	3.2	11.7	3.1
Other	1.5	3.3	4.1	0.0	1.0	0.0	1.8
N/A	31.8	4.7	0.0	3.3	8.3	0.0	10.4
Missing/Unknown	11.9	26.7	6.8	8.3	9.3	0.0	11.6
Axis II: Relationship Classification							
901 – 905: Relationship Disorders	57.7	14.0	3.4	56.7	46.2	0.0	34.2
Missing/Unknown	11.9	26.7	6.8	8.3	9.3	0.0	11.6
Axis I and Axis II Diagnosis (% yes)	26.4	8.7	3.4	53.3	37.5	0.0	23.7
Parent referred for adult mental health services							
Yes	6.0	0.0	0.7	1.7	2.6	6.7	2.8
No	62.7	88.0	66.7	95.0	80.8	13.3	72.4
Already referred / involved	15.4	1.3	28.6	1.7	14.1	11.7	13.7
Missing	15.9	10.7	4.1	1.7	2.6	68.3	11.2
Parent referred for substance abuse services							
Yes	0.0	0.0	0.0	0.0	0.0	0.0	0.0
No	83.1	89.3	86.4	98.3	94.2	8.3	84.5
Already referred / involved	1.0	0.0	9.5	0.0	2.6	0.0	2.6
Missing	15.9	10.7	4.1	1.7	3.2	91.7	12.9

* Bellefaire JCB and Positive Education Program stopped offering ECMH services as part of this initiative on June 30, 2011.

Using matched data from the ChildHood Integrated Longitudinal Data (CHILD) system, we explored cross-system involvement, specifically with the Division of Child and Family Services (DCFS), among ECMH service recipients before treatment (n=930), during treatment (using only children with a case closure date, n=756), and after treatment (n=215). After treatment was defined as the 12 months following ECMH case closure. Our definition excludes cases closed during 2012 as the data to follow them for 12 months are not yet available. Approximately 99% of the total sample could be matched to the CHILD system. Before engaging in ECMH treatment, 39% of children had a child maltreatment report of which 12% were substantiated/indicated claims. During treatment, 13%

of children had a report and 2% of these reports were substantiated. Similarly, after treatment, 13% of children had a DCFS report and 2% of these reports were substantiated. Data were not unduplicated; that is, a child could have had a report before, during, and after treatment. Post-treatment DCFS involvement will increase as additional cases complete ECMH treatment and as 2013 DCFS data become available. In terms of overall involvement with DCFS, over half the sample (54%) had an open case. Open case includes being an alleged child victim, being the sibling of an alleged child victim, and living in a family in need of service.

Figure A: Location of Children Served by the ECMH Program

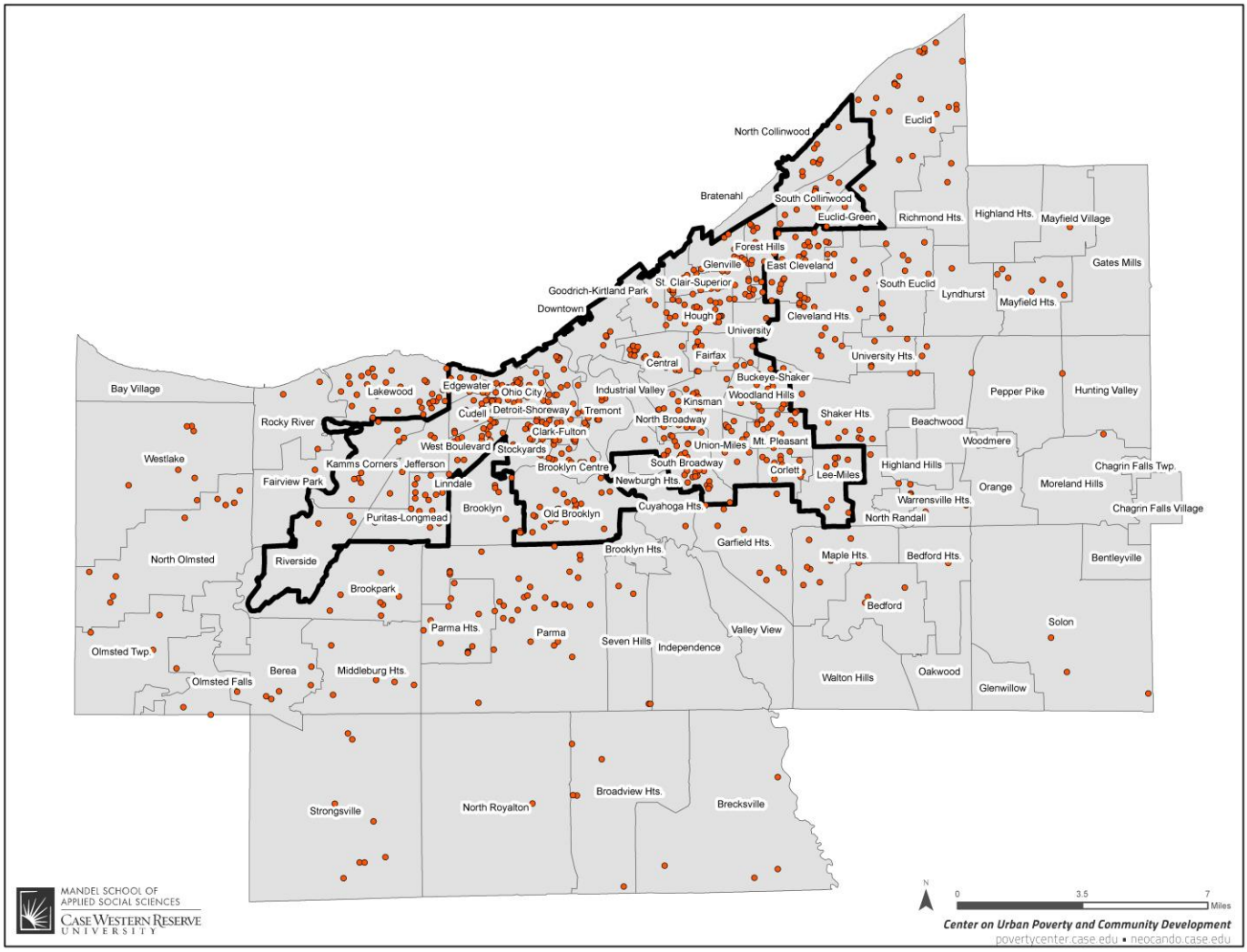

Figure A shows the residences of the children served between 2007 and 2012, based on matched data in the IIC Child Data Registry. Of the 930 children included in the analyses, 901 or 96.9% were geocoded for this map. The distribution shows that though children are heavily clustered within the urban center of the county, they are distributed throughout the inner-ring and out-ring suburbs as well. This distribution confirms that early childhood mental health needs are widespread across the region.

SERVICE CHARACTERISTICS

Data on the amount and duration of ECMH service delivery by agency are available for cases that were administratively closed as of December 31, 2012 (n = 751; see **Table C**). Data are available for a subset of closed cases (n = 591) on the number of service units received (equivalent to a service hour) and for the entire set on the length of time (in months) a case was in service.

The mean length of time a case was open ranged from 4.3 months (Bellefaire JCB) to 10.7 months (Achievement Centers for Children; see **Table C**). Similarly, the average number of service units delivered differed significantly by agency from 20.4 hours (Guidestone) to 119.7 hours (Positive Education Program). While there was marked variation among providers on case length and service units delivered, over 60% of cases received less than 12 months of service at each agency and very few children received 24 or more months of ECMH service. The majority of children served at Achievement Centers, Beech Brook and Guidstone received between 0 and 30 hours of service. The majority of children served by Bellefaire and Positive Education Program received between 30 and 90+ hours of service.

Based on data from closed cases, there was marked variability in treatment completion across agencies (e.g., 66.7% of cases at Bellefaire as compared to 14.5% at Applewood Centers). However, anecdotal information from ECMH providers revealed that many providers marked a child as 'transitioned to other program' when their funding stream changed from IIC to Medicaid. This typically happened when the child turned three, as Medicaid funding for mental health service is not available for children under 3-years of age. Therefore, in the majority of instances, 'transitioned to other program' reflects a change in payment, not treatment.

Successful treatment completion may be related to length of service. For example, approximately 67% of cases at Bellefaire were categorized as completed and Bellefaire's average length of treatment was nearly 2 months shorter than the next agency. In addition, 70% of Bellefaire's cases were served for less than 6 months, a much higher percentage than any other agency. At all agencies except for Bellefaire, more cases were categorized as non-completion than completion. In many cases, the family withdrew from service before treatment was completed, upwards of 54% in some cases. Another common reason for case closure was that the child transitioned to another program or that the family was unable to be located.

To better understand differences among families who completed treatment and those who did not, we created two groups of families based on reason for case closure (treatment completed, n=225 vs. family withdrew from service, family declined service, family moved, unable to locate family, and noncompletion: other, n=347). We did not include the remaining reasons for case closure because they suggest the family never engaged in service, or the child was continuing to receive ECMH services elsewhere, or ECMH services were no longer appropriate given the child's age. There was a statistically significant mean difference in the average length of treatment (in months) between the two groups of families. Families who completed treatment received an average of M=10.1 (*SD*=6.9) months of service whereas families who disengaged received an average of M=6.5 (*SD*=5.2) months. However, as families could have remained 'active' without actually receiving service, we also looked at group differences in terms of the number of actual service units received. Families who completed treatment received more units of service (M=46.9, *SD* =45.0) than families who did not complete treatment, (M=17.1, *SD* =17.8).

We also explored the relationship between child problem behavior severity (as measured by parent-reported CBCL) and treatment completion by creating two groups of children. One group consisted of children whose CBCL scores fell into the subclinical range. The other group included children whose CBCL scores fell into the borderline or clinical ranges. Chi-square analyses suggest problem behavior severity and treatment completion are not related; all children, regardless of whether their scores on the internalizing, externalizing, and total CBCL fell into the subclinical or borderline/clinical ranges were equally likely to successfully complete ECMH treatment.

Table C

Characteristics of Service Delivery

	Achievement Centers for Children	Applewood Centers, Inc.	Beech Brook	*Bellefaire JCB	Guidestone	*Positive Education Program	TOTAL

Length of service delivery	**(n=153)**	**(n=133)**	**(n=113)**	**(n=60)**	**(n=248)**	**(n=44)**	**(N=751)**
< 6 months	33.3	30.4	43.4	70.0	54.0	13.6	42.9
6 - 11 months	28.8	44.4	32.7	26.7	35.9	47.7	35.5
12 - 17 months	19.0	12.6	17.7	3.3	7.3	27.3	13.0
18 - 23 months	11.1	8.9	2.7	0.0	2.8	9.1	5.7
24+ months	7.8	3.7	3.5	0.0	0.0	2.3	2.9
Mean (*SD*)	10.7 (*8.1*)	9.3 (*6.7*)	7.9 (*6.2*)	4.3 (*2.9*)	6.1 (*4.2*)	10.6 (*5.4*)	8.0 (*6.3*)
Number of service units delivered	**(n=143)**	**(n=**)**	**(n=105)**	**(n=59)**	**(n=244)**	**(n=40)**	**(N=591)**
< 15 hours	32.2	-	49.5	15.3	44.3	7.5	37.4
15-29 hours	26.6	-	23.8	18.6	32.8	12.5	26.6
30-59 hours	27.3	-	20.0	30.5	20.5	15.0	22.4
60-89 hours	8.4	-	4.8	8.5	2.0	15.0	5.7
90+ hours	5.6	-	1.9	27.1	0.4	50.0	7.9
Mean (*SD*)	33.4 (*35.0*)	-	22.5 (*21.0*)	52.4 (*39.4*)	20.4 (*16.4*)	119.7 (*103.9*)	33.9 (*44.8*)
Reason for case closure	**(n=149)**	**(n=136)**	**(n=102)**	**(n=57)**	**(n=248)**	**(n=44)**	**(N=736)**
Treatment completed	45.1	14.5	26.5	66.7	24.2	18.2	30.0
Child transitioned to other program	3.3	14.5	5.3	0.0	29.0	47.7	16.4
Child aged out (>48 months)	0.0	0.0	1.8	0.0	6.5	2.3	2.5
Family declined service	1.3	3.6	0.0	1.7	5.6	2.3	3.0
Referred, but never engaged in service	0.0	1.4	0.0	1.7	0.8	0.0	0.7
Family withdrew from service	15.0	53.6	42.5	11.7	22.6	20.5	28.7
Family moved	3.9	0.7	8.0	3.3	3.6	0.0	3.6
Unable to locate family	22.2	4.3	0.0	10.0	0.4	6.8	6.6
Noncompletion: Other	5.2	5.8	0.0	0.0	5.6	0.0	4.0
Missing	3.9	1.4	15.9	5.0	1.6	2.3	4.5

* Bellefaire JCB and Positive Education Program stopped offering ECMH services as part of this initiative on June 30, 2011.
**Data on service units not available for this analysis.

EVALUATION RESEARCH QUESTION 2: DO CHILDREN SHOW IMPROVED FUNCTIONING AND MENTAL HEALTH STATUS FOLLOWING TREATMENT?

Outcome data relating to child behavior and the parent-child relationship were collected by the providers. Due to measure administration practices across agencies, the amount of time elapsed between baseline and follow-up measure administration varied substantially across agencies. However, on average, CBCL follow-up assessments were administered 7.9 months (*SD*= 6.5 months) after baseline CBCL administration and PIR-GAS follow-up tests were given 7.5 months (*SD*=6.0 months) after baseline PIR-GAS administration. **Figures B-I** present data on child behavior from the CBCL as rated by parents at baseline and follow-up. The providers reported the subscale and total CBCL scores only, not the item-level data. Sample sizes are quite varied across the provider agencies. In regard to the subscales, of note is the considerable variation in the severity of child behavior problems at baseline among the various agencies. **Figures J-K** present data on the parent-child relationship from the PIR-GAS as rated by ECMH providers at baseline at follow-up.

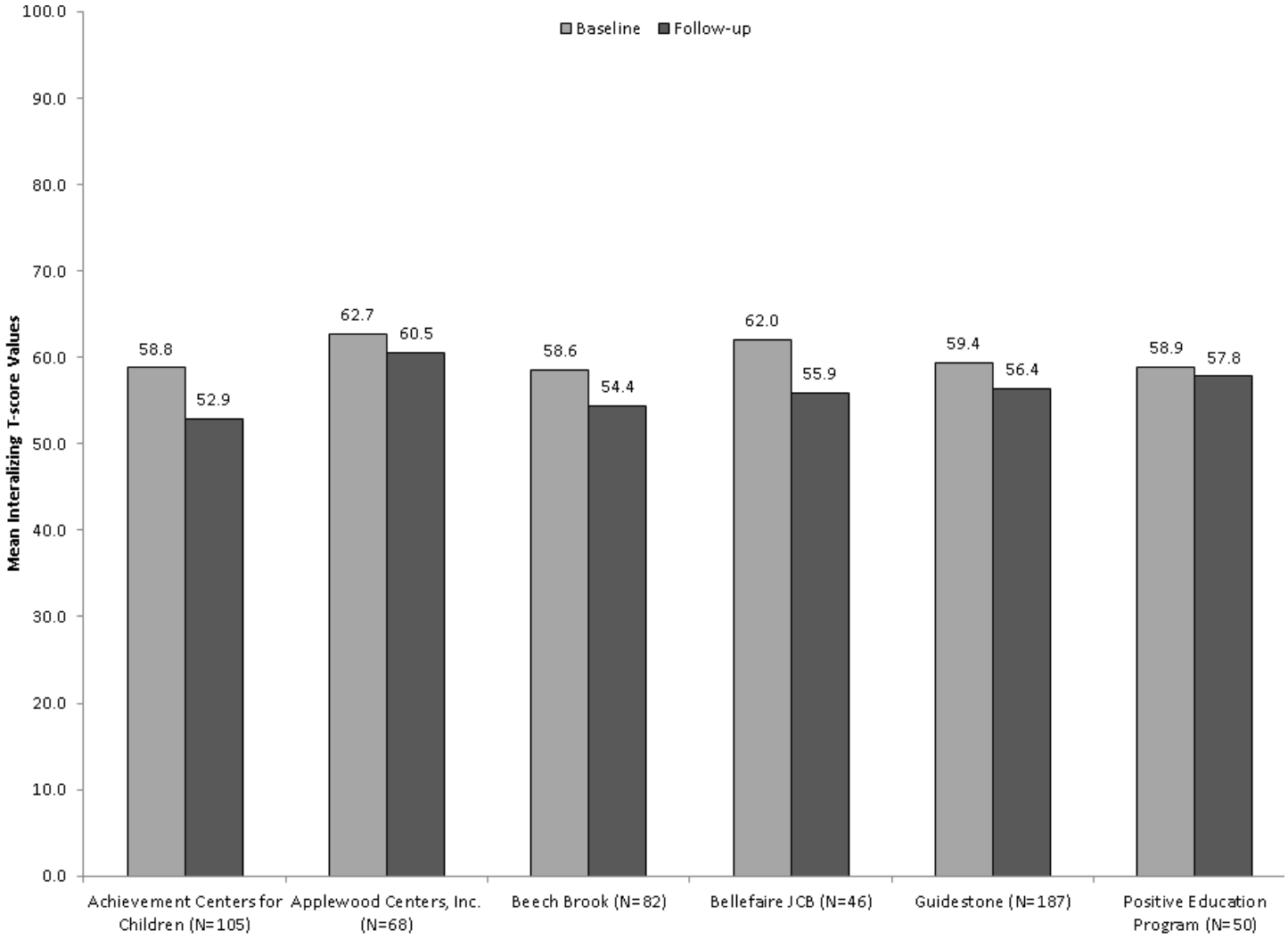

Figure B. Parent-reported CBCL Internalizing Subscale mean change from baseline to follow-up

At each agency, parents reported an overall decline in internalizing behavior problems (see **Figure B**). Across all cases with data available from baseline and follow-up time points (n = 539), a statistically significant 6.5% decline in internalizing problems was observed. Analysis of behavior change by case closure status revealed statistically significant differences. On average, families who successfully completed treatment saw an additional 7.7 point decline in child internalizing problems as compared to families who withdrew from treatment prematurely.

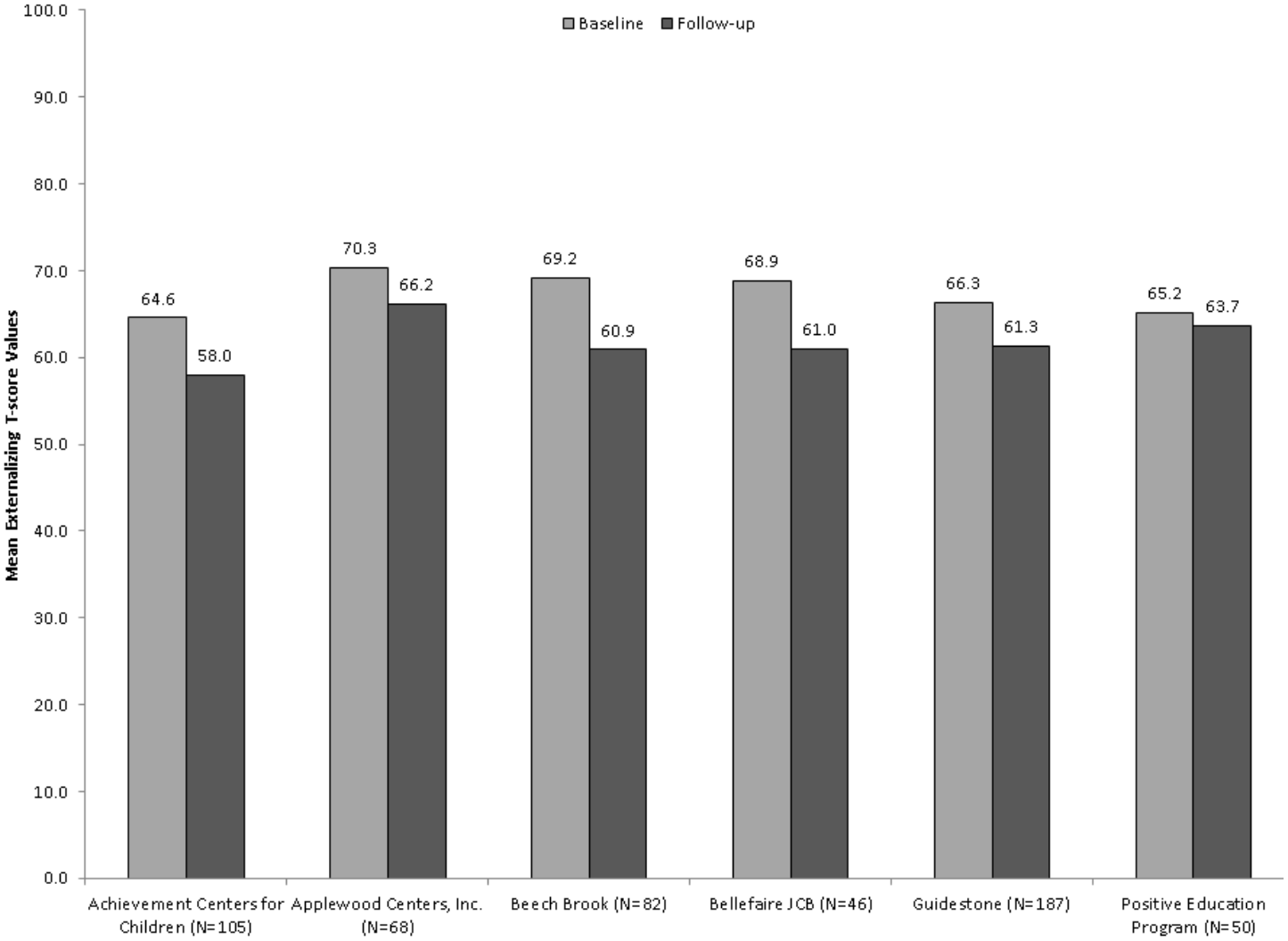

Figure C. Parent-reported CBCL Externalizing Subscale mean change from baseline to follow-up

At each agency, parents reported an overall decline in externalizing behavior problems (see **Figure C**). Across all cases with data available from baseline and follow-up time points (n = 539), a statistically significant 8.5% decline in externalizing problems was observed. On average, child externalizing problems decreased by 11.5 more points among families who completed treatment as compared to families who withdrew from service early. This is a statistically significant difference.

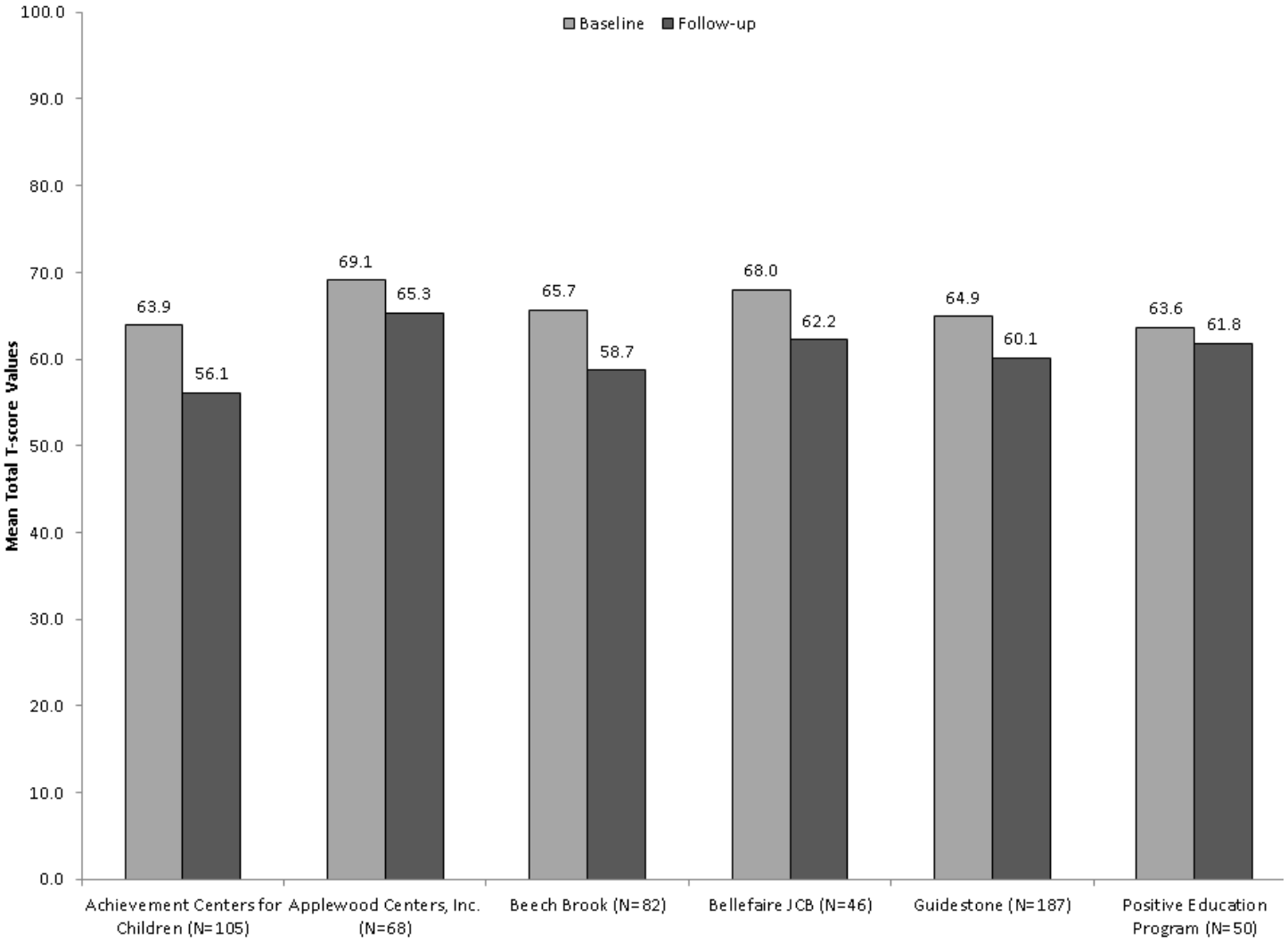

Figure D. Parent-reported CBCL Total Score mean change from baseline to follow-up

At each agency, parents reported an overall decline in total behavior problems (see **Figure D**). Across all cases with data available from baseline and follow-up time points (n = 538), a statistically significant 8.3% decline in total behavior problems was observed. Families who completed treatment saw greater problem behavior reduction than families who withdrew from service (statistically significant 10.5 point mean difference).

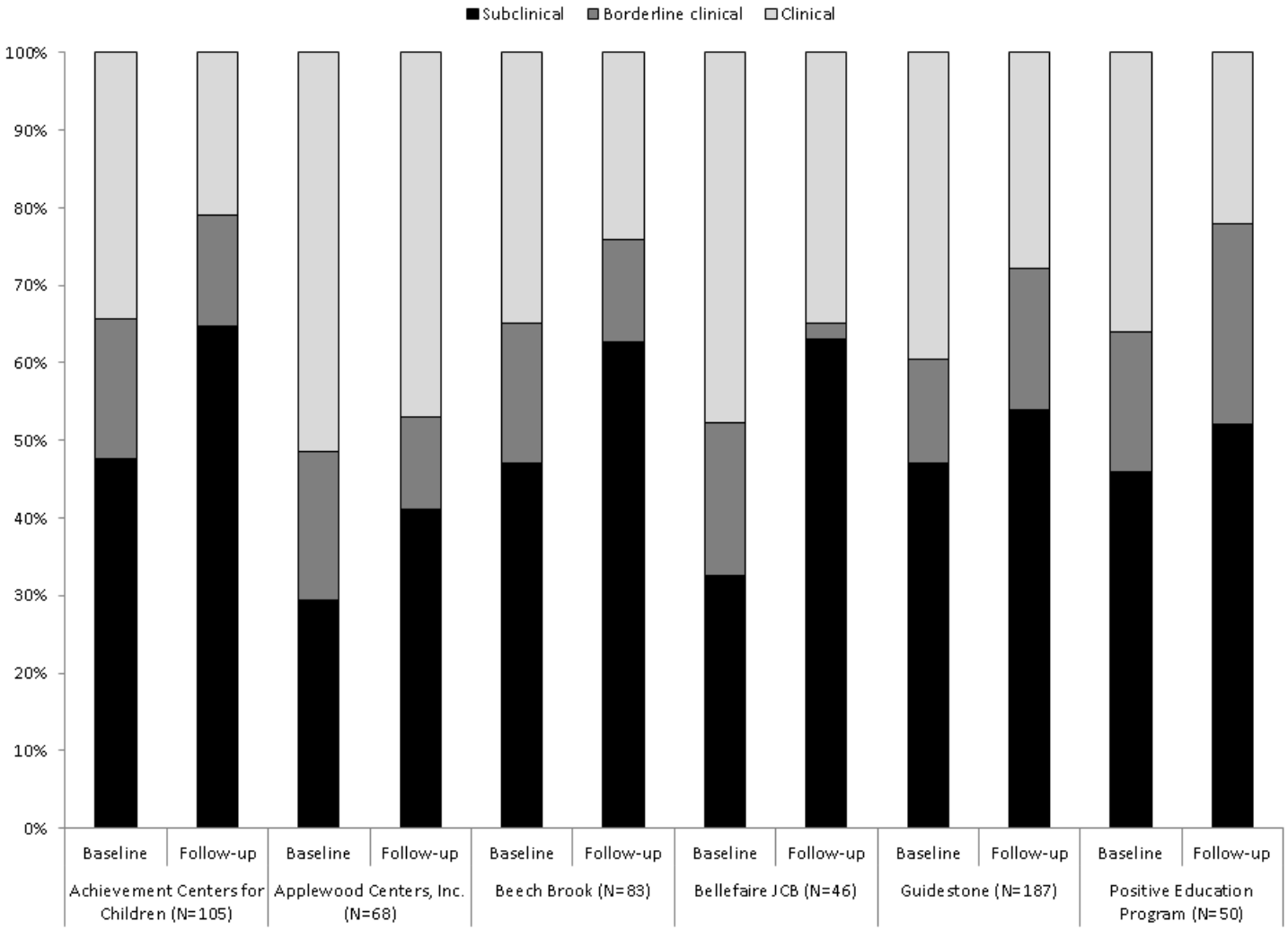

Figure E. Percent of sample scoring within subclinical, borderline clinical and clinical ranges on CBCL internalizing subscale at baseline and follow-up by agency

As illustrated by **Figure E**, agencies served children whose behavior problems ranged in severity at baseline. For example, Applewood Centers and Bellefaire JCB served proportionately more children whose parents reported their internalizing behavior problems in clinical range than the other four agencies. However, each agency served a significant number of children in the subclinical range. Across all six ECMH providers the percent of children scoring within the subclinical range increased from baseline to follow-up while the percent of children scoring within the clinical range decreased from baseline to follow-up CBCL administration.

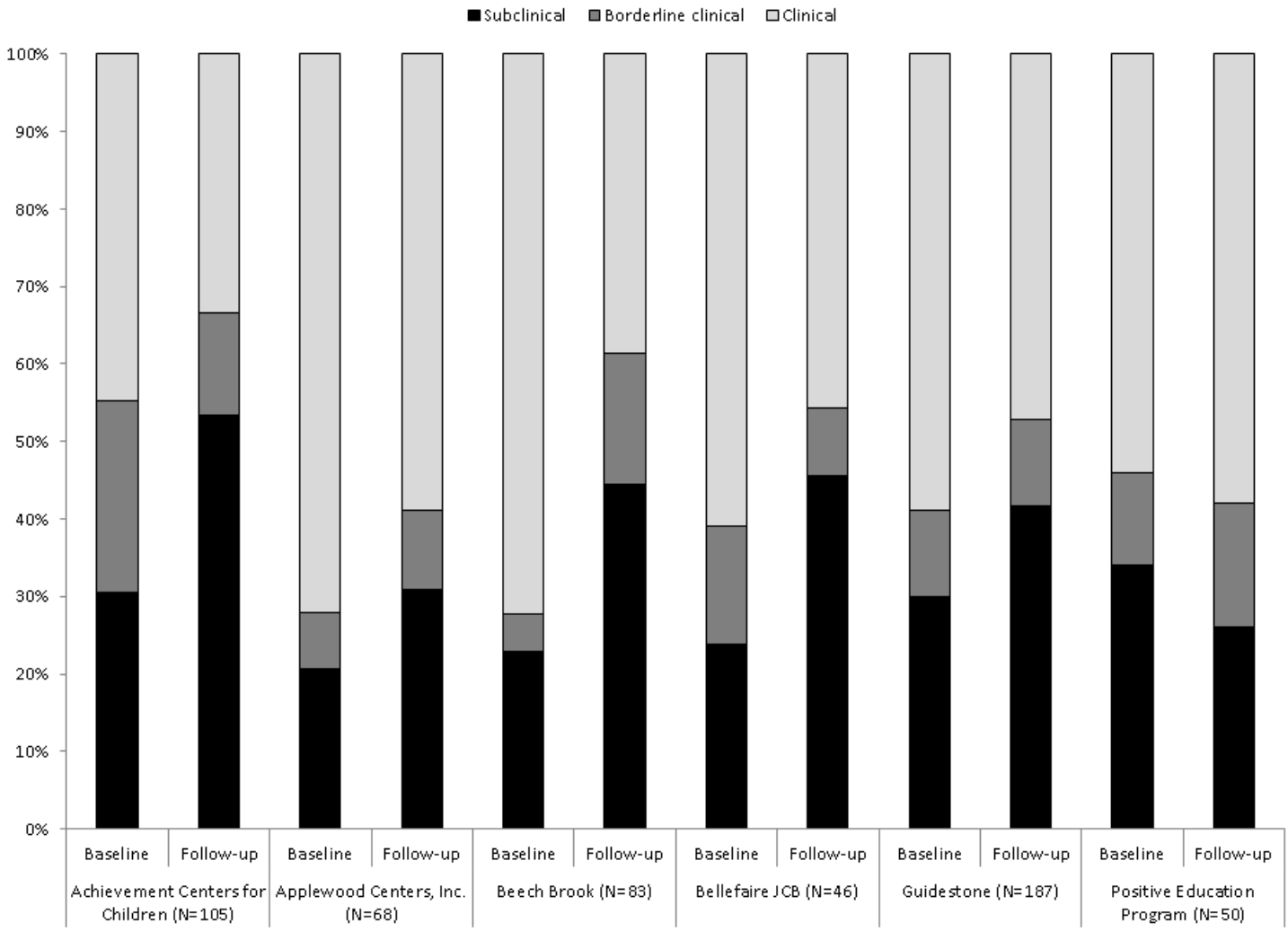

Figure F. Percent of sample scoring within subclinical, borderline clinical and clinical ranges on CBCL externalizing subscale at baseline and follow-up by agency

Comparing **Figure F** to the previous figure (**Figure E**) highlights that proportionately more children served by each agency presented with more severe externalizing than internalizing behavior problems according to parent-reported CBCL score. That is, the percent of children scoring within the clinical range on the externalizing subscale is greater than the percent of children scoring within the clinical range on the internalizing subscale. Applewood Centers and Beech Brook recruited proportionately more children within the clinical range than the other four agencies. Five of the six providers decreased the percent of children scoring within the clinical range and increased the percent of children scoring within the subclinical range from baseline to follow-up; however, at follow-up between 33.3-58.8% of children served across all agencies still evidenced externalizing behavior problems in the clinical range.

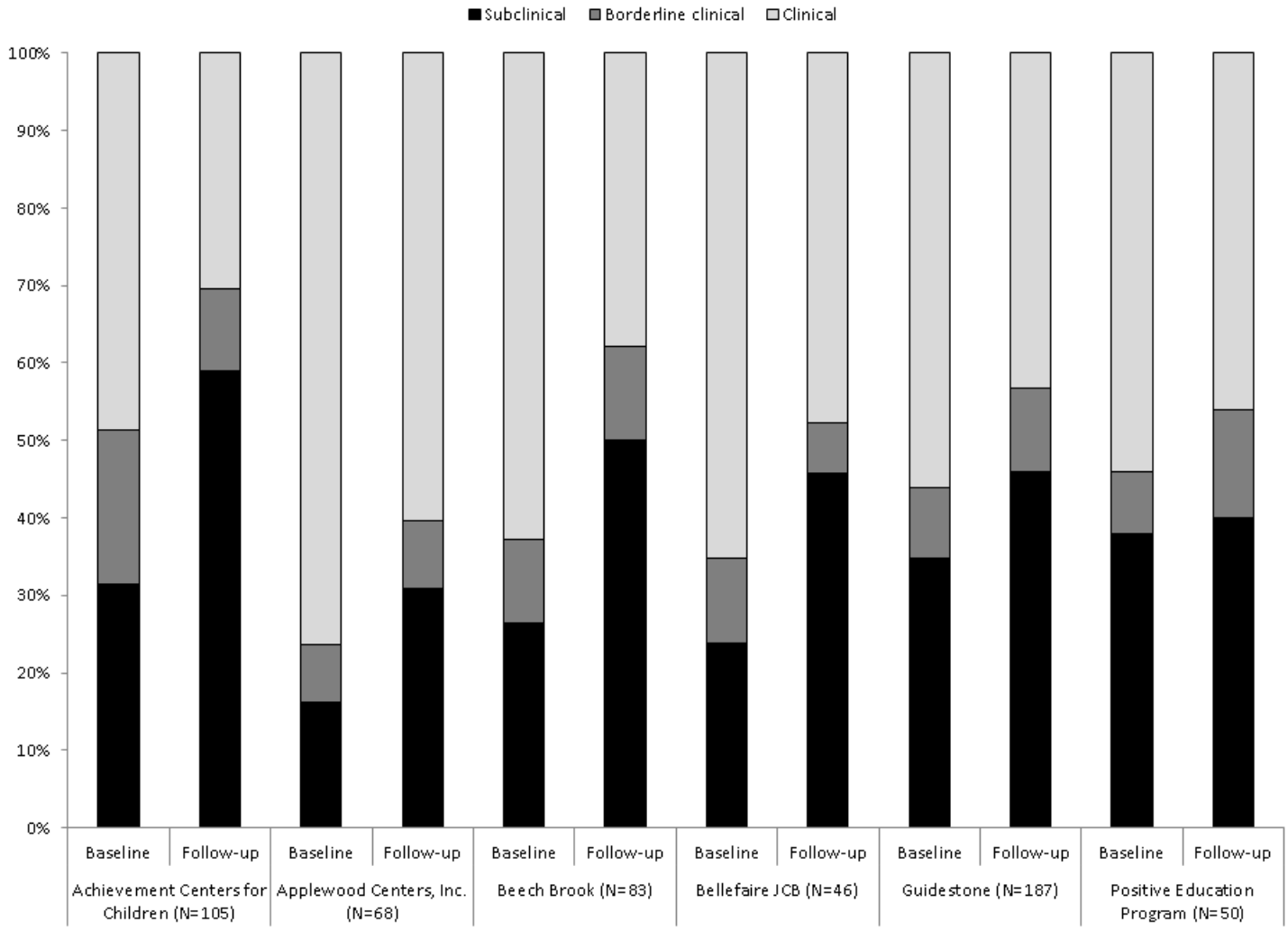

Figure G. Percent of sample scoring within subclinical, borderline clinical and clinical ranges on CBCL total scale at baseline and follow-up by agency

Again, there is great variability in problem behavior severity across agencies at baseline (see **Figure G**). As with internalizing and externalizing subscales, the percent of children evidencing total behavior problems in the clinical range decreased while the percent of children evidencing problems in the subclinical range increased from baseline to follow-up.

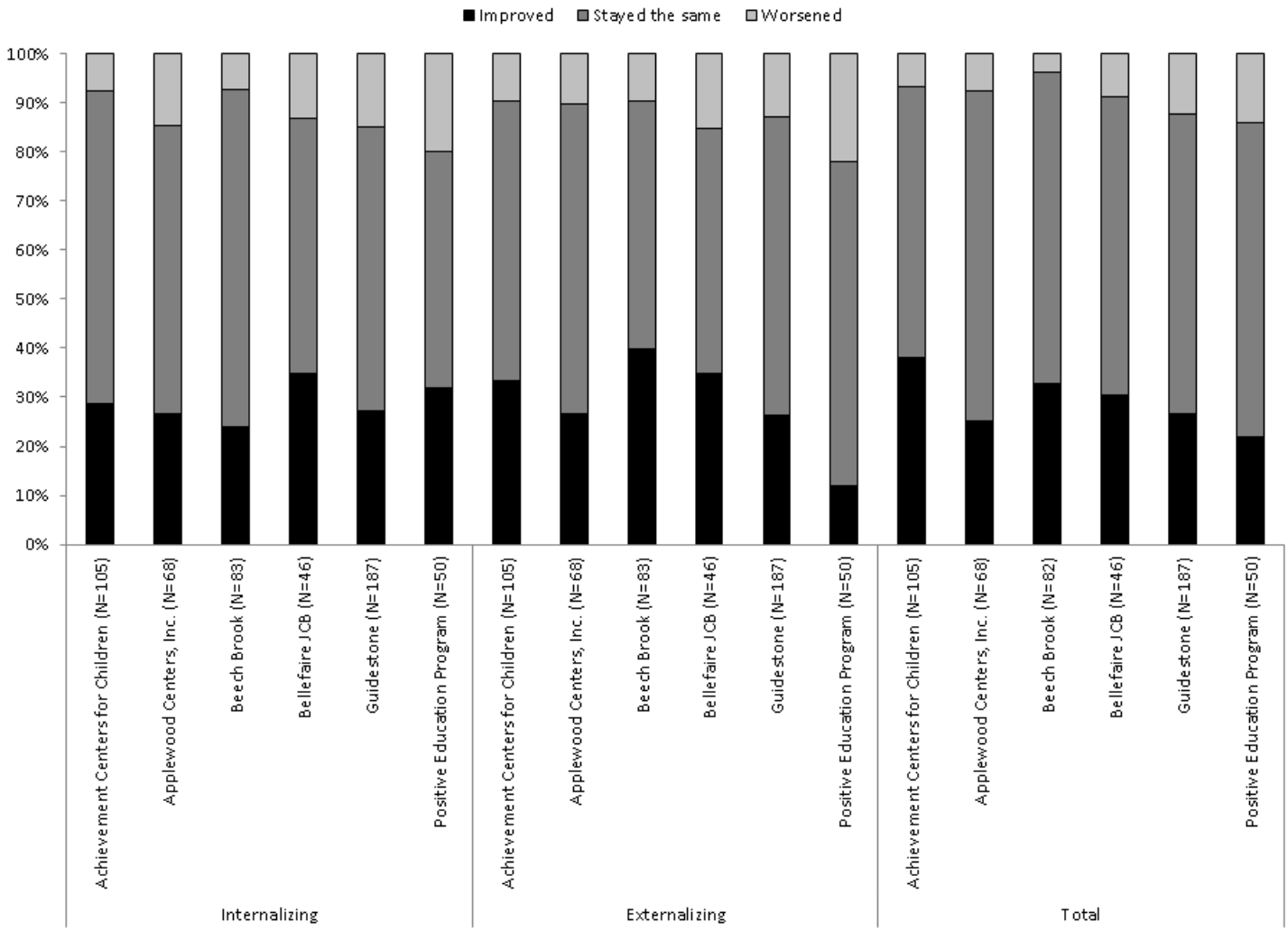

Figure H. CBCL subscale and total score within child categorical change from baseline to follow-up by agency

Figure H shows the percent of children whose problem behavior improved, stayed the same, or worsened from baseline to follow-up. Subclinical, borderline clinical, and clinical ranges were used to explore problem behavior change. Therefore, children categorized as 'improved' moved from a more severe to less severe problem behavior range (e.g., clinical to borderline range). Children whose behavior was categorized as 'worsened' moved from a less severe to a more severe behavioral range (e.g., borderline to clinical range). Across all agencies, at least 12% of children were categorized as 'improved'; however, some agencies (Beech Brook) saw as many as 39.8% of children served improve. A smaller percentage of children at each agency decompensated from baseline to follow-up. Between 3.7% (Beech Brook) and 22% (Positive Education Program) of children demonstrated behavior problems considered more severe at follow-up as compared to their baseline levels of functioning.

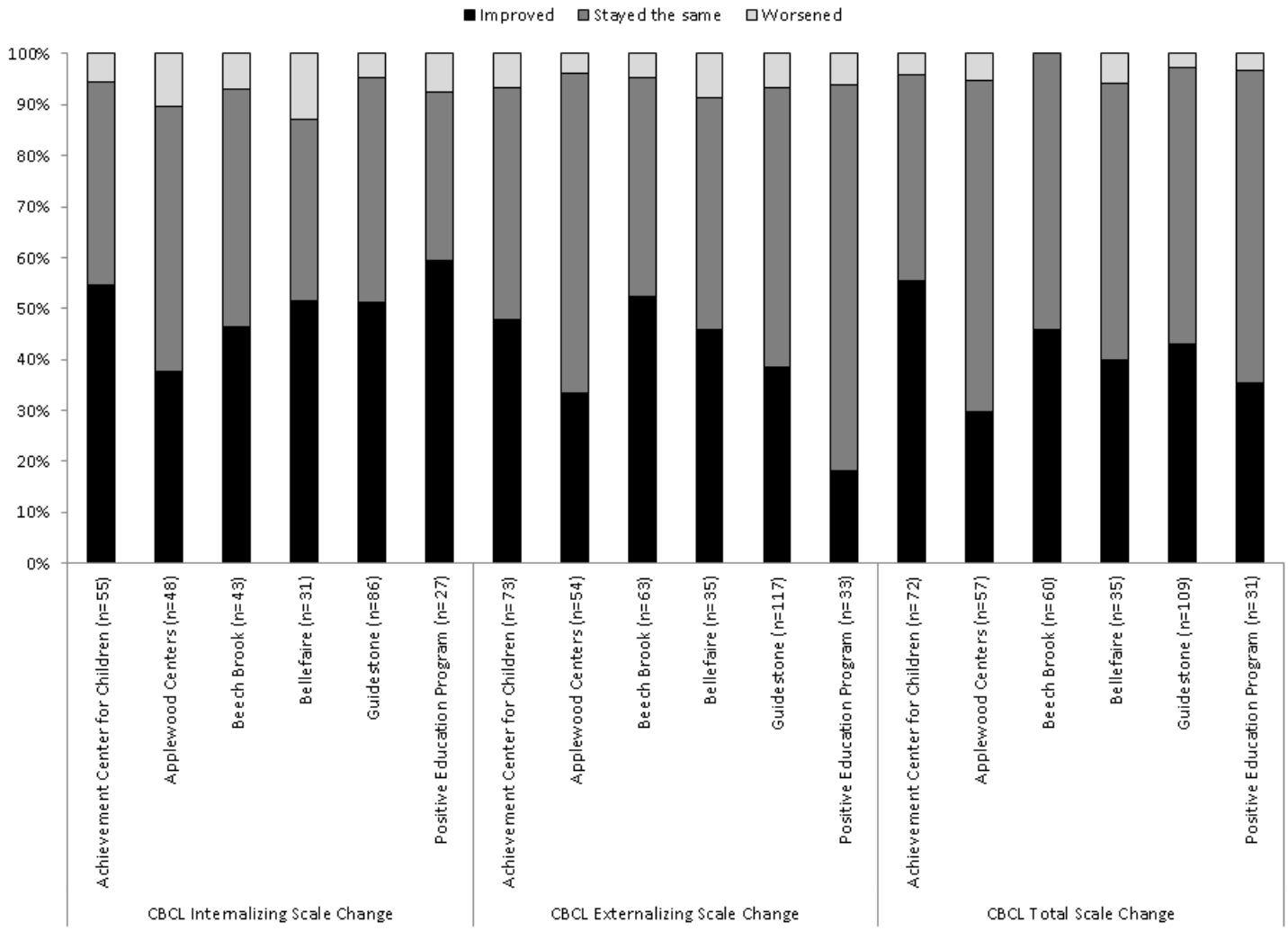

Figure I. CBCL subscale and total score within child categorical change from baseline to follow-up by agency without children categorized as subclinical at baseline

As shown in **Figures E-G**, agencies served a significant number of children in the subclinical range according to parent-reported CBCL internalizing, externalizing, and total scale scores. **Figure I** presents within child change without the children who were categorized as subclinical at baseline. Without the inclusion of subclinical children, rates of child improvement are more variable across agencies. In addition, some agencies appear to have more success with certain behavioral problems. For example, Achievement Centers and Positive Education Program saw proportionately more children served improve on the internalizing scale while Beech Brook saw the best outcomes for externalizing behavior problems. There was more variability in child outcomes on the externalizing than internalizing scale. Unfortunately, some children still decompensated, evidencing more behavior problems at follow-up than at baseline according to parent-report. This was particularly true for Bellefaire and Applewood Centers on internalizing behavior. We explored this group of children in greater detail to better understand their demographic profile. Proportionately more children who decompensated were referred to ECMH from "other" sources. For example, while approximately 1.3% of the total sample was referred to from 'other' referral sources, 9.1% of the children who decompensated on the Total CBCL scale were referred from 'other' sources. Further, proportionately more children who decompensated were closed out as 'transitioned to other program.' It is unclear whether this reflects an actual transition to another treatment program or whether this is an artifact of treatment billing requirements. Anecdotal information suggests children are ‘transitioned’ to Medicaid for billing purposes when they become 3-years-old.

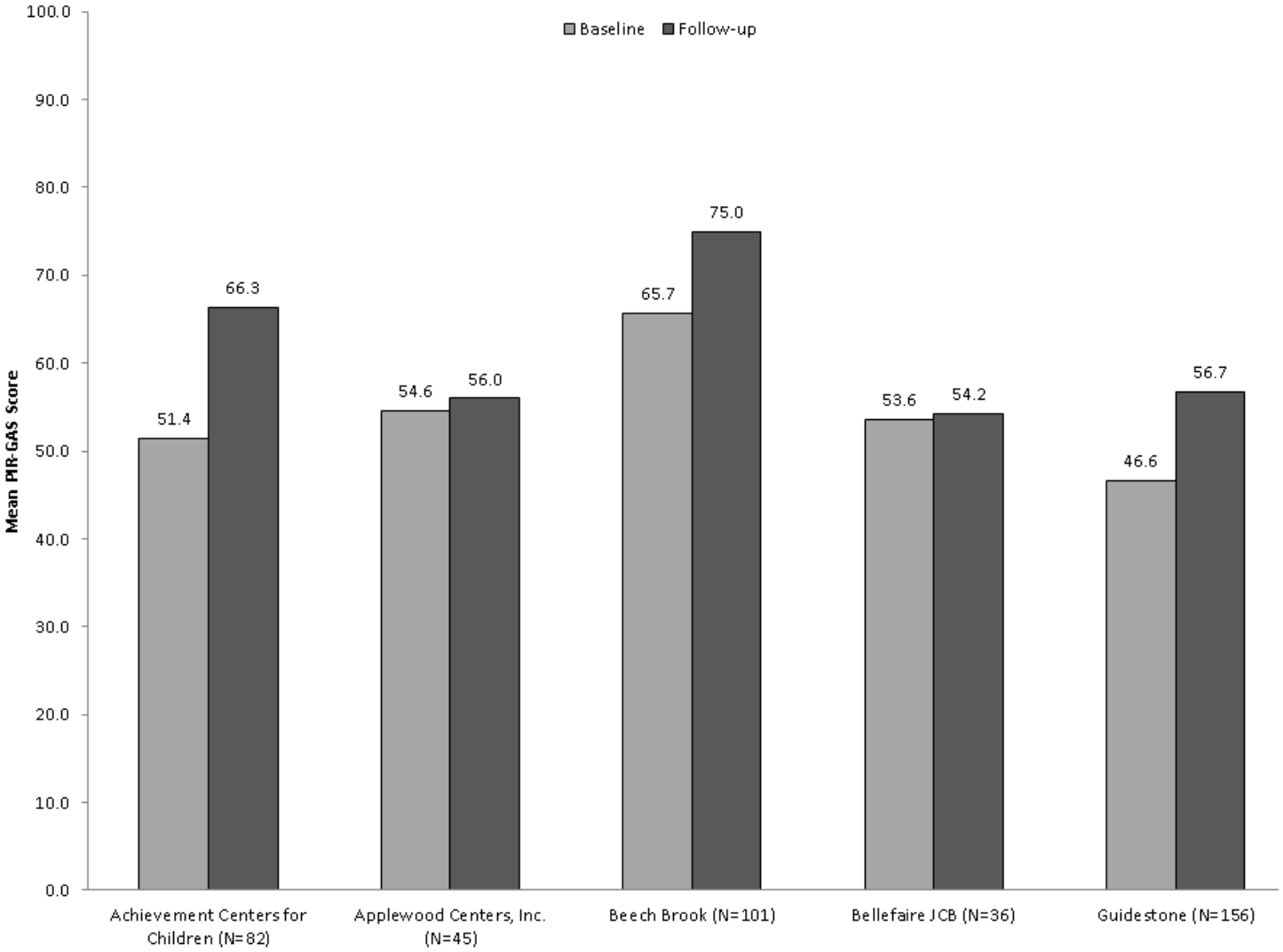

Figure J. Average PIR-GAS scores at baseline and follow-up by agency

Figure J presents data from the PIR-GAS as rated by ECMH providers at baseline and follow-up. No mean PIR-GAS differences were found between children cared for by a biological parent and children cared for by a foster parent. Therefore, data were combined in subsequent analyses. Sample sizes are again quite varied between agencies. The mean baseline rating for families served by Achievement Centers, Applewood, and Bellefaire was in the "distressed" range on the PIR-GAS (mean score between 51-60). On average, parent-child relationships were slightly more adaptive (i.e., within "significantly perturbed" range) among families served by Beech Brook. Conversely, relationships were more disordered among families served by Guidestone (i.e., within "disturbed" range). At follow-up, parent-child relationships among families served at all agencies still evidenced features of a disordered relationship; follow-up mean scores fell within 41-80 points. However, on average, families served by Achievement Centers, Beech Brook, and Guidestone improved an entire range. As with the CBCL, families who completed treatment saw the greatest parent-child relationship improvement. On average, the parent-child relationship improved by 10.8 more points among families who completed treatment as compared to families who withdrew from service.

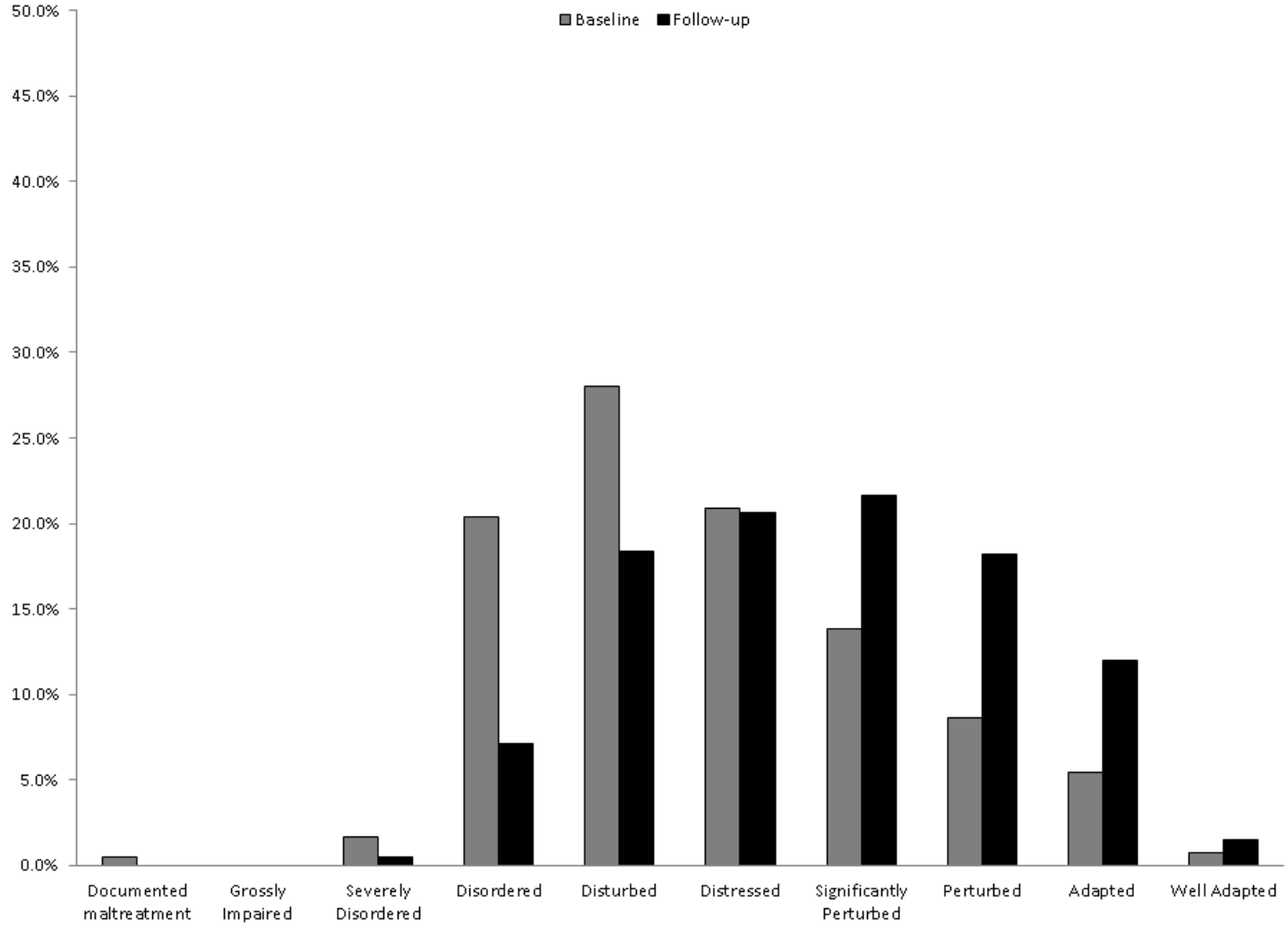

Figure K. Range of PIR-GAS score distributions at baseline and follow-up among families served across agencies

Figure K illustrates PIRG-GAS score distributions and parent-child relationship change using combined data from all agencies. At follow-up, 13.5% of parent-child relationships were categorized as adapted or well-adapted, a 7.4% increased from baseline. Similar improvements were made at the "disordered" end of the distribution (an overarching category that combines "documented maltreatment," "grossly impaired," "severely disordered," and "disordered" ranges). From baseline to follow-up, 15% fewer relationships were categorized as "disordered." Further, whereas the modal range at baseline was "disturbed" the most common relationship classification at follow-up was "significantly perturbed."

Figure K also speaks to the population reached by ECMH providers. Very few families were served who were categorized in the most severely disordered relationship categories at baseline; however, this should not be interpreted as an absence of significant need in the county.

EVALUATION RESEARCH QUESTION 3: FOR WHOM WERE ECMH SERVICES MOST EFFECTIVE?

Children who demonstrated significant behavioral improvement from baseline to follow-up (i.e., change score was greater than or equal to +1.5 SDs of the sample CBCL externalizing, internalizing, or total scale mean) were examined in detail to explore whether demographic factors were related to ECMH effectiveness. Using this criteria, there were 32 children identified as making significant behavioral improvements as measured by the CBCL internalizing subscale, 41 using the CBCL externalizing subscale, and 35 using the CBCL total scale. **Table D** describes the demographic profiles of these children in comparison to the overall sample. Relatively large deviations from the total sample are noted in four areas: 1) Compared to the total sample, children who made significant improvements received, on average, between 6.7 and 15.4 more units of service; 2) Proportionally more of these children completed treatment, upwards of 87.5% as compared to the 30.0% completion rate in the larger sample; 3) While girls comprised 37.8% of the larger sample, they were more likely than boys to show extreme change. For example, 62.9% of the 35 children who made significant behavioral improvements as measured by the CBCL total scale were female; 4) More children in the extreme improvements groups came from two parent households than in the total sample.

Table D. Demographic Characteristics of Children who made Significant Behavioral Improvements during ECMH Treatment.

	Child age	Service Units received	Completed treatment	Child Gender	Axis I Diagnosis	Axis II Diagnosis	Dual Diagnosis	# of Parents
	M (*SD*) in months	M (*SD*)	%	% Female	% Yes	% Yes	% Yes	% with 2
Children who made extreme internalizing behavior improvements (n=32)	28.7 (7.5)	44.7 (47.6)	87.5	56.3	75.0	40.6	21.9	79.3
Children who made extreme externalizing behavior improvements (n=41)	29.0 (7.3)	40.6 (31.0)	78.8	53.7	85.4	36.6	26.8	60.5
Children who made extreme improvements on CBCL total scale (n=35)	28.5 (7.7)	49.3 (49.2)	81.5	62.9	85.7	31.4	20.0	71.9
Children who made extreme improvements on PIR-GAS (n=35)	22.8 (7.7)	41.4 (26.4)	85.3	48.6	80.0	57.1	40.0	51.5
Total sample (N=930)	29.7 (10.0)	33.9 (44.8)	30.0	37.8	79.8	34.2	23.7	46.7

Also of note is the distribution of children who made extreme improvements across the six ECMH provider agencies (see **Table E**). According to **Table E**, while Bellefaire and Positive Education Program served only 6.5% of the total sample, they provided ECMH services to significantly more children who made extreme improvements. For example, Bellefaire served 15.6% of the 32 children who significantly improved their internalizing behavior and 17.1% of children who significantly improved their externalizing behavior. On the other hand, Applewood Centers saw 16.1% of the total 930 cases but did not serve any of the 32 children who made extreme internalizing behavioral improvements.

Table E. **Percent of Children who made Extreme Improvements Compared to Total Sample, by Agency**

	Achievement Centers for Children	Applewood Centers, Inc.	Beech Brook	Bellefaire JCB	Guidestone	Positive Education Program
Children who made extreme internalizing behavior improvements	21.9	0.0	15.6	15.6	34.4	12.5

(n=32)						
Children who made extreme externalizing behavior improvements (n=41)	17.1	7.3	19.5	17.1	31.7	7.3
Children who made extreme improvements on CBCL total scale (n=35)	22.9	5.7	20.0	11.4	25.7	14.3
Children who made extreme improvements on PIR-GAS (n=35)	45.7	2.9	11.4	2.9	37.1	n/a
Total sample (N=930)	21.6	16.1	15.8	6.5	33.5	6.5

Lastly, **Table F** illustrates the percent of each agency's total population that made extreme behavioral improvements. In regard to internalizing and externalizing behavior, Bellefaire had the largest percentage of their total clientele make significant change. Positive Education Program saw the most extreme change relative to their total clientele in total CBCL score.

Table F. Percent of Each Agency's Total Population that Made Extreme Improvements

	Achievement Centers for Children	Applewood Centers, Inc.	Beech Brook	Bellefaire JCB	Guidestone	Positive Education Program
Children who made extreme internalizing behavior improvements	3.5%	0.0%	3.4%	8.3%	3.5%	6.7%
Children who made extreme externalizing behavior improvements	3.5%	2.0%	5.4%	11.7%	4.2%	5.0%
Children who made extreme improvements on CBCL total scale	4.0%	1.3%	4.8%	6.7%	2.9%	8.3%
Children who made extreme improvements on PIR-GAS	8.0%	0.7%	2.7%	1.7%	4.2%	n/a
Total number of children served	n=201	n=150	n=147	n=60	n=312	n=60

PARENT FEEDBACK

At the end of March 2008, the six agencies delivering ECMH services began to use a uniform client feedback survey. The survey is administered to cases as close to the planned termination as possible. If a case terminates unexpectedly the agency sends the survey to the family via U.S. mail. Through the end of 2011, a total of 306 parent surveys were returned, which is an estimated 46% of the 664 cases closed during the period. Respondents were asked to offer ratings on 13 dimensions of their service experience. Overall ratings of the services provided and the staff were quite high. The majority of parents were pleased with the services received, pleased with the amount of time staff spent with their family, and found the staff person who worked with their child helpful and respectful. As to the parent's engagement in the treatment, the majority of respondents felt they were encouraged to take part and were actively involved.

As to measures of treatment benefit and outcome, the majority of respondents reported that they were pleased with the progress made by their child/family. Since starting the program, most parents reported learning about their child/family issue, that their child was doing better, their family was doing better, and their relationship with their child had improved. Overall, the majority of respondents reported that the program helped them deal with their child/family issues and they would return for service if a similar issue arose.

CONCLUSIONS

The study described here analyzes data to inform program improvement and evaluation planning. Overall, the data support a conclusion that ECMH efforts are bringing about child behavior improvements and parent-child relationship benefits, particularly for

families who complete their course of treatment. In addition, parent feedback regarding the treatment experience is overwhelmingly favorable.

Unfortunately, subgroup analyses (by provider agency and diagnosis) are hampered by limited sample sizes. While the patterns described provide a sense of the potential differences across subcategories, they should not be construed as reliable estimates of outcome change. As more data become available these analyses should be repeated to enhance our understanding of group differences.

RECOMMENDATIONS

The following recommendations emerged after analyzing the ECMH data and sharing it with provider agency staff and Invest in Children:

Data-reporting Recommendations

- Ensure that submissions for subsequent quarters contain updated tables on all existing cases plus all new cases opened since the beginning of the reporting quarter. Some agencies are only submitting new cases.
- The number of children with 'missing' and 'n/a' values for Axis I and II diagnoses as well as the significant variability across agencies in the percentage of 'missing' and 'n/a' values needs to be further explored.
- Consistently record a child's diagnosis at intake. Anecdotal information suggests the current intake form does not capture DSM diagnoses, however, it is unclear whether some agencies are documenting DSM diagnoses in DC: 0-3 space.
- Create an option for 'transitioned to ECMH Medicaid funding' to differentiate between children who truly transition to another program as opposed to continue receiving service as usual that is paid for by Medicaid instead of IIC.

Programmatic Recommendations

- Define 'completed treatment' to ensure the term is consistently applied across ECMH providers.
- Consider capturing more detailed information about parents' mental health status, particularly among parents engaged in mental health treatment at the same time their child is receiving ECMH services.
- Explore the feasibility of administering (or reporting) additional outcome measures to document the impact of ECMH treatment. Particularly needed are measures of parent-level outcomes such as parenting skill, stress (e.g., Parent Stress Index), or confidence (e.g., Parent Sense of Confidence Scale). The inclusion of these variables would allow exploration of ECMH effects on parents as well as ECMH effects on children mediated through parent-level variables.
- At baseline, many children's behavioral issues did not reach borderline or clinical levels of significance as measured by parent-reported CBCL. It is unclear whether this is a function of a true absence of severe behavior problems or the result of parental reporting bias. For example, do all parents have the ability to accurately report their child's level of functioning? If not, explore collateral reporting methods or consider the inclusion of additional measures that may be more sensitive to reporter bias. If parents are accurate, reliable sources of information regarding their child's behavior, is the ECMH program reaching the neediest children?

ECMH System Considerations

- Agencies demonstrated great variation in diagnoses. It is difficult to determine what this means with current data. Are different populations of children presenting at different agencies? Are agencies specializing in particular disorders? If so, should families be directed to particular sites depending on their presenting mental health concerns? On the other hand, is variation in diagnoses an artifact of practitioner training or theoretical orientation that differs by agency? Would the same child receive two different diagnoses at two different agencies? Additional data are needed to better understand this finding.

- ECMH treatment outcomes appear related to the interaction between type of behavioral or relationship concern and service provider. Though more information is needed to explain this preliminary observation, it further suggests some agencies are more successful in showing progress with particular mental health issues.