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ORIGINAL ARTICLE

Out-of-Home Placement Decision-Making and Outcomes in Child Welfare: A Longitudinal Study

Ka Ho Brian Chor · Gary M. McClelland · Dana A. Weiner · Neil Jordan · John S. Lyons

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Abstract After children enter the child welfare system, subsequent out-of-home placement decisions and their impact on children's well-being are complex and under-researched. This study examined two placement decision-making models: a multidisciplinary team approach, and a decision support algorithm using a standardized assessment. Based on 3,911 placement records in the Illinois child welfare system over 4 years, concordant (agreement) and discordant (disagreement) decisions between the two models were compared. Concordant decisions consistently predicted improvement in children's well-being regardless of placement type. Discordant decisions showed greater variability. In general, placing children in settings less restrictive than the algorithm suggested ("under-placing") was associated with less severe baseline functioning but also less improvement over time than placing children according to the algorithm. "Over-placing" children in settings more restrictive than the algorithm recommended was associated with more severe baseline functioning but fewer significant results in rate of improvement than predicted by concordant decisions. The importance of placement decision-making on policy, restrictiveness of placement, and delivery of treatments and services in child welfare are discussed.

Keywords Child welfare · Out-of-home placements · Team decision-making · Decision support algorithm · Outcomes

K. H. B. Chor (✉)
Department of Child and Adolescent Psychiatry, Center for Mental Health Implementation and Dissemination Science in States for Children, Adolescents, and Families (IDEAS Center), New York University Child Study Center, New York University School of Medicine, 1 Park Avenue, 7th Floor, New York, NY 10016, USA
e-mail: brian.chor@nyumc.org

G. M. McClelland · D. A. Weiner · N. Jordan
Department of Psychiatry and Behavioral Sciences, Northwestern University Feinberg School of Medicine, 710 North Lake Shore Drive, 12th Floor, Chicago, IL 60611, USA
e-mail: gmac@northwestern.edu

D. A. Weiner
e-mail: dsaw80@northwestern.edu

N. Jordan
e-mail: neil-jordan@northwestern.edu

J. S. Lyons
Child and Youth Mental Health Research, School of Psychology, University of Ottawa, Vanier Hall, 4805, Ottawa, Ontario K1N6N5, Canada
e-mail: john.lyons@uottawa.ca

Introduction

Child welfare has undergone a reform to reduce the length of stay, the number of children in care, and placements in restrictive settings. Between 2005 and 2011, the average length of stay in child welfare in the US has decreased from 28.6 to 23.9 months, the annual number of children entering care (i.e., incidence) from 311,000 to 252,320, and the annual number of children in care (i.e., prevalence) from 513,000 to 400,540. There has also been a corresponding reduction in the proportion of youth in congregate, out-of-family placements from 8.5 to 5.9 % in group home, and from 10.0 to 8.7 % in residential treatment (US Department of Health and Human Services 2006, 2008, 2009a, b, 2010, 2011, 2012). Less restrictive placements are more common, and gradually increased during the same period from 70.4 to 74.0 % in foster care (kinship and non-kinship), and from 7.9 to 8.7 % in pre-adoption or trial

homes (US Department of Health and Human Services 2006, 2008, 2009a, b, 2010, 2011, 2012). These changes suggest that placement decision-making in child welfare is evolving with the system. Understanding placement decisions is an important area of research in child welfare.

Consistent with goals to reduce restrictive placements as well as increase placement stability, there is a growing interest in improving placement decision-making to continuously improve children's experiences in out-of-home care (Barber and Delfabbro 2003; Blakey et al. 2012; Chor et al. 2012; James et al. 2004; Leathers 2006; Rubin et al. 2007). Two major decision models have been applied to placement decision-making in child welfare: the multidisciplinary team model and the decision support algorithm (Chor 2013). Team models rely on pooled interdisciplinary expertise and the inclusion of caregivers and clients in the decision-making process. Examples of the multidisciplinary team model include Child and Family Teams in North Carolina (Snyder et al. 2012), and the Annie E. Casey Foundation multidisciplinary team decision-making model, which has been implemented in over 60 child welfare agencies in 17 states (Crea et al. 2009). The use of a decision support algorithm to aid placement decision-making began as a tool to match incoming children to known case-mixes of existing placements (Schwab et al. 1984). It has evolved to matching a child's functioning needs and strengths to a specific placement based on clinical assessment and standardized criteria. Key examples include the Child and Adolescent Level of Care Utilization System (Fallon et al. 2006) and the Child Severity of Psychiatric Illness (Lyons and Abraham 2001). For both the multidisciplinary team model and the algorithm model of decision-making, contextual and pragmatic factors may be considered, such as a child's placement history, placement availability, geographic limitations, and policy demands (Crea et al. 2009; James 2004; Lindsey 1992; Martin et al. 1998).

Despite advances in these placement decision-making models, there is limited empirical literature on decision-making in child welfare. Significant challenges include inconsistent placement criteria and a greater emphasis on safe removal of children from homes than on subsequent stability in out-of-home placements (Chor 2013; Chor et al. 2013). Decision-making ecology frameworks further highlight uncertainty and multi-level factors (e.g., caseworker, organization, policy) that influence child welfare decision-making (Baumann et al. 2011). Decision-analytic models have rarely been used in child welfare to project long-term, systematic impact of alternative courses of action or implementing evidence-based practices (Goldhaber-Fiebert et al. 2012). Importantly, there is limited understanding of how decision-making models may produce data-driven placement decisions to improve child-level outcomes, a priority in child welfare according to the Adoption and Safe Families Act of 1997 (P. L. 105-89). Understanding this connection is critical if the level of placement restrictiveness is to best meet the child's behavioral health needs (Chor 2013; Handwerk et al. 1998). Optimal placement recommendations are needed to make a long-term positive impact on children, and to tailor appropriate treatments and services for children in different types of placement.

Comparing Placement Decision-Making Models to Examine Statewide Placement Patterns and Impact on Children's Well-Being

From a system-level perspective, because of the diverse placement types and children's profiles, justifying "best" placement decisions becomes increasingly complicated. Thus, state child welfare systems are motivated to address two sequential research and policy questions: (1) how do existing models of placement decision-making contribute to statewide placement patterns in a child welfare system? and (2) how do these decision-making models predict children's well-being across different types of out-of-home placement? Both questions are essential to quality improvement in placement practice and understanding children's ongoing experiences in out-of-home placements.

To address the first question, one study compared two decision-making models in the Illinois child welfare system: the multidisciplinary Child and Youth Investment Teams (CAYIT), and the Child and Adolescent Needs and Strengths (CANS) Algorithm, a need-based, decision support algorithm that recommends the best placement using a child's clinical assessment (Chor et al. 2013). In 2005–2013, Illinois Department of Children and Family Services (IDCFS) mandated that the CAYIT had the ultimate decision-making authority on the actual placement of a child and the teams were provided with a placement recommendation by the CANS Algorithm. Both models recommended youth's out-of-home placements in Illinois that range from the least to the most restrictive settings: independent living (for youth above age 16), transitional living (for youth above age 16), foster care, specialized foster care, group home, and residential treatment. Placement decisions are considered "concordant" when the CAYIT and the CANS Algorithm agree, and "discordant" when the two models disagree. Discordant decisions either result in "under-placement"—when the CAYIT place a child in a less restrictive setting than recommended by the CANS Algorithm; or "over-placement"—when the CAYIT place a child in a more restrictive setting than recommended by the CANS Algorithm.

Based on 7,816 placement records for 6,096 children in 2005–2010, agreement between the CAYIT and the CANS Algorithm (concordance) was the strongest for the least restrictive (i.e., independent living, foster care) and the

most restrictive (i.e., residential treatment) settings. Among discordant decisions the degree of disagreement between the two models (discordance) was small. When the CAYIT disagreed with the CANS Algorithm, they typically placed a child in a setting one level less restrictive (i.e., under-placement) or one level more restrictive (i.e., over-placement) than the CANS Algorithm recommended placement. These findings indicate that the two models work in concert to identify and place children in the least and the most restrictive settings. They also guide the state to monitor and review cases when there is discordance, which may reveal a child's unique placement needs (Chor et al. 2013).

The current study addresses the second and central question: How do concordant and discordant placement decisions between the CAYIT and the CANS Algorithm predict child well-being in out-of-home placements over time? Ideally, the "best" placement indicated by concordance should predict more favorable outcomes than a placement resulting from discordance. An initial study examined 466 children placed in residential treatment. Where the placement in residential treatment was concordant with the CANS Algorithm, there was greater improvement in children's life functioning, emotional, behavioral needs, and risk behaviors (Chor et al. 2012). Children whose placement in residential care was not supported by the CANS Algorithm, however, showed less or no improvement, suggesting that less restrictive, community-based settings would be more appropriate.

While these findings are promising, it is necessary to examine all CAYIT placements and CANS Algorithm recommendations to improve system-wide placement decision-making. The current study examines the impact of concordant and discordant placement decisions between the CAYIT and the CANS Algorithm on child well-being in all placement types available to children under age 16. These placement types include, in increasing level of restrictiveness: foster care, specialized foster care, group home, and residential treatment. Repeated measures using a standardized outcome assessment capture changes in children's well-being over time. Concordance is hypothesized to predict more favorable outcomes than discordance. More nuanced comparisons of concordance and discordance at different levels of care will contribute to the evidence base for future decision-making models, which may facilitate the provision of treatments and services for children in different placements.

Methods

Setting

IDCFS is the state child welfare agency. Children under age 16 can be placed in one of four placement types, in increasing level of restrictiveness: foster care, specialized foster care, group home, and residential treatment (Chor 2013). Foster care includes kinship and non-kinship foster homes; specialized foster care is appropriate for children with greater behavioral, emotional, developmental, and medical needs; group home is a small-scale, congregate setting with daily programming; residential treatment center is 24/7 institutional care for children with severe behavioral, emotional problems, and often risks for danger to self and others.

Outcomes Measure: Child and Adolescent Needs and Strength (CANS)

IDCFS uses the Child and Adolescent Needs and Strength (CANS) tool across programs and placements to track children's outcomes (Weiner et al. 2009). The CANS consists of 104 items organized into eight domains: trauma experiences, traumatic stress symptoms, strengths, life domain functioning, acculturation, behavioral/emotional needs, risk behaviors, and caregiver needs and strengths. Each item has four anchored ratings: "0" (no evidence and no need for action), "1" (need for watchful waiting), "2" (need for action), and "3" (need for immediate action). The CANS has demonstrated strong field reliability, audit reliability, and concurrent validity with widely used measures such as the Child and Adolescent Functional Assessment Scale (Anderson et al. 2003; Lyons 2004). The CANS has also consistently achieved robust item-level inter-rater reliability among researchers (0.81) and between researchers and clinicians (0.85) across CANS domains (Anderson et al. 2003). Every CANS user must have at least a bachelor's degree, complete a CANS training module based on case vignettes/records, and meet at least 0.70 reliability for annual re-certification. Over 30,000 trained and certified CANS users have an average reliability of 0.78 post-training with vignettes, 0.85 with case records, and 0.90 with live interviewers (Lyons 2009; The Praed Foundation 2010).

In this study, five key CANS domains were selected—traumatic stress symptoms, strengths, life domain functioning, behavioral/emotional needs, and risk behaviors. For each child, all CANS domain scores were summed and standardized relative to the means and standard deviations at baseline. The higher a standardized score, the higher the level of severity in that domain, except for strengths, where a higher score indicates the presence of strengths.

Two Placement Decision-Making Models: Multidisciplinary Teams and Decision Support Algorithm

In 2005–2013, IDCFS implemented the multidisciplinary CAYIT to manage statewide changes in out-of-home

placement for children under state custody (Illinois Department of Children and Family Services 2010). The CAYIT placement decision-making was aided by the CANS Algorithm. The two decision-making models are described below.

Child and Youth Investment Teams (CAYIT)

The CAYIT made placement decisions for children under state custody, especially those deemed at risk for placement disruption. Each team consisted of an intake coordinator, a reviewer, a facilitator, and an implementation coordinator. In a CAYIT staffing, the team invited the child (if older than 12), caregivers, and other pertinent individuals (e.g., teacher, therapist) to arrive at an informed placement recommendation. During the staffing, the team discussed the case and the reasons for a child's change of placement. To assess child functioning, the team completed the CANS assessment and sought consensus for each item on the tool. Based on the team discussion and the child's CANS profile, the team finalized a placement for the child and formulated a service plan. The implementation coordinator followed through by identifying specific placement providers, arranging intake interviews, and ensuring that all other recommended services and conditions for the child were in place.

Child and Adolescent Needs and Strengths (CANS) Algorithm

The CANS Algorithm builds on the CANS psychometric properties and field validity to recommend the best placement for a child given the child's profile of behavioral health needs (Lyons 2009; Weiner et al. 2009). It was developed by a focus group that comprised IDCFS policymakers, mental health services researchers, placement providers, and field clinicians. The CANS Algorithm uses select CANS items, specific rating thresholds, and Boolean logic to standardize different placement criteria for foster care, specialized foster care, group home, and residential treatment (see Appendix). For example, to qualify for residential treatment, a child must show higher ratings (i.e., "2" or "3") on risk behavior items, than to meet the criteria for specialized foster care, which are less stringent (Chor et al. 2012; Lyons and Abraham 2001). The CANS Algorithm accounts for variability in child profiles. Thus, two children may qualify for residential treatment with a different constellation of CANS scores and items. During each CAYIT staffing, with a completed CANS profile, the placement recommendation by the CANS Algorithm was made available for consideration, though the team was not required to follow the algorithm's recommendation.

Operationalizing Concordance and Discordance

Concordance represents agreement between the two decision-making models, the CAYIT and the CANS Algorithm, and discordance indicates disagreement. Because the two models recommended one of the four placements in increasing level of restrictiveness—foster care, specialized foster care, group home, and residential treatment—there are 16 types of concordant and discordant placement decisions (see Table 1). The four concordant placement decisions are represented by the four on-diagonal cells. The 12 discordant placement decisions are represented by the 12 off-diagonal cells. The six cells to the left of the diagonal indicate under-placement (when the CAYIT recommended and placed a child in a less restrictive placement than recommended by the CANS Algorithm). The six cells to the right of the diagonal indicate over-placement (when the CAYIT recommended and placed a child in a more restrictive placement than recommended by the CANS Algorithm). Table 1 summarizes the 16 types of concordant and discordant placement decisions. The farther a cell is away from the diagonal, the greater the level of under-placement or over-placement, which indicates greater discordance between the CAYIT and the CANS Algorithm.

Sample

This study examined all CAYIT placement records of children under age 16 who were assessed between July 1, 2005 and April 29, 2010. Placement records were included for analysis if they met the following criteria:

1. The CAYIT-recommended placement occurred within 6 months following the CAYIT staffing.
2. The CAYIT-recommended placement matched a child's subsequent placement. Post-decisions events sometimes change the sought placement (e.g., a child may run away, placement may be unavailable).
3. After the initial CAYIT staffing, follow-up CAYIT meetings that confirmed the same placement recommendation were excluded. The second assessment is generally a follow-up to the first and is conducted to identify and correct problems in placing a child.
4. The CAYIT-recommended placement was associated with at least one subsequent CANS assessment for a child, in addition to the baseline CANS assessment conducted during staffing, in order to measure outcomes over time.

Overall, 3,911 CAYIT placement records met the first four eligibility criteria, 76.1 % of which also met the last repeated assessment criterion. Among those with repeated assessments, there were on average 4.7 repeated CANS assessments per child to construct the child outcome

Table 1 Operationalization of concordance and discordance between the CAYIT and the CANS Algorithm (Chor et al. 2013)

	CAYIT Recommendation (Actual Placement)							
	Foster Care		Specialized foster care		Group home		Residential treatment	
CANS Algorithm Recommendation								
Foster care	**Concordant**	←	Discordant (over-placement: +1)	←	Discordant (over-placement: +2)	←	Discordant (over-placement: +3)	
Specialized foster care	Discordant (under-placement: −1)	→	**Concordant**	←	Discordant (over-placement: +1)	←	Discordant (over-placement: +2)	
Group home	Discordant (under-placement: −2)	→	Discordant (under-placement: −1)	→	**Concordant**	←	Discordant (over-placement: +1)	
Residential treatment	Discordant (under-placement: −3)	→	Discordant (under-placement: −2)	→	Discordant (under-placement: −1)	→	**Concordant**	

Bold face indicates concordance. Arrows indicate that over-placement and under-placement decisions by the CAYIT are relative to the CANS Algorithm recommendations

trajectories, with 69 % of them having three or more repeated assessments. There was no significant demographic difference between children with repeated CANS assessments and those without, indicating the former was not systematically different from the latter.

Analytic Strategy

To construct a child's outcome trajectory, repeated CANS assessments were needed. These assessments might have occurred at irregular intervals and varying frequencies. For these reasons, hierarchical linear modeling (HLM) (Singer and Willet 2003; Tabachnick and Fidell 2007) was used to examine children's outcomes, as had been applied in other longitudinal outcome studies of youth in the Illinois child welfare system (Helgerson et al. 2007; Lyons et al. 2009). Time in year was log-transformed to characterize early adjustment followed by more gradual stabilization (Singer and Willet 2003).

The HLM model assumed a linear growth and had two levels. Level 1 represented within-subject or individual growth trajectories in outcome changes. Each child had an intercept (CANS domain scores at baseline, prior to CAYIT-recommended placement) and a slope (rate of change in CANS domain scores over time at CAYIT-recommended placement). Both intercept and slope were expressed in standard deviation (SD). Level 2 represented between-subject growth trajectories to detect heterogeneity in outcome changes across individuals. For each placement type recommended by the CANS Algorithm (e.g., foster care), a child's Level 1 intercept and slope were predicted by discordant decisions (e.g., algorithm recommended foster care but CAYIT recommended and placed a child in specialized foster care, group home, or residential treatment) relative to concordant decisions (e.g., concordant decisions for foster care), the reference group. Analyses within a recommended placement type by the CANS Algorithm ensured fair and valid comparisons among children who uniformly met the algorithm criteria for the placement type. Central to our hypothesis, children in the discordant placement decision groups were expected to have more severe baseline scores (i.e., intercepts) and less improvement over time (i.e., flatter slopes) than children in the concordant placement decision groups. Trajectories associated with concordant decisions were also examined, using concordant foster care decisions as the reference group. All analyses were conducted using STATA 13.0.

Results

Table 2 presents sample characteristics. Nearly 40 % of the sample experienced more than one eligible CAYIT staffing for this study. At the time of the CAYIT staffing, over half of the children were in foster care settings (56.1 %), followed by specialized foster care (27.7 %), residential treatment (9.6 %), and group home (2.9 %). A small group of children were in emergency shelters (2.1 %) or juvenile justice (1.3 %) settings, both of which are automatic triggers for a CAYIT intervention. 55.3 % of the CAYIT interventions resulted in no change to the restrictiveness of placement and 37.7 % resulted in stepping up to a more restrictive placement.

Table 3 presents the rates and frequencies of concordant and discordant placement decisions in our sample within each placement type recommended by the CANS Algorithm (Chor et al. 2013). Concordance (i.e., the on-diagonal cells) was similar and relatively high in specialized foster care (64.1 %), foster care (59.3 %), and residential treatment (53.5 %), but much lower in group home (13.1 %). The degree of discordance (i.e., the off-diagonal cells) was more extreme when the CANS Algorithm recommended residential treatment (30.9 % under-placement by two levels in specialized foster care) or group home (43.9 %

Table 2 Sample descriptive statistics

	n	%
Number of CAYIT staffing		
1	2,527	64.6
2	1,041	26.6
3	263	6.7
4	73	1.9
5	5	0.1
6	2	0.1
Age at CAYIT staffing		
0–7	1,029	26.3
8–15	2,882	73.7
Age at entry to child welfare		
0–7	2,201	56.3
8–15	1,710	43.7
Gender		
Female	1,667	42.5
Male	2,253	57.5
Unknown	2	0.1
Ethnicity		
African American	2,433	62.2
Caucasian	1,223	31.3
Hispanic, Native American, and Asian	204	5.2
Unknown	51	1.3
Placement at time of CAYIT staffing		
Placement type		
Foster care	2,195	56.1
Specialized foster care	1,085	27.7
Group home	115	2.9
Residential treatment center	376	9.6
Non-placement		
Hospital	1	0.0
Juvenile justice system	52	1.3
Emergency shelter	80	2.1
Unknown	7	0.2
Change in restrictiveness of placement after CAYIT staffing		
No change from placement of origin	2,162	55.3
Step-down to a less restrictive placement	136	3.5
Step-up to a more restrictive placement	1,473	37.7
Not applicable (due to non-placement)	140	3.6
Physical move		
Moved to new placement	2,554	65.3
Remained in placement of origin	1,357	34.7

under-placement by one level in specialized foster care; 29.9 % over-placement by one level in residential treatment). For foster care and specialized foster care recommendations by the algorithm, one level over-placement or under-placement was most common, respectively.

Discordant and Concordant Placement Decisions Predicting Outcomes Over Time

Table 4 presents significant findings from the HLM analyses. For the 12 predictors of discordant placement decisions (i.e., off-diagonal cells in Table 1), the four concordant placement decisions (i.e., on-diagonal cells in Table 1) served as the reference groups. Thus, for each significant discordant predictor in Table 4, its slope or intercept estimate is the difference from that of the corresponding concordant predictor for the same placement. For example, children recommended for foster care by the CANS Algorithm but placed in specialized foster care by the CAYIT (i.e., over-placement by one level) had higher scores in traumatic stress symptoms (0.46 SD) at baseline than did children in concordant foster care.

For the four predictors of concordant placement decisions (i.e., on-diagonal cells in Table 1), concordant foster care decisions served as the reference group. For each significant concordant predictor in Table 4, its slope or intercept estimate is the difference from that of concordant foster care. For example, children placed in residential care by both the CAYIT and the CANS Algorithm (i.e., concordant residential care) had higher traumatic stress symptoms scores (1.00 SD) at baseline than did children in concordant foster care.

Among Children Recommended for Foster Care by the CANS Algorithm

CAYIT's over-placement decisions that resulted in specialized foster care, group home, or residential treatment (i.e., first row in Table 1) were associated with more severe baseline scores across all five CANS domains, compared to concordant foster care decisions. As this discordance between the CAYIT and the CANS Algorithm increased, so did the magnitude of children's associated baseline severity.

To illustrate, compared to children placed in foster care when the CAYIT and the CANS Algorithm agreed, children over-placed by one level in specialized foster care had higher baseline risk behavior scores (0.35 SD, $p < 0.001$). This discrepancy between concordance and discordance increased to 0.68 SD ($p < 0.001$) among children over-placed by two levels in group home, and to 0.83 SD ($p < 0.001$) among children over-placed by three levels in residential treatment. Similar significant differences among these three groups of over-placed children relative to children in concordant foster care were found in traumatic stress symptoms, strengths, life domain functioning, and behavioral/emotional needs (see Table 4). Despite these elevated CANS baseline scores among over-placed children, only those over-placed in residential treatment

Table 3 Distribution of concordant and discordant placement decisions between the CAYIT and the CANS Algorithm (Chor et al. 2013)

	CAYIT Recommendation (Actual Placement)				Total
	Foster care	Specialized foster care	Group home	Residential treatment	
CANS Algorithm Recommendation					
Foster care	**798 (59.3 %)**	478 (35.5 %)	36 (2.7 %)	34 (2.5 %)	1,346 (100.0 %)
Specialized foster care	212 (21.5 %)	**632 (64.1 %)**	43 (4.4 %)	99 (10.0 %)	986 (100.0 %)
Group home	31 (13.1 %)	104 (43.9 %)	**31 (13.1 %)**	71 (29.9 %)	237 (100.0 %)
Residential treatment center	116 (8.6 %)	414 (30.9 %)	94 (7.0 %)	**718 (53.5 %)**	1,342 (100.0 %)

Bold face indicates concordance

showed significant improvement over time in life domain functioning (−0.50 SD, $p < 0.01$) compared to the rate of change of children in concordant foster care.

Among Children Recommended for Specialized Foster Care by the CANS Algorithm

Over-placement decisions resulting in group home or residential treatment (i.e., second row in Table 1) were associated with more severe baseline CANS scores compared to concordant placement decisions for specialized foster care, though no significant finding was associated with children under-placed in foster care. In particular, children over-placed by two levels in residential treatment had more severe baseline risk behaviors (0.67 SD, $p < 0.001$), behavioral/emotional needs (0.60 SD, $p < 0.001$), life domain functioning (0.45 SD, $p < 0.001$), traumatic stress symptoms (0.25 SD, $p < 0.05$), and less strengths (−0.59 SD, $p < 0.001$). Children over-placed by one level in group home showed similar baseline findings in life domain functioning (0.37 SD, $p < 0.001$) and strengths (−0.75 SD, $p < 0.001$). There was no significant finding associated with rate of change predicted by either over-placement or under-placement decisions.

Among Children Recommended for Group Home by the CANS Algorithm

Compared to children in concordant group home, children over-placed by one level in residential treatment exhibited more severe baseline scores, and those under-placed by one level in specialized foster care or by two levels in foster care (i.e., third row in Table 1) showed less severe baseline scores. Specifically, children over-placed in residential treatment had elevated risk behaviors (0.53 SD, $p < 0.001$), behavioral/emotional needs (0.45 SD, $p < 0.01$), and deficits in life domain functioning (0.47 SD, $p < 0.01$), though they only showed significant improvement in life domain functioning over time (−0.68 SD, $p < 0.01$). In contrast, children under-placed in specialized foster care had greater baseline strengths (0.42 SD, $p < 0.05$) and significant improvement in life domain functioning (−0.49 SD, $p < 0.05$). Children under-placed in foster care had fewer behavioral/emotional needs (−0.49 SD, $p < 0.05$).

Among Children Recommended for Residential Treatment by the CANS Algorithm

Compared to children in concordant residential treatment, those under-placed by one level in group home, two levels in specialized foster care, or three levels in foster care (i.e., fourth row in Table 1) had more favorable baseline profiles across all five CANS domains. These findings were especially pronounced in risk behaviors (e.g., under-placement by one level: −0.39 SD, $p < 0.001$; by two levels: −0.72 SD, $p < 0.001$; by three levels: −1.08 SD, $p < 0.001$) and behavioral/emotional needs (e.g., under-placement by one level: −0.36 SD, $p < 0.001$; by two levels: −0.47, SD, $p < 0.001$; by three levels: −0.84 SD, $p < 0.001$).

Trajectories of change associated with these baseline profiles showed a compensatory, slower rate of improvement over time among all children under-placed in group home, specialized foster care, or foster care. For example, these under-placed children showed positive slope changes in risk behaviors compared to children in concordant residential treatment (under-placement by one level: 0.25 SD, $p < 0.01$; by two levels: 0.35 SD, $p < 0.01$; by three levels: 0.35 SD, $p < 0.01$). Similar patterns of change were also found in life domain functioning (under-placement by one level: 0.43 SD, $p < 0.001$; by two levels: 0.24 SD, $p < 0.01$; by three levels: 0.27 SD, $p < 0.05$).

Among Children Placed in Any Placement Type that Resulted from Concordant Decisions

Comparisons among the four concordant decision groups (i.e., the on-diagonal cells in Table 1) showed that as the

Table 4 Key findings from hierarchical linear modeling predicting children's outcomes over time based on repeated CANS assessments

	CANS domains									
	Traumatic stress symptoms		Strengths		Life domain functioning		Behavioral/emotional needs		Risk behaviors	
	Intercept (95 % CI)	Slope (95 % CI)	Intercept (95 % CI)	Slope (95 % CI)	Intercept (95 % CI)	Slope (95 % CI)	Intercept (95 % CI)	Slope (95 % CI)	Intercept (95 % CI)	Slope (95 % CI)
Foster care										
Over-placement: +1	0.46*** (0.35, 0.57)		−0.33*** (−0.44, −0.22)		0.36*** (0.28, 0.44)		0.53*** (0.43, 0.63)		0.35*** (0.28, 0.42)	
Over-placement: +2	0.43** (0.18, 0.68)		−1.04*** (−1.29, −0.78)		0.77*** (0.59, 0.96)		0.81*** (0.59, 1.03)		0.68*** (0.53, 0.84)	
Over-placement: +3	0.69*** (0.43, 0.95)		−0.78*** (−1.05, −0.52)		0.90*** (0.70, 1.09)	-0.50** (−0.82, −0.18)	0.99*** (0.76, 1.22)		0.83*** (0.66, 0.99)	
Reference	−0.40*** (−0.46, −0.33)	−0.10* (−0.19, −0.01)	0.58*** (0.51, 0.64)	0.12* (0.03, 0.22)	−0.80*** (−0.85, −0.76)		−0.64*** (−0.69, −0.58)		−0.89*** (−0.93, −0.85)	0.11** (0.03, 0.18)
Specialized foster care										
Under-placement: −1										
Over-placement: +1			−0.75*** (−1.01, −0.49)		0.37*** (0.17, 0.58)					
Over-placement: +2	0.25* (0.05, 0.45)		−0.59*** (−0.77, −0.40)		0.45*** (0.30, 0.60)		0.60*** (0.42, 0.78)		0.67*** (0.52, 0.81)	
Reference		−0.24*** (−0.37, −0.11)	0.26*** (0.18, 0.34)	0.33*** (0.21, 0.45)	−0.22*** (−0.29, −0.15)	−0.36*** (−0.46, −0.25)		−0.29*** (−0.41, −0.18)	−0.41*** (−0.47, −0.34)	−0.17*** (−0.26, −0.07)
Group home										
Under-placement: −1						−0.49* (−0.94, −0.04)	−0.49* (−0.95, −0.03)			
Under-placement: −2			0.42* (0.04, 0.80)							
Over-placement: +1					0.47** (0.15, 0.79)	−0.68** (−1.12, −0.23)	0.45** (0.18, 0.73)		0.53*** (0.24, 0.82)	
Reference			−0.50*** (−0.77, −0.24)						0.29* (0.05, 0.54)	
Residential treatment										
Under-placement: −1	−0.28** (−0.48, −0.08)					0.43*** (0.19, 0.66)	−0.36*** (−0.50, −0.21)		−0.39*** (−0.54, −0.24)	0.39** (0.16, 0.62)
Under-placement: −2	−0.24*** (−0.37, −0.11)		0.53*** (0.43, 0.63)		−0.56*** (−0.66, −0.46)	0.24** (0.09, 0.39)	−0.47*** (−0.57, −0.38)		−0.72*** (−0.82, −0.62)	0.25** (0.11, 0.40)
Under-placement: −3	−0.58*** (−0.78, −0.37)		0.57*** (0.42, 0.72)		−0.64*** (−0.80, −0.49)	0.27* (0.00, 0.54)	−0.84*** (−0.99, −0.69)		−1.08*** (−1.23, −0.93)	0.35** (0.09, 0.62)
Reference	0.60*** (0.53, 0.67)	−0.39*** (−0.48, −0.29)	−0.70*** (−0.75, −0.64)	0.43*** (0.35, 0.51)	0.72*** (0.67, 0.77)	−0.69*** (−0.77, −0.61)	1.05*** (1.00, 1.10)	−0.58*** (−0.66, −0.50)	1.14*** (1.09., 1.19)	−0.87*** (−0.95., −0.79)

Table 4 continued

	CANS domains									
	Traumatic stress symptoms		Strengths		Life domain functioning		Behavioral/emotional needs		Risk behaviors	
	Intercept (95 % CI)	Slope (95 % CI)	Intercept (95 % CI)	Slope (95 % CI)	Intercept (95 % CI)	Slope (95 % CI)	Intercept (95 % CI)	Slope (95 % CI)	Intercept (95 % CI)	Slope (95 % CI)
Concordance										
Specialized foster care	0.39*** (0.27, 0.50)		−0.32*** (−0.42, −0.22)	0.21*** (0.05, 0.36)	0.59*** (0.50, 0.67)	−0.35*** (−0.49, −0.20)	0.60*** (0.51, 0.69)	−0.32*** (−0.48, −0.17)	0.48*** (0.40, 0.57)	−0.28*** (−0.42, −0.13)
Group home	0.49** (0.15, 0.83)		−1.08*** (−1.37, -0.79)		0.98*** (0.73, 1.23)		0.79*** (0.52, 1.05)		1.18*** (0.94, 1.41)	
Residential treatment	1.00*** (0.90, 1.10)	−0.29*** (−0.44, −0.15)	−1.27*** (−1.36, −1.19)	0.31*** (0.18, 0.43)	1.52*** (1.45, 1.59)	−0.67*** (−0.79, −0.55)	1.69*** (1.61, 1.76)	−0.60*** (−0.73, −0.48)	2.03*** (1.96, 2.10)	−0.97*** (−1.09, −0.86)
Reference	−0.40*** (−0.47, −0.32)		0.58*** (0.51, 0.64)	0.12* (0.02, 0.22)	−0.80*** (−0.86, −0.75)		−0.64*** (−0.69, −0.58)		−0.89*** (−0.94, −0.84)	0.11* (0.02, 0.20)

Refer to Table 1 for the definitions of over-placement (+1, +2, +3) and under-placement (−1, −2, −3) decisions with respect to each placement type recommended by the CANS Algorithm

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ CI denotes confidence interval. Non-significant estimates are not shown

level of care increased, so did the predicted baseline severity compared to concordant foster care. For instance, baseline risk behaviors increased from 0.48 SD ($p < 0.001$) among children in concordant specialized foster care, 1.18 SD ($p < 0.001$) in concordant group home, to 2.03 SD ($p < 0.001$) in concordant residential care. The same pattern of baseline findings was evident in the other four CANS domains.

Based on these baseline patterns, concordant decisions for residential treatment were associated with significant improvement over time for all five CANS domains, compared to the rate of change associated with concordant foster care decisions: risk behaviors (−0.97 SD, $p < 0.001$), life domain functioning (−0.67 SD, $p < 0.001$), behavioral/emotional needs (−0.60 SD, $p < 0.001$), strengths (0.31 SD, $p < 0.001$), and traumatic stress symptoms (−0.29 SD, $p < 0.001$). Concordant decisions for specialized foster care also showed similar improvement: life domain functioning (−0.35 SD, $p < 0.001$), behavioral/emotional needs (−0.32 SD, $p < 0.001$), risk behaviors (−0.28 SD, $p < 0.001$), and strengths (0.21 SD, $p < 0.001$). No significant rate of change was associated with concordant decisions for group home.

Discussion

By comparing two out-of-home placement decision-making models—a multidisciplinary team decision-making model and a decision support algorithm—in the Illinois child welfare system, this study examined their impact on children's outcomes over time across placements of varying restrictiveness. There was supporting evidence that concordant decisions (i.e., agreement between the two decision-making models) generally predicted greater outcome improvement than discordant decisions (i.e., disagreement between the two models) did. Marked improvement was especially associated with concordant placement decisions for residential treatment. Discordant decisions were associated with divergent findings between under-placing and over-placing a child relative to the recommendation from the decision support algorithm. Under-placement was associated with lower severity at baseline. Few significant findings in rate of change were associated with discordant decisions. However, under-placement predicted less significant improvement compared to concordant decisions, especially in residential treatment; over-placement, in some cases (e.g., relative to concordant foster care or concordant group home), predicted greater improvement over time. Below we outline the implications of these findings in three areas: out-of-home placement decision-making and policy, placement recommendations

in child welfare, and children's behavioral health and service delivery.

Implications for Out-of-Home Placement Decision-Making and Policy

This study shows that, after a child enters state custodial care, out-of-home placement decision-making can have a long-lasting impact on the child's outcome trajectories regardless of where the child is placed. Given a priori guidance on operationalizing concordance and discordance (Chor et al. 2013; Magura et al. 2003), state child welfare systems that invest in multiple decision-making models to inform best placement practice should consider comparing these models to examine existing patterns of decisions, and how these patterns might impact the children getting placed. This effort can further states' recommendations to address children's placement stability by using specialized placement units, specialized caseworkers, and assessment tools (Blakey et al. 2012). It will be important to consider specific jurisdictional environments on these decision-making processes. State child welfare systems may have vastly different arrays of out-of-home placements and unique placement procedures. Some states may not have the resources or options to simultaneously use multiple placement-decision making models. In these cases, a continuous quality improvement approach can proactively refine an existing model by linking data on decisions with data on child-level outcomes. Decisions that predict children's improvement should be sustained and their precipitants (e.g., team cohesiveness, family involvement) should be further examined.

Placement decision-making is understandably a complicated process. It involves pragmatic (e.g., bed space) and exogenous (e.g., placement policy) factors. This study, however, highlights the importance of child well-being needs. While pragmatic and exogenous factors might contribute to short-term gains in placement decision-making such as a quicker placement process, they may also result in long-term losses if a child's needs are not met by the placement, which may unnecessarily extend the child's stay in care. Considering the multifaceted trajectories of outcome changes presented in this study, decision-makers should primarily base placement decisions on a child's needs, especially in behavioral/emotion symptoms and risk behaviors, the outcome domains most sensitive to change.

This study further shows that, depending on the type of concordant or discordant placement decision, a child's improvement may take longer to achieve. Gradual improvement in a child's well-being cannot always be accommodated or afforded at the expense of the child's time. Nevertheless, discordant decisions that predict a slower rate of improvement should not be automatically disregarded. It is possible that an optimal placement indicated by concordance is not always available. Decision-makers should expand their decision-making horizon beyond "place" and "not place," by rank-ordering the best placement types (Chor 2013) and projecting the advantages and disadvantages of following versus not following a decision support tool (Lyons and Abraham 2001).

Implications for Placement Recommendations in Child Welfare

Child outcomes at a particular recommended level of care—foster care, specialized foster care, group home, or residential treatment—had different trajectories depending on concordant or discordant decisions between the CAYIT and the CANS Algorithm. Unpacking the impact of over-placing or under-placing a child relative to the CANS Algorithm recommendation, from one recommended level of care to another, can clarify the nuances in data-driven placement recommendations to ensure a need-based, child-focused approach.

When children were recommended for traditional foster care by the CANS Algorithm, following this recommendation predicted promising outcome trajectories. But when the CAYIT disagreed with the CANS Algorithm and over-placed these children in higher levels of care, these children were characterized by more severe baseline profiles, which to a degree, justified the CAYIT's decisions for more restrictive placements. However, these children did not show significant outcome changes over time compared to children with a concordant placement in foster care. These findings seem to confirm that the CANS Algorithm can provide empirical support for the implementation of the least restrictive setting. Further, the CAYIT could have been reactive to factors and child characteristics that do not actually predict suitability for or favorable response to higher levels of care. As the most frequent recommendation by the CANS Algorithm, foster care placement offers an alternative to institutional care. To better serve children for whom the CAYIT would have over-placed in more restrictive placements, these children may benefit from more intensive and tailored services within foster care settings.

Implications are similar for children who were recommended for specialized foster care by the CANS Algorithm, but who were over-placed in group home or residential treatment by the CAYIT. In these cases, more significant baseline scores were paired with no significant changes over time compared to the outcomes of children in concordant specialized foster care. These findings challenge the necessity for more restrictive placements if comparable or better outcomes are to be expected at a lower level of care. The lack of significant difference

between under-placing children in foster care and placing children in concordance with the algorithm in specialized foster care further supports this argument. These collective findings bolster the potential of home-like placements to stabilize a child's presenting problems and promote a child's strengths and resilience. They also present an opportunity to fine-tune placement recommendations for non-institutional care beyond choosing between non-institutional and institutional care.

Group home was the least frequently recommended placement type by the CANS Algorithm. This recommendation was generally associated with few significant and no clear patterns of findings, whether the CAYIT over-placed children in residential care or under-placed children in foster care or specialized foster care. The low concordance rate in group home also suggests that the CAYIT and the CANS Algorithm need more refined criteria for identifying children who can benefit from this placement type. Variability in the availability of services in group homes (Chor 2013) could also have contributed to the inconsistent finding on this level of care.

Children recommended for residential treatment by the CANS Algorithm demonstrated the most robust outcome trajectories. Compared to concordant decisions for residential care, under-placement in foster care, specialized foster care, or group home predicted significantly less improvement. The degree of under-placement associated with this finding was compelling—the greater the deviation between the CAYIT decisions and the CANS Algorithm's recommendations for residential treatment, the more a child's outcome improvement was compromised. While these patterns were due in part to sub-average baselines of under-placed children, they highlighted the quality of concordant decisions for residential treatment that were associated with significant outcomes improvement. Since the CANS Algorithm focuses on the clinical severity of children in its recommendation for residential treatment, how and why the CAYIT determined that these children be placed in non-institutional settings needs to be better understood.

Implications for Children's Behavioral Health and Service Delivery

This study illustrates that appropriate placement decisions made on an ongoing basis can improve the behavioral health of the child welfare population. The outcome domains examined in this study target child well-being, a key policy interest in child welfare since the Adoption and Safe Families Act of 1997 (P. L. 105-89). Of the five outcome domains assessed in children across placement types, life domain functioning, behavioral/emotional needs, and risk behaviors were more amenable to change and improvement than trauma and strengths. While producing "best" placement decisions is a critical first step, a key implication for behavioral health is to tailor appropriate services and treatments to specific placement types, and to alleviate trauma and cultivate protective factors. This trauma-focused and strengths-based approach may not be novel (Griffin et al. 2009), but its consideration of which placement populations such treatments and services should target—foster care, specialized foster care, group home, or residential treatment—needs to be further explored. A mismatch between evidence-based treatments and placement types may confound treatment effectiveness. The breadth and depth of treatments and services should also be considered in conjunction with changes in placement restrictiveness (Chor et al. 2013), especially when over one-third of the sample in this study moved to a more restrictive setting. With interventions such as Multidimensional Treatment Foster Care (Fisher and Chamberlain 2000), unnecessary institutional placements can be minimized if more intensive and appropriate services can be provided for high-risk children in foster care settings (Fisher and Gilliam 2012).

Limitations

This study, like most observational, longitudinal outcome studies, is methodologically limited by the lack of a control group or consideration of covariates that might explain "change." Foremost, regression to the mean, as highlighted in our earlier study (Chor et al. 2012), could explain the most robust findings that were consistent with our hypothesis, specifically the significant results for under-placing children in foster care, specialized foster care, and group home relative to children in concordant residential treatment. To safeguard against this phenomenon, comparisons between concordant and discordant decisions were made within the same level of care recommended by the CANS Algorithm (see Table 1). Although controlling for baseline functioning can eliminate this methodological issue, an interpretative problem might arise because in reality, not all placements are created equal. The ecology of out-of-home placements is created such that child case-mixes will likely differ from one level of care to another. Equalizing child baseline functioning would inadvertently disregard this reality of distinct placement types and case-mixes. As this study focused on improving the empirical basis and feasibility of placement decision-making, accurately identifying child placement needs in the least or the most restrictive settings was in itself an important outcome.

This study was founded on the relationship between concordant and discordant placement decisions. Unfortunately there is no a priori benchmark for what magnitude or what rate of improvement is considered optimal, positive,

or acceptable. Beyond the hypothesis for concordant versus discordant decisions, the underlying assumption is that all out-of-home placements are designed to improve a child's well-being, provided that the placement type is appropriate for a specific type of child in custodial care. "Improving less" or "improving slower" than an already improving concordant group may not be an undesirable outcome. Equally important are within-subject trends, that children are still improving relative to their functioning at an earlier point in time. This is confirmed by the overall improving outcome trajectories of the entire sample.

Future Directions

Future studies should delineate the sequential and additive effects of concordant and discordant decisions, as most children in child welfare experience more than one placement change during their time in care (Blakey et al. 2012; Leathers 2006). Specific factors involved in placement decision-making, such as a child's participation, presenting problems in current placement, child strengths, child-caregiver match, and caregiver preferences should be further explored. Besides clinical assessment, placement stability (e.g., number of placement moves) can serve as an additional outcome indicator to understand its relationship with the quality of ongoing placement decisions (Berger et al. 2009). A child's placement of origin may play a role in the child's future placement outcomes. Three placement scenarios should be considered: stepping up to a more restrictive placement, stepping down to a less restrictive placement, and remaining on the same level of placement restrictiveness. Children in each of these scenarios may behave or influence the placement decision-making process differently. Additional information on the type and intensity of treatments and services can enrich the understanding of children's experience in different placement types.

Conclusions

The child welfare field has made significant advances in evidence-based treatments and advocating for a child's best interests during transition to custodial care. Evidence-based, follow-up placement decision-making can improve the quality of care for children after they enter into the system. As child welfare embraces the least restrictive setting principle and a prevention orientation, ongoing placement decision-making should be a proactive, empirical process rather than a reactive, administrative burden (Chor 2013). In Illinois, this is evidenced by the Illinois Department of Children and Family Services' (2013) adoption of an early intervention approach to improve placement stabilization by strengthening a child's connections to family, social, and community support. The use and comparison of multidisciplinary teams, decision support algorithms, or other usual placement practices have self-corrective potential to standardize placement criteria, refine placement protocols, and identify critical factors that are predictive of child outcomes. State child welfare systems can share and integrate their knowledge in placement decision-making to coordinate treatments and services with different placement types, and to ensure continuity for every child under their care.

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Appendix: Child and Adolescent Needs and Strengths (CANS) Algorithm—placement criteria for residential treatment, group home, specialized foster care, and foster care

4. Residential treatment center (RTC) criteria

4.1 At least two or more '3' among the following needs

CANS subject	CANS 1.0 question #	CANS 2.0 question #
Adjustment to trauma	14	14
Psychosis	46	48
Attention deficit/ impulse	47	49
Depression	48	50
Anxiety	49	51
Oppositional behavior	50	52
Conduct	51	53
Substance use	52	54
Attachment	53	55
Eating disturbance	54	56
Affect dysregulation	55	57
Behavioral regression	56	58
Somatization	57	59
Anger control	58	60

4.2 Three or more '2' among the following needs

CANS subject	CANS 1.0 question #	CANS 2.0 question #
Adjustment to trauma	14	14
Psychosis	46	48

continued

CANS subject	CANS 1.0 question #	CANS 2.0 question #
Attention deficit/ impulse	47	49
Depression	48	50
Anxiety	49	51
Oppositional Behavior	50	52
Conduct	51	53
Substance use	52	54
Attachment	53	55
Eating disturbance	54	56
Affect dysregulation	55	57
Behavioral regression	56	58
Somatization	57	59
Anger control	58	60

4.3 A rating of '2' or '3' on Developmental (32-intellectual/developmental) (CANS 2.0–34).

4.4 At least one '3' among the following risk behaviors.

CANS Subject	CANS 1.0 question #	CANS 2.0 question #
Suicide risk	59	61
Self mutilation	60	62
Other self harm	61	63
Danger to others	62	64
Sexual aggression	63	65
Delinquency	65	67
Fire setting	67	69

4.5 Three or more '2' among the following risk behaviors.

CANS Subject	CANS 1.0 question #	CANS 2.0 question #
Suicide risk	59	61
Self mutilation	60	62
Other self harm	61	63
Danger to others	62	64
Sexual aggression	63	65
Runaway	64	66
Delinquency	65	67
Judgment	66	68
Fire setting	67	69
Social behavior	68	70
Sexually reactive behavior	69	71

Referral to a Residential Treatment Center is indicated by a CANS that satisfies the following criteria matching rules:

Rule 1: (4.1 = TRUE OR 4.2 = TRUE OR 4.3 = TRUE) AND (4.4 = TRUE OR 4.5 = TRUE)

Rule 2: Consider a specialty program if

CANS 1.0	CANS 2.0
4.3 OR	4.3 OR
(CANS 63 (Sexual Aggression) OR	(CANS 65 (Sexual Aggression) OR
CANS 36 (Medical) OR	CANS 37 (Medical) OR
CANS 37 (Physical) OR	CANS 38 (Physical) OR
CANS 65 (Delinquency) = 2 or 3)	CANS 67 (Delinquency) = 2 or 3)

3. Group home/treatment group home (GRH/IGH) criteria

A. Child is less than 12 years old.

3a.0 Child is less than 12 years old.

3a.1 At least one or more '3' or two or more '2' among the following needs.

CANS Subject	CANS 1.0 question #	CANS 2.0 question #
Adjustment to Trauma	14	14
Psychosis	46	48
Attention deficit/ impulse	47	49
Depression	48	50
Anxiety	49	51
Oppositional behavior	50	52
Conduct	51	53
Substance use	52	54
Attachment	53	55
Eating disturbance	54	56
Affect dysregulation	55	57
Behavioral regression	56	58
Anger control	58	60

3a.2 A rating of at least '2' on Developmental (32—Developmental/Intellectual)

(CANS 2.0–34)

3a.3 One '3' among the following risk behaviors

CANS Subject	CANS 1.0 question #	CANS 2.0 question #
Suicide risk	59	61
Self mutilation	60	62
Other self harm	61	63
Danger to others	62	64
Sexual aggression	63	65
Delinquency	65	67
Fire setting	67	69

3a.4 Two or more '2' among the following risk behaviors

CANS Subject	CANS 1.0 question #	CANS 2.0 question #
Suicide risk	59	61
Self mutilation	60	62
Other self harm	61	63
Danger to others	62	64
Sexual aggression	63	65
Runaway	64	66
Delinquency	65	67
Fire setting	67	68

Group Home Referral rule:

Rule A1: 3a.0 AND (3a.1 OR 3a.2) AND (3a.3 OR 3a.4)

Rule A2: Consider specialty program if

CANS 1.0	CANS 2.0
3a.2 OR	3a.2 OR
(CANS 63 (Sexual Aggression) OR	(CANS 65 (Sexual Aggression) OR
CANS 36 (Medical) OR	CANS 37 (Medical) OR
CANS 37 (Physical) OR	CANS 38 (Physical) OR
CANS 65 (Delinquency) = 2 or 3)	CANS 67 (Delinquency) = 2 or 3)

B. Child is 12 through 14 years old

3b.0 Child's age is 12 through 14 years

3b.1 At least one or more '3' or two or more '2' among the following needs

CANS Subject	CANS 1.0 question #	CANS 2.0 question #
Adjustment to trauma	14	14
Psychosis	46	48
Attention deficit/ impulse	47	49
Depression	48	50
Anxiety	49	51
Oppositional behavior	50	52
Conduct	51	53
Substance use	52	54
Attachment	53	55
Eating disturbance	54	56
Affect dysregulation	55	57
Behavioral Regression	56	58
Somatization	57	59
Anger control	58	60

3b.2 A rating of '2' or '3' on Developmental (32 - Developmental/Intellectual)

3b.3 One '3' among the following risk behaviors

CANS Subject	CANS 1.0 question #	CANS 2.0 question #
Suicide risk	59	61
Self mutilation	60	62
Other self harm	61	63
Danger to others	62	64
Sexual aggression	63	65
Delinquency	65	67
Fire Setting	67	69
Sexually reactive behavior	69	71

3b.4. Two or more '2' among the following risk behaviors

CANS subject	CANS 1.0 question #	CANS 2.0 question #
Suicide risk	59	61
Self mutilation	60	62
Other self harm	61	63
Danger to others	62	64
Sexual aggression	63	65
Runaway	64	66
Delinquency	65	67
Fire Setting	67	69
Sexually reactive behavior	69	71

3b.5 A rating of '3' on at least two or more of the following:

CANS Subject	CANS 1.0 question #	CANS 2.0 question #
School attendance	41	43
Judgment	66	68
Social behavior	68	70

Group Home Referral rule:

Rule B1: 3b.0 AND (3b.1 OR 3b.2) AND (3b.3 OR 3b.4 OR 3b.5)

Rule B2: Consider specialty program if

CANS 1.0	CANS 2.0
3b.2 OR	3b.2 OR
(CANS 63 (Sexual Aggression) OR	(CANS 65 (Sexual Aggression) OR
CANS 36 (Medical) OR	CANS 37 (Medical) OR
CANS 37 (Physical) OR	CANS 38 (Physical) OR
CANS 65 (Delinquency) = 2 or 3)	CANS 67 (Delinquency) = 2 or 3)

C. Child is aged 15 or above

3c.0 Youth's age is 15 or above

3c.1. Attachment (CANS 53) (CANS 2.0: 55) is rated as a '2' or '3'

3c.2 Meets criteria for Specialized Foster Care (FHS)

3c.3 Parenting Role (CANS 86 (CANS 2.0: 89) rated a '2' or '3'

Group Home Referral rule:

Rule C1: 3c.0 AND ((criteria for section B above) OR (3c.1 AND 3c.2) OR 3c.3)

Rule C2: Consider specialty program if

CANS 1.0	CANS 2.0
3c.2 OR	3c.2 OR
3c.3 OR	3c.3 OR
(CANS 63 (Sexual Aggression) OR	(CANS 65 (Sexual Aggression) OR
CANS 36 (Medical) OR	CANS 37 (Medical) OR
CANS 37 (Physical) OR	CANS 38 (Physical) OR
CANS 65 (Delinquency) = 2 or 3)	CANS 67 (Delinquency) = 2 or 3)

2. Specialized foster care (FHS) Criteria

2.1 A rating of '2' or '3' on one of the following.

CANS subject	CANS 1.0 question #	CANS 2.0 question #
Medical	36	37
Physical	37	38
Somatization	57	59

2.2 At least one '2' or '3' on one of the following

CANS subject	CANS 1.0 question #	CANS 2.0 question #
Adjustment to trauma	14	14
Psychosis	46	48
Attention deficit/ impulse	47	49
Depression	48	50
Anxiety	49	51
Oppositional behavior	50	52
Conduct	51	53
Substance use	52	54
Attachment	53	55
Eating disturbance	54	56
Affect dysregulation	55	57
behavioral regression	56	58
Anger control	58	60

2.3 A rating of '3' on at least one of the following:

CANS subject	CANS 1.0 question #	CANS 2.0 question #
Intellectual/ developmental	32	34
Motor	70	72
Sensory	71	73
Communication	72	74
Failure to thrive	73	75
Regulatory problems	74	REMOVED
Substance exposure	78	79
Independent Living Skills	84	87

2.4 A rating of '3' on at least one of the following.

CANS subject	CANS 1.0 question #	CANS 2.0 question #
School behavior	39	41
Social behavior	68	70
Sexually reactive Behavior	69	71

2.5 A rating of '2' or '3' on at least one of the following.

CANS subject	CANS 1.0 question #	CANS 2.0 question #
Suicide risk	59	61
Self mutilation	60	62
Other self harm	61	63
Danger to others	62	64
Sexual aggression	63	65
Runaway	64	66
Delinquency	65	67
Fire setting	67	69

Specialized Foster Care referral rule:

2.1—Medically complex

OR.

2.2 and (2.3 OR 2.4 OR 2.5)—Mental Health

1. FOSTER HOME (FHB/FHP) Criteria

The only rule for recommended placement into FHB or FHP is that if Child and Youth Central Information System indicates this as the current placement type, and no other part of the algorithm suggests another Level of Care, then we use the Child and Youth Central Information System placement type.

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