

# Summary of ECAP Research Findings

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## Background

ECAP is a web-based decision support tool that assists child welfare staff with making the best possible placement decisions for children in foster care. The tool provides a recommended level of care, and suggests placement matches based upon the child’s needs, placement provider preferences, and other provider qualities. The ECAP system was developed by TFI Family Services, Inc. and was fully implemented in July 2010. The University Of Kansas School Of Social Welfare was contracted to evaluate the ECAP system, conduct research to support further development and improvement of the tools, and document the system to aid in replication fidelity.

The ECAP system includes a child assessment that is conducted using the Appropriate Placement Level Indicator (APLI) which provides an indicated level of care and information on the child’s needs used for matching. The original version of the APLI had 73 items of which 37 were used for level of care scoring. Other items were used for informational and matching purposes. The APLI was revised as a result of the research conducted. Two versions were created, one for “First” placements which is used for children entering foster care for the first time, and “Subsequent” what is used for children already in care but needing to change placements. The “First” placement APLI has 38 items with 24 items used for scoring the Level of Care. The “Subsequent placement APLI has 35 items, with 21 items used for scoring.

Also a part of the matching system is a Provider Profile, which provides information on placement provider (foster homes) preferences and qualities. The ECAP system presents a list of prioritized placement options based on the level of care needs, matching APLI and Provider Profile items, a provider’s record for providing safe and stable placements (Tier Score), and the placement’s proximity to the child’s home. Agency staff make placement decisions based upon the information made easily available which further enables the consideration of other well-being criteria (e.g. sibling placement, safety and other child needs). Call logs are maintained in the system to record contacts and responses of providers for easy reference.

## Summary of Major Research Findings

ECAP is intended to facilitate better placement matches that result in increased placement stability as well as more timely permanency. While not a part of this evaluation, other research suggests that placement stability contributes to improved child well-being.

### Pre-Post Analysis

Researchers used Pre-Post ECAP comparison groups since a randomized controlled study was not feasible. The study compared children entering foster care in FY 2008 (Pre, n=621) and FY 2011 (Post, n=614).

Reduced Time to Permanency – The median time to permanency was 53.16 days less for the Post ECAP cohort. Pre-ECAP was 440.75 days compared to 387.59 days Post ECAP (p<.012).

Table 1: Median Survival Time to Permanency

Median Survival Time – Permanency	
First-order Controls	Med Days
Pre - FY2008	440.75
Post - FY2011	387.59

Median time to Permanency was computed using Survival Analysis Life Tables in SPSS Version 20. (Median is defined as the number of days for half of the entry cohort to achieve permanency).

The permanency outcome was defined as discharged to reunification, other relative, guardianship or adoption using federal AFCARS rules (e.g. trial home adjustment for reunification).

Fewer Moves - Children in the post ECAP group moved less often as a whole. That is, more days of care were provided per placement move after the ECAP implementation. There was an overall improvement of 22.5%,

with 387.8 days of care provided per move to the Post ECAP group compared to only 316.5 days for the Pre ECAP group.

*Table 2: Days of Care Provided Per Placement Move*

Entry Cohort	Days of Care	Moves	Days Care Per Move
FY2008_Pre	283,565	896	316.5
FY2011_Post	244,301	630	387.8

Days of Care Per Move was defined as the total number of days in out of home care for all children in each cohort during the observation period (e.g. Pre-ECAP was FY2008 - FY2010, and post-ECAP was FY2011- FY2013).

A move is when a child moved from one out of home placement setting to another. Placement settings were counted adhering to general federal AFCARS rules (e.g. not counting runaways, trial home visits, placement type changes in same home, etc.).

### **Appropriate Placement Level Indicator (APLI)**

The APLI is the child assessment tool developed by TFI. The primary outcome (dependent variable) used for the majority of this research was placement stability. Stability was achieved if a child was either in the same placement for at least 180 days or the placement ended in less than 180 days but permanency was achieved (i.e. AFACRS discharge reason was reunification, adoption, guardianship, other relative). No differentiation was made for placement end reasons other than permanency. The study used the most strict definition of a placement move with all placement changes, whether planned or unplanned, were considered moves.

Predictive validity of the original APLI was tested for the overall APLI score, sub-scale scores, and all items whether or not they were previously scored. Results were presented to TFI staff with recommendations for improvements. Improvements included: development of two forms (one for first placements and one for subsequent placements); question revisions (e.g. duplicates removed, double barrel questions modified): modified item scoring method (some items not previously scored are now scored and vice versa), and reformulated sub-scales.

Below are the major findings from the analysis on the original APLI, and the overall performance of the revised APLI using more current data.

#### Predictive Validity

The original APLI significantly differentiated (predicted) placement stability. Average APLI scores were significantly higher for children that moved compared to those that were stable. Scores on the APLI were substantially lower for “first” placements since information on children first entering foster care is much more limited.

For “First” placements, those that were stable had mean APLI scores of 3.9, compared to 5.9 for those that were not stable ( $t = 5.52$ ,  $df = 913$ ,  $p = .000$ ). Differences were more dramatic for “Subsequent” placements, with mean scores of 9.6 for those that were stable, compared to 14.4 for those that were not stable ( $t = 10.62$ ,  $df = 1113$ ,  $p = .000$ ).

#### Placement in Indicated Level of Care

TFI staff made placements in the same level of care as indicated by the original APLI 88% of the time. These “same level” placements were more stable than those placed in a higher or lower level of care than indicated by the APLI score. Forty percent (40%) of placements made at the same level indicated were stable versus 28% for those placed at higher levels and 22% of those placed at lower levels ( $\chi^2 = 34.01$ ,  $df = 2$ ,  $p = .000$ ).

#### Analysis of Subscales

Additional analyses looked at the relationships between the dichotomized subscale domain variables and placement stability. For “first” placements, four of the domains were found to be significantly related to placement stability including aggression, mental health, runaway and school. Stability rates for these problem

areas were 12 to 20 percent lower when the problem behavior was present compared to when it was not. The chemical, physical and gender domains were not significantly related to stability.

Table 3: APLI Subscale Domains & Predicting Stability for “First” Placements

Scale	Stable		Total	X <sup>2</sup>	P	OR
	Yes (n=368)	No (n=573)				
<b>Aggression</b>	66 (28.7%)	164 (71.3%)	230 (100.0%)	13.86	0.000	1.84
<b>Mental Health</b>	20 (18.9%)	86 (81.1%)	106 (100.0%)	20.55	0.000	3.07
<b>Runaway</b>	16 (23.9)	51 (76.1%)	67 (100.0%)	7.02	0.008	2.15
<b>School</b>	58 (27.0%)	157 (73.0%)	215 (100.0%)	17.22	0.000	2.02

The same four domains were also found to be significantly related to placement stability for “subsequent” placements. In addition, the presence of “chemical” problem behaviors also resulted in significantly lower stability rates. Physical and Gender domains were not significantly associated with subsequent placement stability.

Table 4: APLI Subscale Domains & Predicting Stability for “Subsequent” Placements

Scale	Stable		Total	X <sup>2</sup>	P	OR
	Yes (n=441)	No (n=674)				
<b>Aggression</b>	206 (30.3%)	474 (69.7%)	680 (100.0%)	62.48	0.000	2.7
<b>Chemical Depend.</b>	31 (22.5%)	107 (77.5%)	138 (100.0%)	19.24	0.000	2.5
<b>Mental Health</b>	142 (28.6%)	355 (71.4%)	497 (100.0)	45.24	0.000	2.34
<b>Runaway</b>	38 (20.9%)	144 (79.1%)	182 (100.0)	31.72	0.000	2.88
<b>School</b>	156 (30.7%)	352 (69.3%)	508 (100.0%)	30.52	0.000	2.0

### Reliability

Reliability was tested for first placements and subsequent placements. A total of 23 “First” APLI pairs and 24 “Subsequent” APLI pairs were included in the reliability test. The APLI was scored by two independent raters and their results compared. The findings were as follows:

#### *First APLI*

- 70% of the cases tested resulted in the same score by two different raters
- 95% resulted in the same Level of Care

#### *Subsequent APLI*

- 33% of cases tested resulted in the same score by two different raters
- 75% resulted in the same Level of Care

### Improved Scoring and Predictive Validity

The revised APLI was fully tested for overall and subscale performance. This analysis was done using more current data thus increasing the number of placement records where the APLI was used for making placement decisions.

**First Placements** - Both original and new scoring yielded statistically significant differences between the stable and unstable groups APLI scores. Differences are larger for the new scoring ( $t = 5.55$ ,  $df = 1522.63$ ,  $p = 0,000$ ) indicating greater ability to differentiate stable and unstable placements using the modified APLI.

*Table 5: First Placements using New Scoring Method*

APLI Scoring	Stable	N	Mean	Std. Deviation	Std. Error Mean
New	Yes	861	6.15	8.426	0.287
	No	664	4.02	6.599	0.256
Original	Yes	861	5.46	6.282	0.214
	No	664	4.03	5.272	0.205

**Subsequent Placements** - Mean scores are higher overall under the new scoring and differences between the stable and unstable groups are larger under the new scoring. The mean differences are almost 10 points under the new scoring compared to just under 8 points for the original scoring. Both show highly statistically significant differences in scores due to the large N but the t-scores are largest under the new scoring ( $t = 19.81$ ,  $df = 3029.16$ ,  $p = 0.000$ ).

*Table 6: Subsequent Placements using New Scoring Method*

APLI Scoring	Stable	N	Mean	Std. Deviation	Std. Error Mean
New	Yes	1896	24.23	11.399	.262
	No	1405	16.29	11.370	.303
Original	Yes	1896	18.39	12.022	.276
	No	1405	11.47	9.283	.248

### **Next Steps**

The KU research team is continuing to work with TFI to further evaluate ECAP and improve the system. Current research is focused on evaluation of the “Tier Score” for assessing placement provider’s record for providing stable placements, and a refinement method for ordering placement choices. KU will also work with TFI to adapt the system for replication in other sites. The KU staff has experience with implementing web-based systems interfacing with SACWIS/MIS data in numerous states, and will use this experience to assist TFI in customizing its current model for meeting site specific needs. KU may also provide research support for evaluating the replication of ECAP in a new site.

### **KU Research Project Team at the University of Kansas, School of Social Welfare:**

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