WASHINGTON STATE
Department of
Children, Youth, and Families

MISSING FROM CARE ANALYSIS: PART 1

OFFICE OF INNOVATION, ALIGNMENT, AND ACCOUNTABILITY

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INTRODUCTION

The following is an analysis of children missing from care (children who have run from an out-of-home placement) in Washington State. Children missing from care are a challenge for Child Welfare, placing children at risk as well as creating workload issues for staff.

This analysis examines children missing from care from 2013 thru 2015 with the goals of:

1) Providing descriptive information on children who run from care.
2) Identifying what factors are associated with children who run from care.
3) Examining existing data to explore the possibility of creating a predictive model to assist caseworkers in identifying children who are likely to run from an out-of-home placement.
4) Examining if trends have been changing over the last few years, potentially showing impacts of policy and practice changes.

DATA SET AND VARIABLES

All data for this analysis was collected from information stored on the Children's Administration data management system (Famlink) with the exception of the PSC-17 scores, which were obtained from the CHET data management system. The target population was all youth ages 11-17 who were in out-of-home care between Jan. 1, 2013 and Dec. 31, 2015[1]. Table 1 lists the variables gathered from the data management systems.

Table 1: Obtained Measures

Measure	Description
Children with an open placement episode between 2013 and 2015	This became the Target Child for which all the other information was attached.
Removal Date	Date of the start of the placement episode.
Number of prior screened-in reports related to the child	All screened-in reports prior to the start of the placement episode were included (CPS-Child Protective Services, Risk Only and FRS-Family Reconciliation Services). This information was obtained using both reports attached to the Child ID and the Family Case ID. Reports were examined going back to 1999.
Prior placement episode	This refers to a prior placement episode (e.g. prior dependency) on the identified Target Child.
Age of the child at the start and end of the placement episode	
Number of placement events	Placement events refer to the separate placements within the current placement episode (e.g. 3rd placement of the child since the start of the current dependency action).
Age of the child at the start and end of each placement event	
Type of treatment setting	Indicates the type of treatment setting the child was placed in during the placement event (e.g., foster home, private agency foster home, relative home, group home)
Treatment end reason	Why the placement event ended (e.g. changed caregiver, caregiver chose to terminate services, child on the run)
Length of placement event	This would include length of missing from care (on the run)
Race of the child	African American, Asian/Pacific Islander, Hispanic, Native American, and White (Based on the Braam Race categories)
Gender of the child	
Reason for exit from care	Reunification, Adoption, Guardianship, Still in Care
Reason for placement	This information was gathered from a checklist that the caseworker who filed the dependency petition completes to indicate the “reasons for removal” (i.e., abandonment, unable to cope,

[1] A downside to using a dataset that captures all youth in care is that more challenging youth/families may be over represented in the dataset (e.g. more challenging cases tend to stay in the system longer and consequently make up more of the population at any given point in time). However, a benefit to capturing all youth in care is that it provides a lot of information on who it is that Child Welfare is providing services to at any point in time.

	child alcohol, child drugs, child behavioral, housing, neglect, parent alcohol, parent drugs, parent death, parent incarceration, physical abuse, sexual abuse, relinquishment).
PSC-17: (Associated with the Removal Episode) • Externalizing Score • Internalizing Score • Attention Score • Total Score	The "indicated" compared to "not indicated" score on the various PSC-17 subscales were used in analysis. Also, data were collected on who filled out the questionnaire (i.e., child, caregiver, parent, school personnel).

DESCRIPTIVE INFORMATION: WHO ARE THE CHILDREN MISSING FROM CARE?

Researchers have previously examined characteristics of children who run from out-of-home care. Pergamit and Erst (2011) summarize some findings from the previous research[2]-[3]:

- Females are more likely to run away than are males.
- Runaway behavior is not linked to a particular race/ethnicity.
- Runaways tend to have more school problems; higher rates of suicidal ideation; more reported behavioral problems; and more alcohol, substance abuse and mental health disorders.
- Foster youth are more likely to run away the first time if they entered care due to lack of supervision and less likely, if they entered due to sexual abuse or physical abuse.
- The more placements they have, the more likely youth are to run.
- Youth in group homes or residential facilities are more likely to run away than youth in foster homes; youth placed with relatives are least likely to run away.
- Length of time in care does not necessarily predict runaway; in fact, the older the youth is when entering care, the more likely they are to run away.

The data gathered for this study were examined to determine if these findings hold true for Washington State youth in out-of-home care. Additionally, an examination to see if other trends could be identified was done to provide further insight into those children who run from out-of-home care.

BASIC DEMOGRAPHIC INFORMATION

Table 2 includes all the children in the study[4]. Many children have multiple placement episodes (multiple removals from their parents' home) and multiple placement events (changing caregiver during a removal episode), and this data will be examined in following tables. The total population included in this study was 8,216 children; again, these children would have been between the ages of 11-17 during the period of 2013 through 2015. Just over 13 percent of these children (n=1,084) ran sometime during their time in out-of-home care. The population was made up of slightly more females than males (53 percent compared to 47 percent). Additionally, females were significantly more likely to go missing from care than males (60.4 percent compared to 39.6 percent, $p < .001$). Concerning race/ethnicity the data indicates that Native American and African Americans are significantly more likely to run from care than are Whites ($p > .001$). The increased risk for African American and Native American youth to run from out-of-home placement can be seen in that a higher rate "ran from care" than are represented in the "total population" (table 2).

[2] Pergamit, M. & Ernst, M. (2011). Running away from foster care: Youths' knowledge and access of services. Chicago: The University of Chicago—NORC, The Urban Institute, Chapin Hall.

[3] A limited literature review is presented in Appendix A

[4] Descriptive information presented in tables 2 thru 17 do not control for the other variables collected. Regression modeling does occur in table 18.

Table 2: Basic Demographic Information

	Ran from care		Did not run from care		Total population	
	Number	Percent	Number	Percent	Number	Percent
Total						
	1084	13.2%	7132	86.8%	8216	100%
Gender						
Male	429	39.6%	3405	47.7%	3834	46.7%
Female	655	60.4%	3727	52.3%	4382	53.3%
Race/Ethnicity						
African American	221	20.4%	1012	14.2%	1233	15.0%
Asian/PI	34	3.1%	296	4.2%	330	4.0%
Hispanic	167	15.4%	1102	15.5%	1269	15.4%
Native American	222	20.5%	1215	17.0%	1437	17.5%
Unknown	1	.1%	39	.5%	40	.5%
White	439	40.5%	3468	48.6%	3907	47.6%

IMPACT OF PRIOR REMOVAL EPISODE

Many of the children included in the study had multiple removal episodes (e.g. removals from their parents' home). Sometimes these removals occurred prior to the start of the data set (2013) and sometimes children had been returned home and then had a new occurrence of placement in out-of-home care between 2013 and 2015. As indicated in Table 3, a prior placement episode was a significant predictor of running from care during the subsequent placement episode ($p < .001$).

Table 3: Prior Removal Episode

	Ran from care		Did not run from care	
	Number	Percent	Number	Percent
First Removal Episode	638	10.7%	5314	89.3%
At least one prior removal episode	446	19.7%	1818	80.3%

MULTIPLE PLACEMENTS

Many children who enter foster care experience multiple placement events during the placement episode. Table 4 shows how additional placement events are associated with children running from care. As the number of placement events increased so did the likelihood of a child running from care, (e.g. 3.2 percent of children in their first placement compared to 12.5 percent of children with six or more placements ran). However, as children who run are likely to experience more placements, Table 4 may present an exaggeration of the impact of multiple placements on the likelihood of a child running from care (i.e. children with multiple placements are more likely to have previous runs which increases the probability of a future run). Table 5 examines just the first run event for those youth who ran from care; as can be seen 53.0 percent of first runs occur during the first three placements. Interestingly, when looking at just the ratio of placement sequences to run events it appears that the risk of a child's first run from care does not increase as placement event number increases after the second placement (see last column of Table 5). Since this runs counter to previous research, this finding may need to be looked at more closely.

Table 4: Sequence of Placement Event Ending a Run (for youth ages 11-17)

	Ran from Care		Did not Run from Care	
	Number	Percent	Number	Percent
First placement	237	3.2%	7232	96.8%
Second placement	235	5.2%	4322	94.8%
Third placement	194	5.8%	3159	94.2%
Fourth placement	189	7.0%	2517	93.0%
Fifth placement	172	7.8%	2035	92.2%
Six or more placements	2416	12.5%	16973	87.5%

Table 5: Placement Sequence from which First Run Event Occurred

(For all children in data set-first event could have occurred prior to child turning 11)

Placement Number of First Time Run	Number	Percent of Runs	Cumulative Percent	Percent of Runs per Placement Number
First placement	240	21.0%	21.0%	3.2%
Second placement	223	19.5%	40.5%	4.9%
Third placement	143	12.5%	53.0%	4.3%
Fourth placement	100	8.7%	61.7%	3.7%
Fifth placement	87	7.6%	69.3%	3.9%
Six or more placements	331	30.7%	100%	1.7%

CHILD AGE

Another important factor to examine when looking at those likely to run from care is the age of the child. Table 6 shows the age of the child at the end of the placement event (e.g., at the time of the run). As can be seen, the end reason of "on the run" for youth becomes more likely for children as they age (e.g., only 0.4 percent of 11-year-olds had an end reason of "on the run" while this number was 12.9 percent for 17-year-olds).

Table 6: Child age at time of run event

		Age placement ended							Total
		11	12	13	14	15	16	17	
Child did not run	Count	3026	3674	4521	5585	6300	6192	4552	33850
	Percent of children at given age	99.6%	97.1%	93.7%	90.4%	87.7%	87.6%	87.1%	89.8%
Child ran	Count	11	111	304	592	880	873	672	3443
	Percent of children at given age	.4%	2.9%	6.3%	9.6%	12.3%	12.4%	12.9%	10.2%

CASEWORKER REASON FOR REMOVAL

When caseworkers place a child in out-of-home care, they must indicate the reason for removal. Caseworkers can indicate as many reasons for removal as they feel appropriate and the reason(s) for removal are connected to the families case as opposed to the individual child(ren. Table 7 shows the association between these various reasons for removal and the probability that a child will run while in care. Of note is that child alcohol, child behavior, and in particular child drugs were all significant predictors of a child running from care. Type of abuse was generally not a significant predictor of the child running from care, although abandonment was associated with an increased likelihood for the child to run from care.

Table 7: Reason for Removal

Reason for Removal	Number indicated for the reason for removal	Percent indicated-child never ran from care	Percent indicated-child ran from care
Abandonment	497 (6.1%)	76.1%	23.9%**
Unable to cope	1036 (12.8%)	83.5%	16.5%**
Child alcohol	83 (1.0%)	61.4%	38.6%**
Child drugs	138 (1.7%)	52.2%	47.8%**
Child behavior	1333 (16.4%)	80.1%	19.9%**
Housing	560 (6.9%)	87.5%	12.5%
Neglect	5195 (64%)	87.2%	12.8%
Parent Alcohol	705 (8.7%)	84.1%	15.9%*
Parent drug	1659 (20.4%)	86.4%	13.6%
Parent death	101 (1.2%)	84.2%	15.8%
Parent incarceration	537 (6.6%)	86.8%	13.2%
Physical abuse	1472 (18.1%)	88.1%	11.9%
Sexual abuse	740 (9.1%)	88.0%	12.0%
Relinquishment	2 (0.0%)	100.0%	0.00%

**significant predictor of child running at <.05 (two-sided Pearson chi-square test)*
***significant predictor of child running at <.01*

PRIOR REPORTS OF CHILD MALTREATMENT

The number of prior reports of child maltreatment is an indicator of chronicity of child maltreatment in the family home. The relationship between children running from care and prior reports of child maltreatment was examined in two ways. First examined was the relationship of number of prior reports and if the child ever ran from out-of-home care. However, since children from families with longer histories may stay in out-of-home care longer and consequently have more time to run from care as well as become more at risk because they become older while in care, there was also an examination of the relationship of chronicity and the probability of children running from their first placement. As shown in Table 8, children who come from families with more accepted reports have a higher likelihood of running while in out-of-home care. For those from families with 0-2 prior reports, about 8.2 percent ran from care; for those with 3-7 prior reports, about 14.3 percent ran from care; and for those from families with 8 or more reports, about 20.9 percent ran from care at some time during the placement episode. Table 9 illustrates that the trend of more chronicity of maltreatment and more runs holds true even for the first placement event; however, the overall frequency of runs across the board is much lower when looking at just first placement event.

Table 8: Prior reports and run events

	Number of reports prior to placement of child*			
	0-2	3-7	8 or more reports	Total
Number of children in each category who did not run from care	2828	3115	1172	7115
Percent of children in each category who did not run from care	91.8%	85.7%	79.1%	86.8%
Number of children in each category who ran from care	254	518	310	1082
Percent of children in each category who ran from care	8.2%	14.3%	20.9%	13.2%
Total number of child placements	3082	3622	1482	8197

**All screened in reports to CPS and FRS were included. Just includes placement/run events for children 11-17*

Table 9: Prior reports and run events from just first placement

	Number of reports prior to placement of child*			
	0-2	3-7	8 or more reports	Total
Number of children in each category who did not run from care	2668	3142	1419	7230
Percent of children in each category who did not run from care	98.0%	96.6%	95.1%	96.8%
Number of children in each category who ran from care	54	110	73	237
Percent of children in each category who ran from care	2.0%	3.4%	4.9%	3.2%
Total number of children	2723	3252	1492	7467

**All screened in reports to CPS and FRS were included. Just includes placement/run events for children 11-17*

PSC-17

Within the first 30 days of entering out-of-home care youth receive a CHET evaluation. Included in the CHET evaluation is the PSC-17. The PSC-17 includes an externalizing scale, internalizing scale, attention scale and a total score. Based on established criteria each of the scales has a cut score above which the youth would score “indicated” for this being a potential problem area. In this evaluation, the cut score (as opposed to the continuous measure) was used for analysis. Additionally, a number of different individuals including the parent, caregiver, school professional or the youth could have completed the PSC-17. The results for each type of reporter were separately analyzed to explore how the different types of reporter assessment of the youth were associated with the youth running from care. The first set of analysis examined the relationship between scores on the PSC-17 and the child running during the placement episode. Interestingly the youth self-reports were least predictive of the youth running from care (Table 10). The parent, caregiver and school professional were all generally strong predictors, especially the externalizing and internalizing scores; the attention scores were not predictive.

Table 10: PSC-17 and running from out-of-home placement

	Child Did Not Run from Care		Child Ran from Care		Total	
	Percent not indicated	Percent indicated	Percent not indicated	Percent indicated	Percent Indicated	Percent of Youth who ran that were indicated
Youth Externalizing	92.7% (2101)	7.3% (122)	91.9% (456)	8.1% (40)	7.5%	19.4%
Parent Externalizing	66.5% (528)	33.5% (266)	46.8% (58)	53.2% (66)	36.2%	19.9%**
Caregiver Externalizing	80.9% (2522)	19.1% (596)	72.1% (344)	27.9% (133)	20.3%	18.2%**
School professional Externalizing	79.7% (1030)	20.3% (262)	73.4% (152)	26.6% (55)	22.1%	17.4%*
Youth Internalizing	64.3% (1458)	35.7% (810)	64.7% (321)	35.3% (175)	35.6%	17.9%
Parent Internalizing	60.8% (483)	39.2% (311)	46.8% (58)	53.2% (66)	41.1%	17.5%**
Caregiver Internalizing	68.2% (2127)	31.8% (992)	57.2% (273)	42.8% (204)	33.3%	17.1%**
School professional Internalizing	54.0% (698)	46.0% (595)	43.3% (90)	56.7% (118)	47.5%	16.5%**
Youth Attention	83.9% (1902)	16.1% (365)	82.7% (410)	17.3% (86)	16.3%	19.1%
Parent Attention	78.5% (623)	21.5% (171)	72.6% (90)	27.24% (34)	22.3%	16.6%
Caregiver Attention	85.3% (2660)	14.7% (458)	85.3% (407)	14.7% (70)	14.7%	13.3%
School professional Attention	75.8% (979)	24.2% (313)	78.3% (162)	21.7% (45)	23.9%	12.6%
Youth Total	77.3% (1754)	22.7% (514)	76.6% (379)	23.4% (116)	22.8%	18.4%
Parent Total	60.5% (481)	39.5% (314)	41.9% (52)	58.1% (72)	42.0%	18.7%**
Caregiver Total	74.2% (2308)	25.8% (802)	63.2% (301)	36.8% (175)	27.2%	17.9%**
School professional Total	65.4% (845)	34.6% (447)	52.9% (109)	47.1% (97)	36.3%	17.8%**

**significant predictor of child running at <.05 (two sided Pearson chi-square test)*
***significant predictor of child running at <.01*

In addition to looking at the relationship between the PSC-17 and run behavior during the placement episode, there was also an examination of run behavior during placement events. First, the average length of time of placement events was compared for those with varying scores in the PSC-17. As can be seen in the first three columns of Table 11, those indicted on the PSC-17 tended to remain in each placement event for significantly less time. The last three columns examine just run events. The correlations were not as strong for the length of runs as for all placements and the PSC-17 score; however, there is a pattern of an indicated score being associated with a shorter length of run events. Consequently, it seems that although

youth with indicated PSC-17 scores are more likely to run, their run episodes on average last for slightly less time.

Table 11: Relationship between PSC-17 and length of placement events (all events including those prior to the youth turning 11 years old)

	Mean days of placement event(s) for those indicated/not indicated on the PSC-17			Mean days of placement event(s) for those *who ran* from care some time during placement episode indicated/not indicated on the PSC-17 – Only length of the run event is included.		
PSC-17 subscale & rater	Not indicated on PSC-17	Indicated on PSC-17	Level of sig.	Not indicated on PSC-17	Indicated on PSC-17	Level of sig.
Total-Youth	109.08 (11130)	102.96 (3497)	.111	36.30 (1591)	31.75 (428)	.218
Total-Out of home caregiver	145.04 (10997)	110.17 (6288)	.000	37.50 (1145)	28.74 (940)	.002
Total-School	153.10 (4211)	121.23 (3234)	.000	32.09 (466)	33.91 (406)	.668
Total-Parent	146.90 (1972)	94.56 (2327)	.000	44.25 (113)	35.75 (300)	.307
Externalizing-Youth	108.58 (13321)	96.95 (1307)	.043	35.80 (1843)	30.24 (177)	.306
Externalizing-Out of home caregiver	139.07 (12722)	113.46 (4637)	.000	34.68 (1469)	30.16 (632)	.099
Externalizing-School	148.53 (5440)	113.48 (2018)	.000	33.50 (644)	31.54 (230)	.702
Externalizing-Parent	141.97 (2242)	92.60 (2052)	.000	40.13 (198)	37.71 (265)	.763
Internalizing-Youth	108.10 (9427)	106.69 (5206)	.681	36.13 (1324)	33.78 (696)	.739
Internalizing-Out of home caregiver	144.88 (10609)	112.48 (6755)	.000	35.03 (1126)	31.34 (975)	.195
Internalizing-School	156.19 (3507)	123.51 (3975)	.000	33.87 (375)	32.28 (504)	.724
Internalizing-Parent	140.51 (2164)	95.89 (2130)	.000	44.40 (194)	34.67 (269)	.227
Attention-Youth	109.92 (12120)	96.03 (2508)	.001	36.25 (1681)	30.71 (339)	.152
Attention-Out of home caregiver	134.51 (14287)	121.62 (3072)	.005	33.98 (1682)	30.68 (419)	.355
Attention-School	139.40 (5607)	138.00 (1851)	.828	35.30 (682)	24.78 (192)	.010
Attention-Parent	123.91 (3168)	102.80 (1126)	.004	39.01 (351)	37.90 (112)	.905

PLACEMENT SETTING

Youth in out-of-home care are placed in a variety of settings. Some of the more common types of placements are relative placements (both licensed and unlicensed), state-run foster homes and child placing agency (CPA) foster homes. Table 12 shows the frequency of youth running from each of these types of placements. Youth are most likely to run from the state-run foster homes (9.1 percent) and least likely to run from a licensed relative caregiver (4.5 percent). The last row in Table 12 shows BRS placements. Children are most likely to run from BRS facilities[5].

Table 12: Placement setting and running from out-of-home care

	Youth did not run from placement		Youth ran from placement	
	Percent	**Number**	**Percent**	**Number**
State Foster care	90.9%	6625	9.1%	667
CPA Foster care	91.7%	1590	8.3%	143
Relative placement	94.2%	5251	5.8%	325
Licensed relative	95.5%	428	4.5%	20
BRS placement	84.3%	4013	15.7%	749

[Interestingly, and likely indirectly related to run behavior, the length of stay in each placement type differed significantly as well, youth stay on average 212 days in state run foster care, 265 days in a relative home and 336 days in a CPA foster home, and 552 days in a licensed relative home. The mean placement days for BRS homes was 186 days. As with other analysis in this section of this report, length of stay was not controlled for with the other variables collected for this study. (For this analysis episode lengths of less than 60 days were removed.)]

LENGTH OF RUNS

Youth events recorded as "On the Run" represented a broad range of time; however, most runs were relatively short. Twenty-five percent of youth who run from care are missing for two or fewer days, 25 percent are missing from care for three to seven days, 25 percent are missing for 7 to 28 days, and 25 percent are missing for more than 28 days. When looking at the mean length of the placement just prior to the child running from care, those in relative care had the longest placements while those in BRS the shortest (see Table 13). Table 14 indicates that females, on average, had longer run events than males, a mean of 33 days compared to 24 days. With regards to age (Table 15), older children were generally on the run for longer periods of time than younger children (the decline for the length of runs for 17-year-olds may be due to the case being closed once the youth turns 18, consequently shortening those events). Table 16 displays the mean and median length of run events for the various race/ethnic groups.

Table 13: Length of time to run by placement type (How long was the child in placement just prior to the run event)

	Mean length of days the youth was in the placement prior to running from care
State Foster care	84
CPA Foster care	110
Relative placement	119
Licensed relative	130
BRS placement	66

[5] Although not shown in this analysis type of placement was entered into a multinomial regression model with other risk factors including race, age, prior reports, prior placement, child drug, child behavior, abandonment and gender (later analysis will show why these variables were chosen). With all variables in the model there was no significant difference between likelihood to run from relative and licensed relative placement, with both doing significantly better than other licensed care (Exp(B) about 1.8). There was no significant difference between state foster homes and private agency foster homes and likelihood to run when both were entered into the full module.

Table 14: Length of run by gender

	Male	Female
Mean days	24	33
Median days	6	9

Table 15: Length of run by age

	11*	12	13	14	15	16	17
Mean days	7 (26)	17 (163)	19 (448)	24 (1048)	33 (1363)	34 (1550)	28 (1064)
Median days	4	3	5	6	9	9	11

Table 16: Length of run by race/ethnicity

	African American	Asian/PI	Hispanic	Native American	White
Mean days	27	32	33	34	27
Median days	8	11	7	9	7

MULTIPLE RUNS

In total the data set consisted of 8,216 individual children between the ages of 11-17. Of these, 1,084 (13.2 percent) ran at some time while they were in out-of-home care. Of those children who ran from care 432 (5.3 percent) ran only one time while 652 (7.9 percent) children ran two or more times from care. This would indicate a 60.1 percent chance that if a child ran from care, they would run again on at least one more occasion. Additionally, out of the 3,457 run events, 3,025 (87.5 percent) were associated with the 652 children who ran multiple times.

REGIONAL DIFFERENCES

Table 17 shows regional differences in both frequency and length of run events. The table indicates that there was variance between the regions on the likelihood of a child running, as well as the length of the run events.

Table 17: Regional differences (youth 11-17, tx_srvc = On the Run)

Region	Number of run events	Percent event end reason was "on the run"	Mean length of run events (days)	Median length of run events (days)
1	867	7.4%	18	5
2	629	10.2%	38	10
3	1010	8.5%	24	5
4	1224	10.8%	27	8
5	745	8.8%	40	14
6	962	9.4%	26	7

TAKEAWAYS FROM THE DESCRIPTIVE INFORMATION

Many of the findings thus far are consistent with what prior research has shown, although there are also a number of findings that add to the existing research base.

Similar to prior research:

- Females are more likely to run than are males.
- Runaways tend to have more behavioral, drug and alcohol problems.
- Youth in BRS placements are more likely to run than are youth in foster homes.
- Youth in relative placements are least likely to run.

- Older children are more likely to run than younger children are and tend to be in the run for longer periods.

Other findings:

- Although running from care is associated with more placements, it is not directly related. Rather, it seems that this is confounded by the relationship between the youths' behavioral challenges and both more placement changes and more runs. There was not a clear association of more placement events with more runs when just looking at first run event.
- Native Americans and African Americans appear to be at higher risk of running from out-of-home placements.
- Family chronicity of maltreatment was related to youth running from out-of-home care.
- Youths' self-report scores on the PSC-17 were not predictive of run behavior, while that of parents, caregivers and school professionals were predictive.
- PSC-17 scores were predictive of the average length of placement events.
- Prior removal episodes are associated with youth running from out-of-home care.
- Once a child has run from care, there is a 60.1 percent chance they will run again. Additionally, 87.5 percent of all runs from out-of-home placements occur due to repeat runners.

REGRESSION MODEL

All variables examined that showed potential value in predicting who is more likely to run from care were entered into a logistic regression model. An advantage of using a regression model is that the predictive strength of each of the variables can be measured while controlling for the influence of the other variables. The child ever running from care was entered as the dependent variable. Table 18 shows the results. The PSC-17 scores were not entered into the model for a couple of reasons. When included, they significantly reduced the number of cases in the model. Also, all the information included in the model is information that the caseworker had at the time the child is placed, which may be valuable when designing a tool to predict early in the placement process which youth might be at risk to run from care[6].

The resulting variables from the regression model are shown in the "Variables in the equation" column (Table 18); if a variable is not included, it indicates it was not significantly related to the outcome of interest when controlling for the other variables[7].

[6] The PSC-17 is done as part of the CHET evaluation which is typically completed within 30 days of placement. Preliminary analysis did however indicate that the PSC-17 scores were slightly stronger predictors than the caseworker reason for placement scores when included in the model.

[7] The Significance (Sig.) in the models indicates the probability that difference between the groups is due to chance. Typically, if the significance is .05 or lower it is considered significantly unlikely that the relationship is due to chance. In studies with large sample sizes it is not uncommon to find significant differences that are likely not meaningful on a practical level. Consequently, for those findings with a significance level of .05 or lower, a more helpful number is the Exp(B). The Exp(B) represents the odds ratio and is an indicator of the change in odds resulting from a one unit change in the predictor variable. If the odds ratio is 1 then there is not a difference in the likelihood of an event occurring between the two groups. If the odds ratio is 1.5 then there is a 50% increase in the likelihood of the event occurring, and an odds ratio of 2 would suggest that it is twice as likely for the event to occur for those indicated on that particular variable. An odds ratio below 1 indicates a reduced likelihood of the event occurring. For example, an odds ratio of .7 would indicate that a child with this characteristic was 43% less likely to have the event occur (1 divided by .7 = 1.43). It is important to keep in mind that the probability and the odds ratio for each variable in the equations are determined while controlling for the influence of the other variables included in the model. Variables were entered both sequentially (model building) and entered into model together using backward LR. The resulting models were the same using both methods.

Table 18: Logistic regression model with outcome of child ever run from care

Variables in the equation	B	Wald	Sig.	Exp(B) Odds ratio	95% C.I.for EXP(B)	
					Lower	Upper
0-2 Prior reports(reference category)		67.515	.000			
3-7 Prior reports	.529	38.882	.000	1.697	1.437	2.004
8 or more prior reports	.798	63.771	.000	2.222	1.827	2.703
Gebder - Male is the reference category	.276	15.220	.000	1.317	1.147	1.513
Prior removal episodes - No prior removals is reference category	.537	51.453	.000	1.711	1.477	1.981
Race -White is reference category		58.134	.000			
African American	.667	49.550	.000	1.948	1.618	2.346
Asian/Pacific Islander	.001	.000	.995	1.001	.682	1.471
Hispanic	.235	5.302	.021	1.265	1.036	1.546
Native American	.405	18.120	.000	1.500	1.244	1.808
Unknown	-1.328	1.684	.194	.265	.036	1.969
Abandonment	.627	27.987	.000	1.873	1.484	2.363
Child drugs	1.453	60.030	.000	4.276	2.961	6.176
Child behavior	.273	9.841	.002	1.313	1.108	1.557
Age - 11 or under at the start of the placement episode is the reference group		172.683	.000			
Age 12	.795	41.995	.000	2.213	1.741	2.815
Age 13	.832	49.776	.000	2.297	1.823	2.895
Age 14	1.115	96.093	.000	3.049	2.440	3.810
Age 15	1.290	132.943	.000	3.632	2.917	4.523
Age 16	1.101	78.419	.000	3.008	2.357	3.838
Age 17	.509	8.154	.004	1.663	1.173	2.357
Constant	-3.704	1067.100	.000	.025		

RISK OF RUNNING TOOL

Next, there was an examination to see if the information gathered from the regression model could be used to create a risk of running tool that Children's Administration could use to help predict which youth are most likely to run from care. This type of model might be useful if Children's Administration wanted to target an intervention to those most at risk of running. As each of the variables included in the regression model were significant predictors of which children might run, they were all included in the risk of running tool. However, since the strength of the predictors varied (different odds ratios), differential weighting was applied to the variables in developing the risk model. Table 19 list the variable included in the risk of running tool and the weight given to each of the variables.

Table 19: Weighting of variables

Variable	Points
0-2 Prior reports	0
3-7 Prior reports	1
8 or more prior reports	2
Female (Male is 0 points)	1
Prior removal episodes	1
White	0
African American	2
Asian/Pacific Islander	0
Hispanic	1
Native American	1
Unknown	0
Abandonment	2
Child drugs	4
Child behavior	1
Age 11 or under at the start of the placement episode	0
Age 12 at the start of the placement episode	2
Age 13 at the start of the placement episode	2
Age 14 at the start of the placement episode	3
Age 15 at the start of the placement episode	3
Age 16 at the start of the placement episode	3
Age 17 at the start of the placement episode	1
Maximum possible score	16

Based on the scoring criteria each youth was assigned a score and three different cut points were tested to indicate risk of running; 6 or higher, 7 or higher and 8 or higher. This allowed for the investigation of the accuracy of the new risk tool at three different cut points. The comparison of the three different models also allows for an examination of the interrelationship between the four quadrants in Figure 1 (e.g., the more children identified as runners, the higher the probability of both true positives and false positives). The first quadrant shows the percent of children who were predicted to run by the tool but did not run (**False Positives**). For example, for the cut score of 6 or higher (yellow), 20 percent of those who did not run were predicted by the tool to run (**False Positives**) while 80 percent who were predicted not to run did not run (**True Negatives**). The second quadrant (upper right) shows the percentage of children who were predicted by the tool to run and indeed did run (**True Positives**). Again, for the yellow 51 percent of those predicted to run did run from care. The first three lines in each quadrant show the results for the three different cut scores. The relatively high rate of inaccuracy of this risk of running tool, regardless of the cut score, is typical of assessment tools in child welfare. For example, the fifth line (gray) shows an analysis of the SDM (the assessment tool used in Washington State as well by many other child welfare agencies to predict future reports of child maltreatment)[8]. If a risk of running tool like this were to be used, the selection of the cut score is based on factors such as the cost of intervention, cost of no intervention, effectiveness of the intervention and examination of potential unintended negative consequences.

[8] The data for the SDM was obtained from a study of the SDM done in California. The SDM used in California is scored slightly differently than in Washington State, the numbers in Figure 1were done assuming that Low and Moderate risk scores are not investigated and High and Very High scores are investigated (this is consistent with the Washington State scoring of the SDM although the language is different).
Risk Assessment Validation: A Prospective Study October 2013(*Updated March 2014)*
http://www.nccdglobal.org/sites/default/files/publication_pdf/risk-assessment-validation.pdf

Figure 1

20.2% (1419)	50.9% (547)
10.0% (703)	33.1% (356)
3.9% (273)	19.2% (206)
24.6% (1918)	43.0% (1566)
False Positive	**True Positive**
79.8% (5612)	49.1% (528)
90.0% (6328)	66.9% (719)
96.1% (6758)	80.8% (869)
75.4% (5888)	57.0% (2082)
True Negative	**False Negative**

True Positive = Children identified by the tool as at risk to run who ran

False Positive = Children identified as at risk to run and did not run

True Negative = Children identified not at risk to run who did not run

False Negative = Children identified not at risk to run who ran

Yellow = 6 or higher (First line in each quadrant)

Green = 7 or higher (Second line in each quadrant)

Blue = 8 or higher (Third line in each quadrant)

Gray = SDM (Fifth line in each quadrant)

TRENDS FROM 2013 TO 2015

Some caution should be taken when looking at trends over a few years as three years may not be long enough to warrant a high level of confidence. Additionally, factors such as placement age and placement type (i.e., relative, foster home) often change due to practice and policy shifts that can influence the population at risk to run. However, it seemed worthwhile to take an initial look at some trends to examine how the prevalence of run events is changing from year to year.

For the first analyses, run events were examined per calendar year. This is a different measure than counting children who run per calendar year, but since children running per calendar year is already reported as one of the Braam reporting measures it seemed examining the data from a different perspective might be helpful. Table 20 shows the prevalence of run events from 2010 through 2015[9]. Again, this table shows the total number and percentage of events that ended in a run for children ages 11-17. There appears to be a decreasing trend in the prevalence of run events and a decrease in the percentage of run events since 2012. Again, it is important to be cautious not to read too much into a trend line based on only a few years (it is possible that run events in 2016 might increase, and this may or may not negate the downward trend). To try to add some credibility to the finding of the downward trend, a regression model including calendar years 2013, 2014 and 2015 as a predictor variable was run. This allowed for the inclusion of the other variables associated with youth running from care (e.g., age, race), and an examination to see if, after controlling for the impact of these other variables, the calendar year was a predictor of likelihood to run. Table 21 shows the resulting model. As can be seen, after controlling for the other variables in the model, youth were significantly less likely to have a run event in 2015 than in the previous two years. This downward trend of run events is also shown in Figure 2. Figure 2 shows the estimated marginal means by month. The estimated marginal means would be the percentage of events in the given month that ended with a "child on the run." For example, in the highest month, 77 (13 percent) of the 592 end events were runs. The estimated marginal means do not control for the other variables included in the regression model, however they do provide a nice visual representation of the trend. The

[9] A few years were added to table 20, but these additional years were not included in the regression model (table 21) as the other variables were not collected for these additional years.

months are numbered 1-36 and represent the months between January 2013 and December 2015.

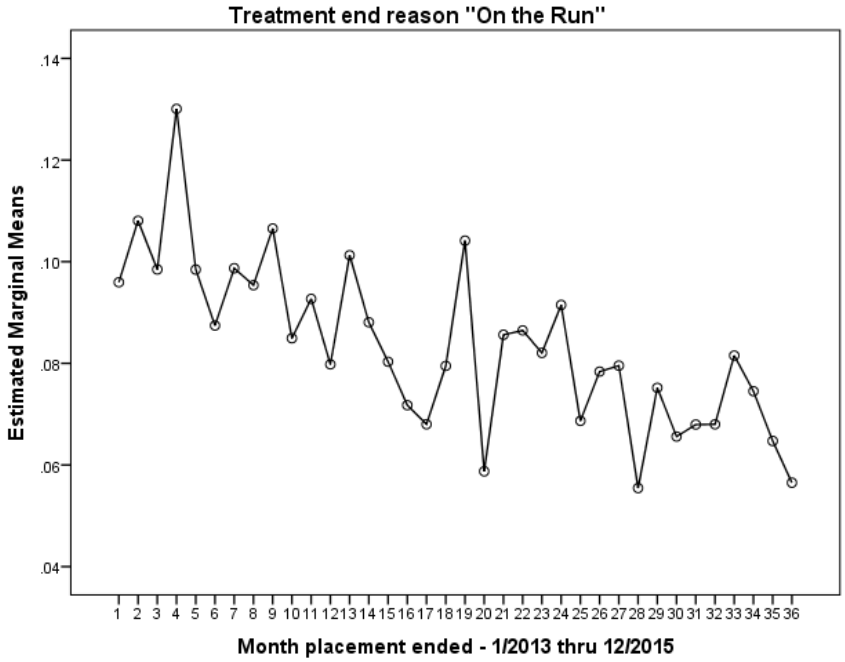
Table 20: Prevalence of run events for youth ages 11 through 17

Year	Number of treatment events that did not end with a run	Number of treatment events that ended with a run	Total number of treatment events ended
Calendar 2010	7032 (90.4%)	748 (9.6%)	7780
Calendar 2011	6717 (90.1%)	741 (9.9%)	7458
Calendar 2012	6475 (89.7%)	743 (10.3%)	7218
Calendar 2013	6795 (90.2%)	736 (9.8%)	7513
Calendar 2014	7174 (91.7%)	646 (8.3%)	7820
Calendar 2015	7460 (93.0%)	559 (7.0%)	8019

Table 21: Regression model including years 2013, 2014 and 2015

Variables in the equation	B	Wald	Sig.	Exp(B) Odds ratio	95% C.I. for EXP(B)	
					Lower	Upper
0-2 Prior reports (reference category)		71.410	.000			
3-7 Prior reports	.387	34.773	.000	1.472	1.295	1.674
8 or more prior reports	.589	71.344	.000	1.803	1.573	2.067
Male is the reference category	.268	29.449	.000	1.307	1.187	1.440
No prior removals is reference category	.197	15.173	.000	1.218	1.103	1.345
White is reference category		15.759	.008			
African American	.146	4.990	.025	1.157	1.018	1.315
Asian/Pacific Islander	.241	3.500	.061	1.273	.989	1.639
Hispanic	-.035	.222	.638	.965	.834	1.118
Native American	.187	8.104	.004	1.206	1.060	1.372
Unknown	-.676	.876	.349	.508	.123	2.096
Age 11 or under at the start of the placement episode is the reference group		111.394	.000			
Age 12	.293	12.217	.000	1.341	1.137	1.580
Age 13	.245	8.605	.003	1.277	1.085	1.504
Age 14	.503	39.864	.000	1.653	1.414	1.932
Age 15	.664	77.573	.000	1.942	1.675	2.251
Age 16	.695	64.842	.000	2.003	1.691	2.372
Age 17	.480	13.562	.000	1.617	1.252	2.088
Year 2015 is reference Year		42.159	.000			
2013	.383	41.928	.000	1.467	1.307	1.648
2014	.189	9.777	.002	1.209	1.073	1.361
Constant	-3.614	1636.843	.000	.027		

Figure 2: Percent of events ending in a run each month – All children



A closer look at the estimated marginal means was then examined for each of the various race/ethnicities. As can be seen in Figures 3-7 the strongest downward trend was for white children (Figure 7) while the other race/ethnicities had more gradual declines or seemed to be staying stable over the study time.

Figure 3: Percent of events ending in a run each month for African American children

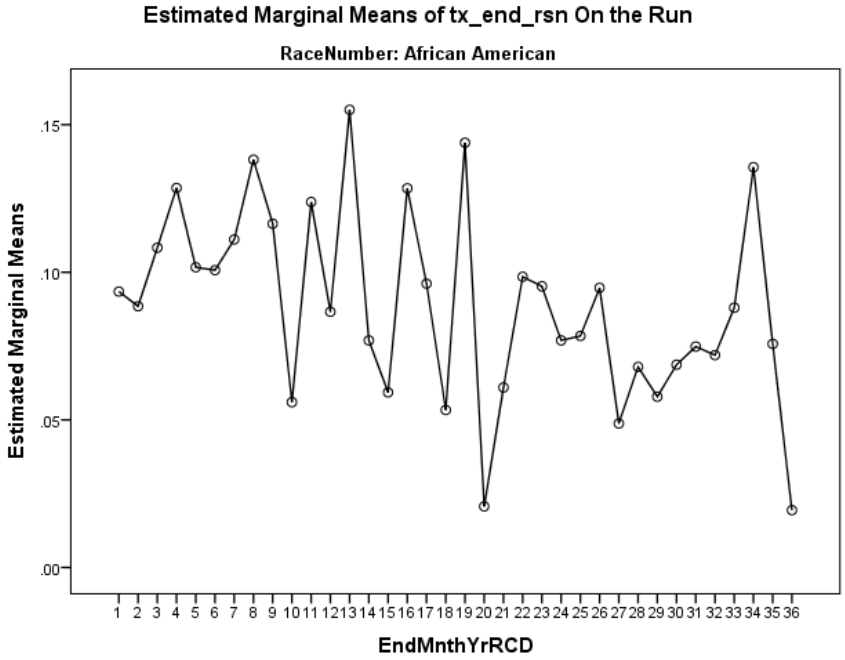


Figure 4: Percent of events ending in a run each month for Asian/PI children

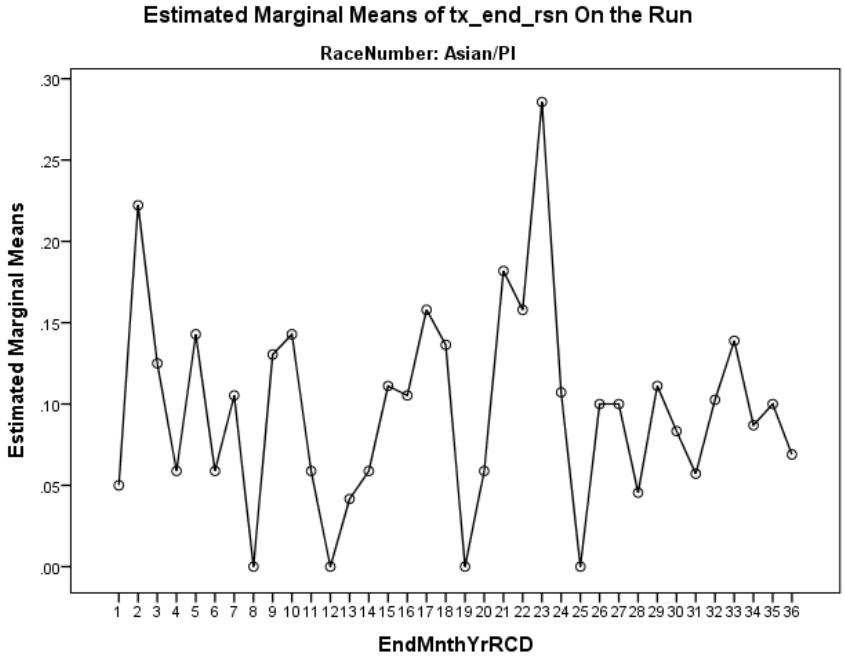


Figure 5: Percent of events ending in a run each month for Hispanic children

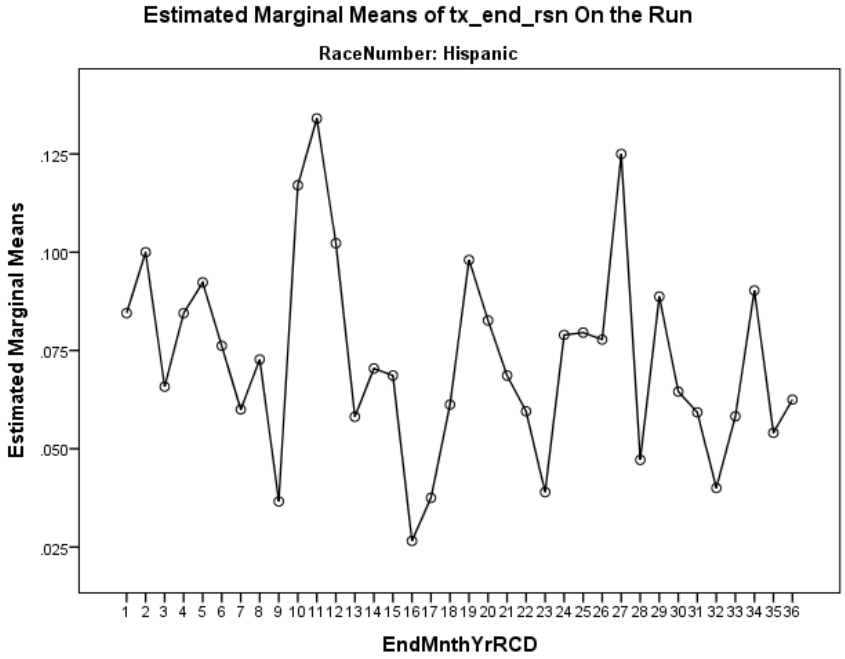


Figure 6: Percent of events ending in a run each month for Native American children

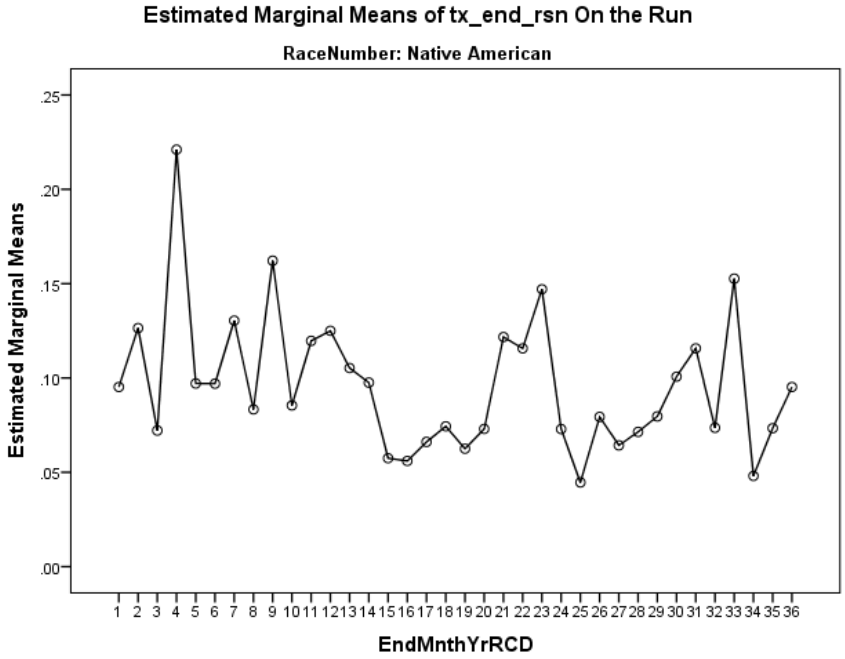
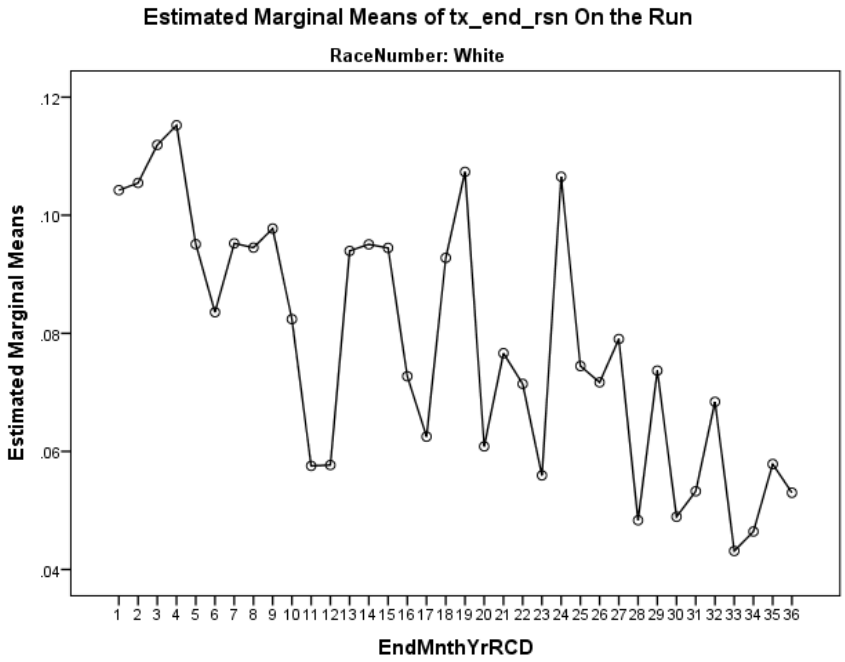


Figure 7: Percent of events ending in a run each month for White children



APPENDIX A: LITERATURE REVIEW

Article Title	Population	Study Type	Key Findings	Study limitations
Running away from foster care: What do we know and what do we do? Crosland, C., and Dunlap, G. (2014) Journal of Child and Family Studies, 24:1697-1706	Children/ youth placed in foster care.	This is a review article reporting the findings of other studies that have been done on children running from foster care.	Youth in foster care are at least twice as likely to run away as youth of the same age in the general population. More the 66% of youth who run away did so more than once. Older youth are more likely to run for longer periods of time than younger youth. Youth more likely to run from group care. Youth 15-17 are more likely to run than younger youth. Females more likely to run than males. Likelihood to run is greatest in first few months of placement. Living with relatives or siblings is associated with a lower likelihood of running. One study focused on reducing runs of children in foster care (Clark et al. 2008) used the Functional Assessment Youth Interaction Tool with youth who have run from placements – positive outcomes for this study are reported.	Simply a lit review so individual study limitations were not examined.
Running away from out-of-home care: A multilevel analysis. Kim, H., Chenot, D., and Lee, S. (2015) Children and Society. Vol. 29 pp.109-121	110,576 cases from 2009 AFCARS. Only included cases with children age 12-17.	Correlational study with "Runaway as current placement setting" as the dependent variable. Analysis included a number of variables including 118 counties. Youth characteristics were entered as level 1 in the model and they we analyzed as nested within the 118 counties.	Results indicate that counties accounted for about 15% of the variability in the likelihood of runaway behavior. Older children and females were more likely to run. Mental health was not associated with run-away behavior - actually associated with less runs -but type of MH was very diverse (e.g. autism was included as MH) After controlling for county race/ethnicity was not a significant predictor. Children removed from single father headed households were at increased risk to run. Prior removals and number of placements both were associated with more runs. Youth removed via court order more likely to run than those on a VPA. Those with case plan of long-term foster care or emancipation were more likely to run.	Well-designed study with large N. Due to large N significant findings were found which were associated with somewhat small odds ratio's. Studies using national data may miss some of the unique characteristics of given states/ communities/ agencies.

Predictors of running away from out-of-home-care. Courtney, M., Zinn, A. (2009) Children and Youth Services Review. Vol. 31 pp. 1298-1306	Study focus was on 14,282 youth who ran from care at least once between 1993 and 2003. Data was accessed from the Illinois state management information system.	Correlational study providing both descriptive statics as well as modeling (Cox proportional hazard model). A large number of covariates were included in the study.	This was a well-designed thorough study that reports on a large number of findings. Those interested in a more in-depth look at the findings are directed towards the original article. Key findings as they relate/add to the current study: Many of the findings in the Washington State study are consistent to the findings in this study. Perhaps the most notable difference is related to mental health issues. Mental health issues are defined differently in the two studies with this study relying on diagnosis as opposed to a screener. Additionally, this study includes additional covariates including Placement with a sibling that was related to a decrease in run behavior. Also, this study looked more closely at factors related to subsequent runs. Although there were some significant correlations with the included covariates, when compared to just first runs the correlations were less numerous/less strong, with the exception that more prior runs was associated with an increased likelihood of future runs.	Study relies on data that is now about 20 years old. Also, sample was drawn from one state. To increase generalizability more recent data and data from other states needs to be examined.