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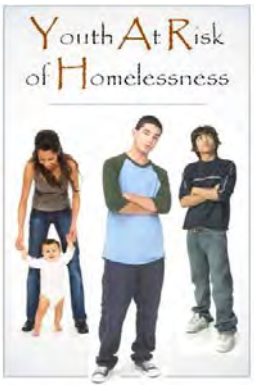

Youth at Risk of Homelessness

Identifying Key Predictive Factors among Youth Aging Out of Foster Care in Washington State

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Report to the DSHS Children's Administration in collaboration with the United Way of King County, Partners for Our Children, and Building Changes under a grant (90CA1807-01-01) from the Administration for Children and Families, U.S. Department of Health and Human Services.

THE ADMINISTRATION FOR CHILDREN AND FAMILIES (ACF) within the U.S. Department of Health and Human Services (DHHS) has funded a Youth at Risk of Homelessness (YARH) planning grant in Washington State focused on youth with current or past experience in foster care. Within our state, the Department of Social and Health Services (DSHS) Children's Administration provides foster care placement services to children in need of protection because they are abused, neglected, or involved in family conflict. With the exception of youth participating in the Foster Care to 21 or Extended Foster Care programs, youth exit the system at age 18. Building on a prior analysis,[1] this report identifies key risk and protective factors associated with homelessness in the year after aging out of foster care. Although predictive modeling was conducted at the state level, we show the prevalence of key predictive factors for the two counties participating in the planning grant (King and Yakima).

Key Findings

We identified a population of 1,213 youth statewide who exited foster care in SFY 2011 or 2012 at age 17 years-old or older and did not return to care. We found the following:

1. ***Approximately one in four young people in our study experienced homelessness after aging out of care.*** Among the 1,213 youth in the study population who aged out of foster care, 335 experienced homelessness (broadly defined) at some point over the next 12 months.
2. ***Where youth live and how much they move while in placement matters.*** Youth who had been homeless or unstably housed according to other service systems, had changed schools a lot, or had two or more foster care placements were at increased risk of homelessness.[2] Youth who had ever been placed with a relative while in foster care had a *decreased* risk of homelessness. A history of running away from care was not significant in the predictive model, although it was strongly associated with many of the factors that were important in predicting homelessness.
3. ***"Cross-over youth" –those involved with both the foster care and the juvenile justice system—are at increased risk.*** Youth who had multiple convictions or adjudications and those who had been Juvenile Rehabilitation clients were more likely to experience homelessness. Similarly, youth with multiple placements in congregate care, as well as prior evidence of behavior issues recorded by child welfare caseworkers were at increased risk.

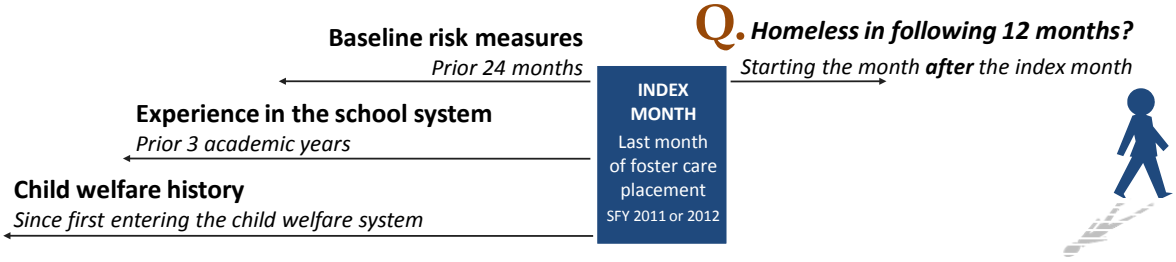
[1] Shah, M.F. et al. (2013). "The Housing Status and Well-Being of Youth Aging Out of Foster Care in Washington State," Olympia, WA: DSHS Research and Data Analysis Division, http://publications.rda.dshs.wa.gov/1489/.

[2] For the purposes of counting foster care placements, we *excluded* the following events: short-term hospital stays, respite care, short-term Juvenile Rehabilitation detentions, runaway events, Trial Return Home/In-Home Dependency if it was the first or last record of the removal episode, and events lasting fewer than 30 days regardless of type if the individual was placed in the same foster home before and after the event.

Study Methods

Study Population and Timeline

The study population included 1,213 youth whose last month in foster care—referred to in this report as the "index month"—was in SFY 2011 or 2012. We included only individuals who were age 17 or above as of the month following the index month and whose last foster care placement was not a Trial Return Home/In-Home Dependency (TRH/IHD) or adoption. We also restricted the study population to individuals who were not missing child welfare intake or placement data. Finally, we excluded 60 individuals who were identified as homeless in the DSHS Automated Client Eligibility System (ACES) in the month prior to the index month in order to provide a more accurate view of how many individuals were *newly* experiencing housing instability. Information about housing status is only updated in ACES at eligibility determination, re-determination, and when clients contact DSHS to report a change in their living arrangement, so some individuals may appear to be homeless according to ACES even after they have been successfully housed.



Data and Measures

This analysis leverages data from the INVEST 2012 database, which contains de-identified education data from OFM's Education Research and Data Center P-20 data warehouse combined with social, health, and criminal justice data for individuals served by DSHS between SFY 2000 and 2012.

In particular, data from the following systems was used in calibrating the predictive model:

- Child welfare data, including number and types of placements, type of abuse (sexual, physical, neglect, other), and other information recorded by caseworkers.
- Education data, including Grade Point Average, drop-out status, unexcused absences, number of school changes, and housing issues identified by homeless school laisions.
- Homeless service system data, including receipt of emergency shelter, transitional housing, rent assistance, and permanent/permanent supportive housing recorded in the Homeless Management Information System (HMIS).
- Public assistance data on housing status recorded by DSHS financial eligibility caseworkers as well as receipt of services through the DSHS Economic Services Administration.
- Health and behavioral health system data, including health status based on chronic illness risk scores, alcohol or other drug (AOD) treatment need, injuries, and mental illness.

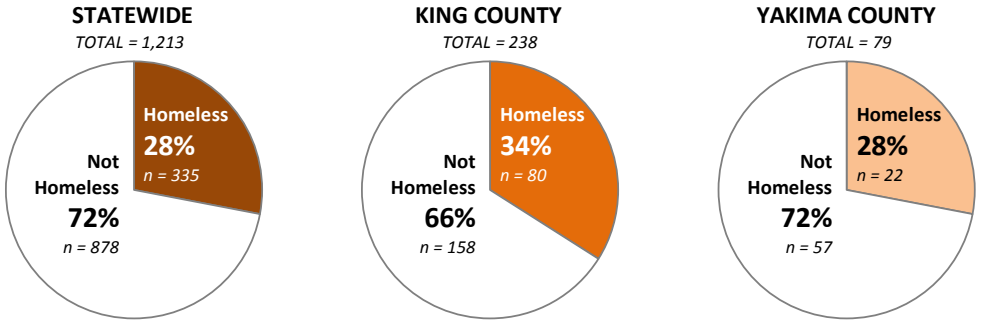
Defining Homelessness as an Outcome

We identified individuals as homeless in the 12-month period following the index month if they were homeless or unstably housed in either the DSHS Automated Client Eligibility System (ACES) or the Homeless Management Information System (HMIS). Youth were identified as homeless in ACES if they newly became homeless with housing, homeless without housing, or were living in emergency or domestic violence shelters at any point in the follow-up year. Youth were identified as homeless in HMIS if they received emergency shelter, transitional housing, or Homeless Prevention and Rapid Re-Housing (HPRR) services at any point in the 12 months following the index month.

Observed Homelessness in the Months Following Exit from Care

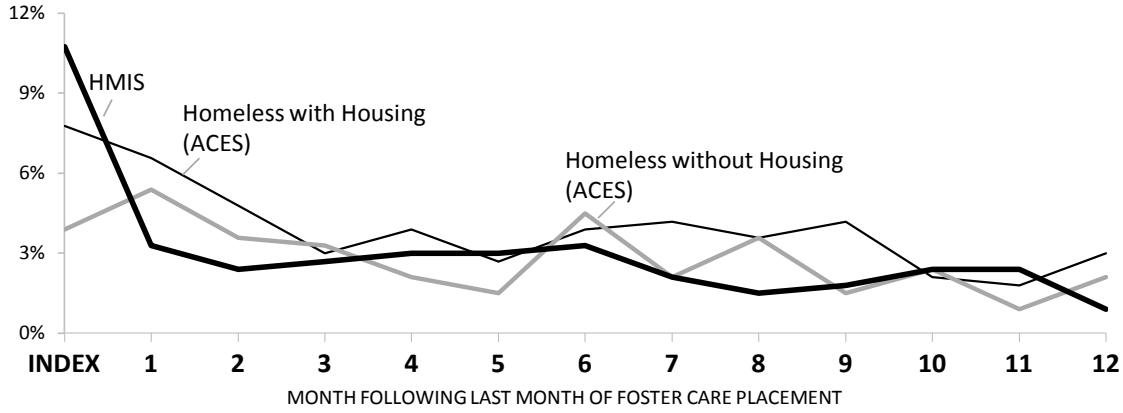
In the study population overall, we identified 335 youth (28 percent) as homeless in the 12-month period following exit from foster care. Although only 22 youth in Yakima County were identified as homeless, the rate of homelessness was the same as the state level (also 28 percent). In King County, 34 percent of youth in the study population experienced homelessness after aging out (n = 80).

Proportion of Youth Experiencing Homelessness after Aging Out of Foster Care



Among the 355 youth who became homeless, we observed the proportion who were *newly* identified in ACES or HMIS as homeless in each month of the follow-up period, including the index month. The biggest spike in newly identified homelessness occurred in the index (exit) month, with 11 percent (33 of 335) receiving HMIS-recorded services (primarily emergency shelter or transitional housing) and 8 percent (26 of 335) identified by DSHS eligibility workers as homeless with housing.

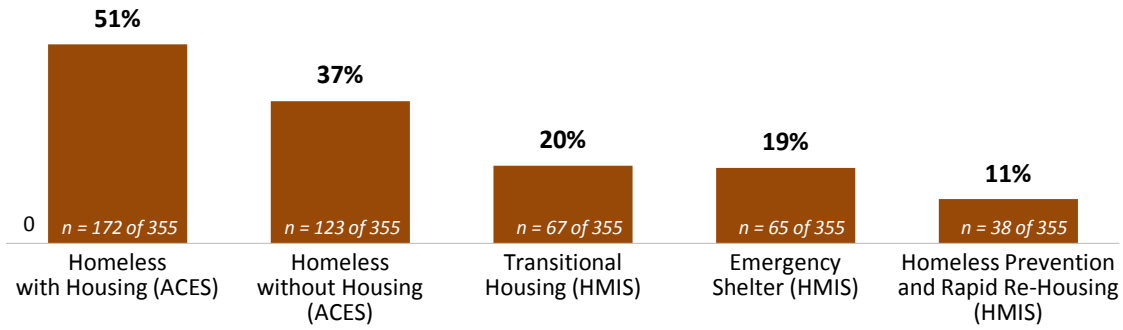
Youth who were NEW to homelessness each month in the transition out of foster care



Over half of the 335 youth who became homeless were identified as homeless with housing by DSHS caseworkers, suggesting that many may have stayed temporarily with friends or family.

Homelessness in ACES and HMIS in the 12 Months after Aging Out

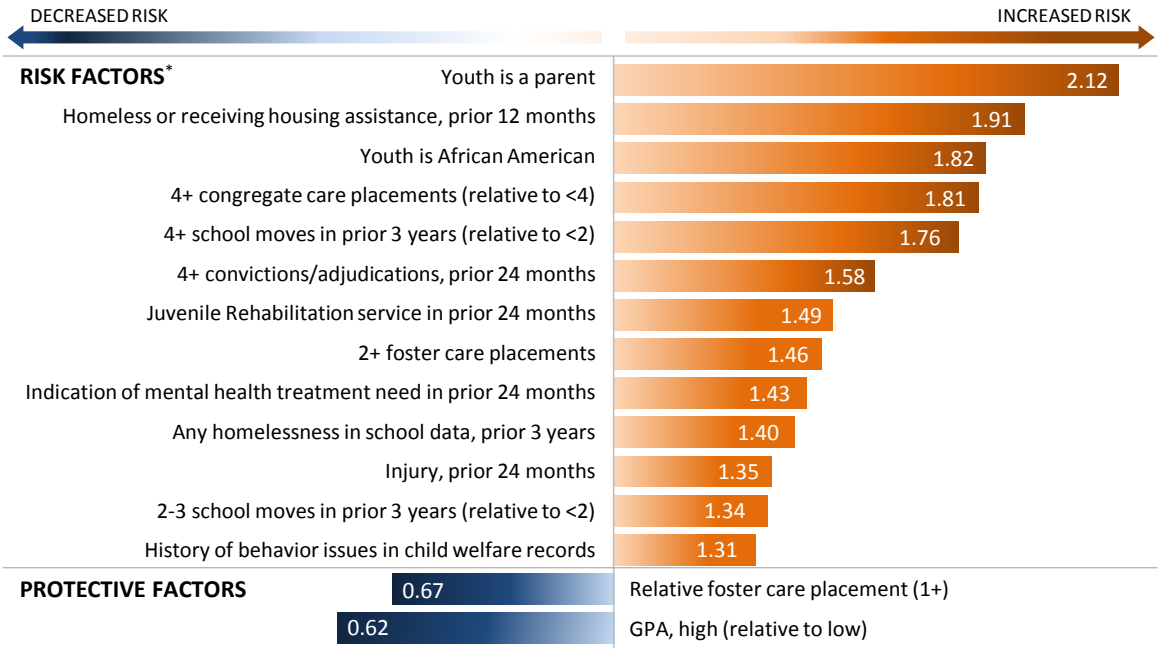
Total homeless = 355



Predicting Homelessness among Youth Aging Out of Care

We estimated a logistic regression model predicting whether a young person in the study population became homeless in the 12 months after aging out of care. Compared to other youth, those who had experienced a disrupted adoption were over three times as likely and those who had parented a child were over twice as likely to experience homelessness. Two actionable factors that were highly predictive included experiencing four or more congregate care placements and experiencing four or more school changes in the past three years. In addition, we identified two protective factors that decreased the odds that a young person would become homeless: having had at least one foster care placement with a relative and having a high cumulative Grade Point Average (GPA).

ODDS RATIOS | **Odds of Experiencing Homelessness after Aging Out of from Foster Care**



*NOTE: 1) Disrupted adoptions are highly predictive of homelessness (Odds Ratio = 3.39), but the prevalence is extremely low (2 percent) and therefore not included in the above chart, 2) prior homelessness or housing assistance was based on data from ACES and HMIS and included permanent and permanent supportive housing, and 3) all factors are statistically significant at p <.05 except history of behavior issues in child welfare records (p = .22).

Calculating a Homeless Risk Score

We then included these same factors in a linear probability regression model, which allowed us to calculate easily interpretable homeless risk scores. A score of .30 was determined to be a good cut-point to use in deciding whether or not a youth should be referred for intervention given that this score minimizes both false positives and false negatives.[3] Among youth we identified as becoming homeless (n = 335), a score of .30 would successfully identify 67 percent (n = 225) as likely to become homeless. A young person with this score would have a 30 percent chance of experiencing homelessness in the 12 months after aging out of foster care. The below table shows the proportion of youth overall, as well as separately for King and Yakima counties, who have calculated scores at or above the .30 threshold.

	STATEWIDE	KING COUNTY	YAKIMA COUNTY
Total number of youth in the study population	1,213	238	79
Youth with a calculated score ≥ .30	481	117	29
Percent of Total	*40%*	*49%*	*37%*

[3] Note that the highest observed score for an individual in the study population was .86.

HYPOTHETICAL EXAMPLES

Using a Calculated Risk Score to Support Referral Decisions

HYPOTHETICAL CASE #1

HOMELESSNESS RISK SCALE

HIGH

Jordan

Jordan is a white, non-Hispanic young man with a history of behavior problems. He has had more than four convictions and been in a Juvenile Rehabilitation (JR) facility within the past 24 months. Due to his movement in and out of JR and congregate care facilities, he has changed schools five times in the past three school years. He also has a history of running away from congregate care facilities and has been identified as homeless in HMIS due to a spell in an emergency shelter. There is a 62 percent chance that Jordan will experience homelessness or housing instability in the year after exiting foster care.

Calculating Jordan's Risk Score

Factors	The Tally SCORE
Starting score	3.9%
Homeless in prior 12 months	13.2%
4+ congregate care placements	12.2%
4+ school moves	10.1%
4+ convictions, prior 24 months	9.8%
Juvenile rehab, prior 24 months	7.5%
History of behavior issues	5.0%

TOTAL SCORE = 62%

Refer for Intervention

HYPOTHETICAL CASE #2

HOMELESSNESS RISK SCALE

LOW

Julia

Julia is a young Hispanic woman who lives with her maternal grandmother and has had only one prior foster care placement. She has been doing well in school and has a high GPA relative to her peers who have also been in foster care. She struggles with depression but does not have evidence of other key risk factors. There is just a 1 percent chance she will experience homelessness or housing instability in the 12 months following exit from foster care.

Calculating Julia's Risk Score

Factors	The Tally SCORE
Starting score	3.9%
1+ relative care placement	–6.8%
High GPA	–6.8%
Mental illness, prior 24 months	4.9%
2+ foster care placements	5.6%

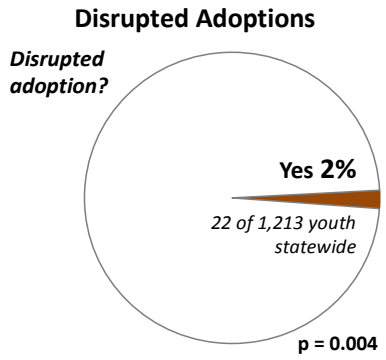
TOTAL SCORE = 1%

Do Not Refer for Intervention

Prevalence of Key Predictive Factors: Youth Aging Out of Foster Care

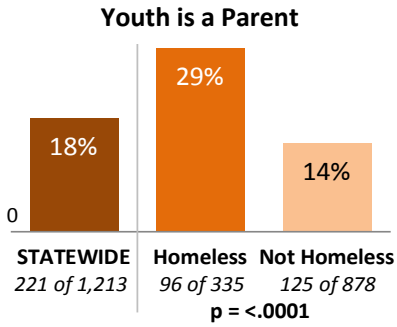
The above analysis provides insight into which factors best predict whether an individual is likely to experience homelessness in the year after aging out of foster care. It is also helpful to consider how prevalent each of the various predictive factors are for youth in the study population.

RISK FACTOR | *A small number of youth have experienced a disrupted adoption*



Youth who had been adopted but then returned to placement—regardless of whether the adoptive parents terminated parental rights—were at particular risk for homelessness (Odds Ratio = 3.39; p = 0.008). Yet a very small number of youth in the study population statewide (only 2 percent) had experienced a disrupted adoption over their lifetime. It is worth noting that this measure may also be capturing some behavior or adjustment issues that were not being measured through other risk factors included in the statistical model.

RISK FACTOR | *Youth who become homeless are more likely to be parents*



Youth who had parented a child—regardless of whether the child was living with them—were more likely to become homeless after aging out of care (Odds Ratio = 2.12; p < 0.0001). Youth were identified as parents if they had been listed on a child's birth certificate in Washington State or appeared as a parent in the DSHS Support Enforcement Management System (SEMS) *and* their child had been served by DSHS (including through child support). Almost twice as many of the youth who became homeless were parents relative to youth who did not become homeless (29 percent compared to 14 percent). In addition, 80 percent of these youth were women. Another RDA study has found that among young women under the age of 20 who become parents in Washington State, 79 percent of those in foster care have their first child by age 17 compared to only 29 percent of young mothers on Medicaid and 21 percent of young mothers not on Medicaid.[4]

IN THEIR WORDS[5]

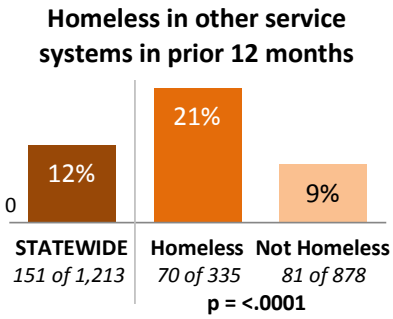
Youth Say:

- You can't get child care without a job and you can't get a job without child care.
- As a parent who is also a youth in foster care, it can feel like you're living under a microscope.
- There are logistical challenges of coordinating your child's care with your own education.
- Many transitional housing programs for youth and young adults do not allow families.

[4] Cawthon, Laurie, et al. (2014). "Pregnant and Parenting Youth in Foster Care in Washington State: Comparison to Other Teens and Young Women who Gave Birth," Olympia, WA: DSHS Research and Data Analysis Division, http://publications.rda.dshs.wa.gov/1500/.

[5] Youth perspective was provided to the research team through de-identified notes collected by the Mockingbird Society based on a focus group convened with eight young adults who had experience with both foster care and homelessness. Individual responses have been paraphrased and are not direct quotes.

RISK FACTOR | ***Youth who become homeless are more likely to have prior housing issues***



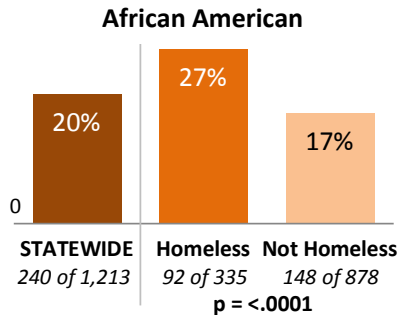
Youth who had experienced housing instability recorded in either the public assistance or homeless service system at some point in the 12 months prior to aging out were 91 percent more likely to experience homeless compared to their peers (Odds Ratio = 1.91; p = 0.001). We identified youth as having recent housing issues at some point in the 12 months prior to aging out of care if they had been identified by DSHS financial eligibility workers as homeless with or without housing or had received emergency housing services recorded by local housing providers in the Homeless Management Information System (HMIS). Youth who became homeless after aging out were twice as likely as other youth in the study population to have experienced housing issues in the year prior to exit (21 percent compared to 9 percent). On average, youth in both groups had spent approximately 10 out of the prior 12 months in foster care. It is therefore possible that some youth experienced housing instability in months they were not in placement. We also found that over one-third of youth (56 of 151) who experienced housing issues prior to aging out of care had run away from placement at some point in the prior 12 month period.

IN THEIR WORDS

Youth Say:

- We're not running *from* we're running *to* a place where we feel safe, accepted, and where we can be ourselves.
- Sometimes it feels safer to be homeless than to stay where you are, especially if you are not accepted due to things like LGBTQ status[6], pregnancy, or religious differences.

RISK FACTOR | ***Youth who become homeless are more likely to be African American***



Youth in the study population who were African American were 82 percent more likely than other youth to experience homelessness after aging out (Odds Ratio = 1.82; p = 0.0003). Approximately 20 percent of youth in the study were African American. However, 27 percent of youth who became homeless following exit from care were African American, compared to 17 percent of youth who did not become homeless. The technical notes on page 13 show descriptive statistics for youth of other racial categories (White, Native American, Asian/Pacific Islander, and Other) and Hispanic origin, but none of these other categories were statistically significant in the predictive model. *(See page 12 for further discussion.)*

IN THEIR WORDS

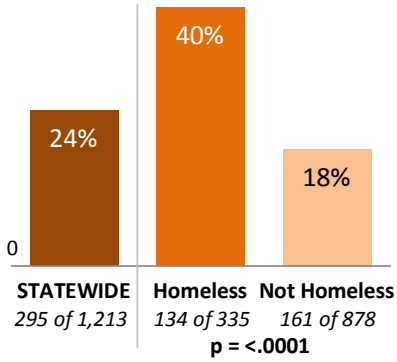
Youth Say:

- It's not really the color of a person's skin that matters, it's the structural racism and other things that are related to race, like socioeconomic status.

[6] "LGBTQ" refers to individuals who identify as lesbian, gay, bisexual, transgendered, or questioning.

RISK FACTOR | ***Youth with multiple congregate care placements are at greater risk***

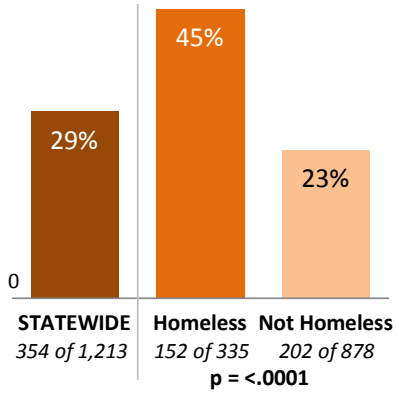
History of Multiple Congregate Care Placements (4+)



Youth who had 4 or more congregate care placements over their lifetime were 81 percent more likely than youth with fewer or no such placements to experience homelessness in the year after aging out (Odds Ratio = 1.81; p = 0.001). Congregate care was defined to include placement in any of the following: detention centers, group care (staff residential), group crisis residential centers, group homes, Juvenile Rehabilitation facilities, Regional Assessment Centers, Regional Crisis Residential Centers, and Secured Crisis Residential Centers. Over twice as many of the youth who became homeless had experienced multiple congregate care placements compared to their peers who did not become homeless (40 percent compared to 18 percent).

RISK FACTOR | ***Youth who become homeless more likely to have changed schools a lot***

Multiple School Moves in Past 3 Years (4+)



Youth who had four or more school moves in the prior three academic years, including the year in which they aged out, were 76 percent more likely than youth with fewer than two school moves to experience homelessness in the follow-up period (Odds Ratio = 1.76; p = .002). In terms of prevalence, 45 percent of youth who became homeless had experienced multiple school moves over the prior three years compared to just 23 percent of their peers who did not become homeless. Recent RDA research on school moves suggests that youth with multiple school moves are more likely to experience issues with homelessness, substance abuse, mental illness, juvenile justice involvement, and poor academic outcomes (such as lower test scores, more unexcused absences, and a higher drop-out rate).[7]

IN THEIR WORDS

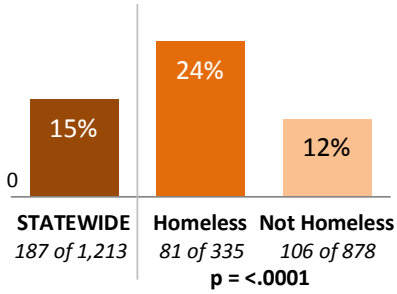
Youth Say:

- There are lots of reasons you might change schools, such as having an Individualized Education Plan (IEP) or 504 plan your school cannot accommodate, changing placements, moving with your foster family, getting expelled, being bullied, being transferred to an alternative school, or having restraining orders filed against or by fellow students.
- Changing schools is hard, especially since credits don't always transfer between schools and districts. You can be on track at your old school but fall back a grade at your new school due to different credit requirements.
- It takes time for teachers to get to know you and to understand how best to help you learn. You can be thriving at one school and failing at the next because of this.
- There are also social challenges, such as knowing where to sit in the lunchroom, trying to keep up with athletics and commit to a team, and explaining what a Junior is doing in Freshman English.

[7] Estee, Sharon, et al. (2014). "School Moves: School Changes Related to Social Service Use, Risk Factors, and Academic Performance," Olympia, WA: DSHS Research and Data Analysis Division, http://publications.rda.dshs.wa.gov/1513/. Please see page 15 of that report for a discussion of the decision rules also employed here to avoid counting school changes that occur normally with grade progression.

RISK FACTOR | ***Youth who become homeless more likely to have multiple adjudications***

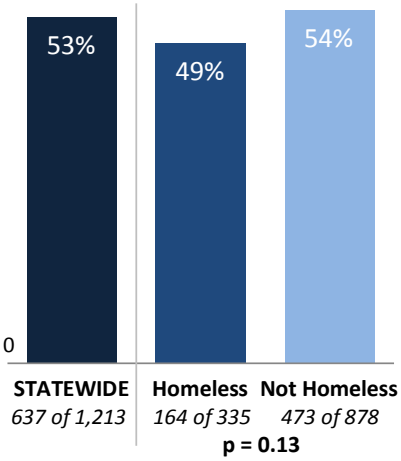
Multiple Convictions/Adjudications in the Last 24 Months (4+)



Youth with four or more adjudications in the two years prior to aging out were 58 percent more likely than other youth to experience homelessness in the year after exit (Odds Ratio = 1.58; p = .04). Adjudications were identified through the Washington State Institute for Public Policy (WSIPP) criminal history file and include any of the following: 1) convicted, 2) deferred (they admitted guilt and were sentenced to one year of supervision), 3) convicted with a sentence to detention, 4) diverted, or 5) convicted and sentenced to a DSHS Juvenile Rehabilitation institution. In terms of prevalence, youth who experienced homelessness after aging out of care were twice as likely to have had four or more adjudications in the two-year period prior to exit (24 percent compared to 12 percent).

PROTECTIVE FACTOR | ***Homeless youth less likely to have had a relative caregiver***

At Least One Relative Placement



Youth who had experienced at least one placement with a relative caregiver were 33 percent less likely to experience homelessness compared to other youth (Odds Ratio = 0.67; p = 0.01). We identified youth as having at least one relative foster care placement regardless of whether or not the relative received payment for caring for the child. Overall, 53 percent of youth in the study population had ever been placed with a relative caregiver. The difference in prevalence was not statistically significant in a descriptive analysis (49 percent of those who became homeless compared to 54 percent of those who did not had ever been placed with a relative; p = 0.13). However, this factor *was* statistically significant in the predictive model, suggesting it actually does serve as a protective factor once it is isolated from other factors associated with it.

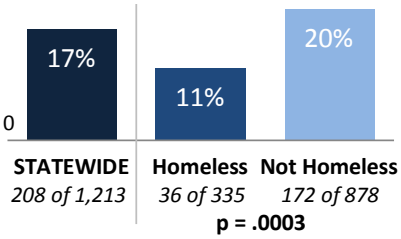
IN THEIR WORDS

Youth Say:

- Some relatives—such as aunts and grandparents—are willing to provide financial and material support whenever it is needed.
- Being placed with relatives can keep you connected to your community and other family members. It can help you learn about your cultural background, as well as things about your family history—like struggles with addiction—that you're careful not to repeat.
- If you have a family that is supportive, then you feel important and loved.

PROTECTIVE FACTOR | ***Homeless youth less likely to have had high GPAs***

High Grade Point Average



Youth with relatively high Grade Point Averages (GPAs) were 38 percent less likely to become homeless (Odds Ratio = 0.62; p = 0.03). We examined cumulative GPAs in the academic year that contained the index month and grouped students into one of four categories. The average GPA for students in the highest quartile was 3.19. We found that 20 percent of youth who did *not* become homeless were in the high GPA group compared to just 11 percent of those who did experience homelessness.

Prevalence of Predictive Factors by State and Community

We examined the prevalence of the key predictive factors for the statewide study population, as well as two subgroups: those living in King County and those living in Yakima County in the month they exited foster care. Due to the very small number of youth aging out of care in Yakima in the study period (n = 79), it was not possible to test between-group differences for statistical significance. In addition, numbers have been redacted in cases where 10 or fewer youth in a community were identified as having a particular risk factor. Overall, the prevalence of risk factors was not dramatically different between communities; however, a few differences emerge.

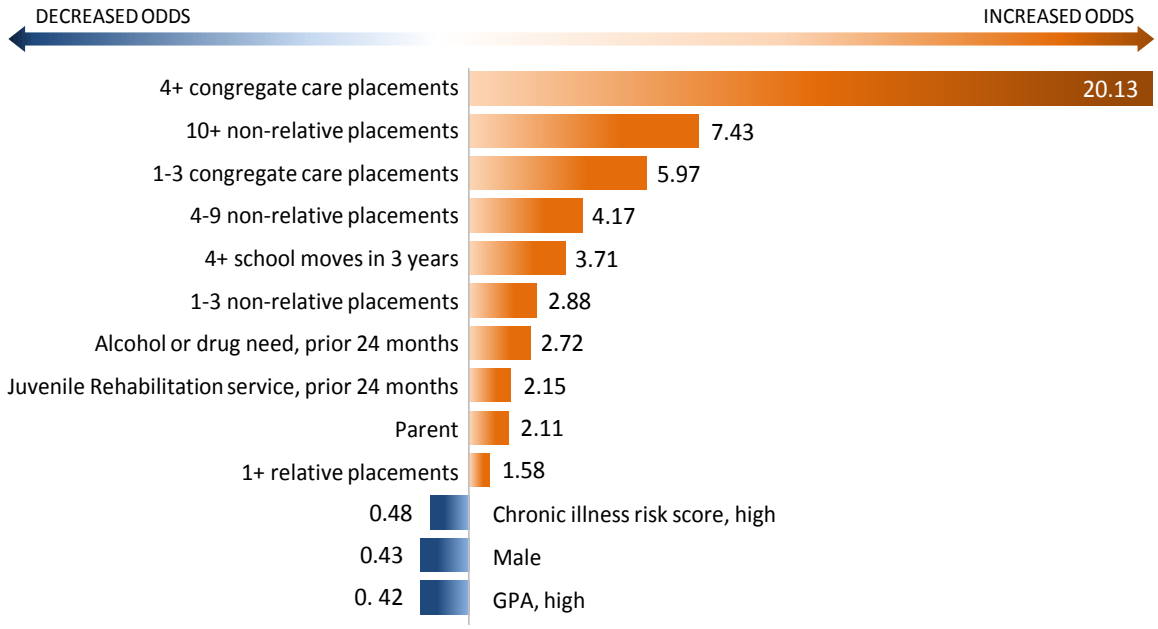
- A higher proportion of youth in Yakima County were parents (6 percent higher than the state and 7 percent higher than in King County)
- A higher proportion of youth in King County were African American (more than twice as high as the state)
- A smaller proportion of youth in King County had four or more convictions/adjudications in the 24 months prior to exiting care (7 percent lower than the state and 8 percent lower than Yakima)
- Relative to Yakima County, a higher proportion of youth in King County (+7 percent) experienced homelessness according to school data in the prior three academic years
- Relative to King County, a higher proportion of youth in Yakima County (+6 percent) experienced 2-3 school moves over the prior three academic years
- A higher proportion of youth in King County had ever been placed in foster care with relatives (12 percent higher than the state and 9 percent higher than Yakima)

	WASHINGTON STATE *TOTAL = 1,213*		**KING COUNTY** *TOTAL = 238*		**YAKIMA COUNTY** *TOTAL = 79*	
RISK FACTORS	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Disrupted Adoption	22	2%	–	–	–	–
Youth is a Parent	221	18%	41	17%	19	24%
Homeless or receiving housing assistance, prior 12 months	151	12%	36	15%	–	–
Youth is African American	240	20%	112	47%	–	–
4+ congregate care placements	295	24%	68	29%	19	24%
4+ school moves in prior 3 years	354	29%	64	27%	21	27%
4+ convictions/adjudications, prior 24 months	187	15%	20	8%	13	16%
Juvenile Rehabilitation service in prior 24 months	88	7%	14	6%	–	–
2+ foster care placements	1,043	86%	210	88%	70	89%
Indication of mental health treatment need in prior 24 months	891	73%	176	74%	59	75%
Any homelessness in school data, prior 3 years	298	25%	72	30%	18	23%
Injury, prior 24 months	570	47%	102	43%	36	46%
2-3 school moves in prior 3 years	310	26%	66	28%	27	34%
History of behavior issues in child welfare records	127	10%	22	9%	–	–
PROTECTIVE FACTORS						
1+ relative care placements	637	53%	154	65%	44	56%
GPA, high	208	17%	30	13%	–	–

Factors Associated with Running Away

Whether a youth had ever run away from a foster care placement did not "survive" the statistical modeling process predicting homelessness, but many of the measures associated with running away were retained in the model. Most notably, four factors that we found to be highly associated with whether a youth had ever run away were also highly predictive of later homelessness: 1) multiple congregate care placements, 2) multiple school moves, 3) Juvenile Rehabilitation involvement, and 4) being a parent. In addition, having a high GPA relative to peers was a protective factor in both models. It is worth noting that 85 of the 1,213 youth in the study population were last known to have run away, but only 35 of these youth were observed as homeless over the following 12-month period.

ODDS RATIOS | **Odds of Ever Having Run Away from Foster Care**



Receipt of Economic Services Following Exit from Care

Youth identified as homeless in the year after aging out of care were significantly more likely to be receiving a service from the DSHS Economic Services Administration (ESA) and to have Medicaid or similar medical coverage relative to youth not identified as homeless. It could be that youth who experienced housing instability also experienced economic and food insecurity. On the other hand, it is also possible that youth not identified as homeless are simply disconnected from services such that their housing status is not observed in administrative data. It is therefore encouraging that the majority of youth *not* identified as becoming homeless *are* connected to some services (81 percent to an ESA service). This high level of service penetration increases our confidence in the ability to identify housing instability since ESA caseworkers collect information on housing status.

Post 12 months[8]	**Become homeless**			**Not become homeless**			
	NUMBER	TOTAL	PERCENT	NUMBER	TOTAL	PERCENT	p value
Any ESA service	333	338	98.5%	702	871	80.6%	<.0001
TANF receipt	63	338	18.6%	129	871	14.8%	0.10
Basic Food receipt	321	338	95.0%	502	871	57.6%	<.0001
Medical coverage	326	335	97.3%	784	878	89.3%	<.0001

[8] The INVEST 2012 database only contains ESA service data through SFY 2012, so this analysis was conducted outside of INVEST using the same criteria to identify the study population. There are slightly larger denominators (338 and 871 compared to 335 and 878) since INVEST only includes individuals who match to education records.

Discussion

This analysis has shown that it is possible to predict with some degree of accuracy which youth leaving foster care are most likely to become homeless in the coming months. In particular, the following insights may inform efforts to design targeted interventions for youth at risk of homelessness:

It is possible to use a scoring algorithm to identify youth at greatest risk of homelessness.

- We have demonstrated how the predictive model developed here can be translated into a scoring algorithm used to target services to youth who may be at greatest risk.
- Such an approach is currently being implemented in the health care setting, where a web-based decision support tool provides frontline care managers with a risk score for each client based on their predicted medical costs.

Factors like race that can be measured with administrative data may, in part, stand in for factors that are less-easily measured.

- Notably, a much higher proportion of youth in King County were African American than in the state as a whole (47 percent compared to 20 percent). As youth suggested, it is likely that race is associated with other factors not included in the model. These factors could include aspects of the local housing market—including high rental costs and discrimination—that make it more difficult to find affordable housing.

A test of predictive accuracy of the model using a separate sample of youth was not possible.

- It is common practice in predictive modeling to do an out-of-sample validity test using a different sample from the one for whom the model was calibrated. That is, ideally we would apply the weights from the scoring algorithm developed here to a different sample of youth aging out of foster care. However, this was not yet possible because we used all available data for the current model for the following reasons: 1) HMIS data on homeless services is only available to us from SFY 2010 forward, 2) we needed to look at youth aging out of foster care over a two-year window of time in order to have a sufficient sample size, and 3) we only had information from ACES—needed for the outcome measure—through SFY 2013.

This report summarizes the results of an analysis that identified key risk and protective factors associated with whether or not someone becomes homeless in the year after aging out of foster care.

STUDY POPULATION

To identify the study population, we began with 1,356 individuals whose last foster care placement occurred in State Fiscal Year (SFY) 2011 or 2012 and were 17 years-old or older as of the month after their last month in placement. We excluded the following individuals:

- 60 individuals who were recorded as homeless in the DSHS Automated Client Eligibility System (ACES) in the month prior to exiting care,
- 72 individuals who were missing child welfare intake or placement data, and
- 11 individuals whose last placement was either a trial return home/in-home dependency or adoption

Once the above restrictions were made, there were 1,213 remaining in the study population used for analysis.

Demographics

The decision was made to include gender (measured as male or female due to available data), race, and Hispanic origin in the analysis since it is important to consider whether youth in minority groups are at greater risk of experiencing homelessness. In a bivariate descriptive analysis, we found that youth who were African American and those whose race was identified as "Other" in DSHS records were significantly more likely to be homeless (rather than not homeless) at some point in the year after aging out of care.

	Total		Became homeless		Did not become homeless		
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	p-value
TOTAL	**1,213**		**335**		**878**		
Male	558	46%	162	48%	396	45%	0.31
African American	240	20%	92	27%	148	17%	<.0001*
Native American	263	22%	79	24%	184	21%	0.33
Hispanic	206	17%	57	17%	149	17%	0.94
White	1,020	84%	1,279	83%	741	84%	0.61
Asian/Pacific Islander	76	6%	22	7%	54	6%	0.79
Other	304	25%	100	30%	204	23%	0.02*

*p-values of 0.05 or below are generally considered statistically significant by conventional standards.

DATA SOURCE

The INVEST 2012 database contains de-identified education records combined with data from the DSHS Integrated Client Database for all individuals who received a DSHS service at any point between State Fiscal Year (SFY) 2000 and 2012 and were age 35 or younger in the first year they received a DSHS service in SFY 2000-12 (or any age if they received a service from the DSHS Economic Services Administration). Education data was provided and linked by the Washington State Office of Financial Management's Education Research and Data Center. K-12 data is compiled from student-level longitudinal education records collected by the Washington State Office of the Superintendent of Public Instruction (OSPI).

DATA AND MEASURES

- **Child welfare system.** Data on experiences youth had in foster care over their lifetime came from the FAMLINK information system maintained by the DSHS Children's Administration. This data was used to identify the number and types of placement events (including running away from care), type of abuse at intake (sexual, physical, neglect, other), the presence of behavior issues, and other information recorded by caseworkers.
- **School system.** Data on the K-12 public school system came from the Comprehensive Education Data and Research System (CEDARS), which contains data that has been submitted and reviewed by the schools.

- **Public assistance system.** Data from the Automated Client Eligibility System (ACES) was used to identify children who had received TANF and to also identify homeless/unstable housing recorded by caseworkers in the process of determining eligibility for public assistance.
- **Homeless system.** Data from the Homeless Management Information System (HMIS) was used to identify individuals defined as homeless by virtue of having received emergency shelter, transitional housing, or rent assistance recorded by local housing providers.
- **Health and behavioral health system.** Data from three information systems—ProviderOne (medical), the Consumer Information System (mental health), and TARGET (chemical dependency)—was used to identify the presence of substance abuse and mental illness over a two-year window of time based on health and behavioral health diagnoses, prescriptions, and treatment records. In addition, drug and alcohol-related arrest data maintained by the Washington State Patrol was used to identify likely substance abuse issues.

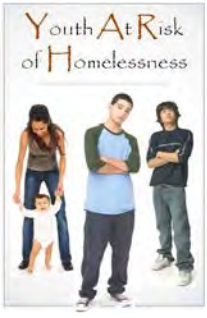
MODEL SPECIFICATION

The process for specifying the predictive model occurred over several months and involved the following steps:

STEP 1. ***Solicit input from key subject matter experts.*** The research team received input from five workgroups made up of service providers, program directors/executives, and other staff representing both public and non-profit agencies. These workgroups helped to identify some of the factors they would expect to be most predictive based on their experience serving foster care youth.

STEP 2. ***Bring together data elements, define the outcome measure, and conduct bi-variate analyses.*** An analytical database was constructed that included all possible measures that were available in INVEST 2012 and could potentially be predictive. We looked for associations between homelessness in the post-period and each measure separately. Three key activities occurred at this stage: 1) we refined the outcome measure so that homelessness was defined broadly, 2) we came up with ways of grouping variables that were likely to provide the most "signal" in the model, and 3) we narrowed down the list of measures to be included in the initial specification of the model.

STEP 3. ***Develop and refine the statistical model.*** Once a more narrow list of possible predictive factors had been identified, we conducted a stepwise regression analysis to identify factors that should be retained in the model based on their statistical significance. We then re-specified the model to include factors identified through the stepwise process, as well as additional factors that conceptually seemed important to include and were also statistically significant.



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