



Opportunity Youth

Factors that Predict Disengagement from School and Work Among Youth in Washington State

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OPPORTUNITY YOUTH are young people age 16 to 24 who are not engaged in school or work. This report identifies factors that predict whether youth served by the Department of Social and Health Services (DSHS) or the Health Care Authority (HCA) become disengaged from school and work. The transition to adulthood can be difficult for all young people as they gain autonomy and face new responsibilities. This report focuses specifically on vulnerable youth who may face additional challenges.

Key Findings

- Youth who were involved in the child welfare or criminal justice system in adolescence were at increased risk of disengagement, partially due to the fact that they tended to experience other family, social, and health risk factors.** Youth that interacted with the child welfare system or the criminal justice system (but not both systems) had twice the odds of disengagement relative to youth served by DSHS or HCA who were not involved with either system. Youth involved in both systems—sometimes referred to as cross-over youth—had 3.5 times the odds of disengagement. Much of the increased risk could be explained by other related risk factors including poverty, homelessness, behavioral health conditions, and disability.
- Other risk and protective factors for disengagement can be identified from K-12 data and young adult experiences.** Youth with poor attendance, who changed schools, and who were served by special education or English as a second language education while in their teens were at higher risk of later disengagement. Those who earned good grades were at reduced risk. Teens and young adults who become parents, experienced homelessness, or interacted with the criminal justice system faced higher likelihood they will disengage in the following year.
- Youth experienced heightened risk of disengagement during times of transition, highlighting the need for transition assistance among vulnerable youth.** Leaving high school was associated with increased likelihood of disengagement in the following year among DSHS and HCA-served youth. Youth who received special education or bilingual education services while they were teens and those with disabilities were at the highest risk of disengagement after high school.
- Youth with work experience and those enrolled in college were less likely to later disengage.** Making the first transition to postsecondary education and/or work was highly important for DSHS and HCA-served youth. Policies and programs that aid in the transition following high school or combine education with work experience or job training could be helpful.

Q. What is the overall risk of disengagement among DSHS and HCA-served youth?

Our study population included 15 year-olds¹ who were enrolled in K-12 education and were served by DSHS or HCA at some point between 2000 and 2012. DSHS and HCA served an estimated 63 percent of children ages 0 to 17 in Washington State during this time period, most commonly through medical coverage and economic services such as Basic Food.

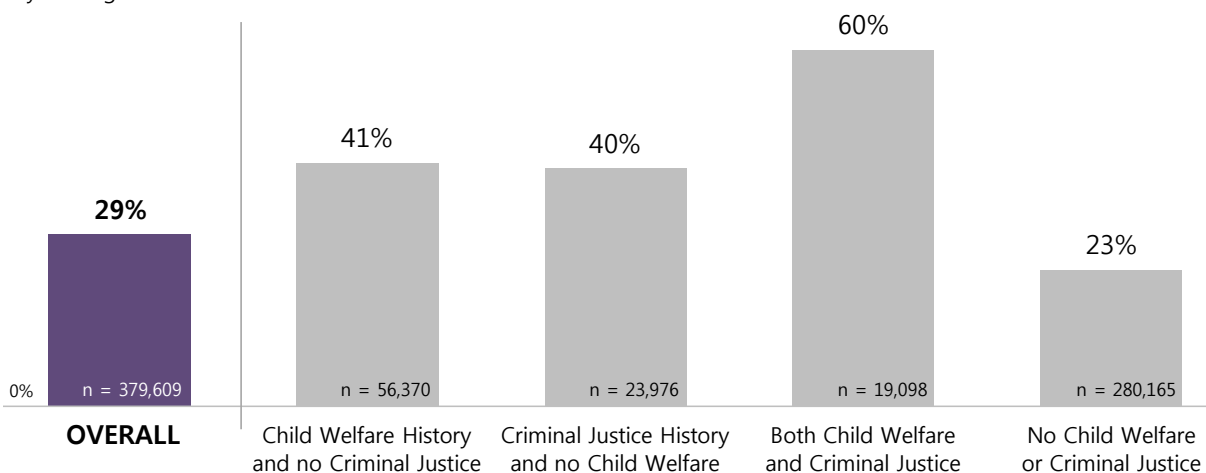
Starting at age 16, we measured whether each youth had disengaged from school or work for a complete year and continued measuring each year through age 22. While the definition of Opportunity Youth includes young people up to 24 years old, we did not have enough years of longitudinal data to include 23- and 24-year-olds. We use cohorts of 15 year olds from multiple years, so young people in more recent cohorts had less follow up time, while the oldest cohort—those who were 15 in Academic Year 2006—were followed through age 22. Once a young person spent a year disengaged, they were no longer followed into later years.

Using the age-specific rates of disengagement observed in this population, we can project the likelihood of experiencing a first disengagement from work and school by age 22. Among the entire cohort of 15 year olds, we estimate 29 percent would experience at least one year of disengagement by the time they turned 22.

FIGURE 1.

Projected Probability of Disengagement by Age 22

For youth Age 15 in AY 2006 to AY 2011



SOURCE: INVEST database and calculated age-specific probabilities of disengagement.

Disengagement was more prevalent in young people involved in the child welfare and/or criminal justice system. Among youth who had child welfare histories (but not criminal justice histories), about 41 percent were projected to experience at least one year of disengagement by age 22. Among youth who had criminal justice histories (but not child welfare histories), about 40 percent were projected to experience at least one year of disengagement by age 22. Among youth who had experiences with both the child welfare system and criminal justice system, about 60 percent were projected to experience at least one year of disengagement by 22. The comparable proportion for DSHS and HCA-served youth in the cohort who had no experience with either system was 23 percent. Most youth in the cohort had no experience with either system.

¹ We included youth who turned 15 at some point between Academic Year 2006 and Academic year 2011.

Q. What factors from early adolescence are predictive of later disengagement?

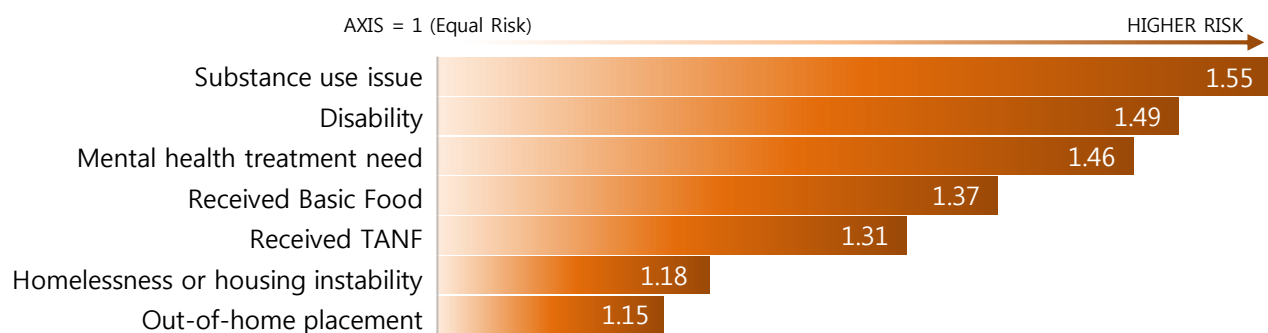
Using discrete-time event history analysis, we predicted the likelihood that a young person disengaged from school and work for the first time in a given year. Since earlier life experiences have been found to have lasting impacts on outcomes among adults, we first examined predictors measured when youth were between 11 and 15 years of age. Impacts are expressed in terms of odds-ratios (see the Technical Notes for an explanation of odds-ratios).

Substance use treatment need, disability, and mental health treatment need were the strongest predictors from the set of early adolescent risk indicators.

FIGURE 2.

Adolescent Factors Predicting Later Disengagement

Disengagement odds-ratios for selected risk factors, measured age 11 to 15



SOURCE: INVEST database. (All predictors significant at the .001 level)

Receipt of Basic Food or TANF, homelessness, and out-of-home placement in early adolescence were also significant predictors of disengagement in late adolescence and young adulthood, though their impacts on odds of disengagement were somewhat smaller.

Once these early adolescent experiences and conditions were taken into account, about one-half of the increased odds of disengagement observed among the child welfare and criminal justice involved youth were explained. This suggests that a large portion of the increase risk we see for these youth can be attributed to their greater experience of disability, behavioral health conditions, poverty, homelessness, and the experiences of abuse or neglect that lead to out-of-home placement.

When are youth most at risk of disengagement?

Youth are most likely to disengage immediately after leaving high school, with age-specific probabilities of disengagement peaking in the year youth turn 19. The state's K-12, higher education, and workforce systems are independent, and youth face an abrupt transition at the end of high school. Youth must navigate the transition to one of two new and different systems—either higher education or the workforce—in order to remain engaged. Often they face this transition as young adults with fewer supports than before.

Our models indicate that youth that successfully navigate the transition—those that enroll in college and those that work—are much less likely to later become disengaged. The first year after high school, whether the youth graduates or not, is critical. Therefore, the years leading up to high school exit are vital for offering youth supports to prepare for their post-high school path, be it college, vocational training, or employment.



Q. What factors from school records are predictive of later disengagement?

To be included in the study, members of the cohort had to be engaged in K-12 education at age 15. With this restriction, we were able to examine the predictive value of information from educational records at age 15.² Impacts are expressed as odds-ratios.

Youth who changed schools during the school year in which they turned 15 had significantly higher odds of later disengagement from work and school. There are a number of reasons that school change could be associated with later disengagement. The school change itself could be disruptive to youth. However, it is also possible that school change is a sign of unmeasured issues with the youth or their families. For example, it may indicate family instability or stress, or the measure may be capturing suspensions or expulsions from school that precipitate a school change. Student-level discipline data was not collected during the years covered by the study, so we were unable to examine disciplinary issues as an alternative explanation for this finding.

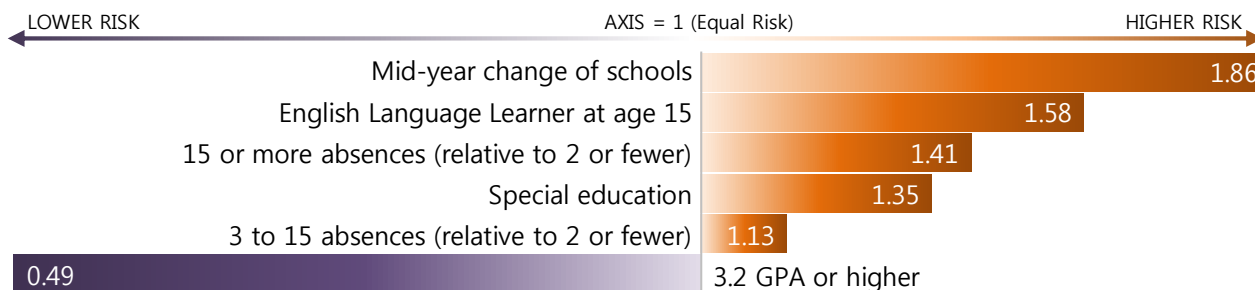
Other factors which increased the risk of later disengagement include poor attendance and use of special education or English language learner (ELL) services at age 15. Poor attendance in high school may be an early sign of disengagement or may signal challenges in other life areas. Youth who receive special education may face barriers to college and employment related to their disabilities that other youth do not face. Youth who receive ELL services in their teen years are likely to be recent immigrants, since youth who used English language support services do so in earlier elementary years and would have exited by age 15. Therefore, our finding suggests that youth who require language support in their teens are more likely to struggle to stay engaged in school and work.

Earning good grades at age 15 is a protective factor that reduces the likelihood of later disengagement, controlling for other factors included in the model.

FIGURE 3.

School Factors Predicting Later Disengagement

Disengagement odds-ratios for risk and protective factors from school records, measured age 15



SOURCE: INVEST database. (All predictors significant at the .001 level)

It is important to note that the influence of poverty, out-of-home placement, homelessness, disability and behavioral health conditions identified at earlier time points are attenuated when school-based factors are added into the predictive model. This does not mean that those experiences and conditions no longer impact youth. Instead, it indicates that youth with those risk factors are also more likely to experience other risk factors included in school records.

² The majority of the youth in this study were in 9th grade in the baseline year in which they turned 15, though some youth were in higher or lower grades.

Q. What late adolescence and early adulthood life events are predictive of disengagement?

While indicators from social and health services received in early adolescence and school-based factors from the teen years significantly predict disengagement, we were also interested in whether early adult life events may also be important predictors. Impacts are expressed as odds-ratios.

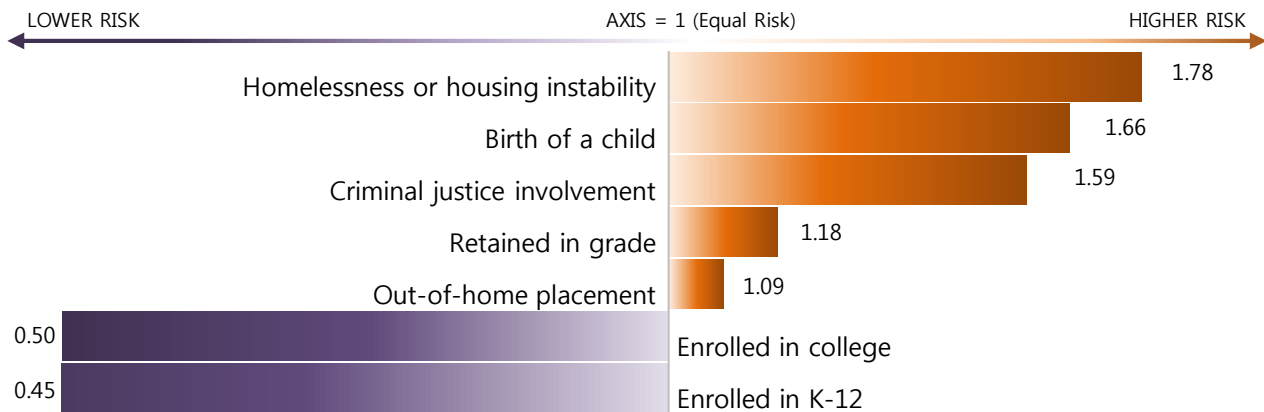
We find that experiencing homelessness, becoming a parent, and interacting with the criminal justice system in a year that a youth is not disengaged significantly increases the odds that they will become disengaged the following year. Smaller increases in odds of disengagement in the following year are observed for youth that are retained in the same grade and those who are in out-of-home placement. In an additional model, we examined whether the increase in risk associated with parenthood differed by gender. We found a significant interaction: having a child increased the likelihood of disengagement more for young women than for young men.

These young adult experiences are closer in time to when youth become disengaged, and as such, are strong predictors in the final model. It is again important to note that youth with childhood risk factors identified earlier, such as youth homelessness, behavioral health conditions and poverty, are more likely to experience events that increase their risk such as continued housing instability, and less likely to experience events that decrease their risk such as enrolling in college. Therefore, prevention efforts must be available throughout this time period.

FIGURE 4.

Young Adult Factors Predicting Later Disengagement

Disengagement odds-ratios associated with selected life events, measured yearly age 15 to 21



SOURCE: INVEST database. (All factors except out-of-home placement significant at the .001 level, placement significant at the .05 level)

– More on Opportunity Youth –

Opportunity Youth
Young People Disengaged
from School and Work
in South King County
NOVEMBER 2016

<https://www.dshs.wa.gov/sesa/rda/research-reports>

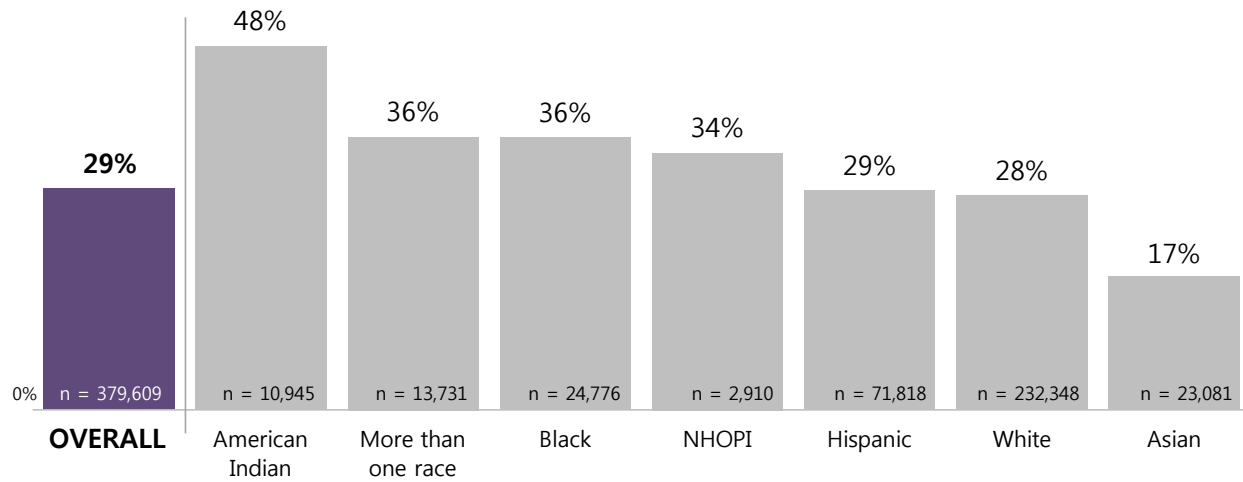
Q. Are there disparities in disengagement by race/ethnicity?

Among DSHS and HCA-served young people, American Indian, Black, Pacific Islander, and multi-racial youth disengaged at higher rates relative to white and Asian youth. Hispanic youth disengaged at slightly higher rates than white youth and much greater rates than Asian youth. Asian youth had the lowest rates of disengagement. Figure 5 displays the probability of disengagement from school and work by age 22 for the cohort of youth in this study.

FIGURE 5.

Projected Probability of Disengagement by Age 22 Disaggregated by Race/Ethnicity

For youth Age 15 in AY 2006 to AY 2011



SOURCE: INVEST database and calculated age-specific probabilities of disengagement.

Much of the increased disengagement experienced by American Indian, Black, Pacific Islander, and multi-racial youth was explained by disparities in risk factors that are more likely to impact these groups. In other words, when compared to white and Asian students with similar risk profiles (i.e. with the same risk and protective factors), these youth disengage at similar rates. The one exception is Native American youth who disengage slightly more than even similar white and Asian students. American Indian, Black, Pacific Islander, and multi-racial youth are at higher risk of becoming disengaged because they are more likely to have experienced the complex risk factors we examined throughout this report.

Targeting Services to Prevent Disengagement

Support vulnerable youth and families

Our study indicated that experiences in childhood and adolescence can continue to impact youth into adulthood. For example, the high rates of disengagement of youth with child welfare and/or criminal justice histories in our cohort can be explained by early adolescent factors included in the model.

- Disengagement may be reduced by supporting youth and families who experience poverty and homelessness, and providing supports for youth with behavioral health conditions and disabilities.

Use school enrollment and attendance data to identify youth at risk

Our modeling found that many factors from school records are strong predictors of becoming Opportunity Youth. Mid-year school changes and chronic absenteeism are both strong signals that a

youth is at risk of disengagement. They also may be signs that youth are facing current instability or the impacts of earlier trauma.

- Students with patterns of missing school and changing schools should be screened to identify the presence of other issues, such as homelessness, family instability, or behavioral health needs. If needed, youth can be connected to services to address their needs.

Focus on youth with high risk of disconnecting after high school

We found that teens who were served by the special education or bilingual education systems were at higher risk of disengagement. Making a successful transition to college or work after high school, even for those with high school diplomas, may be more difficult for these youth because of barriers relating to disability, language and possibly immigration status.

- Special focus on youth who have recently used special education or ELL services during the transition to adulthood is necessary to reduce risk of disengagement.

Focus interventions on young adults who experience certain life events

While experiences in early adolescence and in school are predictive of disengagement, more proximate events play a role as well. Notably, our study finds that experiencing homelessness, having a child, or interacting with the criminal justice system increases young people's chances of disengaging.

- Older youth who are parents, have spells of homelessness, or criminal justice involvement should be supported in order to stay connected to school or work. Subsidized childcare, rapid re-housing, and criminal justice transition programs are all examples of interventions that can aid youth in staying connected through these life events.

Improve preparation and support for the transition from high school

Our findings indicate that transition points are difficult for young adults, especially the transition after high school. Youth exiting high school face their future without the support and guidance they experienced in the K-12 system.

- Improved transition services that treat the end of high school as a hand off and not an exit would likely reduce the likelihood of later disengagement. The implementation of the High School and Beyond Plan in Washington is one example of improved support.

Integrate career-connected learning at both the K-12 and college level

Our study found that youth with work experience or who enroll in college are less likely to become disengaged. Work experience in a given year is one of the strongest predictors of reduced disengagement in the following year; college enrollment is also associated with decreased risk. Once youth have successfully navigated the transition from school (either K-12 or college) to work they tend to stay attached to the labor force.

- When this finding is paired with the difficulty of educational transitions, it becomes clear that increased collaboration between educational systems (both K-12 and higher education) and workforce systems that ease the transition from school to work are warranted.
- Career and technical education, career guidance, job shadowing, internships, work study, and other programs that integrate education with the world of work could help reduce disengagement for vulnerable youth. Relevant work and vocational exploration that connects to career aspirations and does not crowd out academics could reduce the risk of disengagement.

STUDY DESIGN AND OVERVIEW

This study uses a predictive modeling approach to identify factors associated with disengagement from work and school among youth ages 16 to 22 living in Washington State. While the definition of Opportunity Youth includes young people up to 24 years old, we did not have enough years of longitudinal data to include 23- and 24-year-olds.

STUDY POPULATION

This report focuses on individuals (N = 379,609):

- 1) Who were 15 years old (in any Academic Year 2006 through 2011).
- 2) Who were enrolled in K-12 education during the year they were 15 years old.
- 3) Who were served by DSHS between State Fiscal Year 2000 and State Fiscal Year 2012.

Using administrative records, we follow this cohort through Academic Year 2012 to observe whether the youth disengaged from school and work for an entire academic year, a status known as "Opportunity Youth." To be counted as an Opportunity Youth, young people in the cohort had to meet the following criteria over an entire academic year:

- 1) No K-12 education enrollment (source: Office of the Superintendent of Public Instruction enrollment data).
- 2) No Washington State community or technical college enrollment (source: State Board for Community and Technical Colleges data).
- 3) No Washington State 4-year university enrollment (source: Public Centralized Higher Education Enrollment System data).
- 4) No wages (source: Employment Security Department UI wage data).

What is an Odds-Ratio?



Odds-ratios are used to express the relative likelihood of an outcome given a predictive factor.

- **A predictive factor can increase the odds of an outcome.** When the predictive factor increases the odds of an outcome (makes it more likely), the odds-ratio will be above 1.0. The higher the odds-ratio is above 1.0, the more the odds increase.
 - Example: If the odds-ratio is 2.1 for a given predictive factor then the odds of that event occurring when the factor is present is 2.1 times the odds of the event occurring when the factor is not present.
- **A predictive factor can decrease the odds of an outcome.** When the predictive factor decreases the odds of an outcome (makes it less likely), the odds-ratio will be below 1.0. The lower the odds-ratio is below 1.0, the more the odds decrease. Odds-ratios are always positive, so odds-ratios closest to zero (small decimals) lead to the greatest decreases in odds.
 - Example: If the odds-ratio is 0.30 given a predictive factor then the odds of that event occurring when the factor is present is 0.30 times the odds of the event occurring when the factor is not present.
- **A predictive factor can have no impact on the odds of an outcome.** When the predictive factor does not impact the odds of an outcome, the odds-ratio will be very near to 1.0.
 - Example: If the odds-ratio is 1.0 given a predictive factor then the odds of that event given the factor are equivalent to the odds of the event occurring when the factor is not present.

Two examples of odds-ratios from the predictive model in this study:

Youth with a substance use issue identified between age 11 and 15 have 1.55 times the odds of disengaging from school and work when they are 16 to 22 when compared to youth without substance use issues.

Youth with a GPA above 3.2 when they are 15 years old have 0.49 times the odds of disengaging from school and work when they are 16 to 22 when compared to youth with a GPA below 3.2.

ANALYTIC APPROACH

We implemented an event history discrete-time approach, using both time-invariant and time-varying variables to predict disengagement using logistic regression. All time-varying variables were lagged by one year. Each individual cohort member contributed a person-year to the set of observations for every year of the outcome period until they were either censored (due to reaching the end of the time period, moving out of state, or dying) or experienced disengagement.

We included fixed effects for the cohort year, since the baseline year in which the young person turned 15 could have been any year 2006 to 2011.

The final model had a c-statistic of 0.826. We also tested the model on a hold-out sample and found that observations in the top decile were 77 times more likely to become disengaged than observations in the bottom decile.

PREDICTION VARIABLES AND DATA SOURCES

Time invariant

- **Gender and age:** Gender and age were identified from administrative records contained in the Integrated Client Database.
- **Race/ethnicity:** Race/ethnicity categorization comes from Comprehensive Education Data and Research System student records.
- **Child welfare (5 year history):** Child welfare history was flagged when a youth received any service from the Children's Administration of DSHS.
- **Criminal justice (5 year history):** Youth were flagged as having a criminal justice history if they were arrested, convicted of a crime, or spent time in a Juvenile Rehabilitation facility.
- **Basic Food and TANF (5 year history):** Basic Food and TANF receipt were identified through data from the DSHS Automated Client Eligibility System (ACES) summarized in RDA's Client Services Database.
- **Disability (5 year history):** Youth were flagged as having a disability if they received SSI-related medical coverage, or received any service from the Developmental Disabilities Administration or the Division of Vocational Rehabilitation.
- **Mental health treatment need (5 year history):** Data from ProviderOne (medical) and the Consumer Information System (mental health service records) were used to identify the presence of mental illness based on diagnoses, prescriptions, and treatment records.
- **Substance use issues (5 year history):** Data from three information systems—ProviderOne (medical), TARGET (substance use disorder treatment), and Washington State Patrol (arrests)—were used to identify probable substance use disorders based on diagnoses, prescriptions, and treatment records, as well as drug and alcohol-related arrests.
- **Out-of-home placement (4 year history):** Youth were flagged if they had a record of out-of-home placement in the FAMLINK data system. A four year history was used because out-of-home placement in the baseline year (and all follow up years) was captured in the time-varying variable.
- **Homelessness (4 year history):** The homelessness indicator came from the Automated Client Eligibility System (ACES), the data system used to track client eligibility for social and health services. Youth were identified as homeless if they were homeless, with or without housing, in ACES. A four year history was used because homelessness in the baseline year (and all follow up years) was captured in the time-varying variable.
- **County urbanicity:** Youth's county of residence was identified in the baseline year, which was coded as either urban or rural.
- **School variables:** Youth's school records from the year they turned 15 were used to generate the following educational measures: special education in index year, ELL services in index year, number of absences in index year, GPA in index year, and a flag for a mid-year school move within the index year (not including moves over the summer).

Time varying (lagged by one year)

- **Enrollment in education:** Youth school enrollment was checked in each follow up year separately for K-12 enrollment (CEDARS data) and higher education enrollment (SBCTC and PCHEES data).
- **Birth of a child:** Births of children to the cohort were identified by using Department of Health birth records, child support data, and jail visitation data to identify whether the youth was linked to a son or daughter, and using state administrative data to identify that child's birth date. The indicator for having a child was flagged in the year the child was born (lagged by one year) and all subsequent years.
- **Criminal justice involvement:** Youth criminal justice involvement was checked in each follow up year using arrest, convictions, or incarceration in a Department of Corrections or Juvenile Rehabilitation facility.
- **Homelessness:** Youth homelessness was checked in each follow up year using the Automated Client Eligibility System data.
- **Grade retention:** Youth were flagged as being retained in grade if they were in the same grade for two consecutive years.
- **Out-of-home placement:** Out-of-home placement was identified using FAMLINK data.
- **High school graduation:** High school graduation was identified using graduation codes in data from OSPI.
- **College completion:** Any college completion was identified by using both SBCTC and PCHEES data.
- **Employment (low hours):** ESD wage data was used to identify hours worked, with the low threshold set at fewer than 205 hours per year (but more than zero).
- **Employment (high hours):** ESD wage data was used to identify hours worked, with the high threshold set at 205 or more hours per year.



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