

# Findings from the Transitional Living Program Youth Outcomes Study: Technical Appendix



**September 2021**

OPRE Report 2021-191

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## OPRE Report 2021-191

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Scott Brown, Tanya de Sousa, Anna Mahathey, Karen Loya, Jessica Thornton Walker, and Alisa Santucci, Abt Associates, Inc.

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Caryn Blitz, Project Officer  
Office of Planning, Research, and Evaluation  
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Project Director: Alisa Santucci  
Principal Investigator: Jessica Thornton Walker  
Abt Associates Inc.  
6130 Executive Blvd.  
Rockville, MD 20852  
<https://www.abtassociates.com/>

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## Introduction to the Technical Appendix

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This Transitional Living Program (TLP) Youth Outcomes Study (YOS) was conducted by Abt Associates, an independent research firm, in partnership with 30 TLP and Maternity Group Home (MGH) grantees from across the United States to explore the housing, employment and earnings, and education experiences and outcomes of youth who participate in these programs. The study was funded and overseen by the Family and Youth Services Bureau and the Office of Planning, Research, and Evaluation, both within the Administration for Children and Families, U.S. Department of Health and Human Services. The goal of the YOS was to expand the base of knowledge on TLP participants by describing key youth outcomes before, during, and after program participation. The YOS describes:

- Housing, employment, earnings, and education outcomes among TLP participants before, during, and after TLP participation;
- Youth employment, earnings, and postsecondary education pathways before, during, and after TLP participation;
- TLP participants' maintenance of employment and enrollment in postsecondary education; and
- The ways in which TLP services and TLP participants' housing, employment, and education experiences may have been affected by the COVID-19 pandemic.

This Technical Appendix to *Findings from the Transitional Living Program Youth Outcomes Study* (Mahathey et al., 2021) contains additional detail about the study design, data collection, and analyses (Appendix A) as well as supplemental analysis results (Appendix B).<sup>1</sup>

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<sup>1</sup> Sections of Appendix A first appeared in Brown et al. (2021).

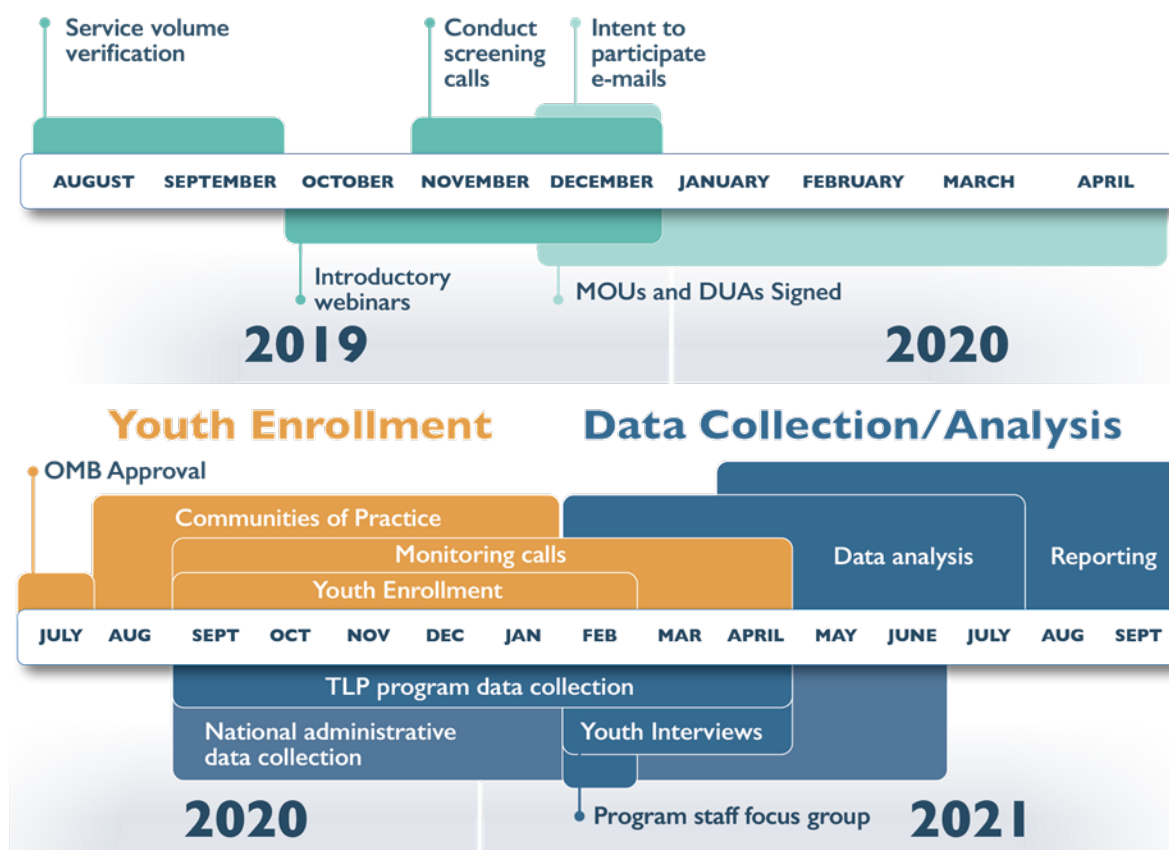
## A. About the Youth Outcomes Study Methodology

Appendix A provides additional detail on the study timeline, grantee sampling process, data collection activities, and analytic methods used for the YOS. Section A.1 explains the overall timeline for the YOS, and Sections A.2—A.5 describe major aspects of the study design.

### A.1. Timeline for the Youth Outcomes Study

Exhibit A1.1 graphically displays the timing of the activities conducted as part of the YOS. The YOS was conducted during a two-year period, from August 2019 until September 2021. During the initial outreach phase (beginning August 2019), the Study Team worked with the Family and Youth Services Bureau (FYSB) to identify candidate TLP grantees<sup>2</sup> to be invited to participate in the YOS. Grantee selection and recruitment continued through April 2020, when all 30 TLPs selected to participate in the YOS had executed agreements to participate in the study. Data collection activities for the YOS could not begin until the data collection instruments and activities were approved by the U.S. Office of Management and Budget (OMB). OMB approved the data collection effort in July 2020.<sup>3</sup>

**Exhibit A1.1: Youth Outcomes Study Timeline**



Note: MOU = Memorandum of Understanding; DUA = Data Use Agreement; OMB = Office of Management and Budget.

<sup>2</sup> The Study Team selected grantees awarded a TLP grant from FYSB in fiscal years 2017 and 2018. Some of these grantees also received funding to operate an MGH. Selected grantees that operate both TLP and MGH recruited youth served by their TLP and MGH for the YOS. An MGH is a TLP-like program that serves parenting and pregnant youth. For simplicity throughout the report, the Study Team uses the term “TLP” to refer to both the TLP and MGH programs included in the YOS, except when reporting differences by program type or highlighting a specific MGH program. Throughout the remainder of the appendix, the Study Team refers to TLP and MGH participants as “youth.”

<sup>3</sup> The OMB control number for the YOS data collection effort is 0970-0383.



Following OMB approval, the Study Team trained grantees to start youth enrollment into the YOS and begin data collection. Study enrollment occurred from September 2020 through February 2021. During the study enrollment and data collection periods, members of the Study Team held regular check-in calls with each participating TLP grantee to provide technical assistance on the study and to monitor their study enrollment and data collection efforts. Community of Practice calls were also held with the TLPs during this time to provide a forum for TLP staff to discuss study activities, successes, and challenges. The analysis reported in the main report and in this technical appendix covers outcomes data for the period between January 2017 and June 2021.

### A.2. Selection of Grantees

To reach the YOS enrollment target of 350–400 youth within the allocated 3- to 4-month enrollment period, the Study Team focused on recruiting study partners from among the largest programs awarded a TLP grant in fiscal year 2017 or 2018. Selection and recruitment of TLP grantees were completed in three stages:

**Stage 1.** The Study Team worked with FYSB Regional Program Managers (RPMs) and Federal Project Officers (FPOs) to verify the service volumes and key factors that could affect projected study enrollment for all TLP grantees awarded TLP funding in 2017 and 2018. The data were used as a basis to estimate service volumes for the study. The Study Team considered six major factors in selection of candidate programs for the study:

1. **Service Volume.** To maximize study sample, the Study Team sorted grantees in descending order based on their average monthly service volumes for all youth served in fully subsidized TLP and MGH beds.
2. **Fully Subsidized Beds.** To help ensure that TLPs selected into the study could provide youth with a TLP model consistent with the FYSB program guidance, the Study Team reviewed grantees with the highest service volumes to verify the number of fully subsidized TLP and MGH beds offered through their program beds (that is, to ensure youth served by the TLP were not required to pay a portion of the rent to receive transitional housing).<sup>4</sup> Grantees that reported zero fully subsidized beds were screened out.
3. **Turnover Rates.** To help ensure that the selected TLPs could typically retain youth in their programs for more than a few weeks, the Study Team compared the average number of youth served per year to the total number of fully subsidized beds in order to approximate lengths of stay in the program. This helped ensure that study participants would have been more likely to receive at least a few months of TLP programming.
4. **Program Configuration.** To support efficiency in program monitoring and communications, programs with more than two to three distinct, geographically dispersed, program sites overseen by different staff (with the exception of programs with a scattered site housing model) were screened out.
5. **Aftercare Response Rates.** To help ensure availability of aftercare data, grantees that reported low aftercare response rates (i.e., a response rate under 50 percent) were generally screened out. An exception was made for grantees with very large service volumes, which were retained for additional screening.
6. **Knowledge of SSNs.** To support collection of study participants' SSNs at enrollment or shortly thereafter, grantees that reported a low proportion of youth who knew their SSNs at program entry or indicated a lengthy period for youth to obtain their SSN after program entry were screened out. Knowledge of SSNs was critical for the Study Team to be able to request administrative data for study participants within the study time period.

After reviewing these factors, the Study Team ranked candidate TLPs for inclusion in the study. The Study Team also used TLPs' service volumes to develop prospective enrollment targets for each grantee. These enrollment targets were

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4 Of the grantees selected to participate in the YOS, 24 required youth to pay some portion of their income each month into a savings account or apply it toward rent, utility, or program costs. Sixteen of those programs returned the funds in full when youth left the program. The seven that did not return the funds were selected in collaboration with FYSB and are considered to have implemented an alternative housing model. See Section A.5.7 for a discussion of how the Study Team treated these programs in the completed data analyses.

based on the average number of youth served and assumed a 25 percent refusal rate. Based on the verification data, the Study Team identified 30 candidate TLPs and 10 alternate TLPs and presented the candidates to the Administration for Children and Families (ACF) in September 2019.

**Stage 2.** The Study Team held an introductory webinar for candidate TLPs to provide them with an overview of the study and its design. The webinars were followed by individual screening calls conducted with the candidate TLPs in November and December 2019. Through these calls, the Study Team determined each candidate TLP's capacity for and interest in participating in the YOS. Additionally, the Study Team used the calls to ascertain what program data the candidate TLPs routinely collect and the extent of aftercare services and tracking conducted by the candidate TLPs following program exit. These last steps were completed to verify that the selected grantees would be able to provide data to the study, thus eliminating the need to collect additional data from study participants.

**Stage 3.** When the information obtained from the screening call indicated that a TLP met all of the eligibility criteria and agreed to participate in the study, the TLP was asked to complete a Memorandum of Understanding (MOU) and a Data Use Agreement (DUA) to formalize their study participation. MOUs and DUAs were executed between December 2019 and April 2020.

### **A.3. Study Eligibility Criteria**

The Study Team worked with Abt Associates' Institutional Review Board to develop eligibility criteria for enrollment into the YOS. The following criteria were developed to ensure that study participants were: (1) eligible for and fully participating in a TLP, (2) capable of understanding their role in the study, and (3) able to provide their informed consent to participate in the YOS:

- **Criterion 1:** Study participants were required be between the ages of 16 and 21 at TLP entry, per FYSB's TLP eligibility requirements.
- **Criterion 2:** Study participants had to meet the TLP's eligibility criteria for program enrollment and be served in the "full" TLP program. Specifically, they had to receive all three core program components: transitional housing, intensive case management, and comprehensive wrap-around support services.
- **Criterion 3:** Study participants were required to understand English or Spanish.
- **Criterion 4:** Study participants were required to provide informed consent to participate in the study. If the participant was a minor, they had to either obtain parental/legal guardian consent and provide their assent to participate in the study or received a waiver of parental/legal guardian consent.
- **Criterion 5:** Study participants had to: (1) be already enrolled in or in the process of enrolling into a participating TLP during the study enrollment period; or (2) have *exited* a participating TLP within the 12 months prior to the study start date *and* stayed in the TLP for at least 30 days. The Study Team referred to this latter condition as "retrospective enrollment."

The fifth criterion reflects the study's snapshot enrollment approach. Allowing study participation by youth who were already enrolled in TLPs at the time study enrollment began was crucial for building a sufficient sample size in a short timeframe. This approach also took advantage of the ability to request historical administrative data on the key study outcomes (see Section A.4 for more details on data sources used in the YOS).

The choice to cut off retrospective enrollment at 12 months prior to the start of the study enrollment period was informed by the following two factors:

1. **Availability of employment data.** At the time of study enrollment, historical employment data from the National Directory of New Hires (NDNH) (the administrative data source used to measure employment and earnings outcomes) was available starting from the fourth quarter of 2018. Youth who entered a TLP in September 2019



would have had at least three quarters of potential employment data prior to entering the TLP, the minimum number of quarters needed to conduct analyses of pre-TLP employment trends.

2. ***Current program contact.*** The Study Team expected youth who entered TLPs prior to the start of the study enrollment period to have active contact with TLP program staff either through: (1) current program participation (because they had not yet exited), or (2) current participation in TLP aftercare services offered to youth after their program exit. It was unlikely that programs would have active contact with youth 12 months after they exited TLP.






The choice of minimum program participation of at least one month for retrospective enrollees (those who had already exited TLP) reflected the following considerations:

1. ***Achieving the target sample size.*** A more restrictive minimum length of stay would have reduced the potential pool of eligible youth.
2. ***Comparability to youth who enter TLPs during enrollment period.*** The Study Team did not apply a minimum length-of-stay eligibility limitation for youth who entered a TLP during the study enrollment period. These youth could potentially exit shortly after enrolling into the TLP (and the YOS). Imposing a longer minimum length of stay requirement for retrospective enrollees could have exaggerated the differences between the sample of youth who had exited TLPs prior to the start of the study enrollment period and the rest of the study sample.

### **A.4. Data Sources**

The YOS used a combination of primary and administrative data to describe youth housing, employment and earnings, and education outcomes for a sample of 365 youth across 30 TLP programs. In addition, the Study Team used qualitative data collected from a small sample of program participants and staff to contextualize how the COVID-19 pandemic may have affected youth outcomes and TLP program services. Exhibit A1.2 provides a summary of the data sources used in the YOS.

Exhibit A1.2: Data Sources for the Youth Outcomes Study

Data Source	Description
 Youth	<ul style="list-style-type: none"> <li>• <b>Background Information Form (BIF):</b> Upon enrolling into the YOS, youth provided their date of birth, social security number (SSN), and demographic information, including: age, gender, race/ethnicity, current educational attainment, current employment status, TANF receipt, and COVID-19-related experiences.</li> <li>• <b>One-on-One Interviews:</b> The Study Team conducted one-on-one 60-minute virtual interviews with seven TLP and two MGH program participants. Youth discussed their views on and experiences during COVID-19 and its implications for their housing, employment, and education in their TLP or MGH program.</li> </ul>
 TLP Program Data	<ul style="list-style-type: none"> <li>• <b>Youth Information Form (YIF):</b> TLP program staff used a secure web form to submit youth program enrollment data and demographics, program entry and exit dates, exit destination, housing status (immediately prior to entry, at exit, and from aftercare contacts after program exit) and COVID-19-related changes to youths' individual service plans. Additional data on general program characteristics (e.g., program size, type, housing model) were collected through TLP program enrollment screening forms.</li> </ul>
 National Directory of New Hires (NDNH)	<ul style="list-style-type: none"> <li>• <b>NDNH:</b> This database includes national administrative data on employment and earnings collected from IRS New Hire forms and state unemployment insurance records maintained by the Office of Child Support Enforcement. Up to eight quarters of data are available at any given time, with older data deleted on a rolling basis unless being held for research purposes.</li> </ul>
 National Student Clearinghouse (NSC)	<ul style="list-style-type: none"> <li>• <b>NSC:</b> This database includes national data on post-secondary enrollment and is based on information contributed by participating universities. It covers over 97 percent of students enrolled in two- or four-year programs and certificate programs. Submission of enrollment and graduation dates are required, but institutions may submit additional information, such as major selected.</li> </ul>
 TLP Program Staff	<ul style="list-style-type: none"> <li>• <b>Focus Group:</b> The Study Team conducted one 90-minute virtual focus group with a total eight staff volunteers from across the 30 participating grantees. Half of the staff worked with only TLP participants, one staff worked with only MGH participants, and three staff worked with TLP and MGH participants in various capacities. Their roles included director, case manager, education specialist, program manager, and parenting pathways coordinator. They discussed COVID-19-related adjustments they made to TLP/MGH programming and services and young people's experiences during the pandemic. Each focus group lasted about 90 minutes and included no more than one staff member from each grantee.</li> </ul>

**The Background Information Form.** The Study Team used the BIF data to collect basic background and demographic information from study participants (some information was needed to conduct additional administrative data matching) and youth-reported data on how the COVID-19 pandemic affected their housing, employment, and education. Immediately after providing their informed consent to participate in the study, study participants completed the BIF via the study's secure web-based study portal. BIF data were collected between September 2020 and February 2021.

**The Youth Information Form.** TLP program staff completed the YIF through the study's secure web-based study portal for each youth enrolled into the YOS. The YIF collected data elements related to study participants' housing, employment, education, and COVID-19-related changes made to their individual service plans at the following points in time:

1. **Shortly after entry into the program (or study enrollment if youth had already entered the TLP):** youth program entry date, TLP entry from a youth shelter (i.e., Basic Center Program or BCP) (yes/no), housing status prior to entry (based on U.S. Department of Housing and Urban Development's standardized Homeless Management Information System (HMIS) codes for previous living situation), educational attainment and enrollment status, employment status, and date of birth and SSN (as verification of the birthdate and SSN provided on the BIF and to supplement any missing birthdates or SSNs on the BIF). The Study Team referred to these as "entry data."
2. **Upon exit from the program:** youth program exit date, exit destination (based on HMIS exit destination codes), safe exit (based on the Runaway and Homeless Youth (RHY)-HMIS data), educational attainment and enrollment status at exit, and employment status at exit. Program staff were also asked to complete questions about COVID-19-related changes to study participants' individual service plans. The Study Team referred to these as "exit data."
3. **At each aftercare contact with youth who had already exited the program:** date of youth aftercare contact and current housing status (based on HMIS living situation codes).<sup>5</sup> The Study Team referred to these as "aftercare data."

Exit and aftercare data were collected by TLP staff on a rolling basis from the start of study enrollment in September 2020 through April 2021.

**National Directory of New Hires Data.** The Study Team used NDNH data to measure study participants' employment and earnings outcomes. NDNH contains national information on employment and wages based on IRS I-9 reports on new hires and state unemployment insurance data on wages and unemployment payments received. NDNH is maintained by the Office of Child Support Enforcement in the U.S. Department of Health and Human Services.

**National Student Clearinghouse Data.** The Study Team used NSC data to measure educational engagement outcomes for youth participating in TLPs. The NSC is a not-for-profit organization that collects college enrollment and postsecondary degree data on students in over 3,600 participating two and four-year public and private U.S. higher education institutions, including both non-profit and for-profit institutions. The NSC records include enrollment in degree programs, as well as vocational certificate and training programs. The primary NSC database accessed for the YOS was *StudentTracker*, which includes enrollment and credential data.

**Youth Interviews.** The Study Team conducted nine one-on-one interviews with study participants<sup>6</sup> to better understand how the COVID-19 pandemic affected their living situation, employment, participation in classes or other educational activities, and experience in TLP. The Study Team relied on program staff to help recruit volunteers from among the youth they enrolled in the YOS. TLPs were asked to conduct outreach for the interviews beginning in December 2020

5 This option was chosen as a source of information to assess housing outcomes, as access to individual-level RHY-HMIS administrative data was determined to be infeasible. Requesting detailed HMIS data extracts on youth would require assessing each grantees' data access, policies, and capacity as well as extensive data use agreements and training on data sharing within each study site, which was not possible within the scope and timeline of this study.

6 The sampling procedures for the youth interviews and program staff focus group were chosen with the Paperwork Reduction Act in mind, which limits the public burden of a systematic collection to fewer than 10 individuals for each different type of data collection effort. Data collection with a sample of 10 or more individuals requires review by the OMB, which was not feasible within the study timeline.

and submit a list to the Study Team of all volunteers recruited by late January 2021. The Study Team reviewed the list of volunteers and sorted them into the following groups:

- **Group 1:** youth who entered TLP or MGH in or after March 2020 (after the U.S. declared a national emergency for COVID-19);
- **Group 2:** youth who were already in TLP or MGH in March 2020 and remained there at the time of the interview; or
- **Group 3:** youth who were in TLP or MGH in March 2020 and had exited the program by the time of the interview.

To diversify the interview sample, the Study Team aimed to select three youth from each group, and within each group one youth who was an MGH participant. Given the mix of youth volunteers for the study and their responses to requests for an interview, the final mix of youth selected for the interviews included four youth from Group 1, four from Group 2, and one from Group 3. Two of the youth were from MGH programs, and a third was a parenting youth in TLP.

The Study Team conducted one-on-one semi-structured interviews with the youth via WebEx, a secure videoconference platform. Interviews were conducted by one of two senior Study Team members and included a dedicated notetaker to document the participants' responses. Interviews lasted no longer than 60 minutes. The interviews were recorded with participant consent and referenced as needed to create final versions of notes as the basis for our data analysis. As a token of appreciation for their time, each youth that was interviewed received an electronic gift card.

**Program Staff Focus Group.** The Study Team conducted a focus group with eight TLP program staff to better understand how the COVID-19 pandemic affected program participants and program operations.

The Study Team worked with the main study contact at each of the participating TLPs to recruit volunteers to participate in the focus group. To be eligible to participate in the focus group, volunteers were required to be:

1. Employed by the TLP since January 2020; and
2. Working as a program coordinator, case manager, or similar position (i.e., work directly with TLP participants and be involved in program operations).

TLPs were asked to submit a list of all volunteers to the Study Team by January 2021. The Study Team reviewed the list of program staff volunteers and selected nine program staff to participate in the focus group. The focus group participant selection process intentionally sought to maximize diversity across programs, locations, and staff roles.

The Study Team conducted the focus group with eight participants<sup>7</sup> via WebEx videoconference. The focus group was loosely structured, with a facilitator asking questions and follow-up probes and a notetaker documenting responses in detail. The focus group lasted 90 minutes and was recorded with participant consent. The focus group recording was referenced as needed to create final versions of notes as the basis for our data analysis.

### **A.5. Overview of Data Analysis Methods**

Prior to collecting any data, the Study Team identified a select number of housing, employment and earnings, and education outcomes that serve as key outcomes for the data analyses.

- **Housing:** The primary housing status outcome was based on data provided in reports by program staff. The Study Team specifically focused on exits from TLPs to homelessness and returns to homelessness after exit as

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<sup>7</sup> While nine program staff members were invited to join the focus group, one was not able to attend the day of the event.

reported in the YIF aftercare data. Housing outcomes were specified according to FY 2020 HMIS codes for Prior Living Situation (entry), Destination (exit), and Current Living Situation (aftercare) with a detailed crosswalk provided in Appendix Exhibit A1.3.

- Employment and Earnings:** Average earnings and employment rates were the primary employment-related outcomes assessed based on NDNH data. The Study Team assessed both the average values and trends on a quarterly basis before, during, and after a TLP stay. The other primary outcome was job loss—specifically, whether youth lost employment after TLP entry and the average time to job loss.
- Education:** Average enrollment rates in an institution of higher education (“post-secondary enrollment”) were the primary educational outcome assessed using NSC data. The Study Team assessed both average values and trends on a monthly basis before, during, and after a TLP stay. The other primary outcome was whether youth who were enrolled at program entry maintained enrollment.

Additional employment outcomes examined included number of employers, time to employment for youth who were unemployed at TLP entry, and full-time versus part-time employment at TLP exit (as reported by program staff). Additional educational outcomes included enrollment intensity (full-time versus part-time), institution type (two-year versus four-year non-profit, versus for-profit, college).

**Exhibit A1.3: Crosswalk of Housing Status Categories and HMIS Codes**

Housing Status	Entry: HMIS Prior Living Situation (3.917)	Exit: HMIS Destination (3.12)	Aftercare: HMIS Current Living Situation (4.12)
Permanent	Rental by client, no ongoing housing subsidy	Rental by client, no ongoing housing subsidy	Rental by client, no ongoing housing subsidy
Permanent	Rental by client, with RRH or equivalent subsidy	Rental by client, with RRH or equivalent subsidy	Rental by client, with RRH or equivalent subsidy
Permanent	Rental by client, with Housing Choice Voucher (HCV) (tenant or project-based)	Rental by client, with HCV (tenant or project-based)	Rental by client, with HCV (tenant or project-based)
Permanent	Rental by client in a public housing unit	Rental by client in a public housing unit	Rental by client in a public housing unit
Permanent	Rental by client, with VASH housing subsidy	Rental by client, with VASH housing subsidy	Rental by client, with VASH housing subsidy
Permanent	Rental by client, with GPD TIP housing subsidy	Rental by client, with GPD TIP housing subsidy	Rental by client, with GPD TIP housing subsidy
Permanent	Rental by client, with other ongoing housing subsidy	Rental by client, with other ongoing housing subsidy	Rental by client, with other ongoing housing subsidy
Permanent	Owned by client, no ongoing housing subsidy	Owned by client, no ongoing housing subsidy	Owned by client, no ongoing housing subsidy
Permanent	Owned by client, with ongoing housing subsidy	Owned by client, with ongoing housing subsidy	Owned by client, with ongoing housing subsidy
Permanent	Permanent housing (other than RRH) for formerly homeless persons	Permanent housing (other than RRH) for formerly homeless persons	Permanent housing (other than RRH) for formerly homeless persons
Permanent	n/a	Staying or living with family, permanent tenure (e.g., room, apartment, or house)	n/a

## APPENDIX A: YOUTH OUTCOMES STUDY METHODOLOGY

Housing Status	Entry: HMIS Prior Living Situation (3.917)	Exit: HMIS Destination (3.12)	Aftercare: HMIS Current Living Situation (4.12)
Permanent	n/a	Staying or living with friends, permanent tenure (e.g., room, apartment, or house)	n/a
Temporary	Hotel or motel paid for without emergency shelter voucher	Hotel or motel paid for without emergency shelter voucher	Hotel or motel paid for without emergency shelter voucher
Temporary	Host home (non-crisis)	Host home (non-crisis)	Host home (non-crisis)
Temporary	Staying or living in a family member's room, apartment, or house	n/a	Staying or living in a family member's room, apartment, or house
Temporary	Staying or living in a friend's room, apartment, or house	n/a	Staying or living in a friend's room, apartment, or house
Temporary	n/a	Staying or living with family, temporary tenure (e.g., room, apartment, or house)	n/a
Temporary	n/a	Staying or living with friends, temporary tenure (e.g., room, apartment, or house)	n/a
Institutional	Foster care home or foster care group home	Foster care home or foster care group home	Foster care home or foster care group home
Institutional	Hospital or other residential non-psychiatric medical facility	Hospital or other residential non-psychiatric medical facility	Hospital or other residential non-psychiatric medical facility
Institutional	Jail, prison or juvenile detention facility	Jail, prison or juvenile detention facility	Jail, prison or juvenile detention facility
Institutional	Psychiatric hospital or other psychiatric facility	Psychiatric hospital or other psychiatric facility	Psychiatric hospital or other psychiatric facility
Institutional	Substance abuse treatment facility or detox center	Substance abuse treatment facility or detox center	Substance abuse treatment facility or detox center
Institutional	Residential project or halfway house with no homeless criteria	Residential project or halfway house with no homeless criteria	Residential project or halfway house with no homeless criteria
Institutional	Long-term care facility or nursing home	Long-term care facility or nursing home	Long-term care facility or nursing home
Homeless	Emergency shelter, including hotel or motel paid for voucher with emergency shelter, or RHY-funded Host Home shelter	Emergency shelter, including hotel or motel paid for voucher with emergency shelter, or RHY-funded Host Home shelter	Emergency shelter, including hotel or motel paid for voucher with emergency shelter, or RHY-funded Host Home shelter
Homeless	Place not meant for habitation (e.g., a vehicle, an abandoned building, bus/train/subway station/airport or anywhere outside)	Place not meant for habitation (e.g., a vehicle, an abandoned building, bus/train/subway station/airport or anywhere outside)	Place not meant for habitation (e.g., a vehicle, an abandoned building, bus/train/subway station/airport or anywhere outside)
Homeless	Safe Haven	Safe Haven	Safe Haven
Homeless	Transitional housing for homeless persons (including homeless youth)	Transitional housing for homeless persons (including homeless youth)	Transitional housing for homeless persons (including homeless youth)
Other	Other	Other	Other
Other	n/a	Deceased	Deceased
Other	n/a	No exit interview completed	n/a
Other	n/a	n/a	Worker unable to confirm
Missing	Client doesn't know	Client doesn't know	Client doesn't know



Housing Status	Entry: HMIS Prior Living Situation (3.917)	Exit: HMIS Destination (3.12)	Aftercare: HMIS Current Living Situation (4.12)
Missing	Client refused	Client refused	Client refused
Missing	Data not collected	Data not collected	Data not collected

Note: RRH = Rapid Re-Housing; HCV = Housing Choice Voucher; VASH = Veterans Affairs Supportive Housing; GPD = Grant and Per Diem; TIP = Transition in Place.

Source: FY 2020 HMIS Data Dictionary v1.5, Appendix A.

## A.5.1 Subgroup Analyses

For each of the primary outcomes, the Study Team explored whether outcomes differed by select youth and TLP characteristics such as gender, race, ethnicity, educational attainment at entry, program type, and program housing model. Subgroup analyses were not a central aim of the study and were exploratory in nature. The number of youth in the study was small for reliably detecting differences so that even apparently large differences between characteristics could be due to chance alone. The Study Team only reported statistically significant differences in YOS report—that is, the differences were unlikely to occur due to chance alone in a sample of this size if there were no actual difference between these groups.<sup>8</sup> Additional results are included in Appendix B.

The Study Team conducted five main types of analyses, which are described below.

## A.5.2 Descriptive Information

The Study Team conducted calculations of proportions and averages for the overall study sample or by youth/program characteristics. Descriptive statistics include average housing, employment and earnings, and education outcomes at program entry, program exit, and after exit (the latter two among youth in the sample who had exited a TLP by the end of the study observation period). For descriptive purposes, the results were cross-tabulated by youth age, gender, race/ethnicity, and housing status prior to program entry. Because these analyses were for descriptive purposes only and were not an assessment of differences, no statistical tests of differences were conducted on these analyses.

## A.5.3 Average Differences

The Study Team ran a set of statistical tests to see whether average (mean) youth outcomes (e.g., average earnings) differed by some other characteristic. One set of analyses tested for whether study participants' average outcomes were different prior to entering TLP and after exiting TLP compared to when they were staying in a TLP. Average difference tests were also used to examine differences by youth characteristics. Using earnings as an example, this set of analyses provides time-weighted average earnings in the periods before and after program entry.

## Analytic Model

This analytic model is specified as follows:

$$Y_{ij} = \beta_0 + \beta_1 X_{PRE} + \beta_2 X_{POST} + \sum_{j=1}^{j-1} \alpha_j + \epsilon_{ij}$$

Where

- $Y_{ij}$  is the observed outcome measure for youth  $j$  at time  $i$ ;

<sup>8</sup> We used a conventional 5 percent threshold for statistical significance, i.e., a 5 percent chance that the difference between the groups would be as or more extreme if there was no difference between these groups in the population.

- $X_{PRE}$  is a dummy variable set to 1 when time  $i$  is prior to program entry and to 0 when time  $i$  is on or after program entry;
- $X_{POST}$  is a dummy variable set to 1 when time  $i$  is on or after program exit and to 0 when time  $i$  is before program exit;
- $\beta_0$  is the intercept term (representing the mean in the period during the program for the omitted person  $j$ );
- $\beta_1$  is the mean difference in the outcome for all observations prior to program entry (indicated by the dummy variable  $X_{PRE} = 1$ ) compared to the mean of observations during program participation (where  $X_{PRE} = 0$  and  $X_{POST} = 0$ );
- $\beta_2$  is the mean difference in the outcome for all observations after program exit (indicated by the dummy variable  $X_{POST} = 1$ ) compared to observations during program participation (where  $X_{PRE} = 0$  and  $X_{POST} = 0$ );
- $\sum_{j=1}^{j-1} \alpha_j$  is a series of dummy variables for each youth up to the  $j-1$  youth;
- $\varepsilon_{ij}$  is an error term for person  $j$  at time  $i$ .

With respect to timing, it is possible that observations that were made closer together were more strongly correlated than observations that were farther apart (i.e., autocorrelation). Therefore, the Study Team computed robust standard error estimates (using Huber-White sandwich estimators) to ensure correct estimation of standard errors even if autocorrelation or other sources of heteroscedasticity are present (Huber, 1967; White, 1980, 1984).

The analyses focused on acquiring mean outcome estimates for each time period. Mean estimates are more precise for time periods that have more observations. The Study Team tested whether the pre-TLP mean difference from the during-TLP mean was statistically significant and whether the post-TLP mean difference from the during-TLP mean was statistically significant, but these results should be interpreted with caution and are not causal evidence of program effects.

### **Missing Data**

There were no missing data on the outcomes for the analyses for youth with valid matching data. Youth with invalid matching data (i.e., invalid SSN) were dropped from the employment analyses, whereas all youth were retained for educational enrollment analyses. There were no missing data on youth entry date (all youth) or exit date (among exiters). Most covariates had no missing data or were missing less than 1 percent of cases. Only the ethnicity covariate had a missing rate above 5 percent (i.e., 7 %). With no missing outcome data and low missing data rates for covariates, complete case analyses were used in the exploratory subgroup tests.

### **Statistical Power**

For a sample size of 365, power analyses estimated an 80% chance of detecting an effect size between .09 and .18 (significant at the .05 level) for the difference between pre-TLP and during-TLP outcomes, depending on the correlation between the pre- and during period (with similar power for during versus post-TLP). This translates to a minimum detectable difference of approximately \$450 to \$900 in quarterly earnings, 4 to 8 percentage points for educational

enrollment, and 3.5 to 7 percentage points for employment based on program exit findings from the Youth Villages Evaluation (Valentine, Skemer, & Courtney, 2015).<sup>9</sup>

The sample size was 365 for educational enrollment analyses and 331 for employment and earnings outcome analyses (after dropping cases with no/invalid SSNs). Exhibit A1.4 shows the post-hoc power analyses based on these sample sizes and the empirical correlations for during-TLP vs. pre-TLP and post-TLP vs. during-TLP earnings, employment, and postsecondary enrollment.

**Exhibit A1.4: Post-hoc Power Analyses for Employment, Earnings, and Enrollment Mean Difference Analyses**

Outcome	N	Corr	ES	MDE
<b>Before vs. During TLP</b>				
Earnings	331	0.44	0.20	\$299
Employment	331	0.38	0.25	8.6%
Postsecondary enrollment	365	0.53	0.01	4.5%
<b>After vs. During TLP</b>				
Earnings	89	0.51	0.12	\$378
Employment	89	0.38	-0.30	16.2%
Postsecondary enrollment	206	0.40	0.01	10.2%

*Note:* N = Sample size (number of youth); Corr = correlation pre-TLP vs. during-TLP, post-TLP vs. during-TLP, respectively); ES = effect size; MDE = minimum detectable effect. Effect size computed as estimated mean difference divided by pooled standard deviation for earnings and based on Cox's index for employment and postsecondary enrollment estimated proportions.

*Source:* TLP Program Data (YIF).

## A.5.4 Trend Analyses

To complement the average differences analyses, the Study Team used growth curve analyses to model trajectories in study participants' average employment and earnings outcomes before, during, and after TLP participation to explore whether trajectories changed at program entry or exit. Using earnings as an example, these trend analyses (examining trajectories or latent growth curves) indicate whether youth earnings were rising, flat, or falling prior to program entry and whether that trajectory differed after program entry.

The Study Team explored what shape of trajectory (functional form of change) best fits the data and conducted statistical tests of whether the shape or rate of change differed in the periods prior to versus after entering a TLP.<sup>10</sup>

9 In the absence of empirical data on pre-post differences on outcomes, we evaluated two assumptions—first when the correlation between the two time periods was .20, and second when the correlation was .80. The former corresponded to a minimum detectable effect of .18 and the latter to a minimum detectable effect size of .09. Minimum detectable pre-post effects were based on a standard deviation of \$5,100 in earnings, and base rates for employment of 70 percent and post-secondary enrollment rate of 19 percent based on observed rates one year after study enrollment in the Youth Villages Evaluation treatment group (Valentine et al., 2015). Recent data on youth employment indicates unemployment rose sharply in Q1 2020 (68 percent employment rate), but recovered substantially by Q2 2020 (77 percent employment rate; Rho et al., 2020). Employment may be lower than our Youth Villages benchmark, but a worst-case scenario of a 50 percent employment rate (from a power perspective) would only increase the minimum detectable effects (MDEs) by about 1 percentage point.

10 The original analysis plan called for testing whether the trajectory after entering a TLP differed from the trajectory during a TLP stay. There were too few quarters of employment data after TLP exit to identify (fit) a growth model at all, and there were too few observations after TLP exit to generate reliable estimates for a trajectory. Thus, we chose to focus on trends prior versus after entry, with attention to the fact that the average length of stay was 9.4 months (or roughly 3 to 4 quarters), so a change in the trajectory around that time could reflect youth exiting TLPs.

## Analytic Model

The formal matrix expression of a latent curve model without predictors (unconditional model) is:

$$y = \Lambda\eta + \varepsilon$$

Where

- $y$  is a  $T \times 1$  vector of repeated measures for each individual  $i$  and  $T$  is the number of time points;
- $\Lambda$  is a  $T \times m$  matrix of factor loadings (that specify the functional form of time);
- $\eta$  is a  $m \times 1$  vector of  $m$  latent factors (representing the growth parameter estimates);
- $\varepsilon$  is a  $T \times 1$  vector of residuals (difference between an individual's predicted and actual score).

This model indicates that an observation for an individual at a single point in time is a weighted function of random intercept and growth parameter estimates plus an individual time-specific residual. A similar model can be used for binary outcomes (e.g., employment), under the assumption that differences between a 0 and 1 response reflect an underlying continuous propensity (e.g., propensity to be employed). These auxiliary threshold models allow for modeling the trajectory of the probability of a youth being employed or other similar binary outcomes with similar interpretation of results.

The number of repeated measures varied by outcome. For employment outcomes, we collected 9 quarters of data on each participant. For educational outcomes, we collected 53 months of enrollment data on each participant.

To identify the best-fitting trajectory shape, the Study Team first fit a linear model that did not differentiate between time before and after entering TLP. We then used a base model specifying simple linear growth in each time period before testing alternative models specifying more complex trajectory shapes to see whether they fit the data better than the simpler base model. If study participants' trajectories differed after entering a TLP relative to before entering TLP, a piecewise model with separate growth parameters for observations before vs. during TLP should fit better than a model assuming there was no difference in the growth rate or shape across these periods. The linear piecewise model assumes a constant rate of change in each of these time periods but allows this rate to differ in each period. We also tested whether quadratic (curved) models, which allow both the growth rate and acceleration/deceleration of growth to differ, fit better than linear models within the before and after TLP periods, respectively.

To identify which trajectory shape (functional form) best fits the actual outcome data, for each time period (pre/during/post-TLP) we explored whether assuming that the rate of change varied over the period produced a better fit of the data compared to an assumption of constant change (quadratic change, depicted by a curved line, versus linear change).<sup>11</sup> Maximum likelihood estimation was used to identify the parameter estimates that best fit the data.

For specifying the functional form of time, our primary model used an individually varying specification of time via definition variables. In this specification, each participant's observation had their time coded relative to program entry, with the quarter prior to program entry being coded as 0 (which sets the intercept as the approximate mean value at program entry). The result is that the slopes in the piecewise linear model can be interpreted as *the average quarterly change in earnings in the sample* for quarters prior to program entry versus after program entry.

<sup>11</sup> Specifically, quadratic models assume that the rate of acceleration or deceleration of change is constant over the period of time. It would have been possible to test more complex forms of non-linear change (e.g., cubic or non-parametric shape factor models) if graphical exploration indicated that the trend was clearly non-linear but not quadratic in nature.

For example, if a youth entered TLP in January 2020, this youth would have five quarters of earnings data prior to program entry (coded with negative numbers) and four quarters of earnings data after program entry. If a youth entered in June 2020, this youth would have seven quarters of data contributing to the estimate of the “before TLP” slope and two quarters contributing to the estimate of the “after TLP entry” slope estimate.

We computed a test of statistical significance for whether more complex models improved model fit using the difference in model log likelihood, the Akaike Information Criterion, and the Bayesian Information Criterion.<sup>12</sup> When comparing relative fit, if two models had a similar fit statistically, we selected the simpler of the two models (the one with fewer parameters being estimated). Results for the comparison of the models tested are reported in Appendix Exhibits B3.8 and B4.7 for employment and education results, respectively. Parameter estimates for the best-fitting model are provided in Appendix Exhibit B3.9 and B4.8, respectively.

### **Missing Data**

There were no missing data on the outcomes for these analyses for youth with valid matching data. Youth with invalid matching data (i.e., invalid SSN) were dropped from the sample in employment analyses; all youth were retained in NSC analyses, which matched on name and SSN. There were no missing data on youth entry date (all youth) or exit date (among exiters).

### **A.5.5 Survival Analyses**

The Study Team used survival analyses to describe the extent to which youth who were employed or enrolled in post-secondary education continuously maintained their employment or enrollment status and the extent to which employed youth remained with the same employer. For all outcomes, results were presented both numerically in terms of the expected number of events per participant per unit of time (the “event hazard”) and graphically as survival curves. For participants employed at program entry, Cox regression models also assessed which participant characteristics were most strongly associated with the hazard of losing employment.

Survival analyses properly accounted for youth who experienced an event (i.e., loss of initial employment arrangement after program enrollment, gaining employment for those unemployed at the time of enrollment) in an earlier time period and who were no longer at risk for experiencing the event. Survival analyses also properly accounted for youth not having yet experienced the event by the end of the study observation period but who were still at risk for experiencing the event in the future (termed “right censoring”).

### **Life Table and Hazard**

To calculate event hazards, the Study Team created life tables, with each row representing a discrete period of time (in this case, one quarter) since program enrollment. During a given quarter, participants may experience the event, drop out of the study, or continue to be at risk for the event. As quarters progress, the number of at-risk participants dwindles until all have either experienced the event or dropped out. An event hazard quantifies how common events are in a given quarter, using the following equation:

$$h(t_i) = \frac{d_i}{n_i - \frac{w_i}{2} - \frac{d_i}{2}}$$

Where

- $h$  is the hazard;

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<sup>12</sup> With definition variable models, traditional overall model fit indices, such as Root Mean Squared Error Approximation, cannot be computed. The main focus here though is on improvement in relative fit – whether the trends differed before versus after TLP entry.

- $t_i$  is the quarter;
- $d_i$  is the number of participants having experienced the event within the quarter;
- $n_i$  is the number of participants still at risk at the beginning of the quarter;
- $w_i$  is the number of participants having dropped out within the quarter.

The hazard calculation assumes that events and drop-outs are just as likely to happen earlier in the quarter as later in the quarter. Accordingly, the calculation considers events and drop-outs to have occurred, on average, at the quarter midpoint. Thus, a participant who experiences an event or who drops out is considered to be “half” a participant in their final quarter, because they are assumed to be an at-risk participant for only half of that quarter.

### **Cox Model**

With employment outcomes being measured (as reported by NDNH) in quarters, some events were recorded as occurring at the same time (i.e., in the same quarter or semester; termed “ties”). For example, among participants who were employed at program entry, 31 lost their employment by the following quarter. The data make it appear as though their unemployment events were tied (simultaneous) when in fact some likely became unemployed earlier in the quarter while others became unemployed later in the quarter.

The standard Cox regression models used in survival analysis assume time is continuously measured, rather than being measured in quarters or semesters. When a survival analysis finds that outcomes frequently occur at the same time, statistical adjustments need to be made to the models to account for ties.

*Exact* methods for ties assume there is a true, but unknown, ordering of events recorded as occurring at the same time. This assumption fits well for employment outcomes, where there is a true and exact ordering of participants’ unemployment events, and ties largely result from time being aggregated into quarters in NDNH administrative data. In contrast, *discrete* methods for ties assume events are actually occurring at the same time. This assumption did not fit well with employment outcomes.

For the loss of employment outcome, we used a Cox regression model, specifying an exact method to resolve ties. The Study Team adopted an exploratory approach, testing one covariate at a time. The model took the form of:

$$h_i(t) = \lambda_0(t) \exp(\beta x_i)$$

Where

- $h_i(t)$  is the hazard for individual  $i$  at time  $t$ ;
- $\lambda_0(t)$  is the baseline hazard function;
- $\beta$  is the coefficient estimate for the covariate;
- $x_i$  is the covariate value for person  $i$ .

For both sets of outcomes, we first ran models without covariates to understand retention (of employment or post-secondary enrollment) in the overall sample and then ran analyses including youth characteristics as covariates to understand associations between these characteristics and retention.



### A.5.6 Analyses to Understand Possible Effects of the COVID-19 Pandemic

The Study Team used a mixed methods approach to understand how the COVID-19 pandemic may have affected study participants' housing, employment, and education outcomes and overall program operations.

#### **Quantitative Analyses**

First, the Study Team used frequencies to describe study participants' self-reported perceptions of the COVID-19 pandemic's influences on their housing, employment, and education, based on information provided in the BIF.

Second, we used frequencies to describe TLP staff-reported changes in study participants' housing, employment, and education goals in their individualized service plans. This allowed us to understand the ways programs may have adjusted (e.g., de-emphasized or more strongly emphasized) employment or education expectations for youth who entered TLPs prior to and after the onset of COVID-19. Adjustments in program expectations may influence employment and educational trajectories. Thus, this information was used to help contextualize study findings about change in these trajectories observed after TLP entry.

Third, we assessed the extent to which the onset of the COVID-19 pandemic was associated with differences in youth employment and educational trajectories by benchmarking to national employment and educational data available on youth. The United States declared a state of emergency due to the COVID-19 pandemic on March 1, 2020, and nearly all participating TLP grantees (97 percent) were located in states that implemented initial stay-at-home orders by April 1, 2020. Using this time as a benchmark for the onset of the pandemic permitted descriptive assessment of whether changes in youth trends prior to and after the declaration of the pandemic were qualitatively similar to or different from those occurring nationally for youth.

#### **Qualitative Analyses**

Virtual one-on-one interviews with nine youth and a focus group with eight program staff were conducted to better understand the how the COVID-19 pandemic may have affected study participants' housing, employment, and education; their experiences in the TLP; and overall program operations. The Study Team approached coding and analysis of these qualitative data using "applied thematic analysis." Using this approach, experienced members of the Study Team read through the interview notes summarizing and describing the information collected on each of topics discussed in the interviews and focus group. Using both pre-determined codes on topics of interest and codes that we developed based on what emerged from the data ("emergent codes"), the Study Team identified common themes in the interviewees' responses to questions, as well as infrequent but potentially meaningful experiences. The Study Team also identified and organized quotes and sections of the interview notes into categories for each theme and coded them using NVivo, a software program designed to aid in qualitative analysis. The themes that arose from our analyses formed the core of our qualitative findings and were used throughout the report to contextualize trends found in the quantitative data.

### A.5.7 Additional Analyses

#### **Differences by Housing Model**

Initial grantee screening calls identified some TLP grantees that use a housing model that modifies one aspect of FYSB's TLP guidelines. FYSB's TLP model the offer of free housing to youth. Under this "traditional" TLP housing model, grantees either do not charge rent or fees, or if they do, they hold the funds in escrow to help the youth build savings and remit the funds to youth at program exit.<sup>13</sup> However, some grantees have adapted their housing model to require some participating youth to pay rent or fees to the program or a landlord. These payments are either fully retained by the program/landlord or are not fully remitted to youth at program exit. We considered these TLP grantees to be

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13 Under the traditional housing model, funds may be made available to youth prior to exit to accommodate special needs that arise during program participation (e.g., purchase of a vehicle, paying off debt).

implementing an “adapted housing model”.<sup>14</sup> Among the 30 TLP grantees that participated in the study, seven implemented an adapted housing model. The Study Team included the housing model in its comparisons of housing outcomes by youth and program characteristics (see Appendix Exhibit B2.2).

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<sup>14</sup> In some cases, a grantee’s rent or fee requirements vary according to the type of housing youth in their program occupy. For example some TLPs offer congregate (group) housing free of rent or fees while also offering scattered-site housing where payments are required of youth. For the sensitivity analysis, we considered grantees that require payment from any TLP youth to be using an adapted housing model.

## B. Supplemental Results

Appendix B provides additional detail on the TLPs grantees that participated in the YOS (Section B.1) and the results of additional analyses run on study participants' housing, employment and earnings, and education data (Sections B.2-B.4).

### B.1. Program Information

**Exhibit B1.1: TLP Grantee Characteristics by Programs and Youth Served**

Characteristic	Programs		Youth Served	
	N	%	N	%
<b>ACF Region</b>				
Region 3	3	10%	25	7%
Region 4	4	14%	62	17%
Region 5	8	27%	66	19%
Region 6	5	17%	68	18%
Region 8	2	7%	29	8%
Region 9	5	17%	80	22%
Region 10	2	7%	35	10%
<b>Program Type</b>				
TLP only	15	52%	180	49%
MGH only	0	0%	0	0%
TLP and MGH	14	48%	185	51%
<b>Program Employment Rules</b>				
Requires employment only	6	21%	67	18%
Requires employment or education	9	31%	87	24%
Does not require employment	14	48%	211	58%
<b>Housing Model</b>				
Single congregate site	0	0%	0	0%
Multiple congregate sites	15	52%	205	56%
Scattered-site	13	45%	143	39%
Scattered-site and congregate site	1	3%	17	5%
<b>Program Rent Model</b>				
Does not charge rent	20	79%	246	67%
Charges rent	9	31%	119	33%
<b>Program Education Rules</b>				
Requires education	7	24%	79	22%
Requires employment or education	8	28%	75	21%
Does not require education	14	48%	211	58%

Note: N = 29 programs, 365 youth. TLP = Transitional Living Program; MGH = Maternal Group Home. One program did not enroll any youth for the study and was excluded from these calculations.

Source: TLP Program Data.

## B.2. Housing

**Exhibit B2.1: Housing Status at Entry, Exit, and Follow-Up Among Youth Who Exited TLP**

Housing Status	Entry	Exit	Follow-Up
Permanent	38%	75%	53%
Temporary	0%	12%	36%
Institutional	3%	1%	1%
Homeless	56%	8%	7%
Other	2%	4%	3%
<i>Number of youth</i>	206	202	108

*Note:* There were 206 youth who had exited TLP at the end of the program data collection period. Percentages are among youth with non-missing data at the time point specified. Follow-up is based on most recent aftercare contact, which occurred an average of 3 months after exit.

*Source:* TLP Program Data (YIF).

**Exhibit B2.2: Housing Status at Entry, Exit, and Follow-Up by Youth and Program Characteristics**

Housing Status	Entry	Exit	Follow-Up	Entry	Exit	Follow-Up	Entry	Exit	Follow-Up
<b>Gender</b>									
	<i>Female</i>			<i>Male</i>			<i>Other</i>		
Permanent	1%	77%	57%	2%	74%	44%	0%	-	-
Temporary	45%	13%	33%	32%	11%	44%	54%	-	-
Institutional	1%	0%	0%	4%	3%	3%	0%	-	-
Homeless	51%	4%	6%	61%	11%	8%	46%	-	-
Other	1%	5%	4%	2%	1%	0%	0%	-	-
<i>Number of youth</i>	206	113	67	142	80	36	13	6	3
<b>Race</b>									
	<i>White</i>			<i>Black</i>			<i>Other</i>		
Permanent	1%	74%	56%	2%	72%	41%	1%	83%	57%
Temporary	47%	10%	33%	36%	18%	48%	35%	7%	32%
Institutional	2%	1%	2%	2%	0%	0%	3%	2%	0%
Homeless	49%	9%	10%	59%	7%	4%	58%	7%	7%
Other	1%	6%	0%	1%	3%	7%	4%	2%	4%
<i>Number of youth</i>	141	87	52	140	67	27	80	46	28
<b>Ethnicity</b>									
	<i>Hispanic</i>			<i>Non-Hispanic</i>					
Permanent	2%	84%	36%	1%	71%	58%			
Temporary	47%	6%	56%	39%	14%	28%			
Institutional	1%	0%	0%	3%	1%	1%			
Homeless	48%	6%	8%	56%	9%	8%			
Other	2%	4%	0%	1%	4%	4%			
<i>Number of youth</i>	88	51	25	249	137	74			
<b>Age at Entry</b>									
	<i>16 to 18</i>			<i>19 to 21</i>					
Permanent	0%	82%	34%	2%	73%	61%			
Temporary	52%	11%	56%	35%	12%	28%			

Housing Status	Entry	Exit	Follow-Up	Entry	Exit	Follow-Up	Entry	Exit	Follow-Up
Institutional	4%	2%	0%	2%	1%	1%			
Homeless	43%	5%	9%	59%	9%	7%			
Other	1%	0%	0%	2%	5%	4%			
Number of youth	100	55	32	265	147	76			
Education Level at Entry									
	Less Than High School			High School or GED			More Than High School		
Permanent	0%	81%	41%	2%	71%	56%	6%	77%	83%
Temporary	39%	13%	52%	37%	11%	29%	52%	12%	8%
Institutional	2%	1%	0%	3%	1%	2%	2%	0%	0%
Homeless	58%	3%	7%	58%	12%	10%	33%	4%	0%
Other	1%	1%	0%	1%	5%	4%	6%	8%	8%
Number of youth	132	70	44	185	106	52	48	26	12
Programs Offered									
	TLP Only			TLP and MGH					
Permanent	1%	72%	47%	2%	78%	57%			
Temporary	39%	10%	43%	41%	13%	31%			
Institutional	3%	1%	2%	2%	1%	0%			
Homeless	55%	11%	6%	55%	5%	8%			
Other	2%	5%	2%	1%	3%	3%			
Number of youth	180	96	47	185	106	61			
Program Rent Model									
	Does Not Charge Rent			Charges Rent					
Permanent	1%	73%	45%	3%	80%	71%			
Temporary	43%	14%	42%	33%	5%	24%			
Institutional	2%	1%	0%	3%	2%	3%			
Homeless	52%	8%	9%	61%	9%	3%			
Other	2%	4%	4%	1%	4%	0%			
Number of youth	246	146	74	119	56	34			
Program Housing Model									
	Multiple Congregate Sites			Scattered Site or Congregate Site					
Permanent	1%	78%	46%	2%	71%	60%			
Temporary	37%	14%	45%	44%	10%	27%			
Institutional	1%	0%	0%	4%	2%	2%			
Homeless	59%	6%	9%	50%	11%	6%			
Other	2%	3%	0%	0%	6%	6%			
Number of youth	205	118	56	160	84	52			

Note: There were 206 youth who had exited TLP at the end of the program data collection period. Percentages are among youth with non-missing data at the time point specified. Follow-up is based on most recent aftercare contact, which occurred an average of 3 months after exit.

Source: TLP Program Data (BIF).

**Exhibit B2.3. Housing Status at Entry and Exit, by Aftercare Status Among Youth Who Exited TLP**

Housing Status	Entry			Exit		
	Aftercare	No Aftercare	p-value (chi-square)	Aftercare	No Aftercare	p-value (chi-square)
Permanent	0%	4%	0.18	83%	66%	0.01
Temporary	42%	32%		6%	19%	
Homeless	54%	58%		5%	11%	
Institutional/Other	5%	5%		5%	4%	
<i>Number of youth</i>	113	93		112	90	

*Note:* There were 206 youth who had exited TLP at the end of the program data collection period. Percentages are among youth with non-missing data at the time point specified. P-value is from a chi-square test of independence for the distribution of the housing status categories for youth who had aftercare contact versus those with no aftercare contact. A p-value greater than .05 indicates the distribution of housing status categories for the two groups is not statistically different; a p-value less than .05 indicates the distribution is statistically different. This test provides context to finding on housing status outcomes at follow-up for the aftercare group only by showing whether this group was similar to or differed from those with no aftercare contact at TLP entry and at TLP exit, respectively. Permanent and Institutional/Other were combined into a single “other” category for the entry chi-square test due to small cell sizes for Institutional/Other.

*Source:* TLP Program Data (YIF).



### B.3. Employment

**Exhibit B3.1: Employment Rates and Average Earnings by Quarter, Q4 2018 to Q4 2020**

Time Period	Employment Rate	Lost Job	Average Earnings (All Youth)	% With Earnings Above Poverty (All Youth)	Average Earnings (Employed Youth Only)	% With Earnings Above Poverty (Employed Youth Only)	National Youth Employment-Population Ratio
2018-Q4	47%	-	\$1,036	12%	\$2,212	25%	50%
2019-Q1	50%	11%	\$912	8%	\$1,818	15%	49%
2019-Q2	56%	14%	\$1,121	12%	\$2,005	22%	52%
2019-Q3	59%	11%	\$1,400	18%	\$2,364	30%	53%
2019-Q4	59%	11%	\$1,368	18%	\$2,310	31%	51%
2020-Q1	57%	8%	\$1,411	18%	\$2,483	32%	50%
2020-Q2	57%	12%	\$1,222	15%	\$2,140	27%	39%
2020-Q3	58%	14%	\$1,334	16%	\$2,313	28%	47%
2020-Q4	54%	12%	\$1,418	17%	\$2,622	32%	48%
All Quarters	55%	10%	\$1,247	15%	\$2,258	27%	49%

*Note:* Sample size is 331 youth with valid SSNs (10 youth provided SSNs that could not be verified during the matching process).

Employment rate is calculated as number of youth with any earnings in the quarter divided by the total number of youth with valid SSNs. Lost job is defined as having any earnings in previous quarter and zero earnings in current quarter. Average earnings for all youth divides total earnings for the time period by all youth; average earnings for employed youth only divides total earnings by the number of youth employed in that time period. % With Earnings Above Poverty based on Assistant Secretary for Planning and Evaluation Federal Poverty Guidelines for 1-person household 2018 (\$12,140), 2019 (\$12,490), and 2020 (\$12,760) divided by 4 to reflect quarterly reporting of earnings. National youth employment rate is based on employment-population ratio for youth age 16 to 24 years (not seasonally adjusted).

*Sources:* National Directory of New Hires, 2018-Q4 to 2020-Q4; Bureau of Labor Statistics Current Population Survey (Unadj) Labor Force Participation Rate – 16-24 yrs 2011-2021 (LNU02324887Q); ASPE Federal Poverty Guidelines 2018–2020.

**Exhibit B3.2: Employment Rates and Average Earnings by Quarter, Relative to TLP Entry**

Quarters Relative to TLP Entry	Employment Rate	Average Earnings (employed youth only)	Average Earnings (all youth)	Job Loss Rate	Number of Youth with Data
-6	44%	\$1,906	\$842	10%	188
-5	52%	\$2,153	\$1,114	9%	228
-4	53%	\$2,160	\$1,140	10%	252
-3	57%	\$2,329	\$1,328	12%	284
-2	57%	\$2,285	\$1,302	9%	302
-1	58%	\$1,900	\$1,099	11%	318
0 (TLP Entry)	60%	\$1,718	\$1,038	14%	308
1	60%	\$2,259	\$1,366	12%	253
2	65%	\$2,527	\$1,632	12%	178
3	66%	\$2,893	\$1,902	11%	143
4	69%	\$3,413	\$2,021	6%	103
5	53%	\$3,169	\$1,685	8%	79
6	55%	\$2,952	\$1,633	11%	47

*Note:* Sample size is 331 youth with valid SSNs (10 youth provided SSNs that could not be verified during the matching process). Negative numbers for quarters relative to TLP entry indicate the number of quarters prior to entry; quarter of entry was based on youth TLP entry date being at any time during the quarter. Employment rate is calculated as number of youth with any earnings in the quarter divided by the total number of youth with valid SSNs. Average earnings for employed youth only divides total earnings by the number of youth employed in that time period; average earnings for all youth divides total earnings for the time period by all youth. Job loss rate is defined as the proportion of youth who had any earnings in the previous quarter and zero earnings in the current quarter.

*Sources:* National Directory of New Hires, 2018-Q4 to 2020-Q4, TLP Program Data (YIF).

**Exhibit B3.3: Employment Rates and Average Earnings by Quarter, Relative to TLP Exit**

Quarters After TLP Exit	Employment Rate	Average Earnings (employed youth only)	Average Earnings (all youth)	Job Loss Rate	Number of Exiters With Data
0 (TLP Exit)	49.4%	\$2,882	\$1,425	11.2%	89
1	48.7%	\$3,058	\$1,490	1.3%	39
2	47.4%	\$4,657	\$2,206	26.3%	19

*Note:* Sample size is 89 youth with valid SSNs who had exited TLPs prior to January 1, 2021. Quarter after TLP exit was based on youth TLP exit date being at any time during the quarter unless the youth entered and exited the TLP in the same quarter, where the subsequent quarter was counted as the first exit quarter. Employment rate is calculated as number of youth with any earnings in the quarter divided by the total number of youth with valid SSNs. Average earnings for employed youth only divides total earnings by the number of youth employed in that time period; average earnings for all youth divides total earnings for the time period by all youth. Job loss rate is defined as the proportion of youth who had any earnings in the previous quarter and zero earnings in the current quarter.

*Sources:* National Directory of New Hires, 2018-Q4 to 2020-Q4, TLP Program Data (YIF).

**Exhibit B3.4: Mean Differences in Quarterly Earnings and Employment Before, During, and After TLP Participation**

Outcome	Overall	Before TLP	During TLP	After TLP	During vs. Before Participation		After vs. During Participation	
	Estimate	Estimate	Estimate	Estimate	Estimate	(95% CI)	Estimate	(95% CI)
<b>Among all youth</b>								
Quarterly earnings	\$1,247	\$1,098	\$1,464	\$1,557	+\$366	(\$156, \$576)	+\$93	(-\$366, \$522)
Employment rate	55%	52%	62%	50%	+10.2pp	(4.8pp, 15.6pp)	-12.4pp	(-21.4pp, -3.5pp)
Job loss rate	10%	9%	11%	13%	+1.9pp	(-4.0pp, 0.4pp)	+1.7pp	(-3.3pp, 6.7pp)
Sample size (in person-quarters)	2979	1,810	1,008	161	2,818		1,169	
<b>Among employed youth only</b>								
Quarterly earnings	\$2,258	\$2,117	\$2,358	\$3,134	\$241	(-\$21, \$502)	\$777	(\$194, \$1,359)
Sample size (in person-quarters)	1645	939	626	80	1,565		706	

Note: 95% CI = 95% Confidence Interval. Results for all youth based on 331 youth with valid SSNs (10 youth provided SSNs that could not be verified during the matching process). Employment rate is calculated as number of youth with any earnings in the quarter divided by the total number of youth with valid SSNs. Average quarterly earnings among all youth includes all quarters for all youth with valid SSNs, assuming youth earned \$0 in quarters with no reported earnings for NDNH. Average earnings among employed youth only includes quarters with earnings in the average, dropping quarters where youth were not employed. Job loss rate is defined as the proportion of youth who had any earnings in the previous quarter and zero earnings in the current quarter. Employment and job loss rate statistical significance was the same in sensitivity tests using cluster-corrected logistic regression models (not shown) – see Appendix Section A.5 for additional information on model estimation.

Sources: National Directory of New Hires, 2018-Q4 to 2020-Q4, TLP Program Data (YIF).

**Exhibit B3.5: Mean Differences in Quarterly Earnings and Employment, Overall, Before, During, and After TLP Participation, by Youth and Program Characteristics**

Outcome	Overall		Before TLP		During TLP		After TLP	
	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI
<b>Gender: Female vs. Male/Other</b>								
Quarterly earnings (all youth)	\$197	(-\$60, \$454)	-\$128	(-\$558, \$302)	\$284	(-\$93, \$661)	-\$136	(-\$990, \$719)
Quarterly earnings (employed youth)	\$135	(-\$179, \$450)	-\$265	(-\$825, \$295)	\$279	(-\$152, \$710)	\$245	(-\$900, \$1,389)
Employment rate	5.8%	(-1.2%, 12.8%)	2.2%	(-8.7%, 13.1%)	4.9%	(-4.5%, 12.3%)	-8.6%	(-26.8%, 9.6%)
Job loss rate	-2.2%	(-4.2%, -0.2%)	-2.0%	(-6.7%, 2.6%)	-1.1%	(-4.8%, 2.5%)	3.4%	(-6.6%, 13.3%)
<b>Race: White vs. Black/Other</b>								
Quarterly earnings (all youth)	-\$358	(-\$607, -\$108)	\$80	(-\$335, \$494)	-\$379	(-\$738, -\$19)	-\$492	(-\$1,363, \$379)
Quarterly earnings (employed youth)	-\$397	(-\$698, -\$97)	-\$53	(-\$577, \$472)	-\$329	(-\$734, \$76)	-\$727	(-\$1,879, \$426)
Employment rate	-6.2%	(-13.2%, 0.8%)	2.7%	(-8.6%, 14.1%)	-7.7%	(-17.1%, 1.8%)	-3.6%	(-21.6%, 14.5%)
Job loss rate	-0.8%	(-2.7%, 1.2%)	-0.8%	(-5.4%, 3.8%)	-0.6%	(-4.2%, 3.1%)	5.5%	(-4.4%, 15.4%)
<b>Ethnicity: Hispanic vs. Non-Hispanic</b>								
Quarterly earnings (all youth)	-\$183	(-\$513, \$146)	-\$412	(-\$931, \$106)	\$53	(-\$474, \$580)	\$389	(-\$511, \$1,288)
Quarterly earnings (employed youth)	\$134	(-\$308, \$576)	-\$404	(-\$1,053, \$246)	\$373	(-\$259, \$1,005)	-\$301	(-\$1,372, \$770)
Employment rate	-11.6%	(-20.0%, -3.2%)	-9.3%	(-21.3%, 2.8%)	-6.9%	(-17.7%, 4.0%)	19.4%	(-1.4%, 40.2%)
Job loss rate	-1.4%	(-3.6%, 0.8%)	-4.1%	(-9.0%, 0.8%)	1.5%	(-2.6%, 5.6%)	-7.4%	(-18.6%, 3.8%)
<b>Education at entry: Less than high school vs. Vocational or some college</b>								
Quarterly earnings (all youth)	-\$938	(-\$1,381, -\$495)	-\$511	(-\$1,246, \$223)	-\$681	(-\$1,207, -\$156)	\$1,007	(-\$231, \$2,245)
Quarterly earnings (employed youth)	-\$721	(-\$1,228, -\$214)	-\$892	(-\$1,750, -\$35)	-\$216	(-\$773, \$342)	\$584	(-\$1,762, \$2,930)
Employment rate	-26.3%	(-36.4%, -16.1%)	-5.0%	(-21.6%, 11.5%)	-25.0%	(-38.8%, -11.2%)	30.9%	(8.3%, 53.5%)
Job loss rate	0.2%	(-2.8%, 3.1%)	0.5%	(-7.2%, 8.2%)	0.1%	(-6.0%, 6.1%)	-3.6%	(-20.6%, 13.4%)
<b>Education at entry: High school or GED vs. Vocational or some college</b>								
Quarterly earnings (all youth)	-\$226	(-\$678, \$226)	-\$417	(-\$1,160, \$325)	-\$17	(-\$530, \$497)	\$793	(-\$374, \$1,960)
Quarterly earnings (employed youth)	-\$140	(-\$625, \$344)	-\$568	(-\$1,392, \$257)	\$179	(-\$315, \$674)	\$677	(-\$1,559, \$2,912)
Employment rate	-6.0%	(-15.5%, 3.5%)	-1.9%	(-17.8%, 14.0%)	-6.0%	(-18.5%, 6.6%)	18.2%	(-2.3%, 38.8%)
Job loss rate	0.2%	(-2.6%, 3.0%)	3.1%	(-4.1%, 10.4%)	-1.5%	(-7.2%, 4.2%)	-3.3%	(-19.2%, 12.6%)

Outcome	Overall		Before TLP		During TLP		After TLP	
	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI
<b>Program requires employment vs. Does not require employment</b>								
Quarterly earnings (all youth)	-\$192	(-\$454, \$71)	-\$410	(-\$895, \$74)	\$85	(-\$366, \$535)	-\$222	(-\$1,433, \$989)
Quarterly earnings (employed youth)	-\$206	(-\$521, \$110)	-\$495	(-\$1,060, \$89)	\$57	(-\$441, \$555)	\$615	(-\$1,278, \$2,507)
Employment rate	-3.6%	(-11.6%, 4.3%)	-7.5%	(-20.5%, 5.4%)	2.1%	(-8.6%, 12.7%)	-15.4%	(-37.2%, 6.3%)
Job loss rate	0.6%	(-1.6%, 2.9%)	-0.4%	(-6.0%, 5.1%)	1.2%	(-3.5%, 5.9%)	-4.5%	(-15.7%, 6.8%)

*Note:* 95% CI = 95% Confidence Interval. Results for all youth based on 331 youth with valid SSNs (10 youth provided SSNs that could not be verified during the matching process). Quarter of entry was based on youth TLP entry date being at any time during the quarter; quarter of exit was based on any exit during quarter except if the youth entered and exited in the same quarter, where the subsequent quarter was counted as the first quarter after TLP. Employment rate is calculated as number of youth with any earnings in the quarter divided by the total number of youth with valid SSNs. Average quarterly earnings among all youth includes all quarters for all youth with valid SSNs, assuming youth earned \$0 in quarters with no reported earnings for NDNH. Average earnings among employed youth only includes quarters with earnings in the average, dropping quarters where youth were not employed. Job loss rate is defined as the proportion of youth who had any earnings in the previous quarter and zero earnings in the current quarter. Employment and job loss rate statistical significance was the same in sensitivity tests using cluster-corrected logistic regression models (not shown) – see Appendix Section A.5 for additional information on model estimation.

*Sources:* National Directory of New Hires, 2018-Q4 to 2020-Q4, TLP Program Data (YIF).

**Exhibit B3.6: Survival Analysis Life Table Results for Youth Employed and Unemployed at TLP Entry**

Quarters After TLP Entry	Employed at entry: Time to first job loss (N=194)					Unemployed at entry: Time to first job (N=123)				
	Lost Job	Censored	Survival	Hazard	Hazard SE	Lost Job	Censored	Survival	Hazard	Hazard SE
0 (Quarter entered TLP)	0	36	1.000	0.000	n/a	0	22	1.000	0.000	n/a
1	31	35	1.000	0.248	0.044	31	25	1.000	0.425	0.075
2	12	10	0.779	0.148	0.043	14	5	0.650	0.394	0.1033
3	11	15	0.672	0.193	0.058	6	5	0.436	0.293	0.1182
4	7	7	0.554	0.189	0.071	-	-	0.325	0.182	0.128
5	-	-	0.458	0.163	0.081	-	-	0.270	0.857	0.4471
6	-	-	0.389	0.370	0.163	n/a	n/a	n/a	n/a	n/a
7	-	-	0.267	0.750	0.401	n/a	n/a	n/a	n/a	n/a

*Note:* Sample size is 317 youth with valid SSNs who had entered TLPs prior to January 1, 2021. Youth were included in the employed at entry analysis if they were employed within the first three months after entering TLP and in the unemployed at entry analysis if they had no employment within the first three months of entering a TLP. Quarter of entry was based on youth TLP entry date being any time during the quarter. Quarters after TLP entry reflect an interval including the beginning of the numbered quarter as the lower bound up to the last day of that quarter (e.g., the row for quarter 0 begins on the first day of the quarter the youth entered TLP up through the last day of that quarter). Survival probabilities are based on an assumed midpoint of this range. The maximum number of quarters for the job loss analyses was 8 quarters and the maximum for first job was 7 quarters – counts are omitted where any cell sizes are less than 5 (indicated with “-”).

*Sources:* National Directory of New Hires, 2018-Q4 to 2020-Q4, TLP Program Data (YIF).



**Exhibit B3.7: Differences by Youth Characteristics in Job Retention Among Youth Employed at TLP Entry and in Time to Employment Among Youth Not Employed at TLP Entry**

Characteristic	Employed at entry: Time to first job loss (N=194)				Unemployed at entry: Time to first job (N=123)			
	Estimate	SE	p-value	Hazard Ratio	Estimate	SE	p-value	Hazard Ratio
<b>Gender</b>								
Female	-0.239	0.247	0.333	0.788	0.139	0.283	0.622	1.150
Male	0.146	0.254	0.564	1.157	-0.120	0.286	0.675	0.887
Other	0.540	0.518	0.297	1.716	-0.260	1.011	0.797	0.771
<b>Race</b>								
White	0.450	0.236	0.057	1.568	-0.210	0.273	0.441	0.811
Black	-0.508	0.252	0.044	0.601	0.132	0.283	0.642	1.141
Other	0.065	0.277	0.815	1.067	0.125	0.310	0.686	1.133
<b>Ethnicity</b>								
Hispanic	-0.013	0.290	0.963	0.987	0.023	0.311	0.940	1.024
<b>Entry from BCP</b>								
Entered TLP from BCP	0.348	0.305	0.255	1.146	0.469	0.305	0.125	1.599
<b>TANF receipt at entry</b>								
Youth or family had received TANF as of entry	-0.399	0.377	0.290	0.671	-0.304	0.313	0.331	0.738
<b>Education completed at entry</b>								
Less than high school	0.441	0.247	0.074	1.554	-0.397	0.279	0.155	0.673
High school or GED or less	0.395	0.398	0.322	1.484	-0.538	0.349	0.124	0.584
<b>Educational enrollment</b>								
Program reported youth enrolled in educational program at entry	0.350	0.247	0.157	1.419	0.496	0.274	0.070	1.642
<b>Youth-reported impact of COVID on employment at study entry</b>								
No effect	-0.074	0.319	0.817	0.929				
Negative effect	0.492	0.261	0.059	1.635				
Positive effect	-0.435	0.516	0.400	0.647				
Mixed effect	-0.794	0.466	0.088	0.452				
<b>Entry during COVID-19 pandemic</b>								
Youth entered TLP during COVID-19 pandemic	-0.467	0.466	0.317	0.627				

*Note:* Estimate = model estimate; SE = standard error; BCP = Basic Center Program. Sample size is 317 youth with valid SSNs who had entered TLPs prior to January 1, 2021. Unless otherwise noted, all characteristics were defined as binary variables, such that the estimate for each row is the difference between youth with and without that characteristic. Youth were included in the employed at entry analysis if they were employed within the first three months after entering TLP and in the unemployed at entry analysis if they had no employment within the first three months of entering a TLP.

*Sources:* National Directory of New Hires, 2018-Q4 to 2020-Q4, TLP Program Data (YIF).

**Exhibit B3.8: Comparison of Model Fit for Trajectories in Youth Employment Rates and Average Earnings**

Model	Before/After TLP Entry Shape	-2LL	p-value	AIC	BIC
<b>Earnings</b>					
1. Linear only	n/a	25492.34	n/a	25520.340	25573.57
2. Piecewise	Linear / Linear	25450.39	<.01	25486.389	25554.83
3. Piecewise	Quadratic / Linear	25394.81	<.01	25440.808	25528.26
4. Piecewise	Quadratic / Quadratic	25450.33	n/a <sup>a</sup>	25490.331	25566.37
<b>Employment</b>					
1. Linear only	n/a	3183.074	n/a	3193.074	3212.085
2. Piecewise	Linear / Linear <sup>b</sup>	3099.186	<.01	3151.186	3250.041
3. Piecewise	Quadratic / Linear	<sup>c</sup>	-	-	-
4. Piecewise	Quadratic / Quadratic	<sup>c</sup>	-	-	-

Note: <sup>a</sup>The quadratic/quadratic model would not converge when all pieces were allowed to covary; covariances between the intercept and quadratic parameters and linear and quadratic parameters were constrained to zero to permit estimation. Because the models are not nested, a likelihood ratio test could not be conducted for the quadratic / linear vs. quadratic / quadratic models.

<sup>b</sup>Covariance for linear parameters before and after entry was near zero and fixed to zero to permit model estimation.

<sup>c</sup>Models did not converge. Sample size is 331 youth with valid SSNs. -2LL = Log-likelihood times negative 2; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion. P-value is from a likelihood ratio test.

Sources: National Directory of New Hires, 2018-Q4 to 2020-Q4, TLP Program Data.

**Exhibit B3.9: Growth Parameters for Best-Fitting Trajectory Model**

Model	Intercept		Before TLP Entry				After TLP Entry			
Shape Before / After Entry	Estimate	$p$	Linear est.	$p$	Quadratic est.	$p$	Linear est.	$p$	Quadratic est.	$p$
<b>Earnings</b>										
Quadratic / Linear	15.794	<.01	0.676	0.25	-0.004	0.96	-0.145	0.67	n/a	n/a
<b>Employment</b>	<b>z-score</b>		<b>z</b>		<b>z</b>		<b>z</b>		<b>z</b>	
Linear only	0.00	n/a	0.007	0.87	n/a	n/a	0.148	0.05 <sup>a</sup>	n/a	n/a

Note: <sup>a</sup> $p=0.049$ , rounded up to .05. Sample size is 331 youth with valid SSNs who had entered TLPs prior to January 1, 2021. Est. = Coefficient estimate,  $p$  = p-value. Earnings estimates are in dollars (thousands); employment estimates are z-scores from model with probit link function.

Sources: National Directory of New Hires, 2018-Q4 to 2020-Q4, TLP Program Data.

**B.4. Education****Exhibit B4.1: Postsecondary Enrollment Rates for Study Sample, Jan 2017 to May 2021**

Month	2017	2018	2019	2020	2021
Jan	2.2%	5.8%	13.7%	12.6%	13.2%
Feb	2.7%	5.2%	9.3%	11.0%	10.7%
Mar	2.7%	5.2%	9.3%	11.0%	10.7%
Apr	2.7%	5.2%	9.3%	10.7%	10.7%
May	3.0%	5.8%	9.9%	10.4%	10.7%
Jun	3.6%	5.2%	10.4%	10.1%	n/a
Jul	3.8%	5.2%	10.4%	10.1%	n/a
Sep	8.0%	12.9%	13.4%	14.8%	n/a
Oct	6.6%	11.0%	11.5%	10.1%	n/a
Nov	5.8%	11.0%	11.0%	9.9%	n/a
Dec	5.8%	11.0%	11.0%	9.9%	n/a

*Note:* Sample size is 365 youth. Youth are counted as enrolled in a given month if they were indicated as being enrolled for any portion of the month, with two adjustments to reflect continuity in enrollment: (1) An individual enrolled as of May in a calendar year was presumed to remain enrolled over the summer (June, July) if they re-enrolled in August for classes; (2) If an individual had a single month of non-enrollment between two enrolled months, they were counted as having remained enrolled in that month (e.g., if a youth was enrolled from September to December, was unenrolled in January and was enrolled from February to May, they were counted as still being enrolled in January (as the non-enrollment is assumed to be likely due to a break in classes and the school calendar, not disenrollment).

*Source:* National Student Clearinghouse StudentTracker, January 2017 to May 2021.

**Exhibit B4.2: Postsecondary Enrollment Rates for Study Sample, Relative to TLP Entry**

Months relative to TLP Entry	% Enrolled	N
-18	9.5%	359
-17	9.7%	361
-16	10.2%	362
-15	11.3%	364
-14	11.0%	365
-13	11.5%	365
-12	11.8%	365
-11	12.9%	365
-10	12.1%	365
-9	12.1%	365
-8	11.5%	365
-7	11.5%	365
-6	11.2%	365
-5	10.4%	365
-4	11.0%	365
-3	9.9%	365
-2	9.0%	365
-1	9.3%	365
0	8.8%	365
1	9.9%	365
2	8.5%	365
3	8.5%	365
4	8.8%	364
5	9.2%	349
6	10.2%	335
7	12.1%	315
8	12.6%	285
9	12.9%	256
10	13.8%	225
11	13.7%	197
12	14.4%	180
13	13.7%	168
14	13.4%	157
15	12.8%	149
16	11.8%	127
17	9.7%	113
18	10.4%	106

*Note:* Youth are counted as enrolled in a given month if they were indicated as being enrolled for any portion of the month, with two adjustments to reflect continuity in enrollment: (1) An individual enrolled as of May in a calendar year was presumed to remain enrolled over the summer (June, July) if they re-enrolled in August for classes; (2) If an individual had a single month of non-enrollment between two enrolled months, they were counted as having remained enrolled in that month (e.g., if a youth was enrolled from September to December, was unenrolled in January and was enrolled from February to May, they were counted as still being enrolled in January (as the non-enrollment is assumed to be likely due to a break in classes and the school calendar, not disenrollment).

*Sources:* National Student Clearinghouse StudentTracker, January 2017 to May 2021; TLP Program Data (YIF).

**Exhibit B4.3: Postsecondary Enrollment Rates for Study Sample, Relative to TLP Exit**

Months After TLP Exit	% Enrolled	N
0	9.8%	204
1	10.2%	206
2	10.6%	188
3	10.8%	158
4	10.2%	137
5	10.1%	109
6	8.5%	94
7	9.2%	65
8	11.8%	51
9	7.7%	39
10	6.7%	30
11	14.3%	21
12	10.5%	19

*Note:* Youth are counted as enrolled in a given month if they were indicated as being enrolled for any portion of the month, with two adjustments to reflect continuity in enrollment: (1) An individual enrolled as of May in a calendar year was presumed to remain enrolled over the summer (June, July) if they re-enrolled in August for classes; (2) If an individual had a single month of non-enrollment between two enrolled months, they were counted as having remained enrolled in that month (e.g., if a youth was enrolled from September to December, was unenrolled in January and was enrolled from February to May, they were counted as still being enrolled in January (as the non-enrollment is assumed to be likely due to a break in classes and the school calendar, not disenrollment).

*Sources:* National Student Clearinghouse StudentTracker, January 2017 to May 2021; TLP Program Data (YIF).

**Exhibit B4.4: Mean Differences in Postsecondary Enrollment Rates Before, During, and After TLP Participation**

Outcome	Overall	Before TLP	During TLP	After TLP	During vs. Before		After vs. During	
	Estimate	Estimate	Estimate	Estimate	Estimate	(95% CI)	Estimate	(95% CI)
<b>Among all youth</b>								
Enrollment rate	11%	11%	11%	11%	0.1%	(-2.6%, 2.9%)	-0.2%	(-4.5%, 4.1%)
Sample size (# months)	11,929	6,556	4,005	1,368	10,561		5,373	
<b>Among youth who ever enrolled only</b>								
Enrollment rate	38%	39%	38%	37%	0.9%	(-8.1%, 9.9%)	-0.6%	(-13.7%, 12.5%)
Sample size (# months)	3,380	1,848	1,143	389	2,991		1,532	

*Note:* 95% CI = 95% Confidence Interval. The top panel for “among all youth” shows monthly enrollment rates for the full study sample, including those who never enrolled in a postsecondary program during the study time period. This analysis reflects the experiences of the average study youth. The bottom panel for “among youth who ever enrolled only” shows monthly enrollment rates among youth who were ever enrolled in a postsecondary program during the study time period. These estimates reflect the extent to which youth who ever enrolled remained continuously enrolled or had periods where they were not enrolled. Youth are counted as enrolled in a given month if they were indicated as being enrolled for any portion of the month, with two adjustments to reflect continuity in enrollment: (1) An individual enrolled as of May in a calendar year was presumed to remain enrolled over the summer (June, July) if they re-enrolled in August for classes; (2) If an individual had a single month of non-enrollment between two enrolled months, they were counted as having remained enrolled in that month (e.g., if a youth was enrolled from September to December, was unenrolled in January and was enrolled from February to May, they were counted as still being enrolled in January (as the non-enrollment is assumed to be likely due to a break in classes and the school calendar, not disenrollment). Before TLP is based on the 18 months prior to TLP entry, and the Overall column means and samples sizes reported also reflect this condition. *Sources:* National Student Clearinghouse StudentTracker, January 2017 to May 2021; TLP Program Data (YIF).



**Exhibit B4.5: Mean Differences in Postsecondary Enrollment Rate, Overall, Before, During, and After TLP Participation, by Youth and Program Characteristics**

Outcome	Overall		Before TLP		During TLP		After TLP	
	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI
<b>Gender: Female vs. Male/Other</b>								
Enrollment rate (all youth)	4.3%	(-0.6%, 9.2%)	0.3%	(-5.2%, 5.8%)	3.5%	(-2.8%, 9.9%)	5.2%	(-3.9%, 14.4%)
Enrollment rate (ever enrolled)	-9.4%	(-23.4%, 4.6%)	0.0%	(-19.0%, 19.0%)	-11.3%	(-30.6%, 8.0%)	17.6%	(-16.1%, 51.3%)
<b>Race: White vs. Black/Other</b>								
Enrollment rate (all youth)	-6.8%	(-11.5%, -2.2%)	-3.0%	(-8.3%, 2.3%)	-5.0%	(-10.9%, 1.0%)	-1.9%	(-10.7%, 7.0%)
Enrollment rate (ever enrolled)	-11.9%	(-23.4%, -0.4%)	-8.2%	(-25.8%, 9.3%)	-7.3%	(-24.3%, 9.6%)	-0.5%	(-26.6%, 25.7%)
<b>Ethnicity: Hispanic vs. Non-Hispanic</b>								
Enrollment rate (all youth)	3.5%	(-2.8%, 9.8%)	-10.2%	(-16.8%, -3.6%)	10.0%	(2.0%, 18.0%)	-7.1%	(-18.8%, 4.5%)
Enrollment rate (ever enrolled)	6.0%	(-8.3%, 20.3%)	-28.2%	(-46.7%, -9.7%)	22.8%	(5.4%, 40.2%)	-14.1%	(-44.6%, 16.4%)
<b>Education at entry: Vocational or some college vs. Less than high school</b>								
Enrollment rate (all youth)	34.4%	(24.2%, 44.7%)	9.2%	(-2.3%, 13.4%)	29.2%	(15.6%, 42.9%)	0.7%	(-15.6%, 17.1%)
Enrollment rate (ever enrolled)	26.9%	(10.6%, 43.1%)	36.7%	(12.1%, 61.4%)	3.1%	(-19.2%, 25.5%)	39.8%	(6.6%, 73.0%)
<b>Education at entry: High school or GED vs. Less than high school</b>								
Enrollment rate (all youth)	7.0%	(3.4%, 10.6%)	5.2%	(0.0%, 10.4%)	3.5%	(-1.8%, 8.7%)	5.6%	(-2.3%, 13.4%)
Enrollment rate (ever enrolled)	7.0%	(-7.4%, 21.4%)	32.4%	(8.6%, 56.1%)	-13.3%	(-32.7%, 6.1%)	29.0%	(-2.3%, 60.3%)
<b>Employment at entry: Employed vs. Not employed</b>								
Enrollment rate (all youth)	11.5%	(6.0%, 17.0%)	3.9%	(-2.1%, 10.0%)	8.8%	(1.9%, 15.7%)	4.6%	(-6.0%, 15.2%)
Enrollment rate (ever enrolled)	9.0%	(-1.9%, 20.0%)	11.5%	(-6.6%, 29.6%)	2.1%	(-14.1%, 18.2%)	5.7%	(-19.7%, 31.0%)
<b>Program requires enrollment vs. Does not require enrollment</b>								
Enrollment rate (all youth)	3.3%	(-1.7%, 8.4%)	-5.1%	(-10.9%, 0.7%)	6.4%	(-0.2%, 13.0%)	-1.9%	(-10.8%, 7.1%)
Enrollment rate (ever enrolled)	5.9%	(-5.6%, 17.5%)	-12.6%	(-30.3%, 5.1%)	-3.7%	(-28.7%, 21.3%)	-3.7%	(-28.7%, 21.3%)

Note: 95% CI = 95% Confidence Interval. Outcomes for “all youth” are monthly enrollment rates for the full study sample, including those who never enrolled in a postsecondary program during the study time period. Outcomes for “ever enrolled” are monthly enrollment rates among youth who were ever enrolled in a postsecondary program during the study time period. These estimates reflect the extent to which youth who ever enrolled remained continuously enrolled or had periods where they were not enrolled. Youth are counted as enrolled in a given month if they were indicated as being enrolled for any portion of the month, with two adjustments to reflect continuity in enrollment: (1) An individual enrolled as of May in a calendar year was presumed to remain enrolled over the summer (June, July) if they re-enrolled in August for classes; (2) If an individual had a single month of non-enrollment between two enrolled months, they were counted as having remained enrolled in that month (e.g., if a youth was enrolled from September to December, was unenrolled in January and was enrolled from February to May, they were counted as still being enrolled in January (as the non-enrollment is assumed to be likely due to a break in classes and the school calendar, not disenrollment).

Sources: National Student Clearinghouse StudentTracker, January 2017 to May 2021; TLP Program Data (YIF).

**Exhibit B4.6: Survival Analysis Life Table Results for Youth Enrolled at TLP Entry**

Months After TLP Entry	Enrolled at entry: Time to first non-enrollment period (N=31)				
	Not Enrolled	Censored	Survival	Hazard	Hazard SE
0 to <5	10	1	1.000	0.078	0.024
5 to <10	3	6	0.672	0.039	0.022
10 to <15	3	1	0.554	0.067	0.038
15 to <20	1	5	0.395	0.050	0.050
20 or more	0	1	0.308	0.000	n/a

*Note:* Sample size is 31 youth with valid SSNs who had entered TLPs prior to January 1, 2021 and were enrolled in a postsecondary program at entry. Months after TLP entry reflect an interval including the beginning of the numbered quarter as the lower bound up to the last day of the month.

*Sources:* National Directory of New Hires, 2018-Q4 to 2020-Q4, TLP Program Data (YIF).

**Exhibit B4.7: Comparison of Model Fit for Trajectories in Youth Postsecondary Enrollment Rates**

Model	Before/After TLP Entry Shape	-2LL	p-value	AIC	BIC
1. Linear only	n/a	7789.787	n/a	7793.787	7808.459
2. Piecewise	Linear / Linear	7779.963	0.001	7787.963	7817.308
3. Piecewise	Quadratic / Linear	7769.696	0.001	7779.696	7816.377
4. Piecewise	Quadratic / Quadratic	7769.629	0.795	7781.629	7825.647

*Note:* Sample size is 365 youth. -2 LL = Log-likelihood times negative 2; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion. P-value is from a likelihood ratio test.

*Sources:* National Directory of New Hires, 2018-Q4 to 2020-Q4, TLP Program Data.

**Exhibit B4.8: Growth Parameters for Best-Fitting Trajectory Model for Postsecondary Enrollment**

Model	Intercept		Before TLP Entry				After TLP Entry			
	Estimate	$p$	Linear Est.	$p$	Quadratic Est.	$p$	Intercept Est.	$p$	Linear Est.	$p$
Quadratic / Linear	-2.396	<.01	-0.080	0.02	-0.004	0.01	-0.106	0.50	0.177	0.00

Note: Sample size is 365 youth. Est. = Estimate (in logits),  $p$  = p-value.

Sources: National Directory of New Hires, 2018-Q4 to 2020-Q4, TLP Program Data.

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