The Ready to Work Partnership Grant Evaluation: Findings from the Interim Impact Study of Four Employment Services Programs for the Long-Term Unemployed

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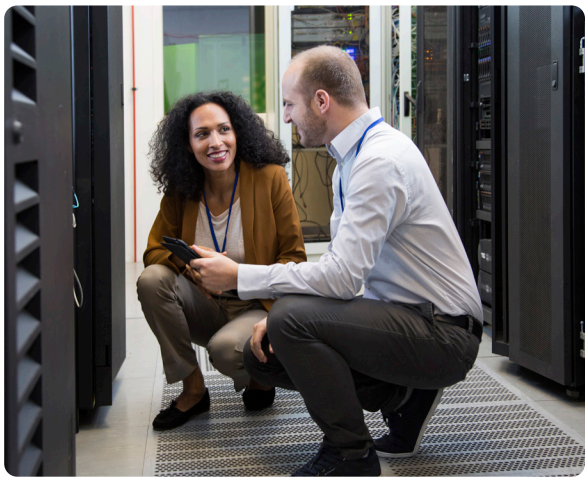

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About this Report

The Ready to Work (RTW) Partnership Grants, operated between 2015 and 2019, were funded by the U.S. Department of Labor (DOL) to establish programs that might prove effective in preparing long-term unemployed and underemployed U.S. workers for employment in middle- and higher-level occupations. The RTW programs were to provide customized services that could include staff guidance on career and service planning, occupational training, work-based training, employment readiness, and job search assistance—but with considerable discretion in program design given to grantees.

To understand the impact of the RTW grant program on participants' earnings and employment, the RTW Evaluation, conducted by Abt Associates and MEF Associates for DOL's Employment and Training Administration, includes an implementation study as well as an experimental impact study. The evaluation assesses the programs implemented by four purposively selected RTW grantees.

This *Interim Impact Report* provides interim estimates of program impact, through approximately 18 months after random assignment into the study, on service and credential receipt, earnings and employment, public benefits receipt, and a range of other employment-related outcomes. The *Final Impact Report* (2022) will provide estimates of program impact on earnings and employment for at least an additional 21 months, or through 3.25 years after random assignment.

Suggested Citation

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At the U.S. Department of Labor, Gloria Salas-Kos, the Contracting Officer's Representative for the evaluation, provided guidance throughout the study and reviewed the early drafts of the report. Likewise, Deborah Martierrez, and before her Megan Lizik, of DOL's Chief Evaluation Office provided guidance and review throughout the evaluation. We appreciate the thoughtful insights and feedback from members of the Technical Working Group: Carolyn Heinrich of Vanderbilt University, Harry Holzer of Georgetown University, Demetra Nightingale of the Urban Institute, and Jeffrey Smith of the University of Wisconsin, Madison.

In addition, many individuals at Abt Associates contributed to this report. Karen Gardiner provided important comments on early drafts. MEF staff Sam Elkin and Bright Sarfo served as site liaisons and led site visits at two grants. Michelle Kahmann and Jessica Flores Pleasants led follow-up survey data collection. Nayara Mowry, Emily Dastrup, Don LaLiberty, and Doug Walton supported the analysis of survey and administrative data. Jessica Kerbo, David Dupree, and Katheleen Linton provided graphic design support. The team also is appreciative of the role of Bry Pollack in editing the report.

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Executive Summary

In response to the deep recession of 2007-2009 and the resulting high levels of long-term unemployment, in 2014 the U.S. Department of Labor (DOL) created the Ready to Work (RTW) Partnership Grant Program. Grantees were to establish programs that might prove effective in preparing long-term unemployed (defined as jobless for 27 weeks or more) and underemployed U.S. workers for employment in middle- and higher-level occupations in industries being filled by foreign workers through the H-1B visa program.

As specified by DOL, the RTW programs were to provide customized services that could include staff guidance on career and service planning, occupational training, work-based training, employment readiness, and job search assistance—but with considerable discretion in program design given to grantees. In October 2014, DOL awarded 24 four-year grants totaling $170 million to partnerships of workforce agencies, training providers, employers, and other organizations to provide these customized services to the target population. The RTW-funded programs operated from 2015 to 2019, prior to the COVID-19 pandemic.

To understand the impact of the RTW grant program on participants' earnings and employment, DOL engaged Abt Associates in partnership with MEF Associates (the "evaluation team"). The evaluation team undertook a rigorous evaluation of the programs implemented by four purposively selected RTW grantees:

- Maryland Tech Connection (MTC), operated by Anne Arundel Workforce Development Corporation (AAWDC);
- Skills to Work in Technology (STW-T) and Job Search Accelerator (JSA), operated by Jewish Vocational Service (JVS);
- Finger Lakes Hired (FLH), operated by RochesterWorks!; and
- Reboot Northwest, operated by Worksystems, Inc. (WSI).

This report provides interim estimates of program impact on service and credential receipt, earnings and employment, public benefits receipt, and a range of other employment-related outcomes through approximately 18 months after random assignment into the study.

RTW Evaluation: Design, Data Sources, and Study Sample

The RTW Evaluation includes an experimental impact study to estimate the effect of RTW programs on participants' outcomes (in particular, earnings), as well as an implementation study (Martinson et al. 2017; Copson et al. 2020). To estimate the impact of each RTW program, the study examines outcomes for those offered the RTW program relative to what their outcomes would have been if they had not been offered the RTW program. This interim impact study report presents impacts 18 months after random assignment into the study; a final impact report will present impacts through at least 39 months, or 3.25 years (to be released in 2022). Exhibit ES-1 provides summary information about the four grantees in the evaluation, showing they vary in number and type of target industries and in approach to service delivery.

Exhibit ES-1: Overview of Grantee Programs in the Ready to Work Evaluation

Grantee Lead Agency	Program Name and Grant Amount	Target Industries	Key Grant-funded Components
Anne Arundel Workforce Development Corporation (AAWDC) 12 counties in Maryland	**Maryland Tech Connection (MTC)** **Grant amount:** Total: $9,995,047 Per person served: $7,971	• Advanced Manufacturing • Bioscience • Healthcare • Information Technology	• Staff assessed participants to develop customized services, with most initially attending a 2-week employment readiness course • Subsequent services individualized and included occupational training, work-based training, and job search assistance
Jewish Vocational Service (JVS) San Francisco, CA	**Skills to Work in Technology (STW-T)** **Job Search Accelerator (JSA)** **Grant amount:** Total: $6,396,276 Per person served: $6,358	• Information Technology	• SWT-T program consisted of three technical skills training courses: Business Administration Bootcamp, Digital Marketing, and Salesforce® Administration • JSA was a 2-week program focused on job search and readiness skills (implemented partway through the grant)
RochesterWorks! Monroe County, NY	**Finger Lakes Hired (FLH)** **Grant amount:** Total: $5,189,848 Per person served: $5,154	• Advanced Manufacturing • Healthcare • Information Technology	• Staff assessed participants to develop customized services. Emphasis on participation in 1-week employment readiness course and one-on-one assistance from staff • Other options included occupational training, work-based training, job search assistance
Worksystems Inc. (WSI) Portland, OR and Vancouver, WA	**Reboot Northwest (NW)** **Grant amount:** Total: $8,455,004 Per person served: $6,272	• Advanced Manufacturing • Information Technology	• Staff assessed participants to develop customized services. Services included 2- to 3-week employment readiness course, occupational training and work-based training, and job search assistance

SOURCE: Developed by Abt Associates based on staff reports and RTW grantee program materials.
NOTES: Grant amounts per person served are calculated with respect to the number of individuals served by the grants, not the number of individuals in the program group. As discussed in Martinson et al. 2017 and Copson et al. 2020, in addition to members of the program group, the grantees served other individuals, such as veterans, incumbent workers, and people who enrolled before the study started and after random assignment for the study concluded. In particular, the MTC program served 1,254 individuals, the JVS RTW programs served 1,006 individuals, FLH served 1,007 individuals, and Reboot NW served 1,348 individuals.

To produce reliable estimates of the RTW programs' effects, applicants at each grantee program were randomly assigned to one of two groups: (1) the program group, which was offered the employment-related services funded by the RTW grant, and (2) the control group, which was not offered RTW services but had access to other resources in the community (including standard services available through the workforce system under the Workforce Innovation and Opportunity Act). This design ensures that no systematic differences existed between the groups at the time they entered the study; as a result, any differences between the groups can be attributed directly to the RTW services.

Based on the RTW logic model (see Exhibit 2-1), this study reports interim estimates of impact—that is, what difference the RTW program made—on service and credential receipt, earnings and employment, public benefits receipt, and other employment-related outcomes. Most outcomes are measured in the evaluation's follow-up survey, conducted approximately 18 months after random assignment. Earnings and employment are also measured in administrative data—the National Directory of New Hires (NDNH)—through 18 months (six quarters) for the **full sample**, and through 36 months (12 quarters) for approximately the first half of sample members, who were randomly assigned early in the study period (the **early cohort)**. The interim impact study's confirmatory outcome, the main indicator of the extent to which a given RTW program is making progress toward its goals after 18 months, is *average earnings in the fifth and sixth quarters after random assignment*. The evaluation also estimates impacts for subgroups based on age, education level, employment status, and gender.

Reflecting the target population of the RTW program, study participants were generally well educated (40 percent or more had at least a bachelor's degree), and more than 80 percent of study members were unemployed when they entered the study (approximately 30 percent for a year or more). The average age of study participants was approximately 45.

The impact results through 18 months for each of the four grantee programs are presented separately below. For each grantee, this summary provides impacts on service receipt for the structured employment-related activities provided through the RTW programs—occupational training, work-based training, and employment readiness courses. It then discusses impacts on the key outcomes the RTW services are hypothesized to affect: credential receipt, earnings and employment, and public benefits receipt.

AAWDC's Maryland Tech Connection (MTC) Program

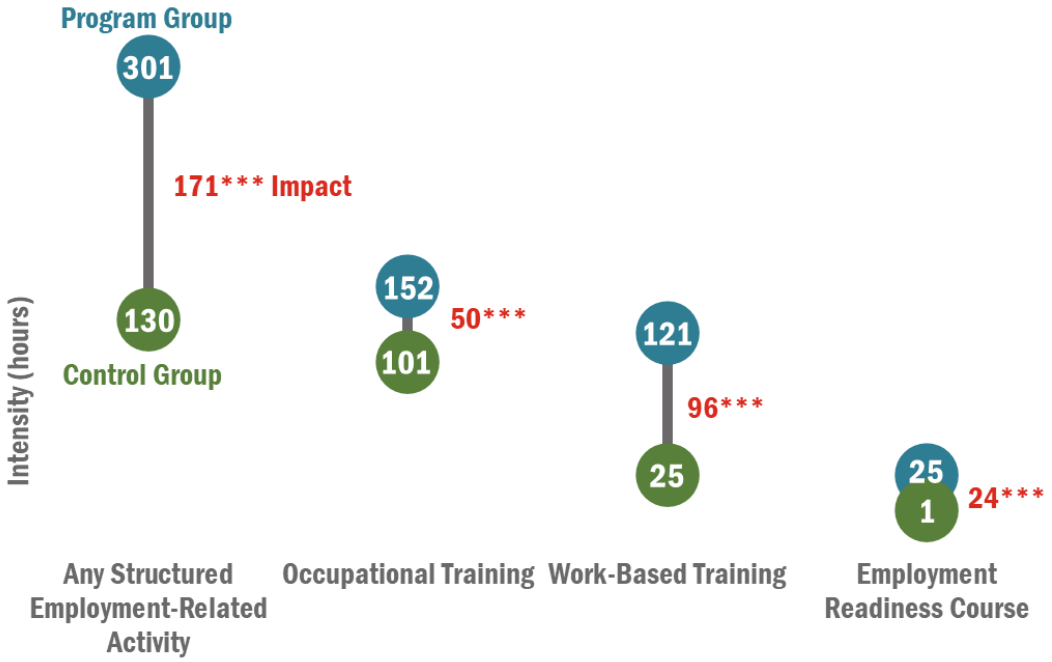
AAWDC, a workforce investment board (WIB), operated MTC in coordination with six other WIBs in northeast Maryland. MTC had positive impacts on service receipt and credential receipt, but a negative impact on earnings. The study finds no clear evidence of impact on employment or public benefits receipt.

- **MTC increased hours of participation in occupational training, work-based training, and employment readiness courses.**

Exhibit ES-2 below shows the impact of the MTC program on total hours of participation in any structured employment-related activity (first column), as well as separately for occupational training (second column), work-based training (third column), and employment readiness courses (final column). MTC increased hours attended in all three activities, as well as in any activity.

Overall, MTC increased participation in any structured employment-related activity by 171 hours (301 hours among the program group versus 130 among the control group). MTC increased participation in the most common activity, occupational training, by 50 hours (to 152 hours in the program group). The program increased participation in work-based training by 96 hours (to 121 hours)—an almost five-fold increase.

Exhibit ES-2: Impact on Hours of Service Receipt, MTC

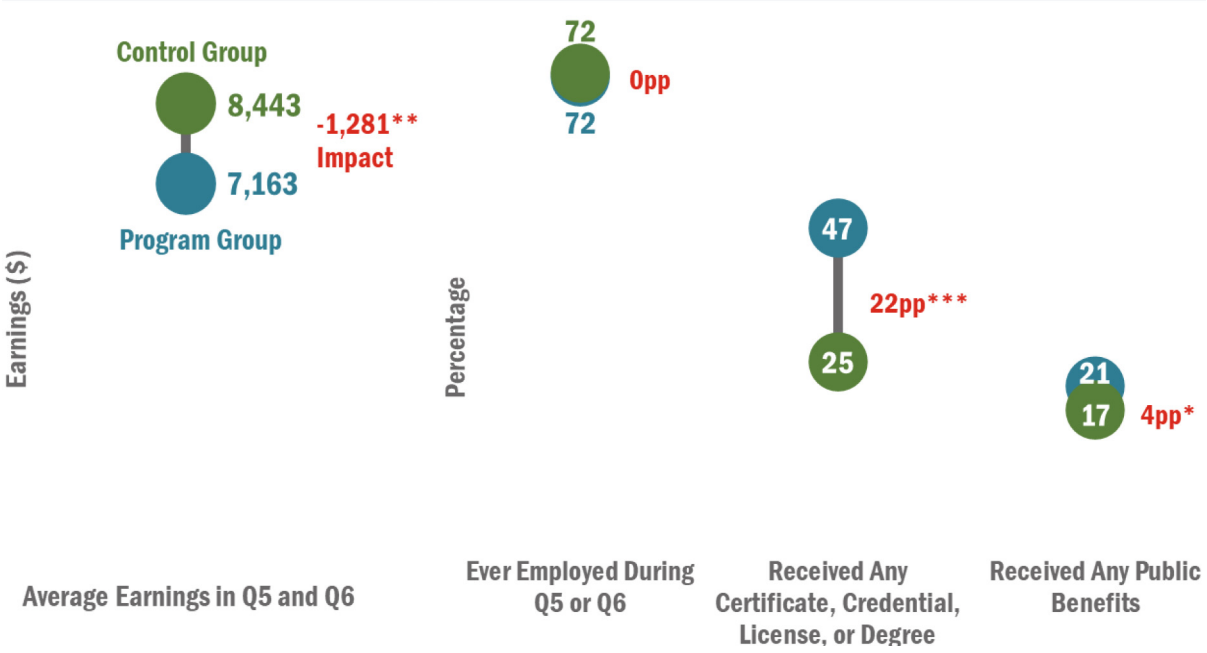


SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey, as of 18 months after random assignment.
NOTES: Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 831 includes 455 program group and 376 control group members who completed the 18-month follow-up survey.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **Although MTC had a positive impact on credential receipt, the program *decreased* earnings in the fifth and sixth quarters after random assignment.**

Exhibit ES-3 below shows that MTC sharply increased receipt of any certificate, credential, license, or degree by 22 percentage points (47 percent of the program group versus 25 percent of the control group). However, the increases in service receipt and credentials did not translate into positive earnings impacts. In fact, for the program group, average quarterly earnings in the fifth and sixth quarters (Q5 and Q6) declined by $1,281. For the early cohort, the evaluation finds weak evidence of negative impacts on earnings through the ninth quarter after random assignment, but not beyond. The negative impact on earnings is concentrated among those who held a bachelor's degree or more at the time they applied to MTC, where impacts on participation in training and on credential receipt were also concentrated, suggesting that participation in these activities depressed earnings. The study finds no clear evidence that the MTC program had an impact on receipt of public benefits.

Exhibit ES-3: Impact on Credential Receipt, Earnings, Employment, and Public Benefits Receipt, MTC



SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey for credential receipt (as of 18 months after random assignment) and public benefits receipt (as of survey interview). National Directory of New Hires for average earnings in Q5 and Q6 and ever employed during Q5 or Q6, through six quarters after random assignment.
NOTES: The program group circle is not visible for Ever Employed During Q5 and Q6 as the program and control group means are the same or close enough to not be distinguishable on the exhibit. Reported impact may not equal the difference between the reported program and control group means because of rounding. For outcomes measured in the 18-month follow-up survey, the total sample of 831 includes 455 program group and 376 control group members who completed the survey. For outcomes measured in the National Directory of New Hires, the total sample of 1,022 includes 536 program group and 486 control group members. "pp" denotes percentage points.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

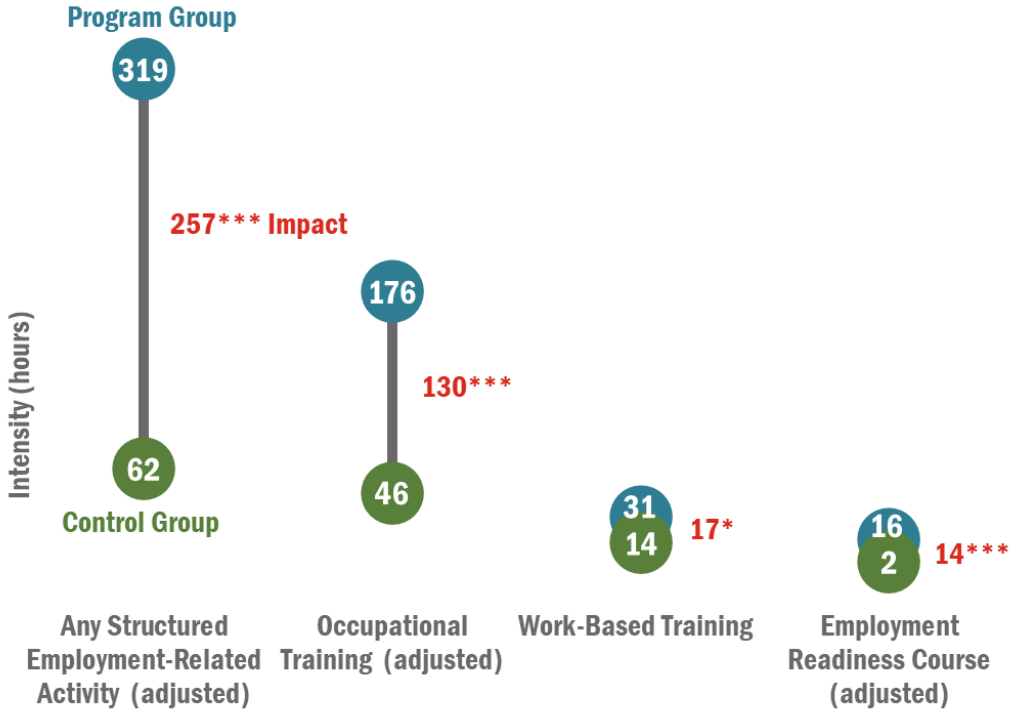
JVS's Skills to Work in Technology (STW-T) and Job Search Accelerator (JSA) Programs

JVS, a non-profit organization, operated its RTW programs in the San Francisco Bay Area. The program had impacts on service receipt, primarily occupational training, and on credential receipt, but not on earnings, employment, or public benefits receipt.

- **The JVS RTW programs increased hours of participation in occupational training and employment readiness courses, with weak evidence of an increase in hours of work-based training.**

Exhibit ES-4 below shows the impact of the JVS RTW programs on hours of occupational training, work-based training, and employment readiness courses, as well as these three structured employment-related activities combined. Consistent with the STW-T program's focus, the most common service received was occupational training (176 hours among the program group); the JVS RTW programs increased occupational training by 130 hours. There was also an increase in hours attending employment readiness courses (14 hours) and some evidence of a moderate increase in work-based training (17 hours).

Exhibit ES-4: Impact on Hours of Service Receipt, JVS

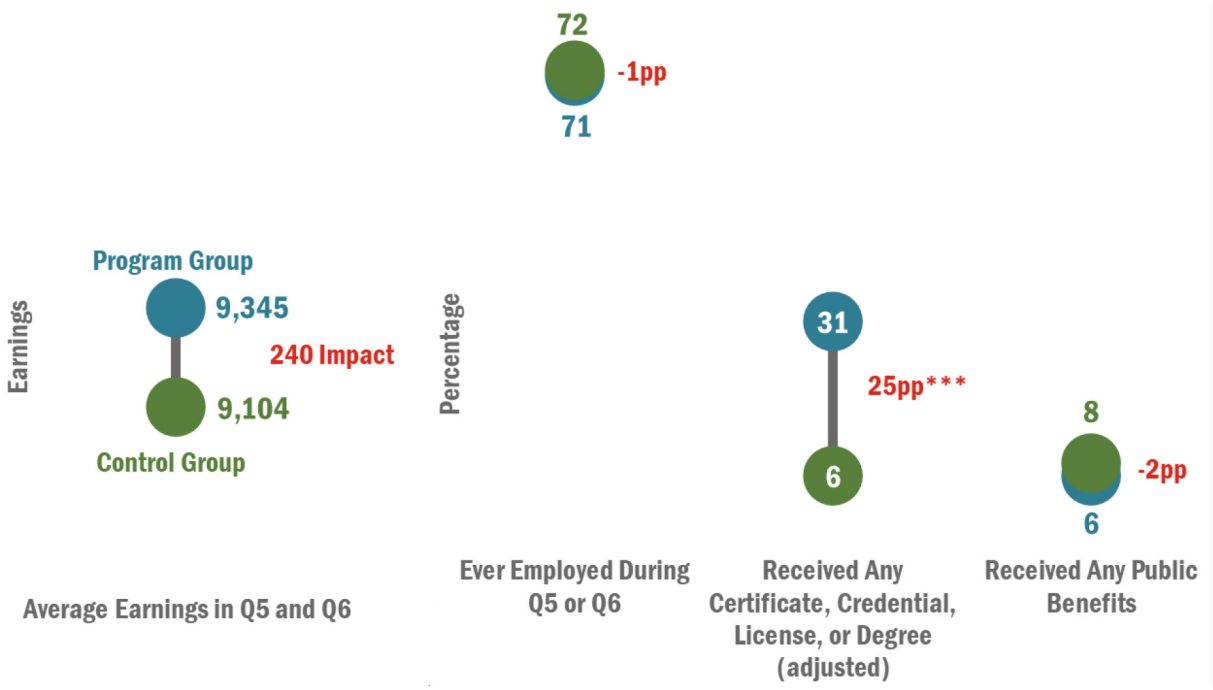


SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey, as of 18 months after random assignment.
NOTES: Results marked "adjusted" reflect the inclusion of information collected as text responses of training types attended, asked only of program group members who initially reported no training in the 18-month survey interview. (See the opening section of the full report's Chapter 4 and Appendix G for more discussion.) All outcomes that are not marked "adjusted" are constructed as described in Appendix D. Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 793 includes 411 program group and 382 control group members who completed the 18-month follow-up survey.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **Though credential receipt increased, the study finds no clear evidence that the JVS RTW programs had a positive impact on earnings in the fifth and sixth quarters after random assignment.**

Exhibit ES-5 below shows the JVS RTW programs increased receipt of a certificate, credential, license, or degree (25 percentage points), but the study finds no clear evidence of an impact on the evaluation's confirmatory outcome for the interim impact study: average earnings in the fifth and sixth quarters after random assignment. Nor did the programs affect employment in the fifth or sixth quarter, or receipt of public benefits. The JVS RTW programs had positive impacts on survey-based measures of hourly wages and hours worked per week at follow-up. However, based on administrative data, the study finds no clear evidence of impact on earnings either for the full sample through 6 quarters after random assignment or for the early cohort through 12 quarters.

Exhibit ES-5: Impact on Credential Receipt, Earnings, Employment, and Public Benefits Receipt, JVS



SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey for credential receipt (as of 18 months after random assignment) and public benefits receipt (as of survey interview). National Directory of New Hires for average earnings in Q5 and Q6 and ever employed during Q5 or Q6, through six quarters after random assignment.
NOTES: Results marked "adjusted" reflect the inclusion of information collected as text responses of training types attended, asked only of program group members who initially reported no training in the 18-month survey interview. (See the opening section of the full report's Chapter 4 and Appendix G for more discussion.) All outcomes that are not marked "adjusted" are constructed as described in Appendix D. Reported impact may not equal the difference between the reported program and control group means because of rounding. For outcomes measured in the 18-month follow-up survey, the total sample of 793 includes 411 program group and 382 control group members who completed the 18-month follow-up survey. For outcomes measured in the National Directory of New Hires, the total sample of 965 includes 491 program group and 474 control group members. "pp" denotes percentage points.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

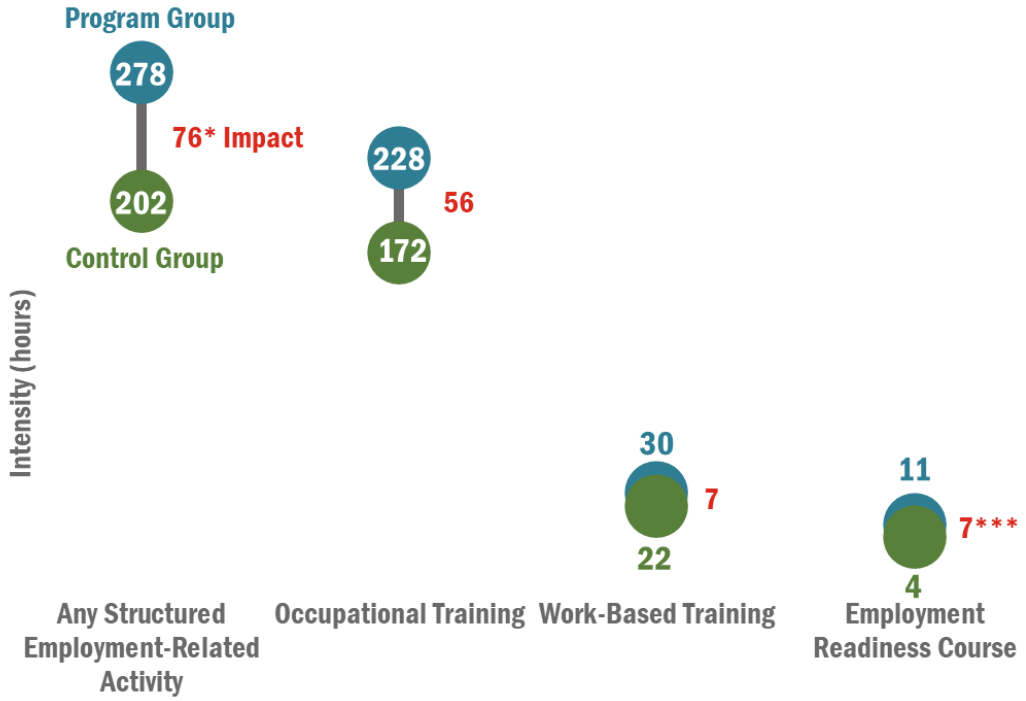
RochesterWorks!'s Finger Lakes Hired (FLH) Program

RochesterWorks!, the WIB for Monroe County in Eastern New York State, operated the FLH program. FLH had small impacts on service receipt, primarily employment readiness courses. However, the study finds no clear evidence of impacts on credential receipt, earnings, employment, or public benefits receipt.

- **FLH increased the hours of participation in employment readiness courses; the study finds no clear evidence of an impact on occupational training or work-based training.**

Exhibit ES-6 shows FLH's impact on hours of any structured employment-related activity and on those three activities separately (occupational training, work-based training, and employment readiness courses). FLH increased attendance in employment readiness courses by 7 hours (11 hours for the program group versus 4 hours for the control group), but the study finds no clear evidence of an impact on hours of occupational or work-based training.

Exhibit ES-6: Impact on Hours of Service Receipt, FLH

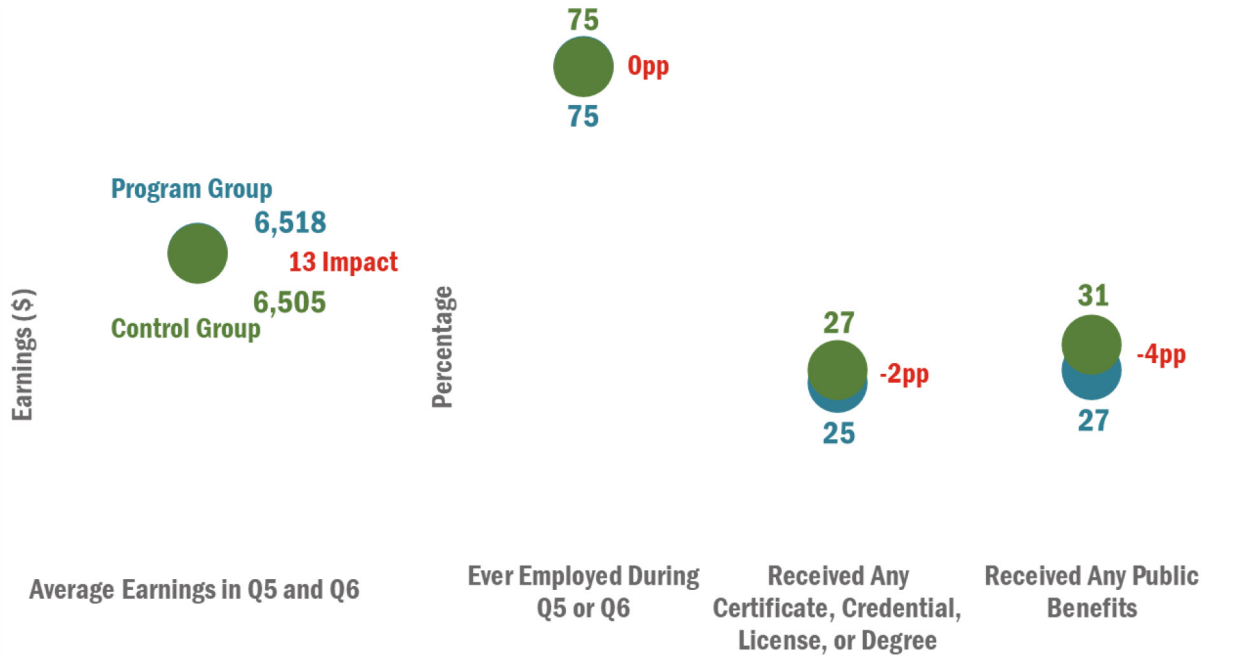


SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey, as of 18 months after random assignment.
NOTES: Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 477 includes 250 program group and 227 control group members who completed the 18-month follow-up survey.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **The study finds no clear evidence that the FLH program had an impact on earnings in the fifth and sixth quarters after random assignment.**

Exhibit ES-7 below shows no clear evidence that the FLH program had an impact on credential receipt, likely reflecting the lack of impacts on occupational training. In addition, the study finds no clear evidence that FLH's impact on employment readiness courses translated into impacts on earnings in the fifth and sixth quarters after random assignment, employment during these quarters, or public benefits receipt. For the early cohort, based on administrative data, there is weak evidence of positive impacts on earnings in the 4th through 6th quarters, but the study finds no clear evidence of an impact in the 7th through 12th quarters (not shown).

Exhibit ES-7: Impact on Credential Receipt, Earnings, Employment, and Public Benefits Receipt, FLH



SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey for credential receipt (as of 18 months after random assignment) and public benefits receipt (as of survey interview). National Directory of New Hires for average earnings in Q5 and Q6 and ever employed during Q5 or Q6, through six quarters after random assignment.
NOTES: The program group circle is not visible for Average Earnings in Q5 and Q6 and Ever Employed During Q5 and Q6 as the program and control group means are the same or close enough to not be distinguishable on the exhibit. Reported impact may not equal the difference between the reported program and control group means because of rounding. For outcomes measured in the 18-month follow-up survey, the total sample of 477 includes 250 program group and 227 control group members who completed the 18-month follow-up survey. For outcomes measured in the National Directory of New Hires, the total sample of 595 includes 300 program group and 295 control group members. "pp" denotes percentage points.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

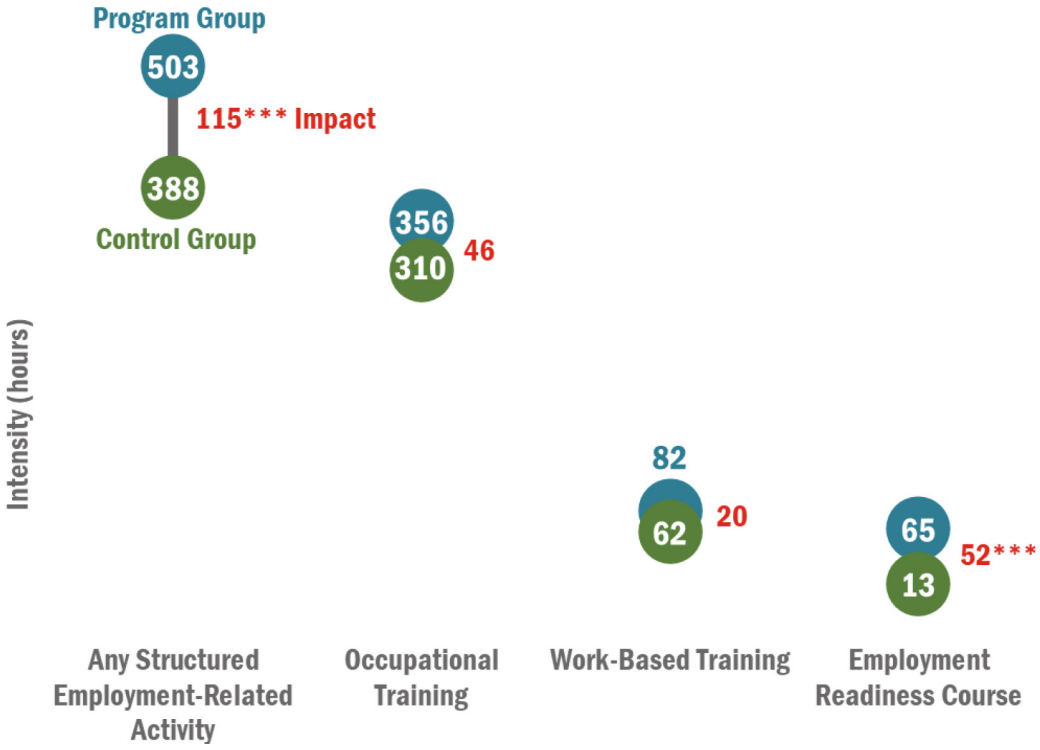
WSI's Reboot Northwest (NW) Program

Worksystems, a WIB in the Portland, Oregon, area, partnered with two other WIBs to operate the Reboot NW program in several counties in Oregon and Washington State. The program had moderate impacts on service receipt, primarily employment readiness courses, and on credential receipt, but the study finds no clear evidence of an impact on earnings and employment or on public benefits receipt.

- **Reboot NW increased hours of participation in employment readiness courses. The study finds no clear evidence of an impact on hours of occupational training or work-based training.**

As Exhibit ES-8 below shows, Reboot NW increased participation levels in employment readiness courses by 52 hours (65 hours for the program group versus 13 hours for the control group). The program also had a 115-hour impact on total hours of participation in any structured employment-related activity (503 hours versus 388 hours). The study finds no clear evidence that Reboot NW had an impact on hours of occupational training or work-based training.

Exhibit ES-8: Impact on Hours of Service Receipt, Reboot NW

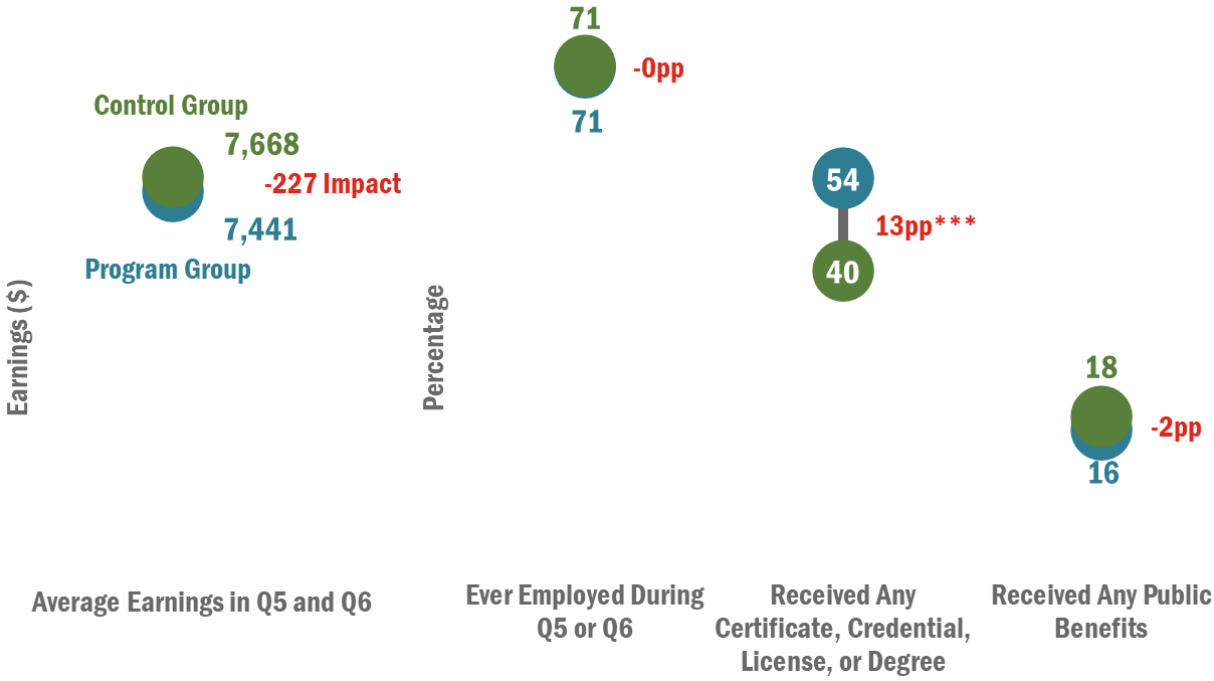


SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey, as of 18 months after random assignment.
NOTES: Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 747 includes 400 program group and 347 control group members who completed the 18-month follow-up survey.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **Though the Reboot NW program produced impacts on credential receipt, the study finds no clear evidence of an impact on earnings in the fifth and sixth quarters after random assignment.**

Exhibit ES-9 below shows that Reboot NW increased receipt of a certificate, credential, license, or degree by 13 percentage points, to 54 percent among the program group (an increase of a third). Though the program did not increase hours of occupational training (Exhibit ES-8 above), it had a positive impact on receipt of any occupational training (12 percentage points, not shown), which appears to have driven the impact on credential receipt. Yet the study finds no clear evidence of an impact on earnings in the fifth and sixth quarters after random assignment. Nor does the study find clear evidence of an impact on employment in the fifth or sixth quarter or on receipt of public benefits. For the early cohort, there were positive impacts on earnings by the 12th quarter ($1,985 per quarter) and some evidence of positive impacts emerging by the 8th quarter (not shown).

Exhibit ES-9: Credential Receipt, Earnings, Employment, and Public Benefits Receipt, Reboot NW



SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey for credential receipt (as of 18 months after random assignment) and public benefits receipt (as of survey interview). National Directory of New Hires for average earnings in Q5 and Q6 and ever employed during Q5 or Q6, through six quarters after random assignment.
NOTES: The program group circle is not visible for Ever Employed During Q5 and Q6 as the program and control group means are the same or close enough to not be distinguishable on the exhibit. Reported impact may not equal the difference between the reported program and control group means because of rounding. For outcomes measured in the 18-month follow-up survey, the total sample of 747 includes 400 program group and 347 control group members who completed the 18-month follow-up survey. For outcomes measured in the National Directory of New Hires, the total sample of 972 includes 489 program group and 483 control group members. "pp" denotes percentage points. Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Closing Remarks

Given the study design's focus on grantee-specific estimates, cross-grantee inferences need to be made with care. With that caveat, the RTW programs were implemented differently across these grantees, and impacts on service receipt reflect these differences. Though all four grantee programs had impacts on service receipt, impacts varied in size: smallest for the JVS programs and largest for MTC. Two programs had positive impacts on hours of occupational training (MTC and the JVS programs); one program had an impact on hours of work-based training (MTC); and all four programs had an impact on hours of participation in employment readiness courses. Three of the four programs increased receipt of any certificate, credential, license, or degree (MTC, JVS, Reboot NW). However, despite these increases in service and credential receipt, the study finds no clear evidence of impacts of the RTW programs on earnings, employment, and public benefits receipt within the 18-month follow-up period.

Why the programs did not produce impacts on earnings and employment or on public benefits receipt is unclear. Four potential and overlapping explanations include these: (1) the 18-month follow-up period was too short to detect effects; (2) the impacts were too small to be detected by the study's sample sizes; (3) the grantee programs did not increase service receipt sufficiently beyond what the control group

received to cause detectable impacts on earnings; and (4) the customized approach did not provide the appropriate content or intensity of services, including the types of credentials received and the field of training targeted, to increase earnings above the level that this unemployed but older and well-educated worker population could make without the RTW program.

Drawing on administrative data on earnings and employment, the impact study's final report will describe whether earnings impacts emerge by 30 months after random assignment. The data collected for this interim report cover a period before the COVID-19 pandemic emerged in March 2020. In contrast, the final report will analyze outcomes from the period affected by the pandemic.

1 Introduction

A key challenge facing policymakers and program administrators is how to develop effective strategies to help Americans facing economic challenges, particularly the long-term unemployed, to succeed in the labor market. These issues are particularly salient during steep downturns, when many who have been steadily employed, often with high earnings, lose their jobs (Jacobson, LaLonde, and Sullivan 2011) and then experience long spells of unemployment (Krueger, Cramer, and Cho 2014; Kroft, Lange, and Notowidigdo 2013).

During the deep recession of 2007-2009, many workers lost their jobs (Kosanovich and Sherman 2015). Even as the economy recovered, those experiencing long-term unemployment represented a substantial portion of all those who were unemployed (Center on Budget and Policy Priorities 2019). Due to the COVID-19 pandemic, the United States is again in a steep downturn. Identifying strategies that help the long-term unemployed regain their economic footing has been a government priority. Of particular interest is identifying strategies that can help workers obtain employment in the higher-paying middle- and high-skill jobs that are in demand by American employers.

To assist those experiencing long spells of unemployment as a result of the 2007-2009 recession, in 2014 the U.S. Department of Labor (DOL) funded the Ready to Work (RTW) Partnership Grant Program that is the focus of this report. The program's grants went to partnerships of workforce agencies, training providers, employers, and other local organizations to improve the employment prospects of local long-term unemployed workers. Grantees were to use the funds to provide a range of customized services tailored to the individual needs of program participants. The services included staff guidance on career planning, occupational training, work-based training, employment readiness courses, and job search assistance. In October 2014, DOL awarded four-year grants totaling $170 million to 24 grantees, with individual awards ranging from $3 million to $10 million.[1] The RTW-funded programs operated from 2015 to 2019, prior to the COVID-19 pandemic.

To document the implementation of the programs and to estimate their effects on program participant outcomes, DOL's Employment and Training Administration (ETA), in collaboration with its Chief Evaluation Office (CEO), contracted Abt Associates and its partner MEF Associates to conduct a rigorous evaluation of RTW grantees' programs. Involving four purposively selected grantees, the evaluation comprises two major components:

- An **implementation study** to examine program design and operation; specifically, the services provided by each grantee program and participation patterns of program participants; and
- An **impact study** that uses a random assignment design to determine program effects ("impacts") on outcomes of interest, including services received and employment and earnings. Over a three-year random assignment period (July 2015 to August 2018), grantees used a lottery-like process to assign applicants either to a program group that had access to the RTW program services or to a control group that did not have access.

[1] Originally, DOL made awards in 2014 to 23 grantees totaling $170 million. In 2015, DOL awarded an additional RTW grant bringing the total number of grantees to 24. The grant period for this grantee ended in 2020.

Previous reports provided the results of the implementation study (Martinson et al. 2017; Copson et al. 2020). This report documents the interim findings from the impact study of the RTW grant program. It provides interim estimates of program impact on educational attainment, employment, and earnings through approximately 18 months after random assignment. The evaluation's final report, to be released in 2022, will document impacts on employment and earnings through approximately 30 months after random assignment.

Notably, this report covers a period before the COVID-19 pandemic. The RTW grantee programs operated years before the COVID-19 virus appeared, and the 18-month follow-up period was completed before the global pandemic was declared in March 2020.[2] (The final report, however, will cover a period affected by the pandemic.)

The balance of this opening chapter proceeds in five sections. Section 1.1 provides a brief overview of the RTW grant program. Section 1.2 provides an overview of the four grantees included in the evaluation. The final section describes the structure of the balance of the document.

1.1 The Ready to Work Partnership Grant Program

DOL developed the RTW grant program in response to the 2007-2009 recession. In particular, the program was to serve workers experiencing long unemployment spells by helping them prepare for higher-paying middle- and high-skill jobs. By the time the grants were awarded in 2014, the unemployment rate had dropped sharply (from 9.3 percent in 2009 to 6.2 percent in 2014).[3] However, many workers were still experiencing long unemployment spells: more than a third of them for more than six months, and more than a quarter for more than a year.[4]

To help the long-term unemployed get back to work, DOL designed the RTW grant program to focus on high-growth industries and occupations where employers were hiring foreign workers under the H-1B visa program due to shortages of sufficiently skilled American workers.[5] Historically, the H-1B visa program has been an important means for U.S.-based employers to address these worker shortages.[6] Employers seeking to hire foreign workers who require an H-1B visa pay fees. Those fees then fund

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2 World Health Organization, "Rolling Updates on Coronavirus Disease (COVID-19)" (website), https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen.

3 Bureau of Labor Statistics, Current Population Survey, Table A-1, https://www.bls.gov/cps/cpsaat01.htm,

4 Bureau of Labor Statistics, Current Population Survey, Table A-30, https://www.bls.gov/cps/aa2014/cpsaat30.htm,

5 The H-1B visa program allows qualified nonimmigrant aliens to temporarily work in the United States when employers cannot otherwise obtain needed business skills and abilities from the U.S. workforce (https://www.dol.gov/whd/immigration/h1b.htm).

A competing argument is that no skills gap exists. Employers could eliminate any apparent skills gap by raising wages. At higher wages, more U.S. workers would apply and more would seek the necessary training. "When employers are unwilling to offer better compensation to fill their skill needs, it is reasonable to ask how urgently those skills are really needed" (Burtless 2014). From either perspective, however, an increased supply of trained workers would arguably be better for both employers and the workers receiving the training. Workers already employed in the field would likely be worse off.

6 Since 1990, the H-1B visa program has enabled U.S.-based employers to hire highly educated, highly skilled foreign workers. Individuals with H-1B visas can work in the United States for three years (extendable to six) under the sponsorship of a specific employer. Initiated as part of the Immigration Act of 1990, the visa program emphasizes hiring foreign workers for "specialty occupations" that "require theoretical and practical application of a body of highly specialized knowledge" in which there is a shortage of U.S. workers with the requisite skill base. Generally, foreign workers must have a bachelor's degree or its equivalent to qualify for an H-1B visa.

initiatives to prepare and place American workers into jobs within occupations and industries where H-1B visas are used.[7] The RTW grant program was one such initiative funded through H-1B visa fees.

In addition to services already provided at American Job Centers (AJCs) through the Workforce Innovation and Opportunity Act (WIOA; PL 113-128), the RTW Solicitation for Grant Applications (DOL/ETA 2014) required grantees to:

- Target ***long-term unemployed workers,*** defined as those who had been jobless for 27 consecutive weeks or more. Targeted workers included those who had lost their jobs during or after the 2007-2009 recession (commencing from December 1, 2007) and who either remained *unemployed* or were *underemployed* (meaning those who had lost their job during or after the recession and had obtained short-term or part-time employment but had not yet found a full-time job in line with their previous level of skill or earnings). Grantees could also accept a small share of "other unemployed workers," meaning those without a job for fewer than 27 consecutive weeks and not underemployed.[8]
- Assess RTW program participants' skills and needs. Based on that assessment, grantees were to provide customized services along three tracks: (1) staff guidance, including intensive coaching and specialized services, and other ***direct job placement services***; (2) ***short-term training*** that leads to direct job placement; and (3) ***accelerated training*** that culminates in an industry-recognized credential and employment. Individuals could receive services in more than one track.
- Include ***work-based training*** where RTW program participants were paid, such as on-the-job training and paid work experience; and services that addressed the unique barriers facing long-term unemployed workers, such as ***financial counseling, behavioral health counseling, and other employment readiness activities***.

Though each RTW grantee generally provided the same set of services, grantees had discretion to tailor their program design and content based on the specific needs and interests of their local population. As a result, grantees varied in how they targeted and sequenced services and in the content of the services received (see Martinson et al. 2017; Copson et al. 2020). The grantee-specific impact chapters of this report describe that variation.

1.2 Grantee Programs Included in the RTW Evaluation

In consultation with DOL, the evaluation purposively selected four of the 23 RTW grantees based on the perceived strength of their program services, program size, sufficient demand to fill the study's control group, and ability to accommodate study procedures (see Martinson et al. 2017). Because perceived

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7 In 2016-2017, the occupation with the highest concentration of H-1B workers was (computer) systems analyst and programmer, followed by computer programmer, college and university educator, electrical engineer, and accountant. In fiscal years 2014-2017, some 45 percent of approved visa applicants had a bachelor's degree; 54.5 percent had a master's, professional, or doctoral degree (U.S. Department of Homeland Security 2018).

8 The RTW Solicitation for Grant Applications also allowed incumbent workers to be served by the grant. *Incumbent workers* are defined as those who are in need of skills upgrades to obtain a new job, or retain a current job that is requiring new or different skills, in an H-1B industry/occupation and where training is developed with an employer or employer association to upgrade those skills. Program enrollees in incumbent worker training funded by the grant are not included in the RTW Evaluation.

strength of the program was one of the evaluation's criteria in selecting grantees to study, the average RTW grantee's program likely had an impact smaller than the impacts estimated here.[9]

Exhibit 1-1 below provides an overview of the four grantees (in bold red), their RTW programs (in bold), and their service areas, chosen for the RTW Evaluation:

- ***Anne Arundel Workforce Development Corporation (AAWDC)***—**Maryland Tech Connection (MTC)**, in the Baltimore (Maryland)/Washington, DC region.
- ***Jewish Vocational Service (JVS)***—**Skills to Work in Technology (STW-T)** and **Job Search Accelerator (JSA)**, in the San Francisco Bay Area (California).
- ***RochesterWorks!***—**Finger Lakes Hired (FLH)**, in Monroe County (New York), including the city of Rochester.
- ***Worksystems Inc.***—**Reboot Northwest**, in the Portland (Oregon)/Vancouver (Washington) metropolitan region.

These grantee programs were located in different urban areas, but each served a relatively large geography that included suburban and rural communities. JVS is a non-profit organization; the others are workforce agencies that provide services under WIOA. Three of the four grantees focused their RTW programs on employment in more than one industry: all included information technology (IT), three also included advanced manufacturing and two included healthcare. As required by the RTW Solicitation for Grant Applications (SGA), all the grantees targeted long-term unemployed worker populations.

Within the terms of the SGA, the programs offered similar services, but with different emphases. The JVS RTW programs and Worksystems Inc.'s Reboot NW program had a stronger emphasis on occupational training. RochesterWorks!'s FLH program had a stronger focus on one-on-one staff assistance and employment readiness activities. AAWDC's MTC program was more balanced across the different activities.

Based on survey responses, time in the program also varied: on average, participants spent the longest time in Reboot NW (25 weeks) and the shortest time in FLH (12 weeks).

[9] The evaluation literature makes a distinction between an *efficacy* test that evaluates a program under near ideal conditions and an *effectiveness* test that operates under more standard conditions (Singal, Higgins, and Waljee 2014). This evaluation should be viewed as closer to an efficacy test.

Exhibit 1-1: Overview of Grantee Programs in the Ready to Work Evaluation

Grantee Lead Agency	Program Name and Grant Amount	Target Industries	Overview of Grant-Funded Services
Anne Arundel Workforce Development Corporation (AAWDC) 12 counties in Maryland	**Maryland Tech Connection (MTC)** **Grant amount:** Total: $9,995,047 Per person served: $7,971	Advanced Manufacturing Bioscience Healthcare Information Technology	Maryland Tech Connection staff assessed enrollees to determine their interest and aptitude in the program's target industries. • All participants attended a two-week group job search skills and job readiness workshop developed for the grant program. • Subsequent services included job search assistance, occupational training in target industries and funded through the grant, and work-based training with an employer. • Participants received a screening to determine their eligibility for public benefits programs. • An MTC partner provided information and resources on behavioral health issues. • Transportation assistance in the form of gas and bus cards was available, as was short-term needs-based financial assistance on a case-by-case basis. Based on AAWDC administrative records, the average length of stay in the MTC program was 3.6 months.
Jewish Vocational Service (JVS) San Francisco, CA	**Skills to Work in Technology (STW-T)** **Job Search Accelerator (JSA)** **Grant amount:** Total: $6,396,276 Per person served: $6,358	Information Technology	JVS's initial RTW program, Skills to Work in Technology, combined job search and job readiness activities and technical skills training classes. It offered three different courses, each beginning with a job-readiness Foundation Week: • A five- to six-week "bootcamp" focused on job readiness, supplemented with training on software useful for an office environment; • An 11- to 12-week program providing training in digital marketing; and • A 16-week program providing training on administration of the Salesforce® platform. Partway into its grant, JVS added a second program, Job Search Accelerator. This two-week program provided assistance with job search and employment readiness. Based on JVS administrative records, the average length of stay in the RTW programs was 2.6 months.

Exhibit 1-1: Overview of Grantee Programs in the Ready to Work Evaluation (continued)

Grantee Lead Agency	Program Name and Grant Amount	Target Industries	Overview of Grant-Funded Services
RochesterWorks! Monroe County, NY	**Finger Lakes Hired (FLH)** **Grant amount:** Total: $5,189,848 Per person served: $5,154	Advanced Manufacturing Healthcare Information Technology	Finger Lakes Hired staff assessed participants to develop a customized set of program services that included: • Occupational training in advanced manufacturing, healthcare, and IT programs funded by FLH; • Employment readiness courses, primarily one-week job search workshops; • Work-based training with an employer; and • Individual job search assistance provided by grant-funded staff. FLH program staff provided guidance on employment-related issues, as well as on-site assistance with academic issues for participants enrolled in a training program at a partnering community college. FLH also provided participants enrolled in occupational training with financial assistance for transportation, tuition, and training-related materials, as well as needs-based payments. Based on RochesterWorks! administrative records, the average length of stay in the FLH program was 1.8 months.
Worksystems Inc. (Worksystems) Portland, OR and Vancouver, WA	**Reboot Northwest (NW)** **Grant amount:** Total: $8,455,004 Per person served: $6,272	Advanced Manufacturing Information Technology	Reboot Northwest staff assessed participants' skills, work experience, and career goals to develop an individualized training plan in advanced manufacturing or IT. The plans could include the following activities: • Occupational training programs with tuition paid by the grant; • A two- to three-week employment readiness course designed for the grant, to build soft skills, strengthen professional networks, and enhance job search strategies; • Work-based training with industry employers; and • Job search assistance. Reboot NW also offered assistance on behavioral health issues, provided by organizational partners. Participants enrolled in occupational training programs received financial assistance for transportation, training materials, and needs-based housing and utility payments. Based on WSI administrative records, the average length of stay in the Reboot NW program was 5.2 months.

SOURCE: Developed by Abt Associates based on staff reports and RTW program material.
NOTES: Grant amounts per person served are calculated with respect to the number of individuals served by the grants, not the number of individuals in the program group. As discussed by Martinson et al. (2017) and Copson et al. (2020), in addition to members of the program group, the grantees served other individuals, such as veterans, incumbent workers, and people who enrolled before the study started and after random assignment for the study concluded. In particular, the MTC program served 1,254 individuals, the JVS RTW programs served 1,006 individuals, FLH served 1,007 individuals, and Reboot NW served 1,348 individuals.

1.3 The Structure of This Report

This report proceeds as follows. The next chapter describes the RTW Evaluation' impact study. Immediately after that chapter is **How to Read This Report's Impact Exhibits**.

Chapters 3 through 6 are the core of the report, a separate chapter for each of the four grantees. These chapters have a common structure. The first section provides an overview of that grantee's RTW program services and the characteristics of its study sample. The next five sections report estimates of program impacts on (i) service receipt, including participation in occupational training, work-based training, and employment readiness courses and assistance with job search and readiness skills; (ii) receipt of financial assistance for occupational training and other employment- and education-related supports; (iii) short-term outcomes (educational attainment, including credentials; factors affecting ability to work and career confidence); (iv) longer-term labor market outcomes (employment, earnings, and other labor market outcomes, such as wages, benefits, and job characteristics); and (v) broader well-being outcomes (including total income and receipt of public benefits). The last section discusses subgroup findings for that grantee. The grantee-specific chapters deliberately do not provide an integrative discussion of the results.

The report's final chapter summarizes the evaluation's findings, considers the results for the four grantees together, and discusses implications for policymakers and program administrators.

A separate appendix volume provides additional detail on the evaluation methods and results: Appendix A on evaluation methods, Appendix B on data sources, Appendix C on survey methods for the 18-month follow-up survey, Appendix D on how outcome measures are constructed, and Appendix E on how baseline measures are constructed. Appendices F through I then provide additional results for each of the four grantees.

2 The Impact Study

This chapter describes the evaluation's impact study. As its name suggests, the study's goal is to estimate the impact of the RTW programs; that is, outcomes for those offered the RTW program relative to what their outcomes would have been if they had not been offered the RTW program. Towards that end, Section 2.1 introduces a logic model for the RTW program. The balance of the chapter considers in turn the impact study's research questions (Section 2.2), impact study design (Section 2.3), impact estimation (Section 2.4), outcome measures (Section 2.5), and data sources (Section 2.6).

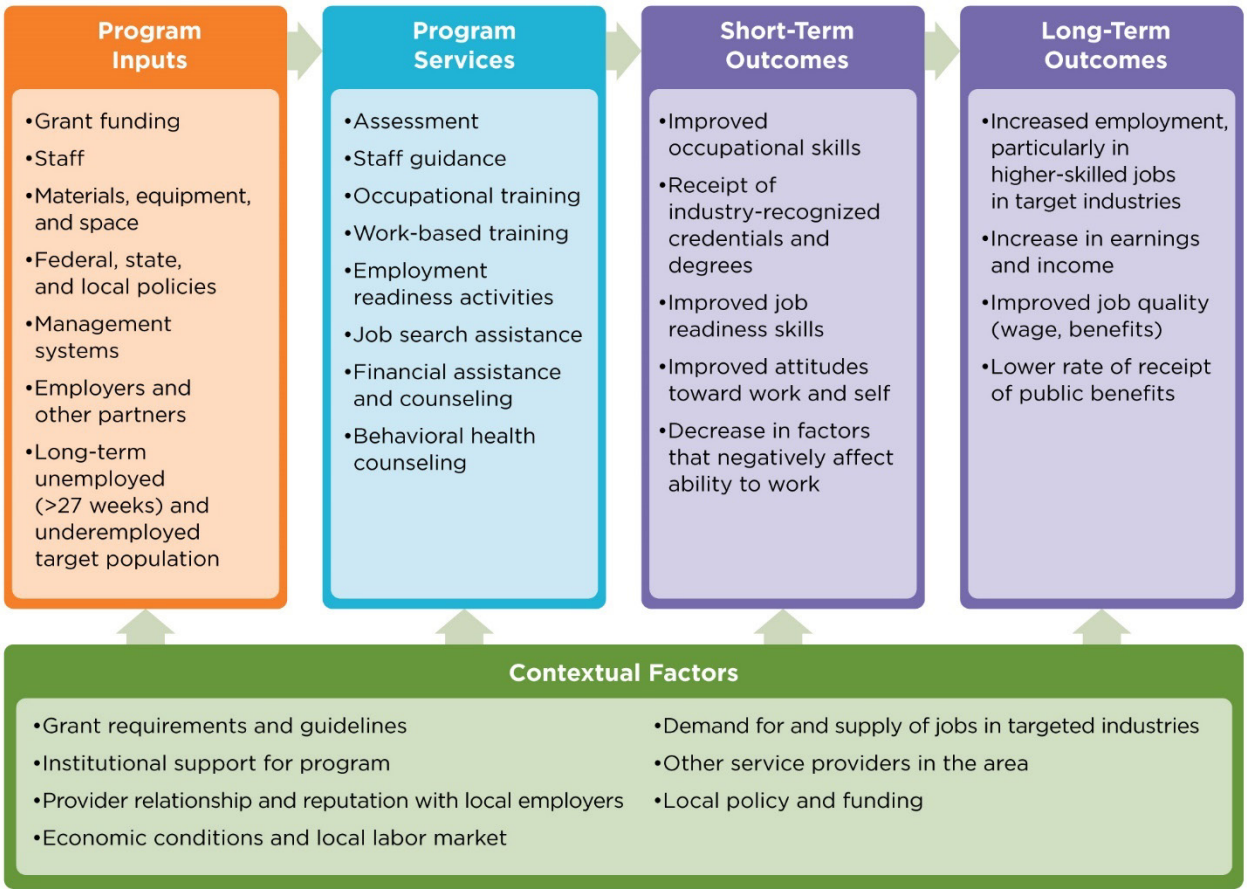
2.1 A Logic Model for the RTW Program

The evaluation of the RTW Partnership grant program is based on a logic model describing how the grantees' programs are hypothesized to produce the expected changes in participant outcomes. Specifically, it shows how the range of services provided are hypothesized to produce effects on "short-term" outcomes such as credential receipt and career knowledge, which in turn will lead to effects on "long-term" outcomes such as employment, earnings, and other measures of well-being.

As depicted in Exhibit 2-1, the RTW logic model begins with program ***inputs***, which include the grantees' funding, staff and physical resources, and management structure, including input from employers and other partners. Continuing from left to right in the exhibit, the next box shows what those inputs provide: the ***program services***. These include assessment, staff guidance, occupational training, work-based training, employment readiness courses, and job search assistance, as well as other supports such as financial assistance, mental health counseling, and financial counseling.

The next columns show, respectively, the short- and long-term outcomes the program services are expected to produce. In the ***short term***, the RTW program is expected to improve short-term outcomes, particularly to increase participation in services leading to an increase in program participants' educational attainment, notably credential and degree receipt. In addition, RTW program participants should experience greater career confidence and fewer barriers to their ability to work. In the ***long term***, RTW program participants are expected to have increased earnings, particularly in better jobs as indicated by both wages earned and job benefits. With increased levels of employment and earnings, reliance on public benefits receipt (defined in the box **Definitions of Key Outcomes** at the end of this section) is hypothesized to decrease. As shown at the bottom of Exhibit 2-1, the grantee programs and program participants' outcomes also are influenced by the ***context*** in which grantees operate—including the local economic conditions and the community characteristics.

Exhibit 2-1: Ready to Work Logic Model



SOURCE: Developed by Abt Associates based on DOL's RTW Solicitation for Grant Applications.

2.2 Impact Study Research Questions

The impact study addresses two overarching research questions:

- ***What was the impact of the offer of the RTW program on the outcomes specified in the logic model?*** The evaluation estimates the impact of the *offer* of each grantee's RTW program relative to not being offered the RTW program, above and beyond any other training or services available in the community. (That is, the evaluation does not estimate the impact of *receipt* of RTW services.)[10]
- ***How did those impacts vary with study member baseline characteristics?*** The evaluation pre-specified three sets of subgroups by (1) *education*: less than a bachelor's degree versus a bachelor's degree or more; (2) *age*: 49 or older versus younger than 49; and (3) *employment status*: unemployed more than 12 months versus ever employed in the past 12 months (including

[10] In addition to estimating the impact of the *offer* of the RTW programs (termed the "intent to treat" impact estimate), the evaluation also estimates the impact of receiving the RTW program (the "treatment on the treated" impact estimate, TOT) for the confirmatory and several secondary outcomes (see Section 2.5 for the outcomes defined as confirmatory and secondary). See Appendix Section A.1.2 for information on how the TOT impact estimates are calculated, and Appendix Exhibit A.1-2 for their values.

those employed at application). In addition, based on guidance from the study's Technical Working Group, the evaluation added a fourth subgroup defined on *gender*: women versus men.

2.3 Impact Study Design

The RTW Evaluation estimates the impact of each grantee's program using an "experimental" research design. In that design, program applicants are randomly assigned (in a process akin to a lottery) to either:

- A **program group** that can access the grant-funded RTW services (whether or not they actually participate); or
- A **control group** that cannot access the grant-funded RTW services, but can participate in any similar services available in the community.

As the term "random assignment" suggests, though there may be some differences between the program group and control group upon entering the study ("at baseline"), these differences are not systematic, but random.[11]

Specifically, at each grantee, study participants were randomly assigned at the time they applied for the RTW program. Each grantee recruited potential participants, verified their eligibility, and obtained their informed consent to participate in the evaluation. Before random assignment, all applicants completed a Baseline Information Form. Then grantee staff used the evaluation's Participant Tracking System to perform random assignment.[12]

For each grantee included in the impact study, Exhibit 2-2 shows the dates of program operation, dates of its random assignment period, and number of RTW applicants randomly assigned to its program or control group.[13] For each grantee, the target sample size was 500 program group members and 500 control group members. All but RochesterWorks! met this enrollment goal (see Chapter 5). Because sample sizes determine the magnitude of the impact that can be detected, this study can detect moderate impacts on earnings, but not small impacts. Since RochesterWorks! enrolled fewer study members, this suggests that the evaluation of the Rochester RTW program can only detect impacts slightly larger than those at the other grantees.

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[11] Tables reporting balance in sample characteristics at baseline between the program group and control group for each grantee study sample are included in the first section of each of the grantee-specific appendices (Appendices F through I).

[12] A brief summary of each grantee's random assignment process can be found in the first section of each of the grantee-specific chapters, Chapters 3 through 6 (see subsection "Target Population and Services Provided"). Additional detail is available in the opening sections of the grantee-specific appendices, Appendices F through I, and in the first report of the Implementation Study (Martinson et al. 2017).

[13] Study enrollment and random assignment started several months after each grantee's RTW program launched, and they ended before the program concluded, so the total size of the program group is smaller than the total number of applicants offered the RTW program. The total enrollment for each grantee program was 1,234 for AAWDC, 1,006, for JVS, 1,007 for RochesterWorks!, and 1,348 for Worksystems.

Exhibit 2-2: Grantee-Specific Study Enrollment

Program	Dates of Program Operation	Random Assignment Period	Study Sample Size		
			Program Group	Control Group	Total
AAWDC (MTC)	May 2015–Oct 2019	Aug 2015–Mar 2018	540	489	1,029
JVS (STW-T and JSA)	May 2015–Oct 2019	Aug 2015–Mar 2018	502	491	993
RochesterWorks! (FLH)	Jan 2015–Jun 2019	Aug 2015–Aug 2018	307	303	610
Worksystems (Reboot NW)	Apr 2015–Jun 2019	Jul 2015–Dec 2017	493	487	980

NOTES: AAWDC randomly assigned enrollees at multiple intake locations. Because the random assignment ratio at some of the smaller intake locations was 2:1 (two applicants randomized into the program group for everyone randomized into the control group), the study sample includes slightly more people in the program group than the control group.

2.4 Impact Estimation

As discussed in the previous section, with random assignment any post–random assignment differences between average outcomes for the program group and average outcomes for the control group—any "impacts"—can be confidently attributed either to the RTW program or to chance.[14] The evaluation can then use statistical methods to bound the plausible impact of chance.

Maintaining the comparability of the two groups of study members requires comparing all those in the program group with all those in the control group, regardless of whether or not program group members actually enrolled in the RTW program. Thus, the evaluation is an "intention to treat" (ITT)[15] study; that is, it estimates the impact of being *offered* the RTW program, compared to not being offered the program but having access to other services in the community including those offered by the workforce system. As such, the evaluation estimates the incremental effect of the RTW programs above and beyond these services.[16]

In addition to reporting impacts by grantee, Chapters 3 through 6 report statistical tests of the probability that the observed impacts could be due to chance rather than the grantee's program. The section **How to Read This Report's Impact Exhibits** at the end of this chapter briefly explains how to read and interpret impact tables in the grantee-specific chapters.

In general, this report discusses impacts only when the statistical tests imply that the impacts are not due to chance (formally $p < .05$). Results where chance is moderately likely (formally $.05 < p < .10$) are described as "some evidence" or "weak evidence." Exceptions are explicitly noted. Results where chance is quite likely (formally $p > .10$) are described as "no clear evidence of impact" or sometimes simply as

[14] For each grantee program, Appendices F through I provide evidence of baseline balance between the members of the program group and the control group at the time of random assignment. These results show that random assignment was implemented with fidelity.

[15] More precisely, this is an "average treatment on the treated" (ATET) analysis.

[16] As noted above, the evaluation also estimates Treatment on the Treated/TOT impact estimates for the confirmatory and several secondary outcomes; see Appendix Section A.1.2.

"no impact." The study's sample sizes imply that some substantively important impacts might not be detected. These concerns are particularly salient for earnings and other labor market outcomes. (See Appendix A for more detail on methods.)

2.5 Prioritizing Selected Outcomes

The impact evaluation estimates impact for outcomes specified in the logic model shown in Exhibit 2-1. This interim report primarily considers outcomes through 18 months after random assignment. For a cohort of study members randomly assigned early in the random assignment period, the report considers employment and earnings outcomes through three years (36 months). Based on prior studies, given that the RTW program emphasized participation in a range of employment-related services, including occupational training, 18 months could be too early to expect to see impacts on earnings (Fortson et al. 2017). The evaluation's final report will consider impacts on employment and earnings through 30 months for all study members and 48 months for the cohort randomized early).

This document reports estimates of impact for a large number of training, employment, and earnings outcomes. As the number of impacts estimated increases, the larger the potential for at least one false positive result to occur—that is, detecting an impact even when the program did not have an effect. Such false positive results from an increased number of estimated impacts are known as the "multiple comparisons problem" (Schochet 2009). For this reason, testing for program impacts on many outcomes weakens the rigor of the evaluation.

To address the problem of multiple comparisons while still preserving flexibility to explore a wide variety of outcomes, the evaluation proceeds as follows. Prior to the start of analysis, the RTW Evaluation specified which outcomes would be treated as confirmatory, secondary, and exploratory:

- A ***confirmatory outcome*** is the main indicator of the extent to which a given RTW program is making progress toward its goals. It is the focal outcome in grantee-specific Chapters 3-6 and in summative statements about the evaluation (e.g., in the Executive Summary and the concluding chapter). The choice of this confirmatory outcome should reflect the primary goal of the DOL grants: to help workers find jobs and increase their earnings. The evaluation therefore pre-specified *earnings* as the confirmatory outcome for this evaluation: for this interim (18-month) report, ***average earnings in the fifth and sixth quarters after random assignment*** (Q5-Q6); for the final (30-month) report and the study as a whole, *average earnings in the fifth to 10th quarters after random assignment* (Q5-Q10).[17] Since, for each grantee, there is only one confirmatory outcome, no other formal correction is needed.
- ***Secondary outcomes*** address an additional set of important indicators of program success and provide information to better understand the confirmatory outcome. In this report, secondary outcomes include *hours in occupational training, work-based training,* and *employment*

[17] The evaluation uses employer-reported NDNH administrative earnings data to build the confirmatory outcome instead of self-reported earnings from the 18-month follow-up survey. Compared to the survey data, these administrative data have larger samples (no loss to survey non-response). In addition, the survey data are considered lower quality than the NDNH data both because survey non-response can lead to bias and because self-reported earnings are prone to recall errors. As noted in Section 2.6, however, the NDNH data does not capture certain types of earnings, such as for the self-employed and contract workers, or those working "under the table." Because the survey captures information on all types of earnings, as well as weekly hours worked and hourly wages, however, these data are a useful complement to the NDNH's quarterly earnings and employment data.

readiness courses, and the sum across those three activities; *receipt of a certificate, credential, license, or degree*; *employment* (in Q5-Q6 for this report; in Q5-Q10 for the final report); and *receipt of any public benefits*. Having pre-specified these secondary outcomes, the evaluation gives them more attention in discussion of results. Nevertheless, no formal correction is made.

- All other outcomes are ***exploratory***. Exploratory outcomes can be useful for further exploring confirmatory- or secondary-level results.

The next four chapters present results for each grantee separately. The final chapter of this report considers estimates across all four grantees jointly. Doing so raises different multiple comparisons issues. The evaluation's approach to those multiple comparison issues is discussed there.

The box below defines the confirmatory outcome, all secondary outcomes, and selected exploratory outcomes in this interim report. Appendix D provides definitions for all outcomes.

Definitions of Key Outcomes

This table provides definitions for the confirmatory outcome, the secondary outcomes, and selected exploratory outcomes. See Appendix D for definitions of all outcomes.

Confirmatory Outcome	Data Source	Outcome Description
Average earnings in 5th and 6th quarters[a] (Q5-Q6)	NDNH	Average quarterly earnings during the 5th and 6th quarters after random assignment.

Secondary Outcomes	Data Source	Outcome Description
Total hours of any structured employment-related activity	18-month follow-up survey	Total hours attended of the following activities in the first 18 months after random assignment: • Occupational training; • Work-based training; and • Employment readiness courses.
Total hours of occupational training	18-month follow-up survey	Total hours attended of any occupational training (college-based or non-college-based) in the first 18 months after random assignment.
Total hours of work-based training	18-month follow-up survey	Total hours of work-based training (unpaid internships, paid internships, or on-the-job training) in the first 18 months after random assignment.
Total hours of employment readiness courses	18-month follow-up survey	Total hours attended of any employment readiness courses in the first 18 months after random assignment.
Received any certificate, credential, license, or degree	18-month follow-up survey	Received any certificate for completing an occupational training program, an educational degree (e.g., associate's or bachelor's), or a professional credential or license between random assignment and survey interview.
Any employment in the 5th or 6th quarter (Q5-Q6)	NDNH	Employed in either the 5th or 6th quarter after random assignment.

Receipt of any public benefits	18-month follow-up survey	Received any of the following forms of public benefits in the month prior to survey interview: • Temporary Assistance for Needy Families (TANF); • Supplemental Nutrition Assistance Program (SNAP); • Unemployment Insurance (UI) benefits; • Supplemental Nutrition Program for Women, Infants, and Children (WIC); • Supplemental Security Income (SSI), Social Security Disability Insurance (SSDI), or other disability insurance; • Section 8 or public housing; • General Assistance benefits; or • Trade Adjustment Assistance (TAA), or Alternative Trade Adjustment Assistance (ATAA) benefits.
Selected Exploratory Outcomes	**Data Source**	**Outcome Description**
Hours per week of training, if attended any structured employment-related activities	18-month follow-up survey	For those who attended any structured employment-related activity (overall, or separately for the three training types listed above), calculated as the ratio of total hours attended to total weeks attended.
Career counseling	18-month follow-up survey	Received career counseling at least once between random assignment and survey interview, either from an employment readiness/occupational training provider or from another organization in the community. Career counseling can include tests to see what jobs a respondent was suited for, information about education or job training programs, information on how to change careers, or information about what jobs are available in the local area.
Job placement assistance	18-month follow-up survey	Received job placement assistance at least once between random assignment and survey interview, either from an employment readiness/occupational training provider or from another organization in the community. Job placement assistance can include assistance in searching for work, referrals to jobs or employers, or labor market information.
Job readiness assistance	18-month follow-up survey	Received assistance with job readiness skills at least once between random assignment and survey interview, either from an employment readiness/occupational training provider or from another organization in the community. Job readiness assistance can include help with a resume, interviewing skills, and networking skills.

NDNH is National Directory of New Hires.
[a]The quarter of random assignment is deemed Quarter 0.

2.6 Data Sources

This section briefly describes data sources for the RTW Evaluation. (See Appendix B for more detail on these data sources.)

- ***Field research***. Between 2016 and 2018, the evaluation team conducted three rounds of in-person interviews with grantee program administrators, line staff, and organizational partners. For each grantee, the team interviewed staff in all grant-funded positions where the grantee's program operated (see Copson et al. [2020] for more detail). This report uses that field research to describe the programs and to interpret the impact estimates.
- ***Baseline Information Form***. Before random assignment, applicants to a RTW grantee program completed the study's Baseline Information Form, which captured information on their demographic and socioeconomic characteristics, employment and education history, receipt of public benefits, opinions about work, and contact information to help locate the study member for the follow-up survey. (See Appendix E for more detail on the derived baseline measures and their uses in the evaluation.) This report uses responses to the Baseline Information Form to describe the study samples for each grantee, create survey non-response weights, improve the precision of the impact estimates, and define subgroups.
- ***18-month follow-up survey***. The follow-up survey collected information on study members' receipt of employment-related services; educational attainment; factors that affected the ability to work; employment and job characteristics; and public benefits receipt. The evaluation team attempted to contact and survey all those who were randomly assigned (see Appendix C for more detail on survey methods). Study members were interviewed on average about 19 months after random assignment (Exhibit 2-3, column 3), providing information on their activities between random assignment and the date of survey interview (column 1).[18] Some survey-based outcomes are measured as of 18 months after random assignment; others are measured as of survey interview. Across all the grantees, response rates range from 76 percent to 81 percent. The analysis uses non-response weights to adjust for differential non-response. This report uses survey responses to characterize the experiences of study members and to measure outcomes.
- ***National Directory of New Hires (NDNH)***. Compiled by the Office of Child Support Enforcement at the U.S. Department of Health and Human Services, the NDNH is a national database of all Unemployment Insurance records that reports quarterly employment and earnings, augmented with federal government payroll information. The NDNH includes most types of employment; however, some types of jobs are not included, specifically those for which workers do not receive a W-2 (e.g., contract workers and the self-employed, and those working "under-the-table").[19] The NDNH serves as the primary source of data on earnings and employment status for this evaluation. These data cover nearly all sample members (a few members' personal identifiers appeared to be invalid, preventing the evaluation from obtaining their NDNH records). This report uses the NDNH data to measure outcomes.

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[18] Respondents were asked to report on outcomes from their date of random assignment to their date of survey interview. Given the almost three-year period over which study members were randomized, the reference period for the sample overall stretches from July 2015 to December 2019. Outcomes will be influenced in part by the economic conditions during the reference period, which improved substantially over this (pre-COVID-19) timeframe.

[19] The IT sector, a target industry for all four RTW programs included in the evaluation, is one of the most common users of independent contract workers ("Research Reveals the Top 10 Industries for Independent Workers", https://blog.talentwave.com/research-reveals-the-top-10-industries-for-independent-workers). Because contracting work is fairly common in the IT sector, the NDNH may underestimate earnings for those working in this sector.

Exhibit 2-3: Follow-up Period and 18-Month Survey Response Rates, by Grantee Program

Grantee	Reference Period (over which outcomes are measured)[a]	Follow-up Period	Survey Interview Timing (number of months after random assignment)		Survey Response Rate		
			Mean	Median	Program Group	Control Group	All
AAWDC (MTC)	Aug 2015–Dec 2019	Apr 2017–Dec 2019	19.7	19.2	84%	77%	81%
JVS (STW-T and JSA)	Aug 2015–Dec 2019	Apr 2017–Dec 2019	19.5	19.1	82%	78%	80%
RochesterWorks! (FLH)	Aug 2015–Dec 2019	Apr 2017–Dec 2019	19.1	18.9	81%	75%	78%
WSI (Reboot NW)	Jul 2015–Oct 2019	Apr 2017–Oct 2019	19.6	19.0	81%	71%	76%

[a]The reference period is the period over which outcomes are measured for this report; the follow-up survey and NDNH data capture outcomes that occur from random assignment through approximately 18 months after randomization. The reference period dates cover the period from the earliest date of random assignment at the given grantee to the date of follow-up (survey interview) or to the end of the sixth quarter after the last randomization, whichever is later.

How to Read This Report's Impact Exhibits

Most exhibits presenting impacts in Chapters 3 through 6 use the format shown below. The far-left column (**Outcome**) identifies the outcomes whose findings appear in the rows, as well as the units of that outcome (e.g., percentages, dollars, hours). To the right are the following data columns:

1. **Program Group Mean** is the mean outcome for the program group, adjusted to correct for random baseline differences between the program group and control group (as explained in Appendix A).

2. **Control Group Mean** is the mean outcome for the control group.

3. **Impact (Difference)** is the difference between the program group and control group means—that is, the difference between the program group outcome for those offered the given RTW program, compared to the control group outcome representing what the program group's outcome would have been absent the offer of the program.

4. **Standard Error** is a measure of uncertainty in the impact. It reflects chance variation due to randomization and measurement error in the outcome.

5. **Relative Impact (%)** is the impact of the program as a percentage change from the control group mean. Relative impact offers a sense of how "big" or "small" the impact of the intervention is relative to the control group mean.

Example of Report's Impact Exhibits

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Ever attended any structured employment-related activity (%)	75	44	31***	3	70

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey, as of 18 months after random assignment.
NOTE: Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]). The total sample of 831 includes 455 program group and 376 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

In this example:

- **Impact (Col 3).** 75 percent of the program group attended any structured employment-related activities in the 18 months after random assignment (Col 1), compared to 44 percent

of the control group (Col 2). So this RTW program increased participation in structured employment-related activities by 31 percentage points. That the impact is flagged with three asterisks (***) means that the evaluation is quite confident that the impact is not zero (formally, that the null hypothesis of no RTW program impact on this outcome is rejected with a *p*-value smaller than .01).

- **Standard Error (Col 4).** The standard error on this impact is 3 percentage points. This standard error can be used to construct a *confidence interval*—meaning the reader can have strong confidence that the true impact is within roughly two standard errors of the reported impact. In this example, then, a strong confidence interval runs from an impact of 25 percentage points to 37 percentage points.

- **Relative Impact (Col 5).** The relative impact is a 70 percent increase, calculated as 100 x [31 / 44].

Classification of Outcomes

Exhibits presenting impacts indicate the confirmatory outcome using ***bolded and italicized text,*** and secondary outcomes using **bolded text.** This special formatting signals that these outcomes were pre-specified as focal. In the shown example above, "Ever attended any employment-related activity (%)" is neither bolded nor italicized, indicating that it is an exploratory outcome.

Conditional Outcomes

For some outcomes, the exhibits report both the overall outcome and the outcome conditional on some other outcome. Impacts on conditional outcomes are indicated using *italicized text*. For example, the exhibits report both total hours of training (inclusive of those who attended no training and thus had zero hours) and also total hours of training among those who attended any training (reported in italics). Analyses of conditional outcomes are not supported by the random assignment design and should therefore be interpreted with care.

Sample Size

Exact sample sizes vary with the patterns of item non-response and for which items non-responses were imputed. The total numbers of sample members for the given data source are reported in the notes at the bottom of the impact tables. Appendix exhibits report samples sizes for each outcome.

3 Impact Findings for Anne Arundel Workforce Development Corporation's Maryland Tech Connection Program

This chapter presents impact findings from Anne Arundel Workforce Development Corporation (AAWDC)'s Maryland Tech Connection (MTC) program through 18 months after random assignment.[20] The MTC program, offered by seven Career Centers across Maryland, operated from May 2015 through October 2019. The program aimed to assist long-term unemployed and underemployed workers to find employment in advanced manufacturing, bioscience/biotechnology, cybersecurity, healthcare, and information technology (IT). To that end, MTC provided employment readiness courses, occupational training, work-based training, and job search assistance, along with financial and other supports.

Key Findings: MTC

- Increased service receipt, primarily occupational training but also work-based training, employment readiness, and job search activities.
- Increased educational attainment, including receipt of professional certifications.
- Decreased average earnings in the fifth and sixth quarters after random assignment.
- Negative impact on earnings is concentrated among those with a bachelor's degree or more, where impacts on participation in occupational training and credential receipt were also concentrated.

This chapter is organized as follows. Section 3.1 provides an overview of the MTC program context, program services, and the characteristics of the study sample. The balance of the chapter reports impacts—that is, program group/control group differences—in the order of the evaluation's logic model shown in Exhibit 2-1: participation in employment-related activities (Section 3.2); receipt of education- and employment-related supports, including financial assistance for occupational training (Section 3.3); educational attainment and career confidence (Section 3.4); labor market outcomes, including employment and earnings (Section 3.5); and other measures of well-being (Section 3.6). Last, Section 3.7 reports impacts for selected subgroups. Unless otherwise noted, all results are from the 18-month follow-up survey. Appendix F provides additional results for MTC.

3.1 Anne Arundel Workforce Development Corporation's Maryland Tech Connection Program

This section provides a summary of the MTC program context, target population and program services, and characteristics of the study's research sample.

3.1.1 Program Context

AAWDC is a non-profit organization that provides workforce development services for Anne Arundel County in Maryland. It serves job seekers and employers in the county through its American Job Centers, known locally as Career Centers. For the Ready to Work (RTW) grant, lead grantee AAWDC partnered with six other workforce agencies. Together, these seven agencies served residents of Baltimore City plus 12 of Maryland's 23 counties: Anne Arundel, Baltimore, Calvert, Carroll, Cecil, Charles, Frederick, Harford, Howard, Montgomery, Prince George's, and St. Mary's. Residents of other Maryland counties could also participate by going to one of the participating Career Centers.

[20] For a smaller cohort of study members randomized early in the study period, the evaluation also examines earnings through the 12th quarter after random assignment.

At the outset of the grant period, MTC focused on two industries—bioscience/biotechnology and IT—as they were projected to be key growth areas in the state due to strong demand from federal government agencies, contractors, and universities. However, the economic environment and jobs in demand varied across the region that the program served. Not all of the areas had employers or job opportunities in those industries. In the final year of the grant, 2018, MTC expanded to include two other industries—advanced manufacturing and healthcare—where demand for workers was growing. The addition of these industries allowed MTC to serve a broader population with interests and skills in those fields across the service area in the final year of the grant.

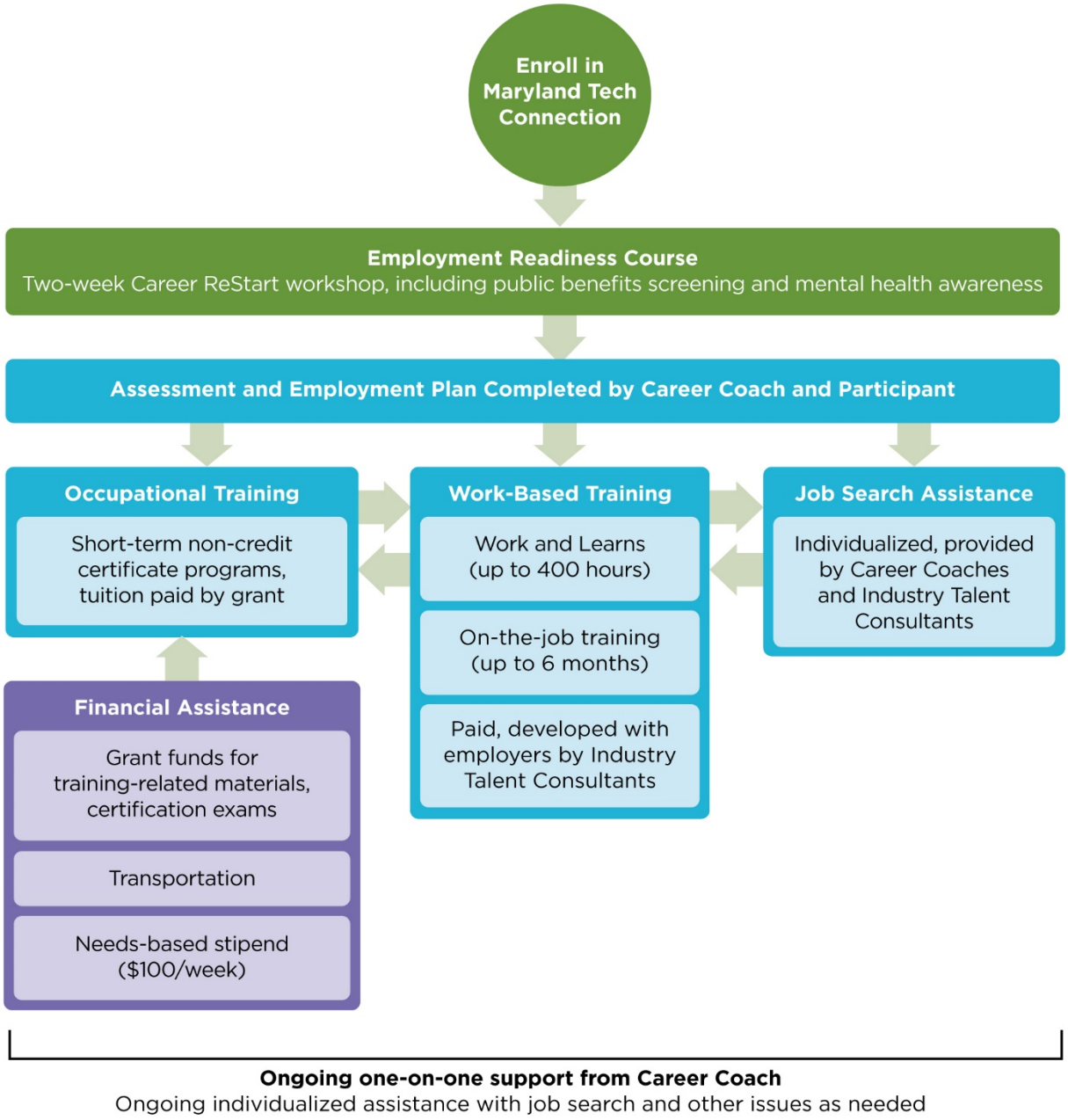
3.1.2 Target Population and Services Provided by MTC

To be eligible for the MTC program, applicants had to be long-term unemployed (as defined by the RTW grant), be a resident of Maryland, have a high school diploma or GED, and have education and/or experience relevant to one of the four targeted industries. Applicants interested in changing careers needed to demonstrate skills or prior experience applicable to the new industry. To reach its target enrollment, AAWDC and its partners used a comprehensive and multifaceted approach to recruitment that included Career Center and partner referrals, outreach by MTC staff at job fairs and other events, the MTC website, and social media.

Study participants were randomly assigned when they applied for the MTC program at one of the participating Career Centers (see Appendix Section F.1.1 for more detail on the random assignment process). After attending an MTC information session, interested applicants completed several computer-based assessments and their eligibility for MTC was verified. After random assignment, those assigned to the program group received information about the next employment readiness course (described below). Those in the control group received information on other services in the community that they could choose to access, including those available through the Career Center. RTW staff did not actively refer control group members to those services (Martinson et al. 2017; see also Appendix Section F.1.1).

For sample members randomized to the program group, grant-funded Career Coaches worked one-on-one with RTW program participants to conduct an assessment, to develop a customized set of program activities, and to provide job search assistance. Career Coaches typically remained with a participant throughout their time in the program. This provided a level of consistency, continuity, and routine follow-up for program group members that was not available as part of the Career Center's usual services. In addition, grant-funded Industry Talent Consultants developed relationships with employers in the target industries that could lead to jobs or work-based training experiences for MTC participants.

Exhibit 3-1: Overview of the MTC Program



SOURCE: Developed by Abt Associates based on staff reports and program materials.

As shown in Exhibit 3-1 and described further in Exhibit 3-2, participants in MTC generally began the program with a two-week employment readiness course called Career ReStart that was available only to program group members. After Career ReStart, participants worked with the Career Coaches to identify appropriate program activities based on an assessment of their skills and interests. Participants with an interest in occupational training to upgrade their skills or prepare for a job in a new industry could also attend two types of paid work-based training at an employer. Job search assistance provided by Career Coaches was available to participants seeking to enter employment immediately or after the completion of other MTC activities. Finally, MTC provided a range of financial supports including tuition assistance

and a need-based weekly stipend for those in occupational training, and assistance with transportation, refurbished computers to complete a job search, and assistance with urgent financial issues that deterred participation (e.g., utility payment).

Exhibit 3-2: Primary Employment-Related Activities and Supports Provided by MTC

Service	Description
Structured Employment Readiness Activities	
Employment Readiness Courses	• The two-week Career ReStart course was designed to provide participants with the tools and motivation necessary for a job search, including components on mental health awareness and a screening for eligibility for public benefits if needed. • At the beginning of the grant period, Career ReStart operated during the business day for two full weeks. That schedule assumed that unemployed workers did not have commitments during the regular work week. As the grant period progressed, program staff reported some participants had daytime commitments that kept them from attending Career ReStart, including part-time employment. In response, MTC provided Career ReStart sessions at night and on weekends. MTC also developed and implemented an online self-paced Career ReStart.
Occupational Training	• Career Coaches helped participants identify appropriate training programs in the target industries. Participants generally enrolled in training provided by community colleges or by other providers eligible to receive state Workforce Innovation and Opportunity Act and Individual Training Account funds for tuition. Tuition for these programs was covered by RTW grant funds. • Midway through the grant period, MTC began contracting with training providers to serve groups of MTC participants in "cohort trainings" designed specifically to meet employer and industry needs.
Work-based Training	• Work and Learn positions were designed for participants to develop work experience, particularly if they were new to a particular industry or had been out of the workforce for some time. They lasted up to 400 hours and MTC paid the participant directly. • Full-time and paid on-the-job training (OJT) lasted up to six months (approximately 1,000 hours) for MTC participants whom an employer wanted to hire, but who needed some additional training in order to fully qualify for the job. MTC reimbursed the employer for half of the participant's wages.
Other Services and Supports	
Job Search Assistance	• MTC Career Coaches expected participants to take the initiative with their job search, and Career Coaches assisted to help with identifying and applying for appropriate jobs. • Industry Talent Consultants worked with Career Coaches across the Career Center locations to identify participants to refer as job candidates to employers.
Financial Assistance	• MTC offered financial assistance and other supports, up to a maximum of $10,000 per participant. • Assistance included funds for occupational training tuition and work-based training wages. Other available forms of financial assistance for those participating in occupational training, work-based training, and/or Career ReStart included needs-related payments, training-related costs, transportation assistance, refurbished computers, and less commonly emergency financial assistance.

SOURCE: Developed by Abt Associates based on staff reports and program materials.

3.1.3 Characteristics of the Study Sample

Exhibit 3-3 shows the characteristics of program group and control group members at the time of random assignment (at "baseline"). (Appendix Section F.1.2 provides additional demographic information and tests for balance between members of the program group and control group at baseline.) As shown, a slight majority of the MTC study members were women (53 percent). The study enrolled about twice as many Black or African American study members as White study members (58 percent versus 29 percent). The average age of study members was 45 years old.[21]

Exhibit 3-3: Selected Characteristics of Study Sample at Baseline, MTC

Characteristic	Incidence
Demographics	
Gender (%)	
Women	53
Men	47
Race (%)	
Asian	8
Black or African American	58
White	29
Hispanic ethnicity (%)	3
Age (%)	
24 years or younger	4
25 to 34 years	15
35 to 44 years	25
45 to 54 years	31
55 years or older	24
Average age (years)	45
Household Status	
Marital status (%)	
Married	45
Widowed/divorced/separated	22
Never married	31
One or more own children in household age 6 or younger (%)	20
Education	
Education level (%)	
High school diploma or less	8
Some college credit but no degree	14
Technical or associate's degree	12
Bachelor's degree	38
Master's degree or more	27
Employment	
Employment status (%)	
Currently employed	16

[21] Women in the study sample were significantly older than the men; women were more likely to be age 50 or older at baseline, and less likely to be under age 30.

Characteristic	Incidence
Currently unemployed, but employed in last 12 months	53
Currently unemployed, and longer than 12 months since last employed	31
Weekly earnings, if employed ($)	460
Public Benefits	
Receiving any public benefits (%)	43
Supplemental Nutrition Assistance Program (%)	22
Temporary Assistance for Needy Families (%)	2
Section 8 or Public Housing assistance (%)	3
Unemployment Insurance (%)	24

SOURCE: Ready to Work Baseline Information Form (BIF). Sample size of 1,029 includes 540 program group and 489 control group members. Statistics in this exhibit are computed based on the AAWDC study members who completed the BIF for the given question.
NOTES: Percentages do not sum to 100% for race and marital status because not all response categories are included in the exhibit.

Aligning with the RTW grant's focus on aiding skilled workers who had experienced long-term unemployment, most study members were unemployed at the time of random assignment (84 percent) and almost a third (31 percent) had been unemployed for more than a year. Study members were well educated overall. Only 8 percent had only a high school diploma or less. Nearly two-thirds had a bachelor's degree (38 percent) or more (27 percent). At baseline, average weekly earnings were $460 among those who worked. Forty-three (43) percent were receiving any public benefits; receipt of Unemployment Insurance (UI) and Supplemental Nutrition Assistance Program (SNAP) benefits was most common (about one-quarter for each).

3.2 Impacts on Participation in Employment-Related Activities

This section reports impacts on the second step of the RTW logic model (Exhibit 2-1, "Program Services"): participation in employment-related activities. Such employment-related activities include occupational training, work-based training, employment readiness courses, and job search assistance. The logic model posits that more participation in employment-related activities for the program group compared to the control group will eventually lead to better earnings and employment outcomes relative to the control group.

As noted in Chapter 2, the evaluation estimates the impact of MTC by comparing:

- Average outcomes for the program group, who were offered the MTC program

versus

- Average outcomes for the control group, who were not offered the MTC program.

Not all program group members participated in MTC. Though the control group could not access MTC, they could seek out other services in the community, including those offered by AJCs.

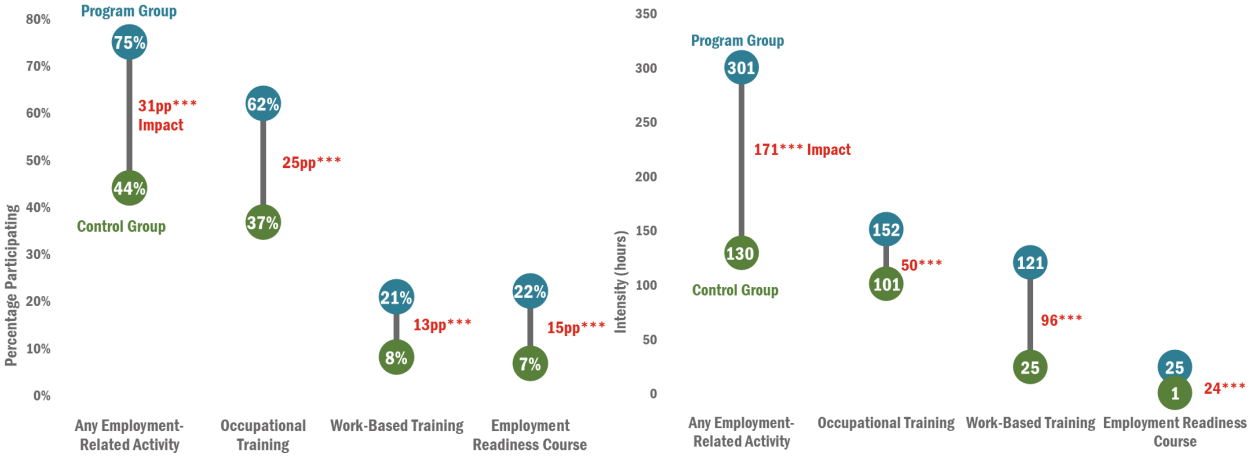
This section first reports MTC's impact on engagement (*participation levels*; that is, any participation) and intensity of engagement (*hours, weeks*) in each structured employment-related activity—occupational training, work-based training, and employment readiness courses—as well as across all three activities. This discussion addresses *cumulative* participation over the entire follow-up period. Next the section describes program participation levels over time, namely for each month in the follow-up period. Last,

this section describes receipt of job search assistance, which was typically provided one-on-one and was not measured with the same level of detail as the structured activities.[22]

- **MTC increased both the level and hours of participation in occupational training, work-based training, and employment readiness courses.**

In all three of the structured employment-related activities, MTC produced large increases in both participation levels and hours of participation compared to the control group. Hours of participation, in total and for each activity type, are *secondary outcomes* for the RTW Evaluation (see Section 2.5). Exhibit 3-4 shows the impacts on receipt of any of the structured employment-related activities and the impact on hours of these activities (overall and by activity type).

Exhibit 3-4: Participation Level and Intensity of Participation in Structured Employment-Related Activities, MTC



SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey, measured as of 18 months after random assignment.
NOTES: Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 831 includes 455 program group and 376 control group members who completed the 18-month follow-up survey. "pp" denotes percentage points.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

MTC increased participation levels for employment-related activities overall by 31 percentage points (75 percent of the program group versus 44 percent of the control group participated in any such activity; Exhibit 3-4). Moreover, MTC increased total hours of participation in such activities by 171 hours (301 hours in the program group versus 130 hours in the control group). MTC also increased the number of weeks of activities attended by 7 (15 weeks in the program group versus 8 weeks in the control group, see Exhibit 3-5 below).[23] Considering specific activities, the largest impact in participation levels was for occupational training (an increase of 25 percentage points); but the largest impact on hours of participation was for work-based training (an increase of 96 hours).

[22] For job search assistance outcomes, the survey collected only whether the study member received this type of assistance and how many times.

[23] See also Appendix Exhibit F.2-2 for a comparison of the distribution of total weeks of any structured employment-related activity between members of the program and control groups.

Exhibit 3-5 shows impacts on service receipt in more detail, including impacts on weeks of training and impacts on hours and weeks of training among those who attended any training. The top panel shows impacts on participation levels and hours and weeks attended for all structured employment-related activities combined. Subsequent panels provide these same impact estimates separately for each type of activity.

Exhibit 3-5: Participation Detail in Structured Employment-Related Activities, MTC

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Any Structured Employment-Related Activity					
Ever attended (%)	75	44	31***	3	70
Total hours attended	**301**	**130**	**171*** **	**27**	**132**
Total hours, for attendees	*405*	*308*	*97***	*39*	*32*
Total weeks attended	15	8	7***	1	79
Total weeks, for attendees	*21*	*21*	*0*	*2*	*0*
Hours per week, for attendees	*22*	*17*	*6***	*2*	*33*
Any Occupational Training					
Ever attended (%)	62	37	25***	3	68
Ever attended college-based training (%)	8	14	−6**	2	−41
Ever attended non-college-based training (%)	58	27	31***	3	114
Total hours attended	**152**	**101**	**50*** **	**19**	**49**
Total hours, for attendees	*267*	*285*	*−18*	*35*	*−6*
Total weeks attended	10	7	3**	1	37
Total weeks, for attendees	*18*	*22*	*−3*	*2*	*−16*
Hours per week, for attendees	*17*	*16*	*2*	*1*	*12*
Any Work-Based Training					
Ever attended (%)	21	8	13***	2	161
Ever attended unpaid internships (%)	3	2	1	1	69
Ever attended paid internships (%)	13	4	10***	2	256
Ever attended on-the-job training (OJT, %)	9	3	6***	2	209
Total hours attended	**121**	**25**	**96*** **	**17**	**390**
Total hours, for attendees	*547*	*344*	*203**	*115*	*59*
Total weeks attended	4	1	3***	1	457
Total weeks, for attendees	*14*	*11*	*4*	*3*	*33*
Hours per week, for attendees	*33*	*33*	*0*	*3*	*1*
Employment Readiness Course					
Ever attended (%)	22	7	15***	2	225
Total hours attended	**25**	**1**	**24*** **	**5**	**1589**
Total hours, for attendees	*132*	*26*	*106****	*31*	*407*
Total weeks attended	1	0	1***	0	272
Total weeks, for attendees	*7*	*6*	*0*	*2*	*8*
Hours per week, for attendees	27	5	22***	2	421

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey, as of 18 months after random assignment.

NOTES: **Secondary outcomes are bolded**; exploratory outcomes are not bolded. *Outcomes in italics* apply to the subset of survey respondents who attended any training, and thus are non-experimental. Where not italicized, outcomes apply to the full survey sample, and impact estimates are experimental. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 831 includes 455 program group and 376 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.

Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **MTC increased participation in *occupational training* and hours attending this training.**

MTC produced a 25 percentage point impact on attendance in occupational training (Exhibit 3-5). Occupational training was not uncommon among the control group (37 percent), but was more common in the program group (62 percent). The average number of hours in occupational training increased from 101 hours in the control group to 152 hours in the program group, an impact of 50 hours. (Both averages include program and control group members who did not attend occupational training.)

Exhibit 3-5 also shows the impact on training among those who attended any occupational training (a non-experimental comparison). Although MTC had a positive impact on hours of occupational training in the program group as a whole, the average number of hours attended among those who received any training are similar in the program group and control group (approximately 270 hours)..[24] Similarly, among those who attended training, the average weeks attended were similar (approximately 20 weeks).[25] In weeks in which they attended training, both groups participated about 17 hours per week.

Consistent with the design of the MTC program, the most common occupational training was in IT: in the program group, 39 percent attended occupational training in IT, an increase of 21 percentage points relative to the control group (see Appendix Exhibit F.2-3). Eight (8) percent of the program group attended occupational training in bioscience/biotechnology, an increase of 4 percentage points. Only 5 percent of the program group attended occupational training in healthcare, and less than 1 percent did so in advanced manufacturing, with no clear evidence of differences between the program and control groups. (As noted in Section 3.1, MTC included these two industries only in its last grant year.)

Both the program and control group primarily attended occupational training outside of a college setting (Exhibit 3-5). For example, in the program group, 8 percent attended a college-based training, whereas 58 percent attended non-college-based training.[26] Furthermore, MTC *decreased* attendance in college-based occupational training by 6 percentage points, but increased non-college-based training by 31 percentage points.

- **MTC increased participation in and hours of *work-based training*.**

Work- based training was uncommon in the control group: only 8 percent of the control group attended work-based training (Exhibit 3-5). MTC more than doubled participation in work-based training, to 21

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[24] Conditional outcomes—in this case, hours *among those who attended any of the given type of training*—are calculated after excluding those who attended no training. Because these calculations exclude those sample members with zero hours attended, the average is higher than the average when including all sample members. Impacts (i.e., program/control differences) on conditional outcomes should be interpreted with care because these impacts do not compare everyone in the program group to everyone in the control group. As such, the estimates are not experimental impact estimates. To emphasize this caveat, conditional outcomes are reported in italics in exhibits.

It is important to note that impacts on conditional outcomes arise from two complementary sources. First, the MTC program could improve outcomes among those who would have gotten the training anyway. Second, additional people are drawn into the training. Sometimes those drawn into the training attend fewer hours than those who would have gotten the training without the MTC program. As a result, the impact on conditional hours is sometimes negative. See Judkins et al. (forthcoming) for more discussion of these issues.

[25] See Appendix Exhibit F.2.4 for a comparison of the distribution of total weeks of occupational training between members of the program and control groups (including those who attended no occupational training).

[26] Examples of non-college training providers reported by staff were the BioTechnical Institute of Maryland for a Laboratory Associate program and the CRA Academy for clinical research occupations (Copson et al. 2020).

percent in the program group. As discussed earlier (Exhibit 3-2), work-based training offered by MTC included paid internships through Work and Learns and paid OJT, with grant-funded staff playing a role in developing these positions with employers. MTC's impact on work-based training includes a 10 percentage point impact on paid internships and a 6 percentage point impact on OJT.

For those who attended work-based training (a non-experimental comparison), MTC also increased hours of participation in this activity by more than half (from 344 for the control group to 547 for the program group). Together the increases in participation and hours among attendees led to an almost five-fold increase in total hours in work-based training, from 25 hours for the control group to 121 hours for the program group. The 547 average hours of work-based training for the program group is the equivalent of about three months of full-time work (i.e., 40 hours per week).[27]

- **MTC increased participation in *employment readiness courses* and hours in such courses.**

The follow-up survey asked study members whether they attended any courses focusing on workplace skills or "soft" skills such as time management, how to be a good employee, or working in a team. For the control group, these types of employment readiness courses were uncommon and short: only 7 percent of the control group attended such a course, and those who attended did so for 26 hours on average. In contrast and reflecting MTC's Career ReStart workshop, 22 percent of the program group attended an employment readiness course, three times the control group level. Those who attended did so for 132 hours on average, five times the control group level. Nevertheless, that 22 percent is lower than expected given that program staff reported the workshop was a standard initial activity for most RTW participants. Lower reported participation rates in employment readiness courses could also be due to respondents' not associating Career ReStart with the survey question.

These increases—in participation and in hours among attendees—result in a more than 10-fold impact on total hours attended: from 1 hour in the control group to 25 hours in the program group. For both the program and control groups, those who attended any employment readiness courses participated for approximately 6 weeks; however, on average, those in the program group attended for 27 hours per week compared to 5 hours for the control group.[28]

- **Impacts on rates of participation in structured employment-related activities peaked in months 4 to 6 after random assignment, continued through month 15, and diminished by the end of the follow-up period.**

The evaluation also examines *impacts over time* on participation levels in any structured employment-related activity as well as in occupational training, work-based training, or employment readiness courses; that is, for each month in the follow-up period. Service receipt impacts over time can be helpful in determining when one might expect employment and earnings impacts to emerge (see Section 3.5 for discussion).

Exhibit 3-6 shows monthly participation rates in each of the three structured employment-related activities for the program group (on the left) and the control group (on the right). For the program group,

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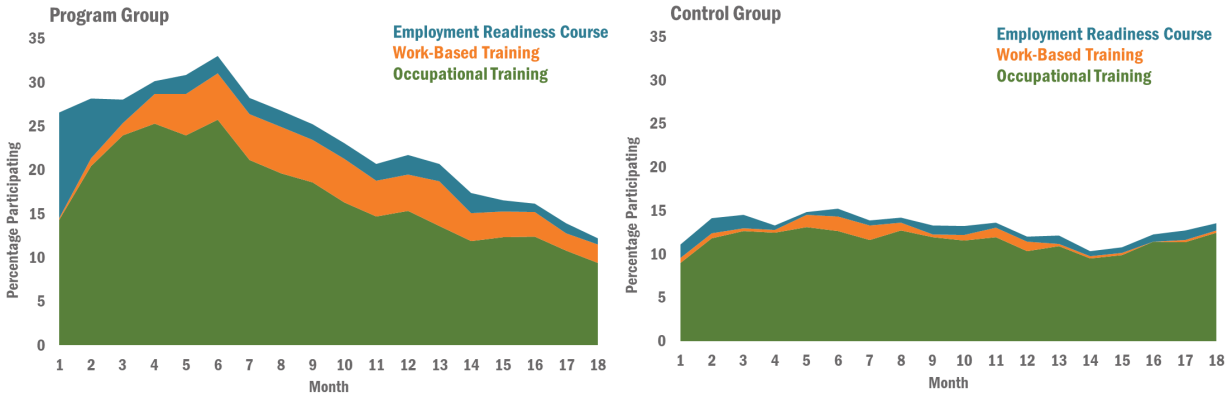
[27] See Appendix Exhibit F.2.6 for a comparison of the distribution of total weeks of work-based training between members of the program and control groups.

[28] See Appendix Exhibit F.2.8 for a comparison of the distribution of total weeks of employment readiness courses between members of the program and control groups.

rates of participation in any such activities peaked at approximately 33 percent in month 6 after random assignment and dropped to approximately 13 percent by the end of the 18-month follow-up period. In the early months after random assignment, program group members primarily attended occupational training and employment readiness courses. Participation in work-based training increased in month 4 and continued through the end of the follow-up period. In contrast, the participation level in any structured employment-related activity for the control group remained at approximately 10 to 15 percent throughout the follow-up period, primarily in occupational training.

Exhibit 3-6: Participation in Structured Employment-Related Activities for the Program and Control Groups, by Month since Random Assignment, MTC



SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey, measured as of 18 months after random assignment.
NOTES: The total sample of 831 includes 455 program group and 376 control group members who completed the 18-month follow-up survey.

Impacts on monthly participation in any structured employment-related activity (the difference between the program and control groups) peaked at 18 percentage points in months 4 and 6 and continued through month 15 after random assignment (see Appendix Exhibit F.2-9). These impacts ranged from 13 to 18 percentage points through month 9 and declined thereafter.

Impacts on participation in occupational training also peaked in months 4 and 6, at 14 percentage points, then decreased to approximately 5 percentage points in months 10 through 12; the study finds no clear evidence of impacts beyond month 12 (see Appendix Exhibit F.2-10). Impacts on participation in work-based activities were smaller (ranging from 3 to 6 percentage points), but were consistent through the end of the 18-month follow-up period (see Appendix Exhibit F.2-11). Impacts on participation in employment readiness courses were largest in month 1 (10 percentage points) and month 2 (5 percentage points; see Appendix Exhibit F.2-12). By month 18, the study finds no clear evidence that MTC had a remaining impact on structured employment-related activities overall, with an approximately equal 13 percent of the program and control groups attending activities (see Appendix Exhibit F.2-9). Program group members were more likely to be in work-based training in month 18 than were control group members, although levels in both groups were low.

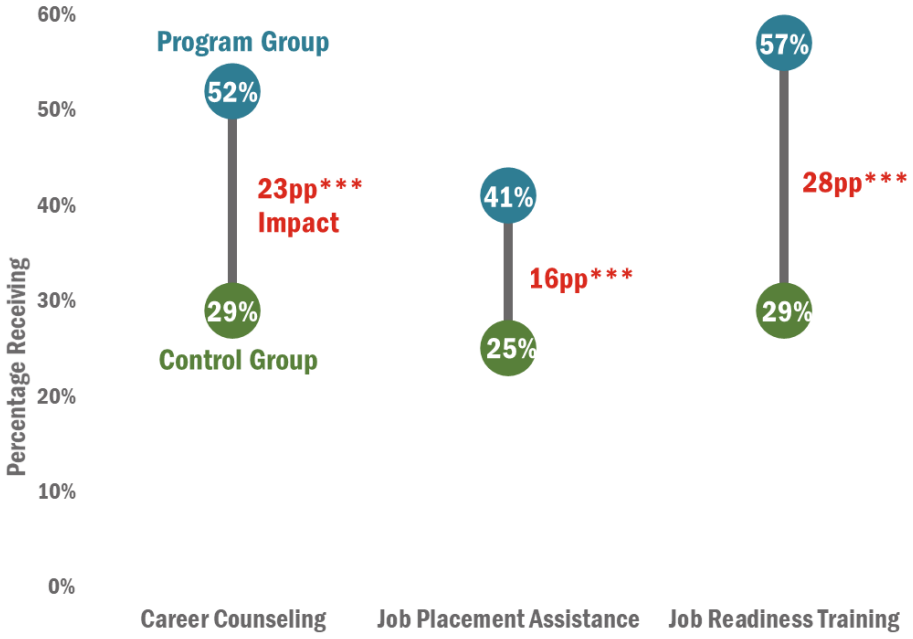
- **MTC increased receipt of career counseling, job placement assistance, and assistance with job readiness skills.**

The survey asked about receipt of a range of assistance related to finding a job. Such assistance included job placement assistance (e.g., assistance searching for work, referrals to jobs or employers, providing labor market information), career counseling (e.g., administering career interest surveys to identify suitable jobs, providing information on how to change careers and on relevant jobs and training

programs), and assistance with job readiness skills (e.g., help with a resume, interviewing skills, and networking). As discussed in Section 3.1, program group members might receive such assistance through one-on-one meetings with program staff (both Career Coaches and Industry Talent Consultants) or as part of the Career ReStart workshop.

In contrast to the outcomes reported above for the three structured employment-related activities, less information was collected for these activities related to job search assistance: the survey asked whether the study member received this type of assistance and the frequency, but did not ask for more detailed measures of intensity (*hours, weeks)*. Receipt of each type of job search assistance increased by two-thirds or more, from about a quarter of the control group to about half of the program group (Exhibit 3-7). For example, 57 percent of the program group but 29 percent of the control group reported receiving assistance with job readiness skills, an impact of 28 percentage points.

Exhibit 3-7: Receipt of Job Search Assistance, MTC



SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.
NOTES: Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 831 includes 455 program group and 376 control group members who completed the 18-month follow-up survey. "pp" denotes percentage points.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

In addition, these levels are more than double the percentage of program group members who reported attending any employment readiness course (22 percent, see bottom panel of Exhibit 3-5). This higher percentage of program group members reporting receipt of job search assistance than attendance in employment readiness courses indicates that much of the job search assistance was provided outside of Career ReStart, most likely through one-on-one interactions with program staff.

- **MTC increased receipt of assistance with workplace behaviors and soft skills.**

The survey asked a series of questions about receipt of assistance with skills that help workers succeed in the workplace as well as in their job search, such as acting professionally and communicating well. Developing these workplace behaviors and skills was a major focus of MTC's Career ReStart workshop

and one-on-one assistance from program staff. As expected, MTC increased the receipt of such assistance. The proportion of the program group that reported attending a program that focused "a great deal of attention" on these skills was approximately twice that of the control group (see Appendix Exhibit F.2-14).

There was a similar approximate doubling of the proportion reporting assistance with soft skills, such as managing stress, anger, and frustration; staying motivated; and handling parenting and other family responsibilities. Smaller but still large relative increases are detected for critical thinking; help with problems at school, work, or home; and time management.

3.3 Impacts on Receipt of Education- and Employment-Related Supports

This section considers more impacts on the second step of the RTW logic model (Exhibit 2-1, "Program Services"): education-related and employment-related supports such as financial assistance for occupational training; academic supports; and assistance with transportation, childcare, work expenses, and mental health issues. The logic model posits that supports that remove barriers to attending and persisting in the program will increase participation in employment-related activities and ultimately lead to increases in earnings and employment.

- **MTC increased the receipt of financial assistance for occupational training.**

The survey asked study members how they funded their occupational training. Respondents could report they paid for training on their own or with the help of their family (through earnings, savings, or loans) or that they received support from other sources.[29] (All funding outcomes were set to zero for study members who attended no occupational training.) Consistent with the financial support the MTC program provided for occupational training, MTC decreased reliance on own/family resources and increased support from other sources, namely the program (Exhibit 3-8). Among all sample members (whether or not they attended training), 21 percent of the control group members paid for training from their own or family funds, but only 12 percent of program group members did so, a drop of a third (9 percentage points).

Exhibit 3-8: Funding Sources for Occupational Training, MTC

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Own or family earnings, savings, or loan (%)	12	21	−9***	3	−44
Received financial support for occupational training from non-family sources (%)	58	22	37***	3	170
Non-family funding sources:					
Free training program (%)	22	9	13***	2	139
Program provider financial support (%)	12	5	8***	2	156
From an American Job Center/state unemployment office (%)	12	7	5**	2	68
Any other funding source (%)	36	6	30***	3	470

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.

NOTES: All outcomes in this table are exploratory. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 831 includes 455 program group

[29] Presumably, these responses are relative to students' out-of-pocket tuition costs and do not reflect the substantial subsidization of community college costs from general tax revenue

and 376 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes. Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

The survey asked about other sources of funding for tuition. MTC produced a 13 percentage point impact on receiving "free" training from a provider, an 8 percentage point impact on receiving financial assistance from the provider, a 5 percentage point impact on financial assistance from an American Job Center or state unemployment office, and a 30 percent impact on assistance from a different source. Overall, 58 percent of the program group reported they received tuition assistance from a non-family source, compared to 22 percent of the control group.

- **MTC increased receipt of academic advising, and transportation and clothing assistance.**

Receipt of academic advising increased by more than a third, to 22 percent in the program group versus 16 percent in the control group (see Appendix Exhibit F.3-2). The impact on academic advising is likely the result of increased participation in occupational training and the supports offered by providers. MTC also increased assistance with transportation (4 percent in the control group versus 25 percent in the program group) and clothing (2 percent in the control group versus 4 percent in the program group). Although mental health awareness was a component of MTC's Career ReStart workshop, the study finds no clear evidence that MTC increased receipt of mental health services.

3.4 Impacts on Credential Receipt and Other Short-Term Outcomes

The RTW logic model (Exhibit 2-1, "Short-Term Outcomes") posits that the program's services and supports in turn would improve short-term outcomes—increase receipt of credentials and levels of career confidence, and decrease barriers to employment—which would subsequently result in improvements in labor market outcomes. This section reports impacts on short-term outcomes.

- **MTC increased receipt of any certificate, credential, license, or degree, primarily occupational training certificates.**

Relative to the control group, MTC increased receipt of any certificate, credential, license, or degree (a *secondary outcome* for the RTW Evaluation; see Section 2.5).[30] Consistent with the increase in participation in occupational training, MTC almost doubled such educational attainment: 47 percent of the program group versus 25 percent of the control group, an impact of 22 percentage points (Exhibit 3-9). In particular, MTC more than doubled certificates received for completing occupational training: 43 percent in the program group versus 19 percent in the control group, an impact of 25 percentage points. Consistent with finding no positive impact on college-based occupational training (Exhibit 3-5), the study finds no clear evidence of positive impacts on college credits or college credentials. This could reflect MTC's focus on the IT industry, in which short-term certificates are common.

[30] A *certificate* is a diploma or other credential awarded for completing a college-based program that required less than a year's worth of credit, or more than a year's worth but less than an associate's degree, or for completing a vocational/occupational training program. A *license* or *certification* is a credential awarded by a state or by an industry or professional association showing qualification to perform a specific job (e.g., certified medical assistant or an IT certification). See Appendix Exhibit F.4-2 for a comparison of the types of professional certifications or licenses received by members of the program group versus the control group. A *degree* includes an associate's, bachelor's, or higher degree.

Exhibit 3-9: Educational Attainment, MTC

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Received any certificate, credential, license, or degree (%)	**47**	**25**	**22*** **	**3**	**88**
Received any occupational training certificate (%)	43	19	25***	3	130
Received any college credits (%)	2	4	−1	1	−33
College credential:					
Certificate (%)	1	2	−0	1	−23
Associate's degree (%)	1	0	0	0	8
Bachelor's degree or higher (%)	1	0	1	1	229
Received any professional certification or license (%)	11	8	3	2	43

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.
NOTES: **Secondary outcomes are bolded**; exploratory outcomes are not bolded. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 831 includes 455 program group and 376 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **MTC did not improve confidence in career knowledge or factors that affect the ability to work.**

The survey asked a series of questions to measure career knowledge associated with finding and keeping jobs, such as increased awareness of steps needed to reach career goals and understanding what taking those steps required. Through its job search and employment readiness assistance, the MTC program was hypothesized to improve career knowledge. However, the study finds no clear evidence that MTC had an impact on the program group's self-reported confidence in their career knowledge (see Appendix Exhibit F.4-3).

The survey also asked about a range of issues that might affect program and control group members' ability to work, including access to affordable quality childcare or reliable transportation, or physical or mental health barriers. The study finds no clear evidence of impact in any of these areas (see Appendix Exhibit F.4-3).

3.5 Impacts on Labor Market Outcomes

The RTW logic model posits that the MTC's services would lead to positive short-term outcomes, which in turn would improve participants' employment and earnings outcomes (Exhibit 2-1, "Long-Term Outcomes"). This section reports impacts on labor market outcomes: first from the employer-reported administrative data from the National Directory of New Hires (NDNH), and then from the self-reported follow-up survey data.

The estimates of MTC's impact on labor market outcomes are inconsistent with that hypothesis. That is, despite the positive impacts on service receipt and credential attainment reported in Sections 3.2 to 3.4, MTC had a *negative* impact on *average earnings in the fifth and sixth quarters after random assignment* ("Q5" and "Q6"). As described in Section 2.5, this confirmatory outcome is the study's main indicator of

the extent to which the RTW program is making progress toward its goals after 18 months.[31] In addition, there are few other positive employment-related impacts.

- **Based on NDNH data, MTC *decreased* earnings in the fifth and sixth quarters after random assignment.**

As discussed in Section 2.5, it might be expected that participants in a training program would work less and therefore earn less while they attend program activities, hence the confirmatory outcome excludes the first four quarters after random assignment. However, the study hypothesized that program group employment and earnings gains would appear by Q5, because by that time most program group members would likely have left MTC and found employment.

As shown in Exhibit 3-10, however, program group members' average earnings were $7,194 per quarter in Q5 and Q6, compared to $8,443 for the control group—a *reduction* of $1,281, a 15 percent decline. As is true with all estimates, the impact on the confirmatory outcome is estimated with uncertainty. Incorporating that uncertainty into a range of plausible impacts implies that the true impact on average quarterly earnings in Q5 and Q6 could be as low as −$2,164 or as high as −$398.[32] Note that throughout the range, the estimated impact on earnings is negative.

Exhibit 3-10: Impacts on Earnings and Employment, MTC

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Earnings					
Average earnings in Q5 and Q6 ($)	***7,163***	***8,443***	***−1,281****	***537***	***-15***
Average earnings in Q5 and Q6, if employed in Q5 or Q6 ($)	*10,128*	*11,657*	*-1,529**	*623*	*-13*
Cumulative earnings in Q1-Q6 ($)	34,083	40,043	-5,960**	2,515	-15
Employment					
Ever employed during Q5 or Q6 (%)	**72**	**72**	**-0**	**3**	**-1**
Ever employed during Q1-Q6 (%)	80	80	0	2	0
Number of quarters employed during Q1-Q6	3.5	3.8	-0.2*	0.1	-6
Longest job tenure during Q0-Q6 (quarters)	3.1	3.3	-0.2	0.1	-5

SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through six quarters after random assignment.
NOTES: ***Confirmatory outcome is bolded and italicized***; **secondary outcomes are bolded**; exploratory outcomes are neither bolded nor italicized. *Outcomes in italics* apply to the subset of sample members who were ever employed during Q5 or Q6, and are thus non-experimental. Where not italicized, outcomes apply to the full sample, and impact estimates are experimental. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]). The total sample of 1,022 includes 536 program group and 486 control group members. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

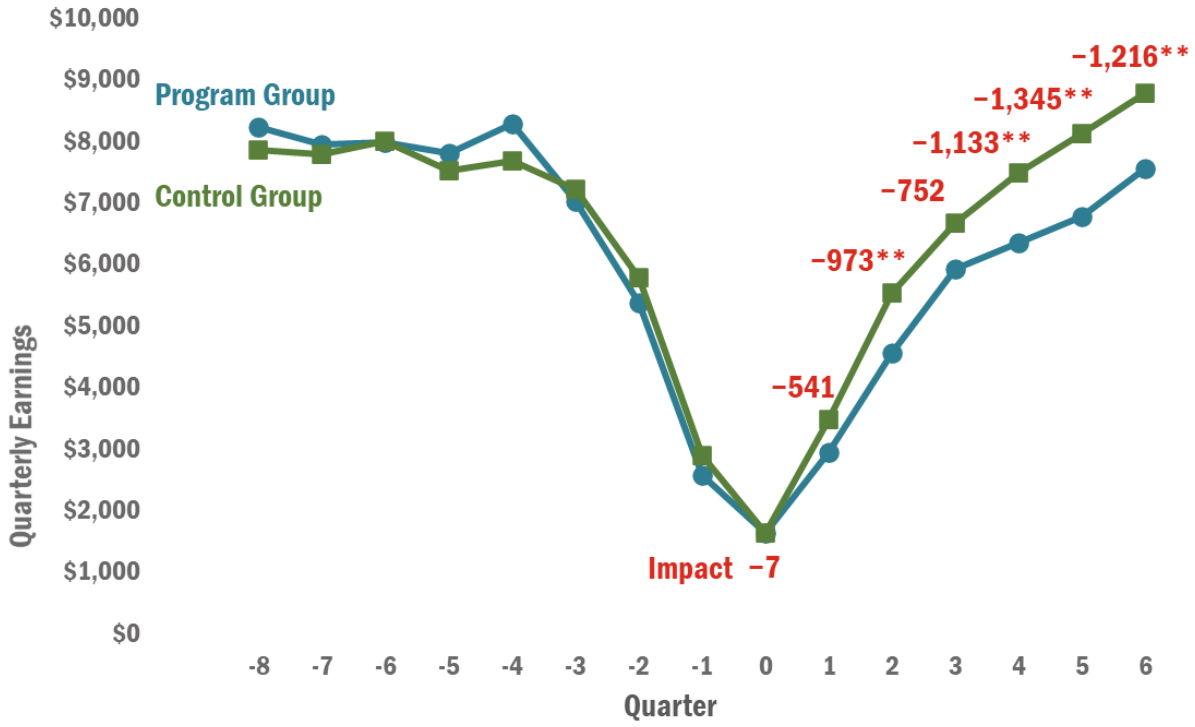
Exhibit 3-11 reports the level of earnings over time for the program group (blue line) and the control group (green line) for the eight quarters before applying to the MTC program, and the following six quarters after random assignment. For each of the quarters after random assignment, the exhibit also

[31] See Appendix Exhibit A.1-2 for TOT impact estimates for average earnings in Q5 and Q6, employment in Q5 and Q6, and public benefits receipt.

[32] These values are the endpoints for a 90 percent confidence interval for the impact on average earnings in Q5 and Q6.

reports MTC's impact on earnings (red numbers above the lines).[33] Exhibit 3-12 likewise shows quarterly employment from eight quarters before random assignment to six quarters after, and shows impacts on employment for each quarter after random assignment.

Exhibit 3-11: Impacts on Earnings, by Quarter, MTC



SOURCE: National Directory of New Hires.
NOTES: On the x-axis, –# indicates quarters before random assignment; 0 reflects the quarter that random assignment occurred. Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 1,022 includes 536 program group and 486 control group members.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

As shown, for both the program and control group, employment and earnings declined sharply prior to applying to the MTC program. Two years before random assignment, approximately 60 percent of both groups were employed, with the proportion dropping to approximately 35 percent in the quarter before applying to the program (Exhibit 3-12). Exhibits 3-11 and 3-12 also show, however, that earnings and employment rebounded in the quarters immediately after random assignment, for the control group as well as for the program group.

This observed earnings dip is consistent with patterns for applicants to job training and other social programs and has been widely documented in the literature (e.g., Ashenfelter 1978; Heckman and Smith 1999; Mueser, Troske, and Gorislavsky 2007). Individuals often apply to these programs soon after encountering particularly difficult circumstances or crises, such as the loss of a job. Some, but often far

[33] Appendix Exhibit F.5-1 also reports the estimated "impacts" on earnings and employment for the eight quarters before random assignment, to test for balance between the members of the program group and control group before applying to the program (there are no significant differences in earnings; employment in the fifth quarter before random assignment is higher in the program group, 63 percent, than in the control group, 58 percent). Pre–random assignment quarterly data on earnings and employment are also included in the baseline balance table, Appendix Exhibit F.1-2.

from all, of that decline is usually temporary. Thus, employment and earnings rise even in the absence of the program (here represented by the control group) after applying to the program.

With respect to *impacts* on earnings—the (regression adjusted) difference in outcomes between the program group and control group—as shown in Exhibit 3-11, the study finds no clear evidence that the MTC program increased earnings in any quarter after random assignment. In most of these quarters, the estimated impact is instead negative.

The timing of program activities is potentially important for interpreting earnings impacts. Substantial positive impacts on participation in program activities, particularly in occupational and work-based training, could result in a reduction in earnings while attending program activities. However, the decrease in earnings evident in Exhibit 3-11 continued after the impact on participation levels had faded. As discussed in Section 3.2, while some program group members were attending program activities well into the second year after random assignment, the impact on service receipt peaked in months 4 through 6, continuing through month 15, with no clear evidence of an impact beyond that point (see Appendix Exhibit F.2-9).

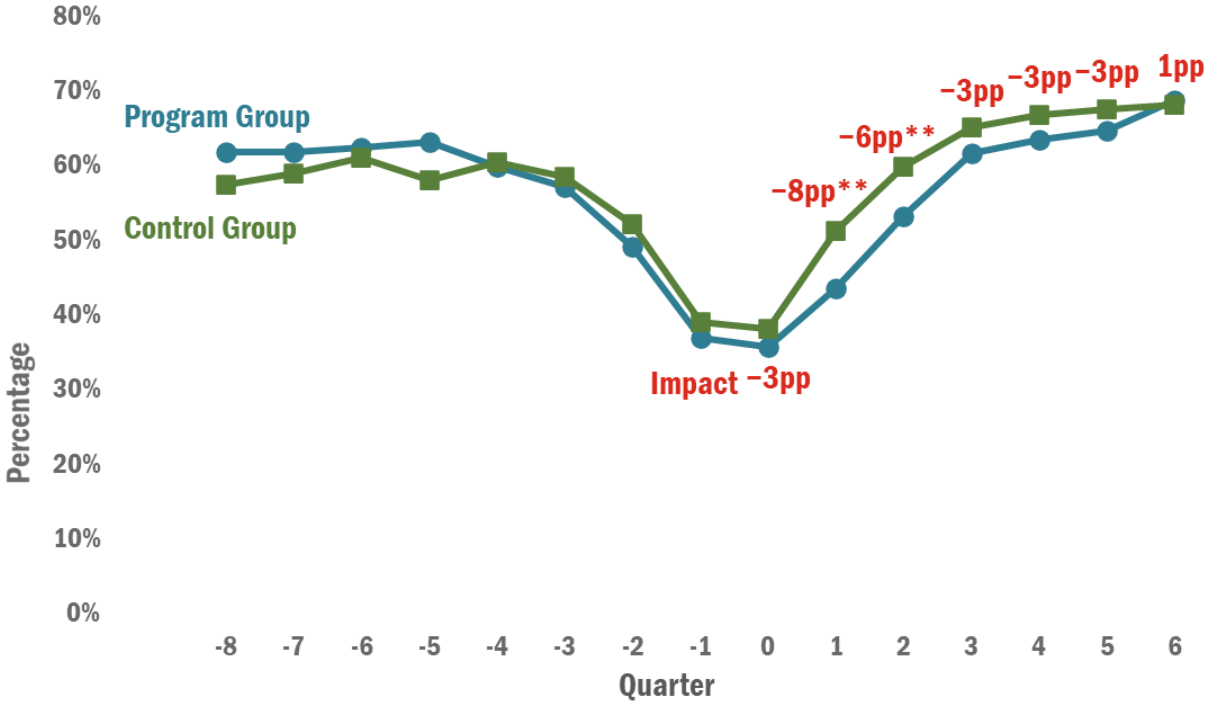
However, one issue that might lead to prolonged negative earnings impacts could be the challenge of finding a good job match after completing training, leading to temporarily lower earnings (Jovanovic 1979; Johnson 1978; Klerman and Karoly 1994; Carrington and Fallick 2015; Lechner, Miquel, and Wunsch 2011).[34] As discussed in Section 3.2, members of the program group were significantly more likely to remain in training into the second year after random assignment than members of the control group (see Appendix Exhibit F.2-9). Furthermore, relative to the control group, if members of the program group were more likely to be training for a new occupation, they may find a job at lower entry-level wages than they would receive for a job in their previous occupation where they had more experience. Thus, inasmuch as either explanation drives the negative earnings impacts observed through Q6, positive earnings impacts might be expected with the longer follow-up in the evaluation's final report.

- **Based on NDNH data, the study finds no clear evidence that MTC increased employment in any quarter during the 18-month follow-up period.**

As could be expected given their participation in program activities during the initial months of the follow-up period (see Exhibit 3-6), during the first two quarters after random assignment, employment was lower for the program group than for the control group (Exhibit 3-12). However, the study finds no clear evidence of an impact on employment in subsequent quarters, including no evidence of an impact on employment in Q5 or Q6 as measured in the NDNH—a *secondary outcome.*

[34] Often after a period of unemployment or training, a worker takes the first available job, even if it is a poor "match" in that it does not use all the worker's skills. While working that job, the worker continues the job search—landing a sequence of better job matches, usually with higher wages and better non-wage job characteristics.

Exhibit 3-12: Impacts on Employment, by Quarter, MTC



SOURCE: National Directory of New Hires.
NOTES: On the x-axis, –# indicates quarters before random assignment; 0 reflects the quarter that random assignment occurred. Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 1,022 includes 536 program group and 486 control group members. "pp" denotes percentage points.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Because employment rates among the program and control groups are similar in Q5 and Q6, these results indicate that the negative earnings impacts in those quarters are not the result of a decrease in employment levels among the program group. Instead, the overall earnings decrease occurs because employed members of the program group earned less than employed members of the control group. Among those who were employed in Q5 and Q6 (a non-experimental comparison), earnings were 13 percent lower for the program group than the control group: $10,128 for the program group compared to $11,657 for the control group (Exhibit 3-10).

- **Based on NDNH data, for an early cohort for whom three years of data are available, the study finds no clear evidence that MTC had an impact on employment or earnings in the first three years after random assignment.**

To this point, reported results on earnings and employment are for all sample members, but only through the sixth quarter after random assignment. For a cohort of applicants randomized early in the study period, 12 quarters (three years) of NDNH data are available. This cohort represents 54 percent of the study sample. Analysis of earnings for this early cohort finds evidence that MTC had negative impacts on earnings in Q1, and weak evidence of negative impacts through nine quarters (statistically significant only in Q1, Q2, Q4, Q8, and Q9), becoming positive but not statistically significant starting in Q10 after

random assignment (see Appendix Exhibit F.5-2).[35] For this early cohort, the study finds no clear evidence of an impact on employment throughout this three-year period.

- **Based on survey data, MTC did not increase employment, but increased the proportion looking for work rather than leaving the labor force.**

The survey collected additional detail on employment and earnings. Exhibit 3-13 reports survey-measured impacts on the three employment categories: employed, unemployed (not employed but actively searching for work), and out of the labor force (neither employed nor actively looking for work). Those sample members out of the labor force could be attending school or be out of the labor market temporarily (e.g., on disability or maternity leave).

Exhibit 3-13: Engagement in the Labor Force, MTC

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Employment Status at Follow-up					
Employed (%)	72	74	−2	3	−2
Unemployed (%)	18	13	5**	3	41
Out of the labor force (%)	6	10	−4**	2	−39
Attending school or long-term training program (%)	2	3	−1	1	−42
Maternity leave, sick, or unable to work because of disability (%)	3	5	−2*	1	−47
Retired (%)	2	2	−0	1	−11

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.
NOTES: All outcomes in this table are exploratory. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 831 includes 455 program group and 376 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

As shown in Exhibit 3-13, consistent with the lack of clear evidence of impacts on NDNH-measured employment in Q5 and Q6, the survey-based measures likewise show no clear evidence of an impact on employment levels approximately 18 months after random assignment, with more than 70 percent of both the program and control groups employed. While survey responses indicate MTC increased unemployment, there is a nearly offsetting decrease in the proportion reporting that they were out of the labor force. These offsetting impacts suggest MTC might have kept program participants looking for work rather than leaving the labor force.

- **Based on survey data, and consistent with the NDNH-based negative impacts on earnings, MTC did not affect weekly hours worked, but decreased hourly wages among those working.**

In addition to employment and earnings, the 18-month survey asked about the characteristics of the sample member's current job (Exhibit 3-14). Based on survey responses, the program and control group

[35] The negative impacts in Q2 and later are statistically significant at the 10 percent level: in Q2 (p = .082), Q4 (p = .097), Q8 (p = .079), and Q9 (p = .062). See Appendix Exhibit F.5-2.

worked for a similar number of hours per week: about 26 hours per week for all sample members employed or not, and 36 hours among those employed.

Exhibit 3-14: Characteristics of Current Job, MTC

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Job Type					
Regular full-time or part-time employee (%)	54	59	−5	3	−9
Employed by a temporary help agency (%)	2	2	−0	1	−6
Employed by a company that contracts out your services (%)	2	2	1	1	52
Independent contractor or independent consultant (%)	8	5	3*	2	64
Self-employed, including freelancer and day laborer (%)	3	4	−1	1	−22
Other (%)	3	2	1	1	51
Pay and Hours					
Rate of pay per year ($)	31,649	34,776	−3,126	2,678	−9
Hourly wage, if employed ($/hour)	*23.64*	*26.98*	*−3.33***	*1.55*	*−12*
Hours worked per week	26	27	−1	1	−4
Hours worked per week, if employed	*36*	*36*	*−1*	*1*	*−2*
Full-time (35 or more hours per week, %)	54	56	−2	3	−4
Full-time, if employed (%)	*75*	*77*	*−2*	*4*	*−2*
Part-time (less than 35 hours per week, %)	18	17	1	3	5
Part-time, if employed (%)	*25*	*23*	*2*	*4*	*7*
Number of weeks at job since random assignment	33	35	−2	2	−6
Job represented by a union (%)	6	6	−1	2	−13
Job Benefits					
Health insurance (%)	48	54	−6*	3	−12
Paid vacation (%)	44	52	−8**	3	−14
Paid holiday (%)	46	50	−4	3	−8
Paid sick time (%)	41	46	−5	3	−10
Retirement/pension plan (%)	42	46	−4	3	−9
Job Schedule					
Regular daytime schedule (%)	54	58	−3	3	−6
Regular evening shift (%)	2	3	−0	1	−17
Regular night shift (%)	3	2	1	1	81
Rotating schedule (%)	4	3	1	1	52
Irregular schedule (%)	4	5	−1	2	−20
Other schedule (%)	4	3	1	1	21
Career Advancement					
Job offers career advancement opportunities:					
Strongly agree (%)	18	21	−3	3	−13
Agree (%)	25	23	2	3	9
Disagree (%)	15	18	−2	3	−14
Strongly disagree (%)	13	12	1	2	9

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.

NOTES: All outcomes in this table are exploratory. *Outcomes in italics* apply to the subset of survey respondents who were employed at follow-up, and thus are non-experimental. Where not italicized, outcomes apply to the full survey sample, and impact estimates are experimental. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 831 includes 455 program group and 376 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.

Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Among employed sample members (a non-experimental comparison) and consistent with the NDNH results on earnings in Exhibit 3-10, average hourly wages were 12 percent lower for the program group than for the control group ($23.64 versus $26.98; Exhibit 3-14). Including those who did not work, as measured in the survey, the study finds no clear evidence of an impact on annual earnings, although again consistent with the NDNH results, the impact estimate is negative, but not statistically significant. (At the time of follow-up, program group members held jobs that on an annualized basis paid on average $31,649 and control group members held jobs that paid on average $34,776; Exhibit 3-14.[36]) Given MTC's lack of impacts on employment, including hours worked per week, the negative impact on hourly wages is a possible explanation for the lower NDNH-based quarterly earnings discussed above (see Exhibit 3-11).

There is little evidence of impacts of MTC on other measures of job quality such as union representation and perceived opportunities for career advancement (Exhibit 3-14). Moreover, the MTC program decreased receipt of employer-provided paid vacation. There is also some evidence of decreased receipt of health insurance.[37] See Appendix Exhibits F.5-5 and F.5-6 for a comparison of the field of employment at the time of the follow-up survey between the program group and control group.

The survey also asked whether respondents attributed obtaining a new job to completing a training program or receiving a certificate (see Appendix Exhibit F.5-7). Among all sample members, whether they attended training or not, 20 percent of the program group versus 12 percent of the control group attributed getting a new job to completing a training program, an impact of 8 percentage points. Among those in the program group who attended training, only about a third (29 percent) reported they obtained a new job as a result of the training. Program group members were also more likely than control group members to report that the training was useful to a subsequent job (19 percent versus 12 percent).

3.6 Impacts on Broader Measures of Well-Being

The RTW logic model posits that improvement in labor market outcomes would in turn improve other measures of MTC participants' well-being, such as increased income and reduced receipt of public benefits. Given MTC's negative impact on earnings, one would not expect improvement in these other measures—and the study detects no such improvements.

- **Although NDNH-based results show negative impacts on earnings, based on survey data MTC did not have an impact on program group members' income.**

As shown in Exhibit 3-15, based on survey-reported income measures, the study finds no clear evidence that MTC had an impact on study members' own income in the month prior to the follow-up survey (including benefits receipt and other sources of income beyond earnings). On average, study members self-reported that their monthly income was approximately $2,500. In light of the NDNH earnings findings, it is not clear why income did not decline, although note that this measure includes sources of income beyond earnings.

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[36] This measure is based on a survey response about earnings at the time of the interview. Note, however, that this is not earnings over the past year, but instead annual earnings given the current job.

[37] The negative impact on receipt of health insurance is statistically significant at the 10 percent level (p = .074; see Appendix Exhibit F.5-4).

Exhibit 3-15: Income and Public Benefits Receipt, MTC

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Income					
Total own income before taxes last month ($)	2,509	2,681	−172	166	−6
Benefits Receipt					
Received any public benefits last month (%)	**21**	**17**	**4***	**3**	**26**
Received TANF last month (%)	1	1	−0	1	−14
Received SNAP last month (%)	13	11	2	2	17
Received UI last month (%)	3	2	1	1	65
Received other public benefits last month (%)	9	9	−0	2	−0

KEY: SNAP is Supplemental Nutrition Assistance Program; TANF is Temporary Assistance for Needy Families; UI is Unemployment Insurance.
SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.
NOTES: **Secondary outcomes are bolded**; exploratory outcomes are not bolded. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 831 includes 455 program group and 376 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

There is some evidence of a positive impact on receipt of any public benefits—a secondary outcome (an increase of 4 percentage points, from 17 percent in the control group to 21 percent in the program group). But the study finds no clear evidence of impact on any specific public benefit: Supplemental Nutrition Assistance Program, Temporary Assistance for Needy Families,; Unemployment Insurance, or other public benefits.

3.7 Subgroup Findings

As discussed in Chapter 2, the RTW Evaluation also explores how impacts vary with study members' baseline characteristics—that is, whether the MTC program was more effective for certain subgroups of the population served. Prior to beginning analysis, the evaluation specified subgroups to compare based on characteristics at the time of random assignment: *education level* (less than a bachelor's degree versus a bachelor's degree or more), *age* (49 or older versus younger than 49), and *employment status* (unemployed more than 12 months versus ever employed in the past 12 months, including those employed at application). In addition, based on guidance from the evaluation's Technical Working Group, the evaluation added a subgroup analysis on *gender*.

The evaluation focuses on whether there is **differential impact**; that is, whether the impact on an outcome is different for one subgroup versus the other subgroup for any of the four characteristics listed above. The evaluation estimates subgroup impacts for the confirmatory and secondary outcomes, as well as for several key exploratory outcomes. In considering these results, it is important to note that the study's sample size is large enough to detect only large differential impacts on earnings between subgroups. To a lesser degree, such sample size concerns apply to subgroup analyses of other outcomes, as well. Thus, substantively important differential impacts plausibly go undetected.

The study finds no consistent evidence of differential impact of MTC by age, employment status at baseline, or gender (see Appendix Exhibits F.7-3 to F.7-8), but does find a differential impact by baseline

education level. Exhibit 3-16 presents subgroup results based on *education level* for the confirmatory outcome, average earnings in Q5 and Q6, and credential receipt and employment in Q5 or Q6. For each outcome, the exhibit provides three rows. The first row reports the impact on that outcome for the first subgroup (less than a bachelor's degree); the second row reports the impact on that outcome for the second subgroup (bachelor's degree or more). The third row reports the differential impact. As noted, the evaluation focuses on the ***difference*** in impact between the two subgroups.

Exhibit 3-16: Subgroup Impacts, by Education Level: Educational Attainment, Earnings and Employment, MTC

Outcome/Subgroup	Sample Size	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	*p*-Value
Educational Attainment						
Received any certificate, credential, license, or degree (%)						
Less than bachelor's degree	260	35	23	12**	6	.039
Bachelor's degree or more	551	53	26	27***	4	<.001
Difference				15**	7	.030
Earnings and Employment						
Average earnings in Q5 and Q6 ($)						
Less than bachelor's degree	344	5,476	5,408	67	690	.922
Bachelor's degree or more	678	8,064	10,032	−1,968***	731	.007
Difference				−2,035**	1,008	.044
Ever employed during Q5 or Q6 (%)						
Less than bachelor's degree	344	72	64	8	5	.117
Bachelor's degree or more	678	72	77	−5	3	.145
Difference				−12**	6	.034

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey for educational attainment; measured as of survey interview. National Directory of New Hires for average earnings in Q5 and Q6 and ever employed during Q5 or Q6, measured through six quarters after randomization.

NOTES: All outcomes in this table are exploratory. Reported impact may not equal the difference between the reported program and control group means because of rounding. For outcomes measured in the 18-month follow-up survey, the total sample of 831 includes 455 program group and 376 control group members who completed the 18-month follow-up survey. For outcomes measured in the National Directory of New Hires, the total sample of 1022 includes 536 program group and 486 control group members.

Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **Based on NDNH data, MTC's negative impact on earnings is concentrated among those with at least a bachelor's degree at baseline.**

As discussed in Section 3-5, considering all sample members, the study detects a negative impact on average earnings in Q5 and Q6. As shown in the top of the second panel of Exhibit 3-16, considered separately by education level, the study detects a negative impact on earnings for those with a bachelor's degree or more (−$1,968), but the study finds no clear evidence of an impact on earnings for those without a bachelor's degree.

Moreover, although the study finds no clear evidence of an impact on employment for study members as whole, there is evidence of differences by education level. As shown in the bottom of the second panel of Exhibit 3-16 above, among those without a bachelor's degree, the program group experienced an *increase* in employment of 8 percentage points compared to the control group. Among those with a bachelor's degree or more, however, the program group experienced a *decrease* in employment of 5 percentage points compared to the control group. Though neither impact alone is statistically different from zero, the study finds clear evidence that the impact is more negative for those with a bachelor's degree.

- **Despite the more negative impact on NDNH-based measures of earnings and employment for those with at least a bachelor's degree, based on survey data MTC had a more *positive* impact on credential receipt among this group.**

The study finds that program group members with a bachelor's degree or more—the group that experienced *negative* employment and earnings impacts—were *more* likely to obtain a credential (first panel of Exhibit 3-16). In particular, MTC increased educational attainment more among those with at least a bachelor's degree (by 27 percentage points) than among those without a bachelor's degree (12 percentage points, statistically significant at the 5 percent level; Exhibit 3-16 above). Those with a bachelor's degree were also more likely to participate in occupational training (see Appendix Exhibit F.7-1). The negative earnings and employment impacts among those with a bachelor's degree may have occurred because this group was more likely to be attending occupational training, suggesting that participation in these activities depressed earnings.

Given the pattern of results for those *without* a bachelor's degree, one might expect that as program activities ended, negative impacts on earnings would disappear for those *with* a bachelor's degree (as well as for sample members overall), and perhaps even for positive earnings impacts to emerge. As shown in Appendix Exhibit F.7-9, considering only the early cohort for whom the study has 12 quarters of earnings data: for those with a bachelor's degree or more, the decrease in earnings remains through Q9, with no clear evidence of impacts (either positive or negative) thereafter.[38] Moreover, the earnings impacts for those with a bachelor's degree or more, compared to those without, are no longer statistically different from each other after Q6.[39] The longer follow-up period available for the RTW Evaluation's final report should be helpful in understanding whether investment in employment-related services has a longer-run economic payoff.

[38] The negative impacts on quarterly earnings for those with at least a bachelor's degree are statistically significant at the 5 percent level in Q1, Q2 and Q4, and at the 10 percent level in Q5 (p = .057), Q8 (p = .074) and Q9 (p = .086).

[39] This difference is statistically significant at the 5 percent level in Q1 and Q2, and at the 10 percent level in Q4 (p = .057), Q5 (p = .083), and Q6 (p = .090).

4 Impact Findings for Jewish Vocational Service's Ready to Work Programs

This chapter presents impact findings, through 18 months after random assignment, from the two programs operated by the San Francisco–based Jewish Vocational Service (JVS) funded by the Ready to Work grant.[40] From the start of the grant JVS operated a single program, Skills to Work in Technology (STW-T). The program comprised three separate courses that provided training for employment in information technology: Business Administration Bootcamp, Digital Marketing, and Salesforce® Administration. Partway through the grant period, JVS implemented its second program, Job Search Accelerator (JSA). This two-week program focused on job search and readiness skills.

Key Findings: JVS RTW Programs

- Increased service receipt, primarily occupational training, but also work-based training, employment readiness courses, and job search activities.
- Increased educational attainment, including receipt of professional certifications.
- Did not increase average earnings five and six quarters after random assignment, based on administrative data.
- Improved some survey-based measures of labor market outcomes, including impacts on hourly wage and hours worked in current job.

This chapter is organized as follows. Section 4.1 provides an overview of the JVS RTW program context, target population and program services provided, and the characteristics of the study sample. The balance of the chapter reports "impacts"—that is, program group/control group differences, structured following the logic model presented in Chapter 2 (Exhibit 2-1): participation in employment-related activities (Section 4.2); receipt of education- and employment-related supports, including financial assistance for occupational training (Section 4.3); educational attainment and career confidence (Section 4.4); labor market outcomes, including employment and earnings (Section 4.5); and other measures of well-being, hypothesized to result from improved labor market outcomes (Section 4.6). The final section reports impacts for selected subgroups (Section 4.7). Unless otherwise noted, all results are from the 18-month follow-up survey. Appendix G provides additional results for the JVS RTW programs.

Analysis of the follow-up survey data indicates that survey respondents in the JVS RTW impact study appeared to misinterpret a series of questions on service receipt.[41] In particular, 80 percent of program group members who responded to the survey did *not* report attending occupational training or employment readiness courses in the survey's closed-ended questions on training and employment readiness.[42] However, later in the survey, among those who did not report attending training in the close-ended questions, a vast majority (86 percent) *did* report attending these JVS RTW programs, by name, in an open-ended, follow-up response. (Only members of the program group were asked the open-ended follow-up question; equivalent information is not available for members of the control group.) As a result, outcomes based only on responses to the initial, closed-ended questions substantially underestimate the level of participation by the program group in the JVS RTW programs.

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40 For a smaller cohort of study members randomized early in the study period, the evaluation also examines earnings through the 12th quarter after random assignment.

41 This misinterpretation did not occur for the other grantees in the RTW Evaluation.

42 Measures related to employment and other questions distinct from service receipt were not affected.

The impact study therefore uses the open-ended responses to create "adjusted" outcomes for reporting on the *incidence* of program group members attending such program activities that include the information reported in the open-ended responses. For the more detailed training-related outcomes, such as hours or weeks of training, however, no additional information is available. Respondents who did not report attending occupational training or employment readiness courses in the initial, closed-ended question were not asked the corresponding follow-up questions. For these outcomes the "adjusted" outcomes for these respondents are treated as missing.

Because control group members were not asked the open-ended follow-up question, the evaluation lacks the second source of information to verify the employment-related services control group members received. (By design, they could not attend the JVS RTW programs.) For that reason, the reported level of participation among the control group should be considered a lower bound, and the impact estimates on adjusted measures of service receipt may overestimate the impact of the JVS RTW programs on participation in employment-related activities.

Given the nature of the adjustment, estimates of the impact of the JVS RTW programs on service receipt using the adjusted outcomes should be interpreted with caution. The discussion below focuses on the adjusted outcomes that incorporate information from the open-ended responses. For secondary outcomes, but not for exploratory outcomes, corresponding unadjusted outcomes are reported in the tables and footnotes. Appendix Section G.1 provides additional information on how the adjusted outcomes were created and reports tables with unadjusted estimates corresponding to all adjusted estimates.

4.1 Jewish Vocational Service's Ready to Work Programs

This section provides a summary of the JVS RTW programs' context, target population and program services, and characteristics of the study sample.

4.1.1 Program Context

JVS is a San Francisco-based not-for-profit organization that provides employment and training services for job seekers at various career levels to several counties in the area.[43] JVS's office is in downtown San Francisco. Its service area includes the city and county of San Francisco as well as several neighboring counties in the San Francisco Bay Area: Alameda, Contra Costa, San Mateo, and Santa Clara. Information technology (IT) is a major industry in the San Francisco Bay Area.[44] Silicon Valley—home to Google, Apple, Facebook, and other major technology companies—is located in the southern part of the service area.

Though the presence of technology employers meant the demand for skilled workers was high in the technology field, JVS staff reported that some of this demand was for workers with skills beyond the training level offered by the JVS RTW programs. In particular, staff reported that many technology jobs in the area required credentials with higher levels of education and related work experience than held by most JVS participants.

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[43] A network of agencies around the San Francisco Bay Area provide vocational and/or rehabilitation services under the name Jewish Vocational Service (the legal name is Jewish Vocational and Career Counseling Services). Each agency operates independently and is administratively separate from the others. Like the others, this JVS is an independent organization.

[44] https://sfchamber.com/resources/economic-development/key-sectors-2/

4.1.2 Target Population and Services Provided by the JVS RTW Programs

To be eligible for the JVS RTW programs, applicants had to be able to work legally in the United States, be a resident of one of the counties JVS served, and be age 18 or older. In addition, they had to meet the RTW grant criteria of experiencing long-term unemployment and have at least a high school diploma. Beyond that, JVS targeted workers who had experience (or related college education) related to the program to which they were applying. To meet their enrollment goals, JVS undertook a comprehensive recruitment strategy. JVS recruited applicants for its RTW programs primarily through online advertising, especially Craigslist; recruitment at events such as job fairs; outreach and referrals from community partners; referrals from JVS staff of individuals pursuing general services; and newspaper advertising.

Applicants to the JVS RTW programs completed an online application and, depending on the program of interest, were invited either to an in-person interview or to complete computer-based technical assessments. Eligible applicants then attended an in-person group session at JVS and were randomly assigned at this time. Program group members received information on class start dates; control group members received information on other employment-related services available at JVS and in the community that they could choose to access, but were not actively referred to those services by RTW staff (Martinson et al. 2017; see also Appendix G).

As shown in Exhibit 4-1, JVS's first RTW program, ***Skills to Work in Technology***, consisted of three courses that provided **occupational training** for employment in IT:

- ***Business Administration Bootcamp***—a five- to six-week course primarily focused on job readiness skills, supplemented with training on software needed for working in an office environment, such as Microsoft Office® and, for later cohorts, Quickbooks®.[45] Of the roughly 100 total program hours provided in this course, about 15 hours were dedicated to training in office and business computer skills.
- ***Digital Marketing***—an 11-week course providing training related to marketing using digital tools (with a 12th week added for later cohorts to address any remaining participant needs). This course consisted of two 2-hour sessions weekly. Training was provided by General Assembly, a for-profit computer programming training provider in the same building as JVS. Due to difficulty in placing participants in jobs, this course was discontinued after the third of the grant's four years, in July 2018.
- ***Salesforce® Administration***—a 16-week course providing technical training on how to manage the Salesforce platform for an organization and prepare for the Salesforce Administrator basic certification exam (known as ADM 201). A contracted Salesforce instructor delivered the training three days a week. After the course was completed, the program also arranged paid **work-based training** for some participants at an employer with Salesforce needs. Participants were paid $20 per hour. The "fellowships" lasted one to three months, mostly 20 hours per week. Few participants were offered fellowships later in the grant period because resources were limited.

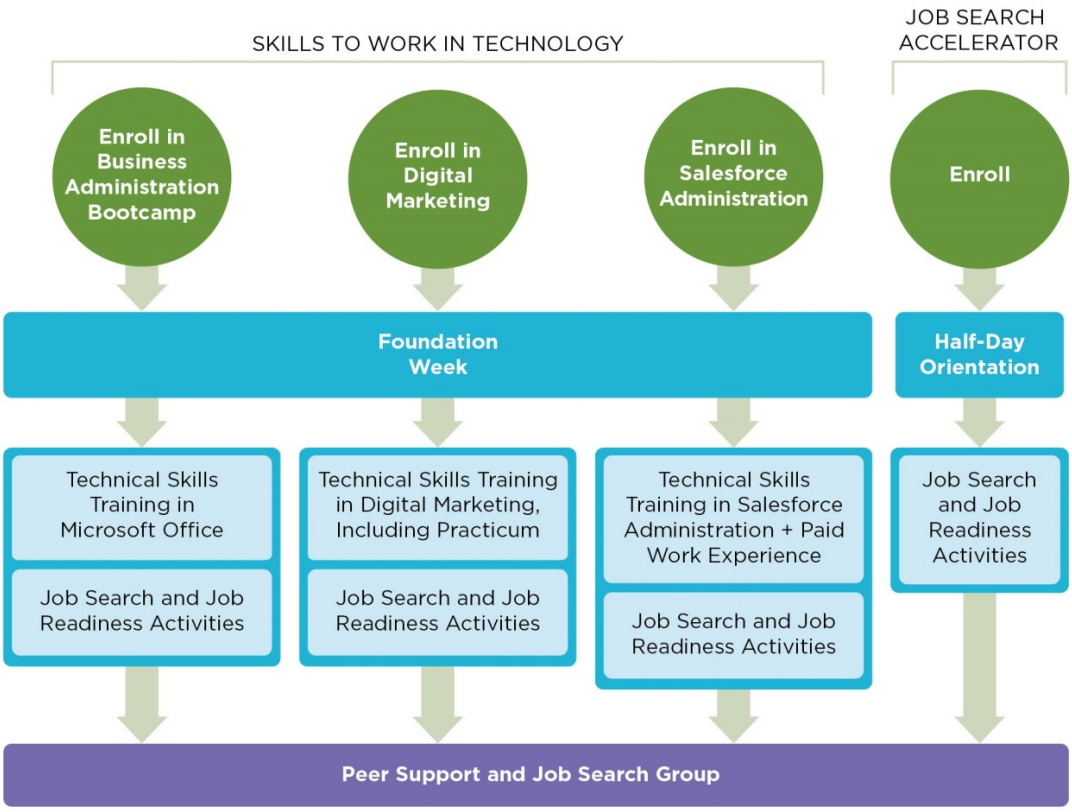
Each course delivered training concurrent with job search and employment readiness activities. Each began with a "Foundation Week" of personal and career exploration to prepare for job search. Later

[45] The training focus of this program changed over time, and JVS renamed it accordingly. For example, for a while it was known as "Office Administration Bootcamp." For simplicity, we use the name Business Administration Bootcamp throughout.

activities included developing job search tools, such as resumes and networking skills, and boosting motivation and self-confidence. After the training ended, participants could attend peer group activities.

Partway through the grant period, in 2016, JVS added the two-week ***Job Search Accelerator*** program. This program did not have a technical skills component or a focus on IT or office skills. Instead, it provided **employment readiness courses and job search assistance**, combining the employment readiness elements of the Business Administration Bootcamp curriculum with elements of a job search program that JVS had previously operated. JVS developed it in response to an interest by potential participants in a course that updated job search skills without providing technical training.

Exhibit 4-1: Overview of the STW-T and JSA Programs



SOURCE: Developed by Abt Associates based on staff reports and program materials.

4.1.3 Characteristics of the Study Sample

Exhibit 4-2 shows the characteristics of program group and control group members at random assignment (at "baseline"). (Appendix Section G.1.2 provides additional demographic information and tests for balance between members of the program group and control group at baseline.) As shown, about two-thirds of study members were women. About half were White and one-quarter were Asian. The average age was 44, and about 20 percent were age 55 or older.[46]

[46] There is no systematic difference in the age patterns between women and men in the study sample.

Exhibit 4-2: Selected Characteristics of Study Sample at Baseline, STW-T and JSA

Characteristic	Incidence
Demographics	
Gender (%)	
Women	63
Men	37
Race (%)	
Asian	24
Black or African American	11
White	53
Hispanic ethnicity (%)	11
Age (%)	
24 years or younger	3
25 to 34 years	23
35 to 44 years	23
45 to 54 years	29
55 years or older	22
Average age (years)	44
Household Status	
Marital status (%)	
Married	40
Widowed/divorced/separated	15
Never married	39
One or more own children in household age 6 or younger (%)	10
Education	
Education level (%)	
High school diploma or less	4
Some college credit but no degree	10
Technical or associate degree	7
Bachelor's degree	49
Master's degree or more	30
Employment	
Employment status (%)	
Currently employed	19
Currently unemployed, but employed in last 12 months	47
Currently unemployed, and longer than 12 months since last employed	34
Weekly earnings, if employed ($)	424
Public Benefits	
Receiving any public benefits (%)	23
Supplemental Nutrition Assistance Program (%)	9
Temporary Assistance for Needy Families (%)	1
Section 8 or Public Housing assistance (%)	3
Unemployment Insurance (%)	15

SOURCE: Ready to Work Baseline Information Form (BIF). Sample size of 993 includes 502 program group and 491 control group members. Statistics in this table are computed based on the JVS study members who completed the BIF for the given question. NOTES: Percentages do not sum to 100% for race and marital status because not all response categories are included in the exhibit.

Aligning with the RTW grant's focus on aiding skilled workers who had experienced long-term unemployment, most study members were unemployed at the time of random assignment (81 percent) and almost a third (34 percent) had been unemployed for more than a year. Study members were well educated overall. A large majority (80 percent) had a bachelor's degree or more. For the 19 percent who were employed at baseline, average weekly earnings were $424. Among all study members, about one-quarter were receiving public benefits. Supplemental Nutrition Assistance Program (SNAP; 9 percent) and Unemployment Insurance (UI) benefits (15 percent) were the most common.

4.2 Impacts on Participation in Employment-Related Activities

This section reports impacts on the second step of the RTW logic model (Exhibit 2-1, "Program Services"): participation in employment-related activities. Such employment-related activities include occupational training, work-based training, employment readiness courses, and job search assistance. The logic model posits that more participation in employment-related activities for the program group compared to the control group will eventually lead to better earnings and employment outcomes relative to the control group.

As noted in Chapter 2, the evaluation estimates the impact of JVS's RTW programs by comparing:

- Average outcomes for the program group, who were offered the JVS RTW programs

versus

- Average outcomes for the control group, who were not offered the JVS RTW programs.

Not all program group members participated in the JVS RTW programs. Though the control group could not access the JVS RTW programs, they could seek out other services in the community.

This section first reports the impact of the JVS RTW programs on engagement (*participation levels*; that is, any participation) and intensity of engagement (*hours, weeks*) in each structured employment-related activity—occupational training, work-based training, and employment readiness courses—as well as across all three activities. This discussion addresses *cumulative* participation over the entire follow-up period. Next the section describes program participation levels over time, namely for each month in the follow-up period. Last, it describes receipt of job search assistance, which was typically provided one-on-one by program staff and was not measured with the same level of detail as the structured activities.[47]

As discussed in the opening section of this chapter, service receipt outcomes for the program group have been adjusted to include a respondent's open-ended response. Each measure that has been adjusted is labeled as such in the exhibits. Detailed results reported in Appendix G show estimated impacts for both adjusted and unadjusted outcomes.

- **The JVS RTW programs increased both the level and hours of participation in occupational training, work-based training, and employment readiness courses.**

The JVS RTW programs produced large increases in both participation levels and hours of participation in all three of the structured employment-related activities. Hours of participation, in total and for each activity type, are *secondary outcomes* for the RTW Evaluation (see Section 2.5). Exhibit 4-3 shows the

[47] For job search assistance outcomes, the survey collected only whether the study member received this type of assistance and how many times.

impacts on receipt of any of these structured employment-related activities and the impact on hours of these activities (overall and by activity type).

Exhibit 4-3: Participation Level and Intensity of Participation in Structured Employment-Related Activities, STW-T and JSA

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey, measured as of 18 months after random assignment.
NOTES: Results marked "adjusted" reflect the inclusion of information collected during the 18-month survey interview as text responses of training types attended, asked only of program group members who initially reported no training. See the opening section of Chapter 4 and Appendix G for more discussion. All outcomes that are not marked "adjusted" are constructed as described in Appendix D. Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 793 includes 411 program group and 382 control group members who completed the 18-month follow-up survey. "pp" denotes percentage points. Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

The JVS RTW programs increased participation levels for employment-related activities overall by 73 percentage points (90 percent of the program group versus 16 percent of the control group). Moreover, the JVS RTW programs also increased total hours of participation in such activities by 257 hours (319 hours in the program group versus 62 hours in the control group).[48] The JVS RTW programs also increased the number of weeks of activities attended by 13 weeks (16 weeks versus 4 weeks, see Exhibit 4-4).[49]

Considering specific activities and given the focus on technical skills training, the largest impact on participation levels was for occupational training. The JVS RTW programs increased participation in occupational training by 50 percentage points, compared to 25 percentage points for employment readiness courses and 9 percentage points for work-based training. Furthermore, the JVS RTW programs' impact on total hours of participation is driven by the impact on hours attending occupational training.

Exhibit 4-4 shows impacts on service receipt in more detail, including impacts on weeks of training, and impacts on hours and weeks of training among those who attended any training. The top panel shows

[48] When this outcome is not adjusted for the reported survey misinterpretation issue discussed at the opening of this chapter, the JVS RTW programs increased total hours of participation by 66, significant at the 1 percent level; Exhibit 4.4.

[49] For the other three grantee programs, the evaluation plots total weeks of any structured employment-related activity (as well as weeks of occupational training, work-based training, and employment readiness courses), but the evaluation does not do so for the JVS RTW programs because of the survey response issue among the majority of JVS program group members. As described in greater detail in Appendix G, the outcomes on weeks of any structured employment-related activity are missing for these program group members.

impacts on participation levels and hours and weeks attended for any structured employment-related activities. Subsequent panels provide these same impact estimates separately for each type of activity.[50]

Exhibit 4-4: Participation Detail in Structured Employment-Related Activities, STW-T and JSA

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Any Structured Employment-Related Activity					
Ever attended (%, adjusted)	90	16	73***	2	448
Total hours attended	**128**	**62**	**66*** **	**20**	**105**
Total hours attended (adjusted)	319	62	257***	39	412
Total hours, for attendees	*457*	*395*	*62*	*75*	*16*
Total weeks attended (adjusted)	16	4	13***	2	354
Total weeks, for attendees	*23*	*26*	*−3*	*4*	*−10*
Hours per week, for attendees	*24*	*14*	*9***	*2*	*65*
Any Occupational Training					
Ever attended (%, adjusted)	64	14	50***	3	356
Total hours attended	**84**	**46**	**38****	**16**	**83**
Total hours attended (adjusted)	176	46	130***	26	284
Total hours, for attendees	*478*	*332*	*146***	*69*	*44*
Total weeks attended (adjusted)	9	3	6***	1	190
Total weeks, for attendees	*25*	*25*	*−0*	*4*	*−2*
Hours per week, for attendees	*23*	*13*	*10***	*2*	*77*
Any Work-Based Training					
Ever attended (%)	12	2	9***	2	417
Attended any paid internships (%)	10	1	9***	2	831
Attended any on-the-job training (OJT, %)	1	0	1**	0	
Total hours attended	**31**	**14**	**17***	**9**	**119**
Total hours, for attendees	*NR*	*NR*	*NR*	*NR*	*NR*
Total weeks attended	1	0	1*	0	113
Total weeks, for attendees	*NR*	*NR*	*NR*	*NR*	*NR*
Hours per week, for attendees	*NR*	*NR*	*NR*	*NR*	*NR*
Employment Readiness Course					
Ever attended (%, adjusted)	28	3	25***	2	821
Total hours attended	**13**	**2**	**10*** **	**3**	**428**
Total hours attended (adjusted)	16	2	14***	4	556
Total hours, for attendees	*NR*	*NR*	*NR*	*NR*	*NR*
Total weeks attended (adjusted)	1	0	1***	0	303
Total weeks, for attendees	*NR*	*NR*	*NR*	*NR*	*NR*
Hours per week, for attendees	NR	NR	NR	NR	NR

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey, as of 18 months after random assignment.

NOTES: **Secondary outcomes are bolded**; exploratory outcomes are not bolded. *Outcomes in italics* apply to the subset of survey respondents who attended any training, and thus are non-experimental. Where not italicized, outcomes apply to the full survey sample, and impact estimates are experimental. Non-experimental results are not reported (NR) when 15 or fewer survey respondents of either the program or control group attended any training. Results marked "adjusted" reflect the inclusion of information collected during the 18-month survey interview as text responses of training types attended, asked only of program group members who initially reported no training. See the opening section of Chapter 4 and Appendix G for more discussion. All outcomes that are not marked "adjusted" are constructed as described in Appendix D. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]);

[50] Given the nature of the adjustment to measures of hours and weeks of training, for the adjusted outcomes, impacts on hours and weeks of training are not additive between the three component parts (occupational training, work-based training, and employment readiness courses) and impacts on the combined measure of any structured employment-related activity.

relative impact is blank if the control group mean is zero. The total sample of 793 includes 411 program group and 382 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **The JVS RTW programs increased participation in *occupational training* and hours attending this training.**

As discussed above, adjusted for the survey reporting issue, the JVS RTW programs increased attendance in occupational training by 50 percentage points (64 percent for the program group compared to 14 percent for the control group) and increased total hours attended by 130 (176 hours for the program group compared to 46 hours for the control group; Exhibit 4-4).[51] The average weeks attended increase from 3 in the control group to 9 in the program group. (Average hours and weeks of training include program and control group members who did not attend occupational training.)

Exhibit 4-4 also shows the impact on training among those who attended any occupational training (a non-experimental comparison). The average number of hours attended in the program group (478 hours) was nearly half again as large as in the control group (332 hours).[52] Among those who attended training, the average weeks attended were similar for both groups (25 weeks), but the program group attended for a greater number of hours per week compared to the control group (23 compared to 13).

Consistent with the design of the JVS RTW programs, the most common occupational training was in IT (see Appendix Exhibit G.2-2). In the program group, 59 percent attended occupational training in IT, an increase of 53 percentage points relative to the control group. Also reflecting the program design, the JVS RTW programs resulted in a large increase of 52 percentage points in the proportion attending occupational training outside a college setting, 62 percent for the program group compared to 9 percent for the control group (see Appendix Exhibit G.2-2). Few in either group attended college-based training.

- **The JVS RTW programs increased participation in and hours of *work-based training*.**

As discussed above, work-based training was uncommon in the control group: only 2 percent of the control group attended a work-based training activity, whereas 12 percent of the program group did so (Exhibit 4-4). The vast majority of those who attended any work-based training participated in a paid internship. As discussed in Section 4.1, paid work-based training was provided through one of the JVS RTW programs, Salesforce Administration.

- **The JVS RTW programs increased the proportion participating in *employment readiness courses* and their hours in such courses.**

The survey asked study members whether they attended any courses focusing on workplace skills or "soft" skills such as time management, how to be a good employee, or working in a team. For the control group, these types of employment readiness courses were uncommon and short: only 3 percent of the

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[51] Reflecting the under reporting of occupational training receipt by the program group, these impacts on service receipt are smaller when not adjusted (Exhibit 4-4). Unadjusted, the JVS RTW programs did not have an impact on participation in occupational training, and had an impact of 38 hours on hours of occupational training, a secondary outcome.

[52] Impacts (that is, program/control differences) on conditional outcomes—in this case, hours *among those getting any of this type of training*—should be interpreted with care. These impacts do not compare everyone in the program group to everyone in the control group. As such, the estimates are not experimental impact estimates. To emphasize this caveat, conditional outcomes are reported in italics in the exhibits.

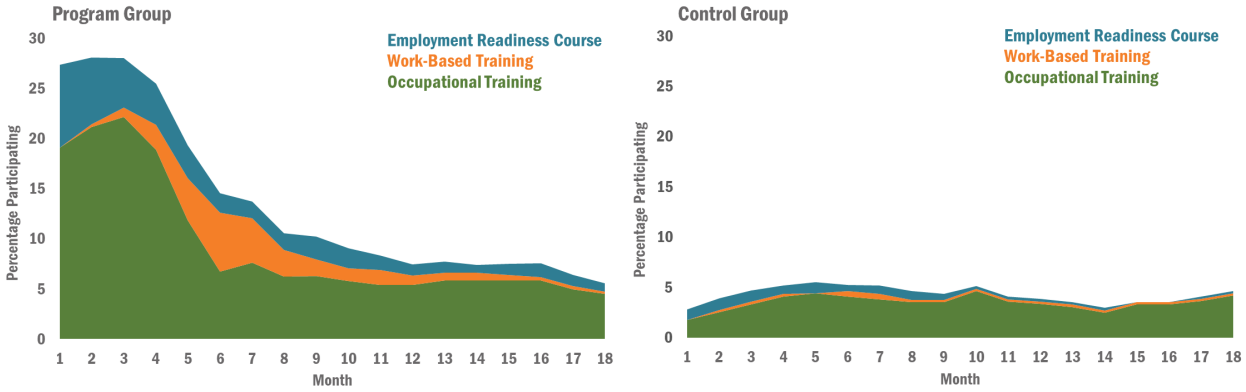
control group attended such a course, for 2 hours on average. In contrast, and likely reflecting the Job Search Accelerator program or Business Administration Bootcamp, when adjusted for the survey reporting issue, 28 percent of the program group attended an employment readiness course (an impact of 25 percentage points), attending for a total of 16 hours (an impact of 14 hours).[53]

- **Impacts on rates of participation in structured employment-related activities peaked in month 1 after random assignment, and faded away after month 7.**

The evaluation also examines *impacts over time* on participation levels in any structured employment-related activity or in occupational training, work-based training, or employment readiness courses; that is, for each month in the follow-up period. Service receipt impacts over time can be helpful in determining when one might expect employment and earnings impacts to emerge (see Section 4.5 for discussion).

Exhibit 4-5 shows monthly participation rates in each of the three structured employment-related activities for the program group (on the left) and the control group (on the right). For the program group, rates of participation in any such activities peaked at approximately 28 percent during the first three months after random assignment, fell to approximately 15 percent by month 6, and settled at approximately 6 to 8 percent in months 11 through 18. Program group members primarily attended occupational training (approximately 20 percent in the first four months after random assignment). To a lesser extent, they attended employment readiness courses (peaking at 8 percent in month 1) and work-based training (peaking at 6 percent in month 6). In contrast, the participation level for the control group remained at approximately 5 percent or lower throughout the follow-up period, primarily in occupational training.

Exhibit 4-5: Participation in Structured Employment-Related Activities for the Program and Control Group, by Month Since Random Assignment, STW-T and JSA



SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey, measured as of 18 months after random assignment.
NOTES: The total sample of 793 includes 411 program group and 382 control group members who completed the 18-month follow-up survey.

Impacts on participation in any structured employment-related activity peaked at 15 percentage points in the first month of the follow-up period, falling to 3 percentage points by month 9, with no clear evidence of impacts beyond that point (see Appendix Exhibit G.2-5).[54] Impacts on participation in occupational

[53] Using the unadjusted measure, the JVS RTW programs increased hours of attendance in an employment readiness course (a secondary outcome) by 10 hours (Exhibit 4-4).

[54] Impact estimates on monthly participation in training reported in this paragraph are unadjusted for the survey response issue.

training are largest in the initial months (see Appendix Exhibit G.2-6), whereas impacts on work-based training (see Appendix Exhibit G.2-7) and employment readiness courses (see Appendix Exhibit G.2-8) continue later into the follow-up period, reflecting that program members engaged in these activities after the occupational training courses.

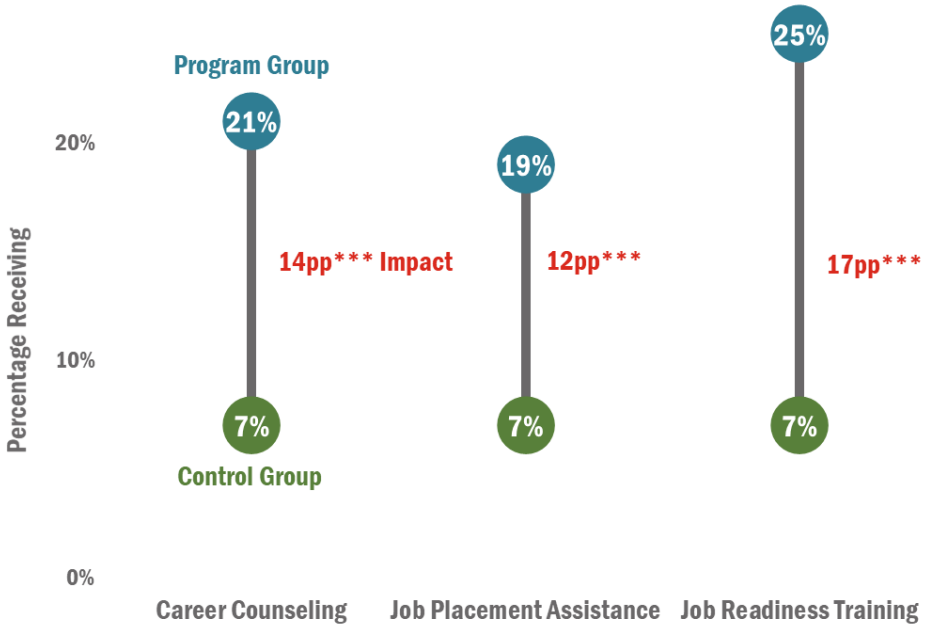
- **The JVS RTW programs increased receipt of career counseling, job placement assistance and assistance with job readiness skills.**

The survey asked about receipt of a range of assistance related to finding a job. Such assistance included job placement assistance (e.g., assistance searching for work, referrals to jobs or employers, providing labor market information), career counseling (e.g., administering career interest surveys to identify suitable jobs, providing information on how to change careers and relevant jobs and training programs), and assistance with job readiness skills (e.g., help with a resume, interviewing skills, and networking). As discussed in Section 4.1, program group members might receive these services through the structured job search and employment readiness programs (Business Administration Bootcamp or Job Search Accelerator), as well as through the initial "foundation week" or as one-on-one assistance throughout the courses.

In contrast to the outcomes reported above for the three structured employment-related activities, less information was collected for these activities related to job search assistance: the survey asked whether the study member received this type of assistance and the frequency, but did not ask for more detailed measures of intensity (*hours, weeks)*. The JVS RTW programs more than doubled receipt of each type of job search assistance (Exhibit 4-6). For example, 24 percent of the program group and 7 percent of the control group reported receiving "any" assistance with job readiness skills, an impact of 17 percentage points. The JVS RTW programs also improved receipt of job placement assistance by 12 percentage points and receipt of career counseling by 14 percentage points.

Another set of survey questions asked respondents whether the programs they were attending addressed career planning and finding a job. More than half of the program group reported that "at least some attention" was given to those two topics, whereas less than 5 percent of the control group did so (see Appendix Exhibit G.2-9).

Exhibit 4-6: Receipt of Job Search Assistance, STW-T and JSA



SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.
NOTES: Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 793 includes 411 program group and 382 control group members who completed the 18-month follow-up survey. "pp" denotes percentage points.
Statistical significance based on two-sided hypothesis tests; significance levels as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **The JVS RTW programs increased receipt of assistance with workplace behaviors and soft skills.**

The survey asked a series of questions about receipt of assistance with skills that help workers succeed in the workplace as well as in their job search, such as acting professionally and communicating well. Given the content of both the SWT-T and JSA programs, they increased the receipt of such assistance, as expected. A very small proportion of the control group received services that focused "a great deal of attention" (about 1 percent) or "at least some attention" (about 5 percent) on these issues (see Appendix Exhibit G.2-10). In contrast, between 20 and 30 percent of the program group, adjusted for the survey response issue, reported receiving services in which "a great deal of attention" was given to these issues, and roughly half or more reported the issues received "at least some attention." In particular, large impacts of more than 50 percentage points are observed on giving "at least some attention" to workplace behaviors, including working in groups, communicating well, acting professionally, and staying motivated (see Appendix Exhibit G.2-10).

Somewhat smaller impacts are detected for critical thinking; time management; managing stress, anger, and frustration; study skills; and finding help with problems at school, work, and home (all but the last with impacts of more than 40 percentage points for receiving "at least some attention" (see Appendix Exhibit G.2-10).

4.3 Impacts on Receipt of Education- and Employment-Related Supports

This section considers more impacts on the second step of the RTW logic model (Exhibit 2-1, "Program Services"): education-related and employment-related supports such as financial assistance for

occupational training; academic supports; and assistance with transportation, childcare, work expenses, and mental health issues. The logic model posits that supports that remove barriers to attending and persisting in the program will increase participation in employment-related activities and ultimately lead to increases in earnings and employment.

- **The JVS RTW programs increased the receipt of financial assistance for occupational training and a range of other support services.**

The survey asked study members how they funded their occupational training. Respondents could report they paid for training on their own or with the help of their family (through earnings, savings, or loans) or that they received support from other sources. (All funding outcomes were set to zero for study members who attended no occupational training.)

Adjusted for the survey response issue and including those who did not attend occupational training, the JVS RTW programs produced a 24 percentage point impact on receiving financial support for occupational training (Exhibit 4-7). Specifically, program group members were more likely to report they received "free" training or financial assistance from "another source" than were control group members. Among all sample members (i.e., whether they attended training or not), the JVS RTW programs had no effect on paying for training from own or family funds; but among those who attended (a non-experimental comparison), it had a 42 percentage point impact (66 percent of the control group compared to 23 percent of the program group; see Appendix Exhibit G.3-1).

Exhibit 4-7: Funding Sources for Occupational Training, STW-T and JSA

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Own or family earnings, savings, or loan (%, adjusted)	9	9	−1	2	−6
Received any financial support for occupational training from non-family sources (%, adjusted)	31	6	24***	3	382
Non-family funding sources:					
Free training program (%, adjusted)	18	4	14***	3	365
Program provider financial support (%, adjusted)	9	2	7***	2	462
From an American Job Center/state unemployment office (%, adjusted)	2	0	1*	1	620
Any other funding source (%, adjusted)	10	1	9***	2	663

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.
NOTES: All outcomes in this table are exploratory. Results marked "adjusted" reflect the inclusion of information collected during the 18-month survey interview as text responses of training types attended, asked only of program group members who initially reported no training. See the opening section of Chapter 4 and Appendix G for more discussion. All outcomes that are not marked "adjusted" are constructed as described in Appendix D. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 793 includes 411 program group and 382 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

For support services, adjusted for the survey response issue, the RTW JVS programs produced a 10 percentage point impact on the receipt of academic advising, a 5 percentage point impact on the receipt of financial aid advising, and a 7 percentage point impact on the receipt of tutoring (see Appendix Exhibit G.3-2). The JVS RTW programs also produced an impact of 3 percentage points on receiving assistance with mental health issues.

4.4 Impacts on Credential Receipt and Other Short-Term Outcomes

The RTW logic model (Exhibit 2-1, "Short-Term Outcomes") posits that the program's services and supports in turn would improve short-term outcomes—increase receipt of credentials and levels of career confidence, and decrease barriers to employment—which would subsequently result in improvements in labor market outcomes. This section reports impacts on short-term outcomes.

- **The JVS RTW programs increased receipt of any certificate, credential, license, or degree, primarily occupational training certificates.**

Relative to the control group, the JVS RTW programs increased receipt of any certificate, credential, license, or degree (a *secondary outcome* for the RTW Evaluation; see Section 2.5).[55] Adjusted for the survey response issue and reflecting the increase in participation in occupational training, the JVS RTW programs quadrupled receipt of any type of credential: 31 percent of the program group versus 6 percent of the control group, an impact of 25 percentage points (Exhibit 4-8).[56] In particular, the JVS RTW programs substantially increased receipt of an occupational training certificate: 25 percent in the program group versus 4 percent in the control group, an impact of 21 percentage points. The JVS RTW programs also increased receipt of professional certifications or licenses by 6 percentage points. In particular, members of the program group were significantly more likely to report receiving a Salesforce certification than were members of the control group (see Appendix Exhibit G.4-2 for the types of professional certifications reported). Consistent with the lack of impact on participation in college-based occupational training (see Section 4.2 above and Appendix Exhibit G.2-2), the study finds no clear evidence of an impact on receipt of college credits or college certificates, diplomas, or degrees.

Exhibit 4-8: Educational Attainment, STW-T and JSA

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Received any certificate, credential, license, or degree (%)	**16**	**6**	**10*** **	**2**	**159**
Received any certificate, credential, license, or degree (%, adjusted)	31	6	25***	3	419
Received any occupational training certificate (%, adjusted)	25	4	21***	3	562
Received any college credits (%, adjusted)	1	1	−1	1	−59
College credential:					
Certificate (%, adjusted)	0	0	−0	0	−31
Associate's degree (%, adjusted)	0	0	0	0	
Bachelor's degree or higher (%, adjusted)	1	1	−1	1	−51
Received any professional certification or license (%, adjusted)	8	1	6***	1	477

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.

NOTES: Secondary outcomes are bolded; exploratory outcomes are not bolded. Results marked "adjusted" reflect the inclusion of information collected during the 18-month survey interview as text responses of training types attended, asked only of program group members who initially reported no training. See the opening section of Chapter 4 and Appendix G for more discussion. All outcomes that are not marked "adjusted"

[55] A *certificate* is a diploma or other credential awarded for completing a college-based program that required less than a year's worth of credit, or more than a year's worth but less than an associate's degree, or for completing a vocational/occupational training program. A *license* or *certification* is a credential awarded by a state or by an industry or professional association showing qualification to perform a specific job (e.g., certified medical assistant or an IT certification). A *degree* includes an associate's, bachelor's, or higher degree.

[56] Using the unadjusted measure, the JVS RTW programs had an 10 percentage point impact on receipt of any certificate, credential, license, or degree (Exhibit 4.8).

are constructed as described in Appendix D. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 793 includes 411 program group and 382 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **The study finds no clear evidence that the JVS RTW programs improved confidence in career knowledge or factors that affect the ability to work.**

The survey asked a series of questions to measure career knowledge associated with finding and keeping jobs, such as increased awareness of steps needed to reach career goals and understanding of what taking those steps required. Through its job search and employment readiness activities, the JVS RTW programs were hypothesized to improve career knowledge. However, the JVS RTW programs resulted in a small decrease in the program group's self-reported confidence in their career knowledge (see Appendix Exhibit G.4-3).

The survey also asked about a range of issues that might affect program and control group members' ability to work, including access to affordable quality childcare or reliable transportation, or physical or mental health barriers. The JVS RTW programs resulted in a small increase in the proportion reporting that their health was a barrier to working (8 percent of the program group compared to 4 percent of the control group; see Appendix Exhibit G.4-3).

4.5 Impacts on Labor Market Outcomes

The RTW logic model posits that the JVS RTW program services would lead to positive short-term outcomes, which in turn would improve participants' employment and earnings outcomes (Exhibit 2-1, "Long-Term Outcomes"). This section reports impacts on labor market outcomes: first from the employer-reported administrative data from the National Directory of New Hires (NDNH), and then from the self-reported follow-up survey data.

The estimates of the JVS RTW programs' impact on labor market outcomes are inconsistent with that hypothesis. In particular, despite the impacts on service receipt and credential attainment reported in Sections 4.2 to 4.4, the study finds no clear evidence that the programs had an impact on average earnings in the fifth and sixth quarters after random assignment ("Q5" and "Q6"). As described in Section 2.5, this *confirmatory outcome* is the study's main indicator of the extent to which the JVS RTW programs are making progress toward their goals after 18 months.[57] In contrast, exploratory self-reported information from the 18-month survey suggests the JVS RTW programs may have had positive labor market impacts.

- **Based on NDNH data, the study finds no clear evidence of an impact on earnings in the fifth and sixth quarters after random assignment as a result of the JVS RTW programs.**

As discussed in Section 2.5, it might be expected that participants in a training program would work less and therefore earn less while they attend program activities, hence the confirmatory outcome excludes the first four quarters after random assignment. However, the study hypothesized that program group

[57] See Appendix Exhibit A.1-2 for TOT impact estimates for average earnings in Q5 and Q6, employment in Q5 and Q6, and public benefits receipt.

employment and earnings gains would appear by Q5, because by that time most program group members would likely have left the JVS RTW programs and found employment.

However, average earnings in Q5 and Q6 as measured by the NDNH were similar in the program and control groups (including those who did not work), both a little more than $9,000 (Exhibit 4-9). As is true with all estimates, the impact on the confirmatory outcome is estimated with uncertainty. Incorporating that uncertainty into a range of plausible impacts implies that the true impact on average quarterly earnings in Q5 and Q6 could be as low as −$854 or as high as +$1,334.[58]

Exhibit 4-9: Impacts on Earnings and Employment, STW-T and JSA

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Earnings					
Average earnings in Q5 and Q6 ($)	***9,345***	***9,104***	***240***	***665***	***3***
Average earnings in Q5 and Q6, if employed in Q5 or Q6 ($)	*13,354*	*12,692*	*662*	*781*	*5*
Cumulative earnings in Q1-Q6 ($)	41,139	44,138	−2,999	3,017	−7
Employment					
Ever employed during Q5 or Q6 (%)	**71**	**72**	**−1**	**3**	**−1**
Ever employed during Q1-Q6 (%)	83	79	4*	2	5
Number of quarters employed during Q1-Q6	3.5	3.7	−0.1	0.1	−3
Longest job tenure during Q0-Q6 (quarters)	3.0	3.4	−0.4***	0.1	−11

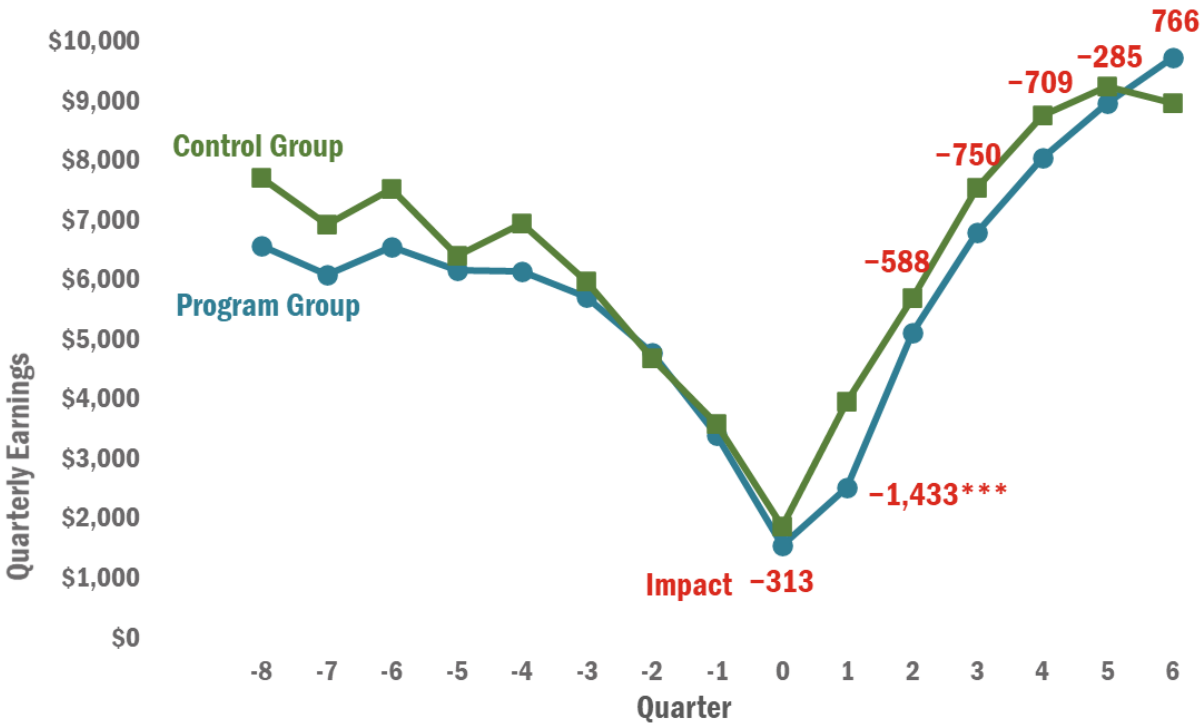
SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through six quarters after random assignment.
NOTES: ***Confirmatory outcome is bolded and italicized***; **secondary outcomes are bolded**; exploratory outcomes are neither bolded nor italicized. *Outcomes in italics* apply to the subset of sample members who were ever employed during Q5 or Q6, and are thus non-experimental. Where not italicized, outcomes apply to the full sample, and impact estimates are experimental. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]). The total sample of 965 includes 491 program group and 474 control group members. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Exhibit 4-10 below reports the level of earnings over time for the program group (blue line) and the control group (green line) for the eight quarters before applying to the program and the following six quarters after random assignment. For each of the quarters after random assignment, the exhibit also reports the JVS RTW programs' impacts on quarterly earnings (red numbers above the lines).[59] Exhibit 4-11 likewise plots quarterly employment from eight quarters before random assignment to six quarters after, and shows impacts on employment for each quarter after random assignment.

[58] These values are the endpoints for a 90 percent confidence interval for the impact on average earnings in Q5 and Q6.

[59] Appendix Exhibit G.5-1 also reports the estimated "impacts" on earnings and employment for the eight quarters before random assignment, to test for balance between the members of the program group and control group before applying to the program. There are no significant differences in earnings; employment in Q0, the quarter of random assignment, is lower in the program group (30 percent) than in the control group (38 percent). Pre–random assignment quarterly data on earnings and employment are also included in the baseline balance table, Appendix Exhibit G.1-2.

Exhibit 4-10: Impacts on Earnings, by Quarter, STW-T and JSA



SOURCE: National Directory of New Hires.
NOTES: On the x-axis, –# indicates quarters before random assignment; 0 reflects the quarter that random assignment occurred. Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 965 includes 491 program group and 474 control group members.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

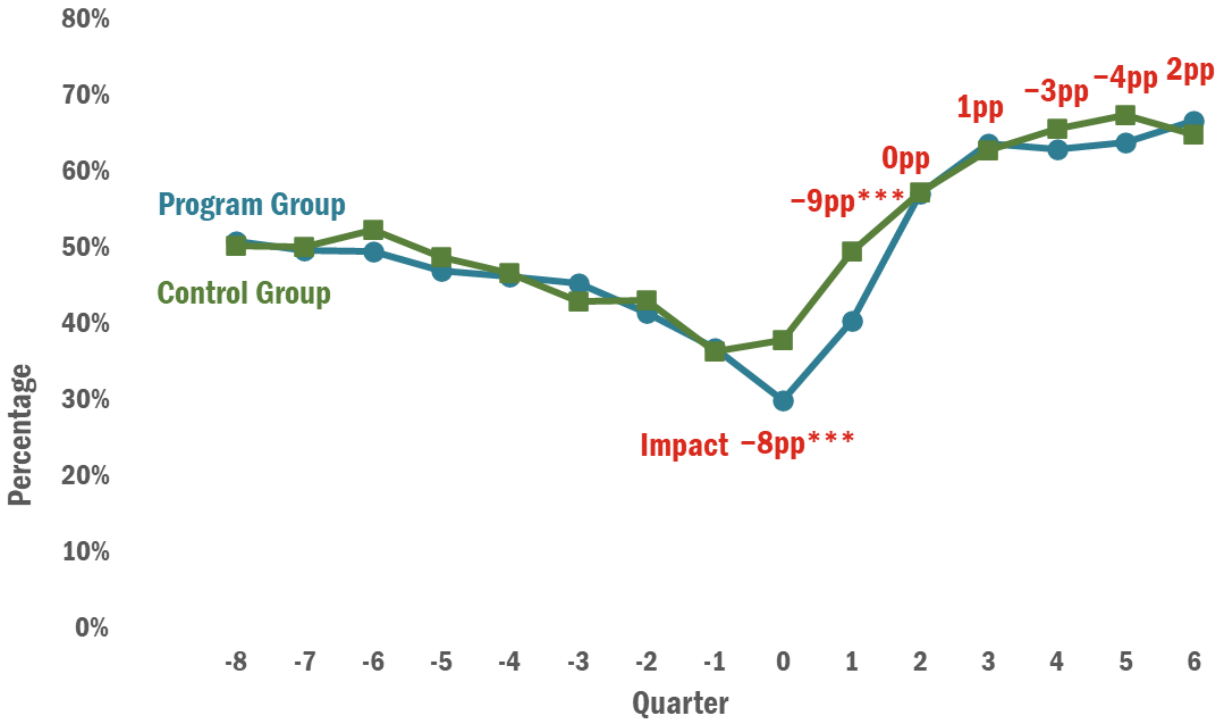
As shown, for both the program and control group, employment and earnings declined sharply prior to applying to the RTW programs. As would be expected in a program serving the long-term unemployed, two years before random assignment only about 50 percent of sample members were employed (see Exhibit 4-11). In the year before random assignment, employment levels dropped sharply, to about 35 percent in the quarter before applying to the RTW programs. Exhibits 4-10 and 4-11 also show, however, that earnings and employment rebounded in the quarters immediately after random assignment, for the control group as well as for the program group.

This observed earnings dip is consistent with patterns for applicants to job training and other social programs and has been widely documented in the literature (e.g., Ashenfelter 1978; Heckman and Smith 1999; Mueser, Troske, and Gorislavsky 2007). Individuals often apply to these programs soon after encountering particularly difficult circumstances or crises, such as the loss of a job. Some, but often far from all, of that decline is usually temporary. Thus, employment and earnings rise even in the absence of the program (here represented by the control group) after applying to the program.

With respect to *impacts* on earnings—the (regression adjusted) difference in outcomes between the program group and the control group—as shown in Exhibit 4-11, impacts on earnings were negative in the first quarter after random assignment. This negative impact was expected in the early quarters, when more of the program group was participating in employment-related activities. In later quarters, the study finds no clear evidence of an impact on earnings.

The study also finds no clear evidence of an impact of the JVS RTW programs on the proportion employed in Q5 or Q6 (see Exhibit 4-9). The proportion employed in Q5 or Q6 is a *secondary outcome* for the RTW Evaluation (see Section 2.5). As shown in Exhibit 4-11, however, the JVS RTW programs had a negative impact of 9 percentage points on employment in the first quarter after random assignment (Exhibit 4-11), when more program group members than control group members were enrolled in program services (see Exhibit 4-5).[60] After the first quarter, both groups had similar employment rates throughout the remainder of the six-quarter follow-up period. There is some evidence, however, that the JVS RTW programs increased the proportion of sample members ever employed over the full six-quarter period (83 percent in the program group, compared to 79 percent in the control group; Exhibit 4-9).[61]

Exhibit 4-11: Impacts on Employment, by Quarter, STW-T and JSA



SOURCE: National Directory of New Hires.
NOTES: On the x-axis, –# indicates quarters before random assignment; 0 reflects the quarter that random assignment occurred. Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 965 includes 491 program group and 474 control group members. "pp" denotes percentage points.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

To this point, reported results on earnings and employment are for all sample members, but only through the sixth quarter after random assignment. For a cohort of applicants randomized early in the study period, 12 quarters (three years) of NDNH data are available. This cohort represents 48 percent of the study sample. Similar to findings across all sample members, the JVS RTW programs had a negative

[60] Quarter 0 reflects the quarter of random assignment. For those randomized early in the quarter, most of the quarter occurs after random assignment, whereas for those randomized late in the quarter, most of the quarter occurs before random assignment. The negative impact on employment observed in Q0 likely reflects the impact of program group members starting to take up the JVS programs in lieu of searching for employment.

[61] The positive impact on being ever employed through six quarters after random assignment is statistically significant at the 10 percent level (p = .076).

impact on earnings for the early cohort in the first quarter after random assignment; further, the study detects no evidence of impacts on earnings through 12 quarters after random assignment (see Appendix Exhibit G.5-2).

- **Although NDNH-based results show no clear evidence of an impact on earnings, based on survey data the JVS RTW programs had impacts on the hourly wage and hours worked in program group members' current job.**

In addition to employment and earnings, the 18-month survey asked about the characteristics of the sample member's current job (Exhibit 4-12). In contrast to the NDNH-based results just presented, the survey results suggest that the JVS RTW programs had positive labor market impacts. Specifically, based on survey responses and including those who did not work, at the time of follow-up, program group members held jobs that on an annualized basis paid on average $8,833 more per year.[62,63] Program group members reported earnings equivalent to annual earnings of $37,271, compared to $28,438 among control group members (Exhibit 4-12). Program group members also reported working more hours per week at follow-up. Including those who were not employed, the program group worked 26 hours per week, compared to 23 for the control group, an impact of 3 hours per week.

Exhibit 4-12: Characteristics of Current Job, STW-T and JSA

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Job Type					
Regular full-time or part-time employee (%)	47	44	3	4	6
Employed by a temporary help agency (%)	2	0	1	1	250
Employed by a company that contracts out your services (%)	5	4	2	1	49
Independent contractor or independent consultant (%)	11	9	2	2	29
Self-employed, including freelancer and day laborer (%)	5	6	−2	2	−26
Other (%)	5	6	−2	2	−25
Pay and Hours					
Rate of pay per year ($)	37,271	28,438	8,833***	2,763	31
Hourly wage, if employed ($/hour)	*32.11*	*28.01*	*4.11***	*1.72*	*15*
Hours worked per week	26	23	3**	1	11
Hours worked per week, if employed	*36*	*35*	*1*	*1*	*3*
Full-time (35 or more hours per week, %)	55	49	7*	4	14
Full-time, if employed (%)	*77*	*73*	*4*	*4*	*6*
Part-time (less than 35 hours per week, %)	17	18	−1	3	−6
Part-time, if employed (%)	*23*	*27*	*−4*	*4*	*−16*
Number of weeks at job since random assignment	32	32	−0	2	−1

62 This measure is based on a survey response about earnings at the time of the interview. Note, however, that this is not earnings over the past year, but instead annual earnings given the current job.

63 As discussed in Section 2.6, the NDNH does not capture earnings for the self-employed, which includes independent contractors; in contrast, the survey asks for all sources of earnings. Thus, to the extent that participating in the JVS programs led to increases in employment in IT, the evidence of positive impacts on earnings in the survey data but not in the NDNH could arise because of the prevalence of contracting for work rather than hiring or using employees in the IT sector. In support of this conjecture, the survey results show a positive and not small impact on employment in IT (31 percent in the program group versus 20 percent in the control group, see Appendix Exhibit G.5-4). However, no evidence of an impact on the proportion of workers who are self-employed or working as contractors is detected (Exhibit 4-12). Thus, to be consistent with this conjecture, respondents would need to treat contract work as regular employment rather than self-employment; the survey provides no evidence on the extent to which this may have occurred.

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Job represented by a union (%)	4	3	1	1	22
Job Benefits					
Health insurance (%)	47	43	4	4	10
Paid vacation (%)	44	42	2	4	5
Paid holiday (%)	45	41	4	4	10
Paid sick time (%)	28	24	4	3	17
Retirement/pension plan (%)	39	36	3	4	8
Job Schedule					
Regular daytime schedule (%)	57	49	8**	3	16
Regular evening shift (%)	1	0	1	1	154
Regular night shift (%)	0	1	−1*	1	−93
Rotating schedule (%)	1	1	0	1	8
Irregular schedule (%)	3	3	−0	1	−15
Other schedule (%)	12	14	−2	2	−17
Career Advancement					
Job offers career advancement opportunities:					
Strongly agree (%)	6	3	3*	2	112
Agree (%)	14	6	9***	3	156
Disagree (%)	35	41	−6	4	−15
Strongly disagree (%)	6	7	−1	2	−15

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.

NOTES: All outcomes in this table are exploratory. *Outcomes in italics* apply to the subset of survey respondents who were employed at follow-up, and thus are non-experimental. Where not italicized, outcomes apply to the full survey sample, and impact estimates are experimental. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 793 includes 411 program group and 382 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.

Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Among those who worked (a non-experimental comparison), the JVS RTW programs had a positive impact on the hourly wage of $4 per hour, $32 per hour for the program group compared to $28 for the control group (Exhibit 4-12). The JVS RTW programs also caused a shift to a regular daytime schedule (8 percentage points), with some evidence of an increase in full-time employment (7 percentage points).[64] No impacts are detected on working in a job with benefits, including employer-provided health insurance and paid vacation (Exhibit 4-12).

Overall, though the NDNH data did not show an increase in earnings, evidence from the 18-month survey suggests that program group members were earning more than control group members, and also working more hours, at follow-up. A range of past studies (Barnow and Greenberg 2015; Barnow and Greenberg 2019; Mastri et al. 2018; Schochet et al. 2003) have also found that impact estimates based on earnings reported in administrative data tend to be smaller and less likely to be statistically significant than those based on survey responses. The NDNH data do show a positive, though not statistically significant, impact estimate on earnings in Q6, which roughly corresponds to when the survey was administered.

[64] The impact on being employed full-time (35 or more hours per week) is statistically significant at the 10 percent level (p = .060); see Appendix Exhibit G.5-4.

Longer follow-up, using NDNH data through 10 quarters—an additional year—will be helpful in determining the extent to which the JVS RTW programs succeed in improving earnings.

As expected given the program focus, the JVS RTW programs resulted in a 53 percent increase in employment in the IT industry: 31 percent of the program group working in this industry, compared to 20 percent of the control group (see Appendix Exhibit G.5-4). See also Appendix Exhibits G.5-5 and G.5-6 for a comparison of the field of employment at the time of the follow-up survey between the program group and control group. The JVS RTW programs also increased employment that was perceived as providing career opportunities: 20 percent of the program group reporting that they "strongly agreed" or "agreed" that their current job did so, compared to 9 percent of the control group (Exhibit 4-12).

The survey also asked program and control group members whether they attributed obtaining a new job to completing a training program or receiving a certificate (see Appendix Exhibit G.5-7). Among all sample members, whether they attended training or not, 22 percent of the program group versus 3 percent of the control group attributed getting a new job to completing a training program, an impact of 19 percentage points. Among those in the program group who attended training, 48 percent reported they obtained a new job as a result of the training, compared to 17 percent of the control group. Program group members were also more likely than control group members to report that the training was useful to a subsequent job (22 percent versus 3 percent).

4.6 Impacts on Broader Measures of Well-Being

The RTW logic model posits that improvement in labor market outcomes would in turn improve other measures of well-being among the program group, such as increased income and reduced receipt of public benefits.

- **Consistent with the NDNH-based finding of no clear evidence of impact on earnings, based on survey data the study likewise finds no clear evidence that the JVS RTW programs had an impact on program group members' total income.**

Based on survey-reported income measures, the study did not detect an impact of the JVS RTW programs on the study member's income received in the month prior to the follow-up survey (including benefits receipt and other sources of income beyond earnings; Exhibit 4-13). While, as discussed above, increases in earnings were detected using the survey-based measure, this did not translate into an increase in self-reported income when all income sources were considered.

Exhibit 4-13: Income and Public Benefits Receipt, STW-T and JSA

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Income					
Total own income before taxes last month ($)	3,150	2,862	287	187	10
Benefits Receipt					
Received any public benefits last month (%)	**6**	**8**	**−2**	**2**	**−27**
Received TANF last month (%)	0	0	0	0	6
Received SNAP last month (%)	3	3	−1	1	−22
Received UI last month (%)	2	2	−1	1	−24
Received other public benefits last month (%)	2	4	−2**	1	−55

KEY: SNAP is Supplemental Nutrition Assistance Program; TANF is Temporary Assistance for Needy Families; UI is Unemployment Insurance.

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.
NOTES: **Secondary outcomes are bolded**; exploratory outcomes are not bolded. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 793 includes 411 program group and 382 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Overall, the study finds no clear evidence that the JVS RTW programs affected the receipt of public benefits—a *secondary outcome*. Reflecting their relatively high incomes, receipt rates were very low for both groups. The JVS RTW programs did result in a small decrease in the receipt of "other" public benefits (i.e., other than TANF, SNAP, and Unemployment Insurance).

4.7 Subgroup Findings

As discussed in Chapter 2, the RTW Evaluation also explores how impacts vary with study members' baseline characteristics—that is, whether the JVS RTW programs were more effective for certain subgroups of the population served. Prior to beginning analysis, the evaluation specified subgroups to compare based on characteristics at the time of random assignment: *education level* (less than a bachelor's degree versus a bachelor's degree or more), *age* (49 or older versus younger than 49), and *employment status* (unemployed more than 12 months versus ever employed in the last 12 months, including those employed at application). In addition, based on guidance from the evaluation's Technical Working Group, the evaluation added a subgroup analysis on *gender*.

The evaluation focuses on whether there is **differential impact**; that is whether the impact on an outcome is different for one subgroup versus the other subgroup for any of the four characteristics listed above. The evaluation estimates subgroup impacts for the confirmatory and secondary outcomes, as well as for several key exploratory outcomes. In considering these results, it is important to note that the study's sample size is large enough to detect only large differential impacts on earnings between subgroups. To a lesser degree, such sample size concerns apply to subgroup analyses of other outcomes, as well. Thus, substantively important differential impacts plausibly go undetected.

Overall, there are no systematic differences in impacts by education level, age, or employment status at baseline, including no differential impacts on earnings in the fifth and sixth quarters after random assignment (see Appendix Exhibits G.7-1 to G.7-6). However, the evaluation does find evidence of differential impacts by gender on earnings and employment in Q5 and Q6. Exhibit 4-14 presents subgroup results based on *gender* for the confirmatory outcome, average earnings in Q5 and Q6, as well as for employment in Q5 or Q6. For each outcome, the exhibit provides three rows. The first row reports the impact on that outcome for the first subgroup (women); the second row reports the impact on that outcome for the second subgroup (men). The third row reports the differential impact. As noted, the evaluation focuses on the ***difference*** in impact between the two subgroups.

Exhibit 4-14: Subgroup Impacts, by Gender: Earnings and Employment, STW-T and JSA

Outcome/Subgroup	Sample Size	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	*p*-Value
Earnings and Employment						
Average earnings in Q5 and Q6 ($)						
Women	612	9,962	8,704	1,257	858	.143
Men	353	8,252	9,769	−1,517	1,037	.144
Difference				−2,774**	1,346	.040
Ever employed during Q5 or Q6 (%)						
Women	612	75	70	5	3	.145
Men	353	63	75	−11**	5	.016
Difference				−16***	6	.005

SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires, measured through six quarters after randomization.
NOTES: All outcomes in this table are exploratory. Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 965 includes 491 program group and 474 control group members.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **Based on NDNH data, the JVS RTW programs had a differential effect by gender on earnings and employment, with negative impacts for men and no evidence of impacts for women.**

As shown in the top three lines of Exhibit 4-14, considered separately by gender, the study finds no clear evidence of an impact on earnings for men or women. There is, however, evidence that the impact is more negative for men. The study also detects a negative impact on employment in Q5 and Q6 for men (11 percentage points) but no evidence of impact for women.

In contrast, the study finds no evidence of differential impacts by gender on either training or educational attainment or on benefits receipt (see Appendix Exhibits G.7-7 and G.7-8). For both genders, the study finds positive impacts on receipt of any structured employment-related activity, as well as on hours of such training, and positive impacts on educational attainment. It is therefore unclear why the JVS programs would have a differential impact by gender on employment and earnings.

5 Impact Findings for RochesterWorks!'s Finger Lakes Hired Program

Key Findings: FLH

- Increased the receipt of employment readiness courses and job search assistance.
- Did not increase hours of occupational or work-based training.
- Did not increase average earnings in the fifth and sixth quarters after random assignment.
- Increased full-time employment, and decreased part-time employment.

This chapter presents impact findings from RochesterWorks!'s Finger Lakes Hired (FLH) program through 18 months after random assignment.[65] RochesterWorks! is the Workforce Investment Board (WIB) for Monroe County, which includes the city of Rochester, in western New York State. The FLH program provided individualized services, including employment readiness courses, occupational training, and work-based training, designed to help participants find employment in the advanced manufacturing, healthcare, and information technology (IT) industries. Integral to the FLH program design was the role of the Education and Employment Specialist, who assessed participants' skills and service needs at program entry, made referrals to services, and worked with FLH participants throughout their time in the program.

This chapter is organized as follows. Section 5.1 provides an overview of the FLH program context, target population and program services provided, and the characteristics of the study sample. The balance of the chapter reports impacts—that is, program group/control group differences—organized following the logic model presented in Exhibit 2-1 in Chapter 2: participation in employment-related activities (Section 5.2); receipt of education- and employment-related supports, including financial assistance for occupational training (Section 5.3); educational attainment and career confidence (Section 5.4); labor market outcomes, including employment and earnings (Section 5.5); and other measures of well-being, hypothesized to result from improved labor market outcomes (Section 5.6). The final section reports impacts for selected subgroups (Section 5.7).

Unless otherwise noted, all results are from the 18-month follow-up survey. Appendix H provides additional results for FLH. The FLH sample size was smaller than for the other three grantees, making it harder to detect impacts.

5.1 RochesterWorks!'s Finger Lakes Hired Program

This section provides a summary of the FLH program context, target population and program services, and characteristics of the study sample.

5.1.1 Program Context

As the WIB for Monroe County, RochesterWorks! operates three American Job Centers (called Career Centers) that provide job search assistance, career guidance, and training opportunities for adults and

[65] For a smaller cohort of study members randomized early in the study period, the evaluation also examines earnings through the 12th quarter after random assignment.

youth, as well as assistance to local businesses in hiring employees. For the Ready to Work (RTW) grant, the FLH program operated out of the Career Centers to serve residents of Monroe County.[66]

Throughout the grant period, FLH focused on the advanced manufacturing, healthcare, and IT industries. According to RochesterWorks! staff, the Rochester region had experienced several decades of gradual economic decline, with unemployment further exacerbated by the national recession in 2007-2009. At the time the grant was awarded in October 2014, staff anticipated both job opportunities for workers with upgraded skills and a growth in reemployment opportunities in these three industries.

5.1.2 Target Population and Services Provided by FLH Program

To be eligible for the FLH program, an applicant had to be a long-term unemployed worker (as defined by the RTW grant), have a high school diploma or GED, and an interest in one of the three targeted industries. FLH staff anticipated that many participants would enter the program with credentials and work experience to qualify for their target job. Therefore, to move participants to employment as quickly as possible, staff designed the FLH program to primarily provide one-on-one job search assistance and employment readiness courses. The expectation was that a relatively small portion of participants would need to upgrade skills in their target industry through occupational training. To meet its target enrollment, RochesterWorks! used a comprehensive and multi-faceted recruitment effort. RochesterWorks! primarily recruited applicants through referrals from other Career Center staff, FLH's College Liaisons (see Exhibit 5-2), and partner organizations. RochesterWorks! also advertised FLH on its website, Career Center fliers, and mailings to Unemployment Insurance claimants.

Those who were interested in the FLH program were pre-screened for eligibility by phone and invited to a weekly group orientation session at the Career Center. After providing information about FLH to applicants and confirming eligibility, RTW program staff provided applicants with information on workshops and assessments available through the Career Center that might be of interest to them should they not enroll in FLH. Random assignment occurred at this point, with those assigned to the program group scheduled for an initial meeting to occur within a week. Those assigned to the control group were referred to the Career Center, where if interested they could meet with Career Center staff to discuss the job search process, participate in non-FLH-funded workshops, and complete employment-related assessments (Martinson et al. 2017; see also Appendix Section H.1).

The FLH program employed two full-time Education and Employment Specialists (EESs). The role of the EES was to assess program participants' goals and interests and help them to develop an individualized plan detailing the FLH services to help achieve those goals. The specific sequence and mix of services was based on each participant's needs and preferences. An EES was available to FLH participants throughout their time in the program, provided ongoing support, and followed up with participants routinely. In contrast, regular Career Center Career Service Advisors provided assistance to Career Center clients on a walk-in basis, but did not work with the same individuals over time and provide ongoing support tailored to their needs.

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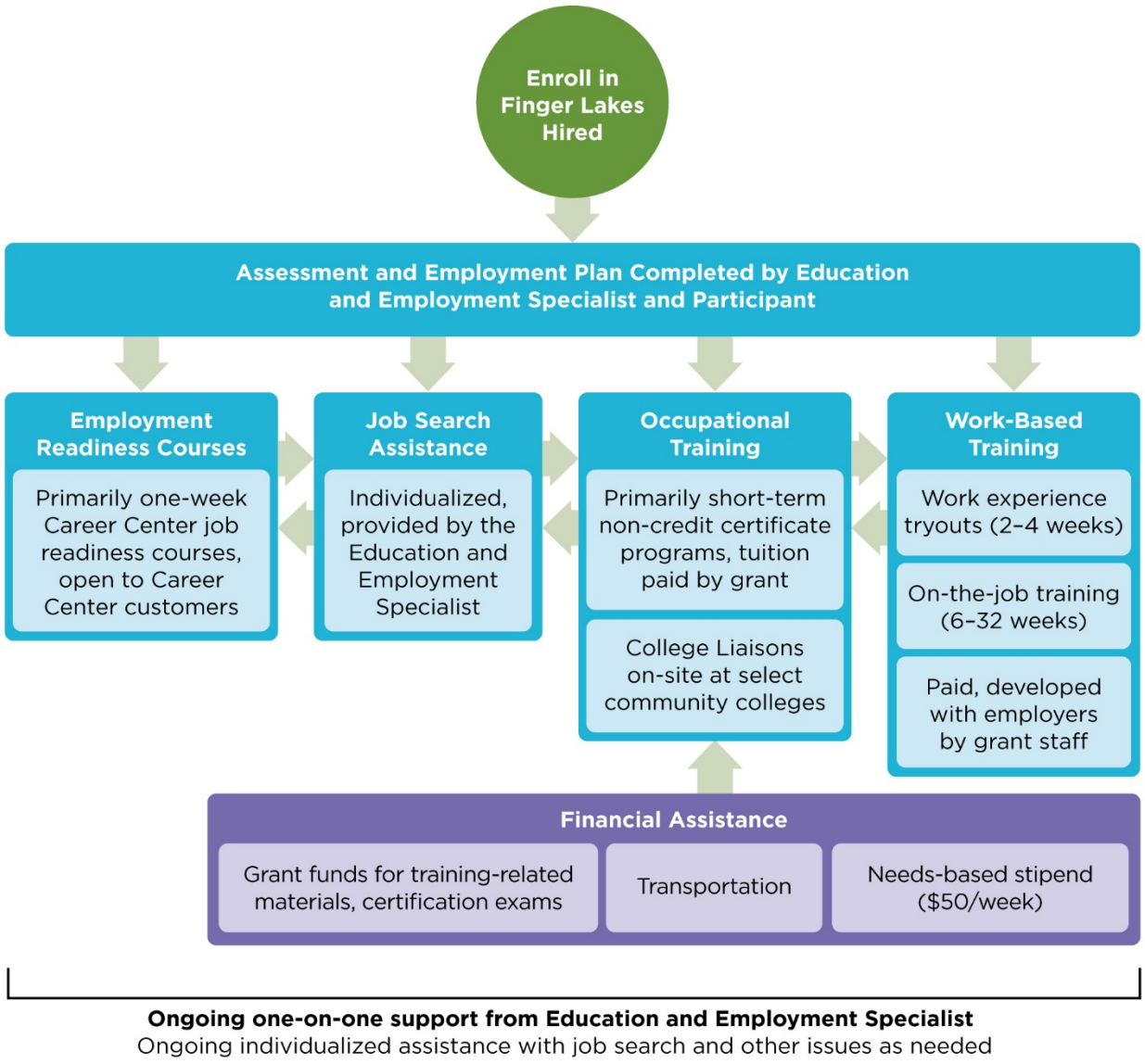
[66] RochesterWorks! partnered with two other WIBs to operate FLH in a multi-county region. Those two WIB partners in the grant were Finger Lakes Works, serving Seneca, Ontario, Wayne, and Yates Counties; and GLOW Works, serving Genesee, Livingston, Orleans, and Wyoming Counties. The RTW evaluation of FLH focuses only on grant activities operated by RochesterWorks!.

Exhibit 5-1: Overview of the FLH Program



SOURCE: Developed by Abt Associates based on staff reports and program materials.

As shown in Exhibit 5-1 and described further in Exhibit 5-2 below, FLH offered employment readiness courses, job search and readiness assistance, occupational training, work-based training, and financial assistance to help long-term unemployed workers find jobs in the advanced manufacturing, healthcare, and IT industries. FLH participants could begin with any of the FLH activities and move among them as needed in consultation with the EES.

Exhibit 5-2: Primary Employment-Related Activities and Supports Provided by FLH

Service	Description
Structured Employment Readiness Activities	
Employment Readiness Courses	• FLH participants received an admission preference into RochesterWorks!'s *5 Steps to Rapid Employment* workshop. This 20-hour, week-long workshop pre-dated FLH and was available to all Career Center customers.[a] • The workshop focused on developing resumes and cover letters and practicing interviewing skills, but the curriculum also included content and activities to help participants build self-confidence and develop a vision for the type of job they wanted.
Occupational Training	• FLH supported enrollment in occupational training in advanced manufacturing, healthcare, and IT of up to two years, including paying for tuition. The length of training and resulting credential varied by provider and training program. Options ranged from short-term (a few weeks or months) certificate programs in healthcare and IT through postsecondary degrees (lasting up to two years). • For participants enrolled at one of three local community colleges, the RTW grant funded an on-site FLH College Liaison to assist participants in accessing college and external resources to promote program completion.
Work-based Training	• Work experience "tryouts" were intended to provide participants with job experience to build their resumes and provide employers with the opportunity to work with a participant before making a hiring commitment. They lasted two to four weeks, with the participant's wages paid by the grant. • On-the-job training (OJT) positions lasted 6 to 32 weeks with the expectation that the employer retained the participant in a full-time position upon completion. The grant subsidized the participant's wage during the initial training period.
Other Services and Supports	
Job Search Assistance	• EESs provided one-on-one job search assistance to help participants conduct a job search. • EESs met with participants regularly, typically every two weeks, suggesting steps they could take to explore job opportunities and apply for jobs, and setting a schedule for them to complete those activities.
Financial Assistance	• Participants enrolled in occupational training could receive financial assistance with certain expenses to help facilitate attendance and completion of training, including school supplies and testing costs. They also received transportation assistance, either a gas card or bus pass. • Low-income participants who enrolled in occupational training could receive a needs-based stipend of $50 per week.

SOURCE: Developed by Abt Associates based on staff reports and program material.

[a]The nationally available 5 Steps curriculum was developed by Jay A. Block, a career coach and author of the book *5 Steps to Rapid Employment: The Job You Want at the Pay You Deserve* (McGraw Hill Education 2014).

5.1.3 Characteristics of the Study Sample

Exhibit 5-3 shows the characteristics of program and control group members at the time of random assignment (at "baseline"). (Appendix Section H.1.2 provides additional demographic information and tests for balance between members of the program group and control group at baseline.)

Exhibit 5-3: Selected Characteristics of Sample Members at Baseline, FLH

Characteristic	Incidence
Demographics	
Gender (%)	
Women	55
Men	45
Race (%)	
Asian	2
Black or African American	29
White	61
Hispanic ethnicity (%)	7
Age (%)	
24 years or younger	5
25 to 34 years	18
35 to 44 years	17
45 to 54 years	30
55 years or older	31
Average age (years)	46
Household Status	
Marital status (%)	
Married	33
Widowed/divorced/separated	21
Never married	41
One or more own children in household age 6 or younger (%)	15
Education	
Education level (%)	
High school diploma or less	16
Some college credit but no degree	20
Technical or associate's degree	20
Bachelor's degree	31
Master's degree or more	13
Employment	
Employment status (%)	
Currently employed	12
Currently unemployed, but employed in last 12 months	61
Currently unemployed, and longer than 12 months since last employed	27
Weekly earnings, if employed ($)	297
Public Benefits	
Receiving any public benefits (%)	53
Supplemental Nutrition Assistance Program (%)	27
Temporary Assistance for Needy Families (%)	6
Section 8 or Public Housing assistance (%)	11
Unemployment Insurance (%)	28

SOURCE: Ready to Work Baseline Information Form (BIF). Sample size of 610 includes 307 program group and 303 control group members. Statistics in this table are computed based on the RochesterWorks! study members who completed the BIF for the given question.
NOTES: Percentages do not sum to 100% for race and marital status because not all response categories are included in the exhibit.

A majority of the FLH study members were women (55 percent). The study sample included about twice as many White study members as Black or African American (61 percent versus 29 percent). The average age was 46 years.[67] Aligning with the RTW grant's focus on aiding skilled workers who had experienced long-term unemployment, almost all study members were unemployed at the time of random assignment (88 percent) and a little more than one-quarter (27 percent) had been unemployed for more than a year.

Study members were well educated. About 84 percent of study members had some education beyond high school, including nearly half (44 percent) with at least a bachelor's degree and 13 percent with a master's degree or more. At baseline, weekly earnings averaged $297 among those who worked. Among all study members, more than half (53 percent) were receiving some federal public benefits. Unemployment Insurance (UI) benefits and Supplemental Nutrition Assistance Program (SNAP) were the most common—slightly more than one-quarter for each.

5.2 Impacts on Participation in Employment-Related Activities

This section reports impacts on the second step of the RTW logic model (Exhibit 2-1, "Program Services"): participation in employment-related activities. Such employment-related activities include occupational training, work-based training, employment readiness courses, and job search assistance. The logic model posits that increases in participation in employment-related activities for the program group compared to the control group will eventually lead to increases in earnings and employment outcomes relative to the control group.

As noted in Chapter 2, the evaluation estimates the impact of FLH by comparing:

- Average outcomes for the program group, who were offered the FLH program

versus

- Average outcomes for the control group, who were not offered the FLH program.

Not all program group members participated in FLH. Though the control group could not access FLH, they could seek out other services in the community that were not funded by the RTW grant. In particular, control group members could enroll in the *5 Steps to Rapid Employment* workshop and other assistance available to all customers at the RochesterWorks! Career Center.

This section first reports FLH's impact on engagement (*participation levels*; that is, any participation) and intensity of engagement (*hours, weeks*) in each structured employment-related activity—occupational training, work-based training, and employment readiness courses—as well as across all three activities. This discussion addresses *cumulative* participation over the entire follow-up period. The section then describes program participation levels over time, namely for each month in the follow-up period. Last, the section describes receipt of job search assistance, which was typically provided one-on-one, but was not measured with the same level of detail as the structured activities.[68]

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[67] Women in the study sample were significantly younger than men; they were more likely to be under age 40 at baseline and less likely to be age 50 or older.

[68] For job search assistance outcomes, the survey collected only whether the study member received this type of assistance and how many times.

- **FLH increased levels of participation in structured employment-related activities, primarily employment readiness courses.**

FLH increased participation levels in any structured employment-related activities by 13 percentage points (59 percent of the program group versus 46 percent of the control group, Exhibit 5-4). There is weak evidence that FLH also increased overall hours of services received by 76 hours (from 202 hours in the control group to 278 hours in the program group).[69] Exhibit 5-4 shows the impacts on receipt of any of these structured employment-related activities and the impact on hours of these activities (overall and by activity type). Hours of participation, total and for each activity type, are *secondary outcomes* for the RTW Evaluation (see Section 2.5). As discussed further below, FLH produced a large increase in participation in employment readiness courses, but the study finds no clear evidence of an impact on participation in occupational training or work-based training.

Exhibit 5-4: Participation Level and Intensity of Participation in Structured Employment-Related Activities, FLH

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey, measured as of 18 months after random assignment.
NOTES: Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 477 includes 250 program group and 227 control group members who completed the 18-month follow-up survey. "pp" denotes percentage points.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **FLH increased levels of participation in *employment readiness courses* and hours attending such courses.**

The survey asked study members whether they attended any courses focusing on workplace skills or "soft" skills such as time management, how to be a good employee, or working in a team. Approximately twice as many program group members attended an employment readiness course as did the control group (28 percent versus 15 percent), an impact of 13 percentage points (Exhibit 5-4). FLH increased the total hours attending an employment readiness course by 7 hours, and the total weeks attending by 1 week (see Exhibit 5-5).[70] As discussed in Section 5.1.2, the Career Center offered a variety of employment readiness

[69] The positive impact on total hours of employment-related activities is statistically significant at the 10 percent level (p = .081); see Appendix Exhibit H.2-1. See also Appendix Exhibit H.2-2 for a comparison of the distribution of total weeks of any structured employment-related activity between members of the program and control groups.

[70] See Appendix Exhibit H.2-8 for a comparison of the distribution of total weeks attending an employment readiness course between members of the program and control groups.

workshops that were available to both the program and control groups. However, the program group got preferred admission into the Career Center's one-week *5 Steps to Rapid Employment* workshop.

Exhibit 5-5 shows impacts on service receipt in more detail, including impacts on weeks of training, and impacts on hours and weeks of training among those who attended any training. The top panel shows impacts on participation levels and hours and weeks attended for all employment-related activities combined. Subsequent panels provide these same impact estimates separately for each type of activity.

Exhibit 5-5: Participation Detail in Structured Employment-Related Activities, FLH

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Any Structured Employment-Related Activity					
Ever attended (%)	59	46	13***	4	27
Total hours attended	**278**	**202**	**76***	**44**	**38**
Total hours, for attendees	*527*	*447*	*79*	*77*	*18*
Total weeks attended	12	9	3*	2	36
Total weeks, for attendees	*22*	*20*	*2*	*3*	*11*
Hours per week, for attendees	*21*	*21*	*−1*	*2*	*−3*
Any Occupational Training					
Ever attended (%)	36	34	2	4	6
Ever attended college-based training (%)	6	9	−3	2	−37
Ever attended non-college-based training (%)	31	27	4	4	16
Total hours attended	**228**	**172**	**56**	**40**	**33**
Total hours, for attendees	*665*	*512*	*153**	*92*	*30*
Total weeks attended	9	7	1	1	18
Total weeks, for attendees	*25*	*23*	*2*	*3*	*11*
Hours per week, for attendees	*25*	*23*	*3*	*2*	*12*
Any Work-Based Training					
Ever attended (%)	8	7	1	2	16
Ever attended unpaid internships (%)	4	5	−1	2	−20
Ever attended paid internships (%)	1	1	0	1	7
Ever attended on-the-job training (OJT, %)	4	1	3**	1	362
Total hours attended	**30**	**22**	**7**	**12**	**33**
Total hours, for attendees	*NR*	*NR*	*NR*	*NR*	*NR*
Total weeks attended	1	1	0	1	14
Total weeks, for attendees	*NR*	*NR*	*NR*	*NR*	*NR*
Hours per week, for attendees	*NR*	*NR*	*NR*	*NR*	*NR*
Employment Readiness Course					
Ever attended (%)	28	15	13***	4	89
Total hours attended	**11**	**4**	**7*** **	**3**	**171**
Total hours, for attendees	*39*	*33*	*6*	*16*	*18*
Total weeks attended	2	1	1**	1	155
Total weeks, for attendees	*6*	*6*	*0*	*3*	*2*
Hours per week, for attendees	8	11	−3	3	−24

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey, as of 18 months after random assignment.

NOTES: **Secondary outcomes are bolded**; exploratory outcomes are not bolded. *Outcomes in italics* apply to the subset of survey respondents who attended any training, and thus are non-experimental. Where not italicized, outcomes apply to the full survey sample, and impact estimates are experimental. Non-experimental results are not reported (NR) when 15 or fewer survey respondents of either the program or control group attended any training. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 477 includes 250 program group and 227 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.

Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **The study finds no clear evidence that FLH increased participation levels in or hours attending *occupational training* or *work-based training*.**

The study finds no clear evidence that FLH increased attendance in either occupational or work-based training, reflecting that the program focused primarily on employment readiness courses (Exhibits 5-4 and 5-5 above). Program group and control group members attended occupational training at similar levels (about one-third) and for a similar number of hours (about 200).[71] Work-based training was uncommon for either group: only about 8 percent attended any work-based training activity. There was, however, a small increase in participation in on-the-job training.

Program and control group members demonstrated similar patterns of participation in the types of occupational training they attended. Healthcare training was the most common (about 17 percent of each group), and far fewer participated in IT or advanced manufacturing training (see Appendix Exhibit H.2-3). For both the program and control group, most training was conducted outside of a college setting (approximately 30 percent in a non-college setting versus less than 10 percent in college-based training; Exhibit 5-5).

- **Participation in structured employment-related activities followed a similar pattern for the program and control groups, but with higher rates among the program group for the first 15 months of the 18-month follow-up period.**

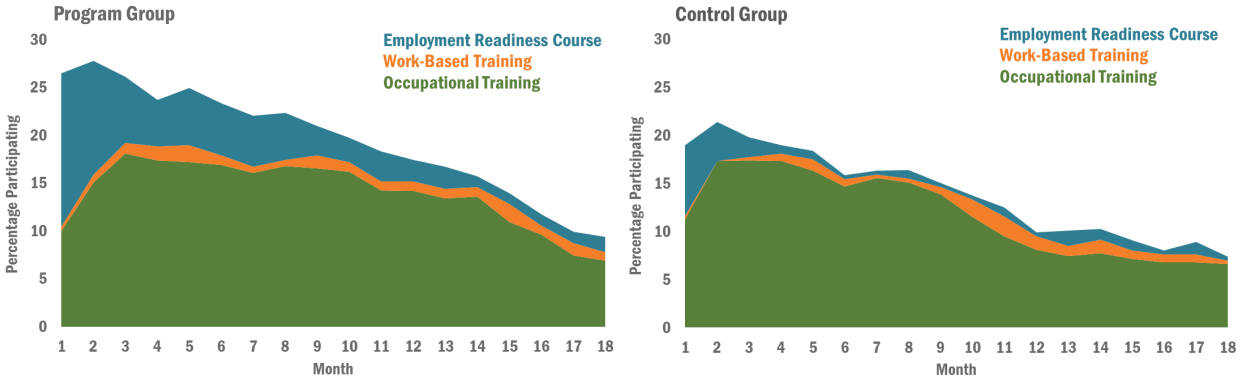
The evaluation also examines *impacts over time* on participation levels in any structured employment-related activity, as well as in occupational training, work-based training, or employment readiness courses; that is, for each month in the follow-up period. Service receipt impacts over time can be helpful in determining when one might expect employment and earnings impacts to emerge (see Section 5.4 for discussion).

Exhibit 5-6 shows monthly participation rates in each of the three structured employment-related activities for the program group (on the left) and the control group (on the right). For the program group, approximately 23 to 28 percent participated in any such activities over the first six months after random assignment, with the rate decreasing slowly to approximately 18 percent by month 12 and to 10 percent by month 18. In the early months after random assignment, program group members primarily attended employment readiness courses and occupational training.

Participation levels for the control group followed a similar pattern as for the program group – higher early on and decreasing over time – but at a somewhat lower level than for the program group throughout most of the follow-up period (starting at approximately 20 percent, and falling to approximately 10 percent by month 12). This indicates that the control group might have accessed other services available at RochesterWorks! after being randomly assigned to the control group, including the employment readiness course that was available to all Career Center customers (although the program group received preference in admission).

[71] See Appendix Exhibits H.2-4 and H.2-6 for the distribution of total weeks of occupational training and work-based training, respectively.

Exhibit 5-6: Participation in Structured Employment-Related Activities for the Program and Control Group, by Month Since Random Assignment, FLH



SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey, measured as of 18 months after random assignment.
NOTES: The total sample of 477 includes 250 program group and 227 control group members who completed the 18-month follow-up survey.

Consistent with the similar participation patterns between the program and control groups, *impacts* on monthly participation in any structured employment-related activity (the difference between the program and control group) were a roughly consistent 6 to 8 percentage points through month 15, with no clear evidence of impact beyond this point (see Appendix Exhibit H.2-9).[72] For the first 10 months these impacts were driven by impacts on attending an employment readiness course (see Appendix Exhibit H.2-12); in months 11 through 14 the impact arose primarily through an impact on attending occupational training (see Appendix Exhibit H.2-10).

- **FLH increased receipt of other employment-related activities, including job placement assistance, career counseling, and assistance with job readiness skills.**

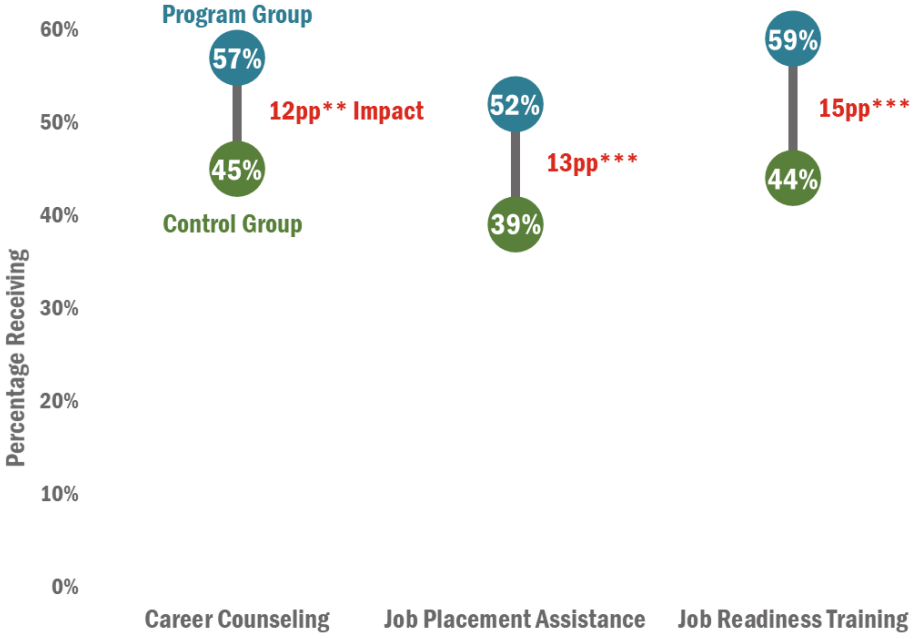
The survey asked about receipt of a range of assistance related to finding a job. Such assistance included job placement assistance (e.g., assistance searching for work, referrals to jobs or employers, providing labor market information), career counseling (e.g., administering career interest surveys to identify suitable jobs, providing information on how to change careers and relevant jobs and training programs), and assistance with job readiness skills (e.g., help with a resume, interviewing skills, and networking). As discussed in Section 5.1, program group members might receive such assistance through one-on-one meetings with program staff, namely the EESs, or as part of the *5 Steps to Rapid Employment* workshop.

In contrast to the outcomes reported above for the three structured employment-related activities, less information was collected for activities related to job search assistance: the survey asked whether the study member received this type of assistance and the frequency, but did not ask for more detailed measures of intensity (*hours, weeks)*. FLH increased receipt of job search assistance by 12 to 15 percentage points, depending on the type (Exhibit 5-7). For example, 52 percent of the program group and 39 percent of the control group reported receiving any job placement assistance, an impact of 13 percentage points. For the program group, this level is almost double the percentage of respondents who reported attending any employment readiness course (see Exhibit 5-5, bottom panel). This finding

[72] The statistical significance of the estimates of the impact on participation in any structured employment-related activities varied between being significant at the 5 and 10 percent level (the impact in month 4 was not significant; see Appendix Exhibit H.2-9 for specific *p*-values).

indicates that much of this type of assistance was provided through activities beyond the employment readiness course, most likely through one-on-one interactions with program staff.

Exhibit 5-7: Receipt of Job Search Assistance, FLH



SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.
NOTES: Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 477 includes 250 program group and 227 control group members who completed the 18-month follow-up survey. "pp" denotes percentage points.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **FLH increased receipt of assistance with workplace behaviors, soft skills, and study skills.**

The survey asked a series of questions about receipt of assistance with skills that help workers succeed in the workplace as well as in their job search, such as critical thinking, working in groups, and communicating well. As expected, given that developing these workplace behaviors and skills was a major focus of one-on-one assistance from program staff and the Career Center's employment readiness course, FLH increased the receipt of such assistance. FLH had an approximately 12 percentage point impact on the proportion of study members who reported attending a program that focused "a great deal of attention" on critical thinking, working in groups, and communicating well (see Appendix Exhibit H.2-14). FLH also doubled receipt of assistance with study skills. The program had smaller impacts on other soft skills, such as managing stress, anger, and frustration; time management; and finding help with problems at school, work, or home.

5.3 Impacts on Receipt of Education- and Employment-Related Supports

This section considers more impacts on the second step of the RTW logic model (Exhibit 2-1, "Program Services"): education-related and employment-related supports such as financial assistance for occupational training; academic supports; and assistance with transportation, childcare, work expenses, and mental health issues. The logic model posits that supports that remove barriers to attending and

persisting in the program will increases participation in employment-related activities and ultimately lead to increases in earnings and employment.

- **FLH decreased reliance on study members' own or family financial resources to fund occupational training and increased support from other sources.**

As discussed in Section 5.1, FLH provided financial assistance for occupational training (see Exhibit 5-2) that was not available to control group members. To assess the impact of the availability of this assistance, the survey asked study members about the funding used for the costs of their occupational training. Respondents could report they paid for training on their own or with the help of their family (through earnings, savings, or loans) or that they received support from other sources. (All funding outcomes were set to zero for study members who attended no occupational training.) Whereas 19 percent of the control group paid for training from their own or family funds, only 8 percent of the program group did so, a decrease of 12 percentage points (Exhibit 5-8). Among those who participated in occupational training (a non-experimental comparison), FLH produced an even larger decrease in the use of own or family resources: 58 percent of the control group relied on this compared with 22 percent of the program group, a decrease of 36 percentage points (see Appendix Exhibit H.3-1).[73]

Exhibit 5-8: Funding Sources for Occupational Training, FLH

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Own or family earnings, savings, or loan (%)	8	19	−12***	3	−60
Received financial support for occupational training from non-family sources (%)	33	27	6	4	21
Non-family funding sources:					
Free training program (%)	19	11	8**	3	68
Program provider financial support (%)	7	6	0	2	2
From an American Job Center/state unemployment office (%)	10	5	6**	2	128
Any other funding source (%)	16	9	6**	3	65

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.
NOTES: All outcomes in this table are exploratory. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 477 includes 250 program group and 227 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

The survey asked about other sources of funding for tuition. FLH increased receipt of "free" training from a provider (8 percentage points), financial assistance from an American Job Center or state unemployment office (6 percentage points), and assistance from other sources (6 percentage points). Thus, though the study finds no clear evidence that FLH increased the overall level of receipt of occupational training, it did shift how program participants paid for it.

[73] Impacts (that is, program/control differences) on conditional outcomes—in this case, use of own or family resources to fund occupational training *among those who attended any occupational training*—should be interpreted with care. These impacts do not compare everyone in the program group to everyone in the control group. As such, the estimates are not experimental comparisons. To emphasize this caveat, exhibits report conditional outcomes in italics.

- **FLH increased receipt of tutoring and assistance with childcare.**

FLH doubled the receipt of tutoring: 10 percent of the program group versus 4 percent of the control group (see Appendix Exhibit H.3-2). This increase could reflect grant-funded college liaisons established by the FLH program at several of the local community colleges. Staff reported that these liaisons as well as the EESs encouraged program group members to seek out tutoring assistance if they encountered academic challenges. Although levels of childcare assistance were generally low, FLH did increase assistance with childcare by 3 percentage points (4 percent of the program group versus 1 percent of the control group).

5.4 Impacts on Credential Receipt and Other Short-Term Outcomes

The RTW logic model (Exhibit 2-1, "Short-Term Outcomes") posits that the program's services and supports in turn would improve short-term outcomes—increase receipt of credentials and levels of career confidence, and decrease barriers to employment—which would subsequently result in improvements in labor market outcomes. This section reports impacts on short-term outcomes.

- **No impacts on educational attainment are detected as a result of FLH.**

Approximately 26 percent of both the program and control groups reported attaining a certificate, credential, license, or degree (a *secondary outcome* for the RTW Evaluation; see Section 2.5).[74] Though the study finds no clear evidence that FLH had a positive impact on educational attainment overall, there is weak evidence of a negative impact on receipt of a professional certification or license (Exhibit 5-9).[75] As discussed in Section 5.1.2, the FLH program did not emphasize occupational training so the lack of the impacts on credential receipt is not surprising.

Exhibit 5-9: Educational Attainment, FLH

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Received any certificate, credential, license, or degree (%)	**25**	**27**	**−2**	**4**	**−7**
Received any occupational training certificate (%)	22	24	−3	4	−10
Received any college credits (%)	2	1	1	1	43
College credential:					
Certificate (%)	2	0	1	1	332
Associate's degree (%)	0	0	0	0	
Bachelor's degree or higher (%)	0	0	−0	0	−100
Received any professional certification or license (%)	5	10	−5*	3	−48

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.

NOTES: Secondary outcomes are bolded; exploratory outcomes are not bolded. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding

[74] A *certificate* is a diploma or other credential awarded for completing a college-based program that required less than a year's worth of credit, or more than a year's worth but less than an associate's degree, or for completing a vocational/occupational training program. A *license* or *certification* is a credential awarded by a state or by an industry or professional association showing qualification to perform a specific job (e.g., certified medical assistant or an IT certification). See Appendix Exhibit H.4-2 for a comparison of the types of professional certifications or licenses received by members of the program group versus the control group. A *degree* includes an associate's, bachelor's, or higher degree.

[75] The impact on professional certifications or licenses is statistically significant at the 10 percent level ($p = .052$); see Appendix Exhibit H.4-1.

control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 477 includes 250 program group and 227 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **The study finds no clear evidence that FLH improved confidence in career knowledge or factors that affect the ability to work.**

The survey asked a series of questions to measure career knowledge associated with finding and keeping jobs, such as increased awareness of steps needed to reach career goals and understanding of what taking those steps required. Through its one-on-one job search assistance and employment readiness activities, the FLH program was hypothesized to improve career knowledge. However, the study finds no clear evidence of an impact on the program group's self-reported confidence in their career knowledge (see Appendix Exhibit H.4-3).

The survey also asked about a range of issues that might affect program and control group members' ability to work, including access to affordable quality childcare or reliable transportation, or physical or mental health barriers. The study finds no clear evidence of an impact in any of these areas (see Appendix Exhibit H.4-3).

5.5 Impacts on Labor Market Outcomes

The RTW logic model posits that FLH's services would lead to positive short-term outcomes, which in turn would improve participants' employment and earnings outcomes (Exhibit 2-1, "Long-Term Outcomes"). This section reports impacts on labor market outcomes: first from the employer-reported administrative data from the National Directory of New Hires (NDNH), and then from the self-reported follow-up survey data.

The estimates of FLH's impact on labor market outcomes are inconsistent with that hypothesis. Despite the impacts on service receipt reported in Sections 5.2 and 5.3, the program did not have an impact on average earnings in the fifth and sixth quarters after random assignment ("Q5" and "Q6"). As described in Section 2.5, this *confirmatory outcome* is the study's main indicator of the extent to which the program is making progress toward its goals after 18 months.[76] In contrast, the survey data suggest a positive impact on full-time employment (an exploratory outcome).

- **Based on NDNH data, the study finds no clear evidence of an impact on earnings in the fifth and sixth quarters after random assignment as a result of FLH.**

As discussed in Section 2.5, it might be expected that participants in a training program would work less and therefore earn less while they attend program activities, hence the confirmatory outcome excludes the first four quarters after random assignment. However, the study hypothesized that program group employment and earnings gains would appear by Q5, because by that time most program group members would likely have left FLH and found employment.

Yet FLH produced no detectable impact on average earnings in Q5 and Q6 (about $6,500 per quarter for both groups; Exhibit 5-10). As is true with all estimates, the impact on the confirmatory outcome is

[76] See Appendix Exhibit A.1-2 for TOT impact estimates for average earnings in Q5 and Q6, employment in Q5 and Q6, and public benefits receipt.

estimated with uncertainty. Incorporating that uncertainty into a range of plausible impacts implies that the true impact on average quarterly earnings in Q5 and Q6 could be as low as −$870 or as high as +$896.[77]

Exhibit 5-10: Impacts on Earnings and Employment, FLH

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Earnings					
Average earnings in Q5 and Q6 ($)	***6,518***	***6,505***	***13***	***537***	***0***
Average earnings in Q5 and Q6, if employed in Q5 or Q6 ($)	*8,611*	*8,683*	*−72*	*589*	*−1*
Cumulative earnings in Q1-Q6 ($)	31,400	33,642	−2,242	2,624	−7
Employment					
Ever employed during Q5 or Q6 (%)	**75**	**75**	**0**	**3**	**0**
Ever employed during Q1-Q6 (%)	83	84	−1	3	−2
Number of quarters employed during Q1-Q6	3.9	4.0	−0.2	0.2	−4
Longest job tenure during Q0-Q6 (quarters)	3.3	3.5	−0.2	0.2	−5

SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through six quarters after random assignment.
NOTES: ***Confirmatory outcome is bolded and italicized***; **secondary outcomes are bolded**; exploratory outcomes are neither bolded nor italicized. *Outcomes in italics* apply to the subset of sample members who were ever employed during Q5 or Q6, and are thus non-experimental. Where not italicized, outcomes apply to the full sample, and impact estimates are experimental. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]). The total sample of 595 includes 300 program group and 295 control group members. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

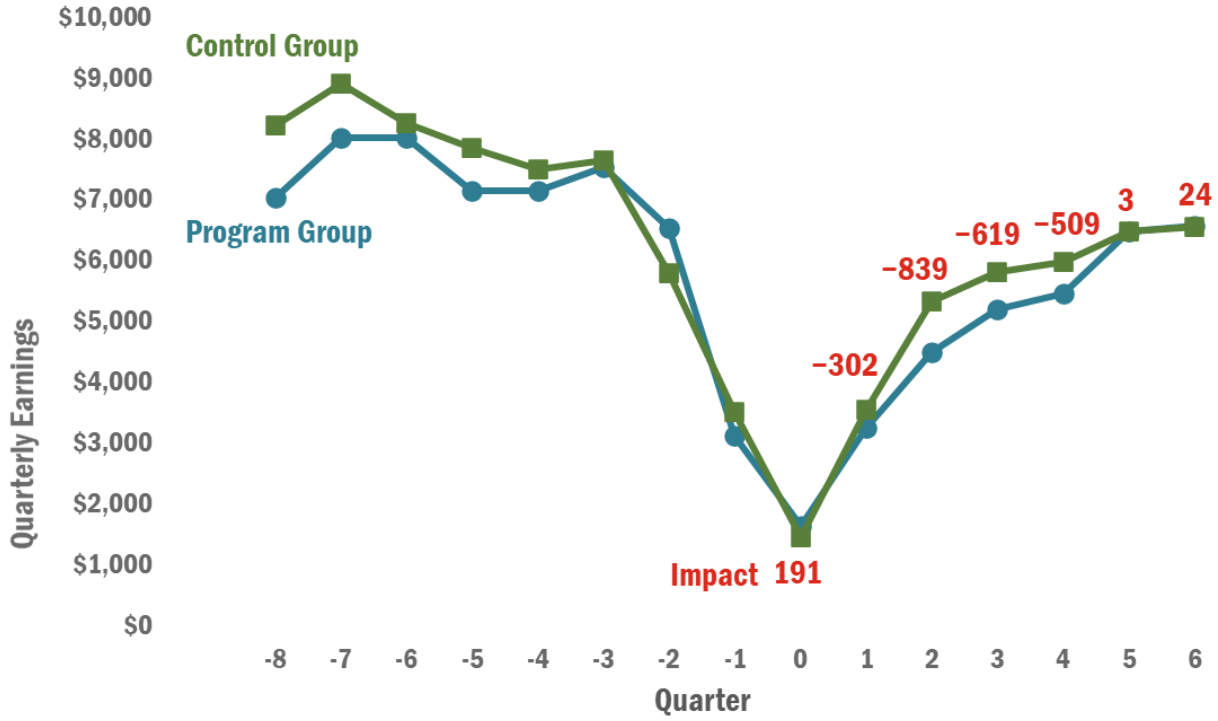
Exhibit 5-11 below reports the level of quarterly earnings over time for the program group (blue line) and the control group (green line) for the eight quarters before applying to FLH and the following six quarters after random assignment. For each of the quarters after random assignment, the exhibit also reports FLH's impact on earnings (red numbers above the lines).[78] Exhibit 5-12 likewise plots quarterly employment from eight quarters before random assignment to six quarters after, and shows impacts on employment for each quarter after random assignment.

As shown in Exhibit 5-11, for both the program and control group, employment and earnings declined sharply prior to applying to the FLH program. Two years before random assignment, about 70 percent of the study sample were employed (Exhibit 5-12). In the year before random assignment, employment levels dropped sharply, to about 40 percent in the quarter before applying to the program. Exhibits 5-11 and 5-12 also show, however, that earnings and employment rebounded in the quarters immediately after random assignment, for the control group as well as the program group.

[77] These values are the endpoints for a 90 percent confidence interval for the impact on average earnings in Q5 and Q6.

[78] Appendix Exhibit H.5-1 also reports the estimated "impacts" on earnings and employment for the eight quarters before random assignment, to test for balance between the members of the program group and control group before applying to the program (there are no significant differences). Pre–random assignment quarterly data on earnings and employment are also included in the baseline balance table, Appendix Exhibit H.1-2.

Exhibit 5-11: Impacts on Earnings, by Quarter, FLH



SOURCE: National Directory of New Hires.
NOTES: On the x-axis, –# indicates quarters before random assignment; 0 reflects the quarter that random assignment occurred. Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 595 includes 300 program group and 295 control group members.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

This observed earnings dip is consistent with patterns for applicants to job training and other social programs and has been widely documented in the literature (e.g., Ashenfelter 1978; Heckman and Smith 1999; Mueser, Troske, and Gorislavsky 2007). Individuals often apply to these programs soon after encountering particularly difficult circumstances or crises, such as the loss of a job. Some, but often far from all, of that decline is usually temporary. Thus, employment and earnings rise even in the absence of the program (here represented by the control group) after applying to the program.

With respect to *impacts* on earnings—the (regression adjusted) difference in outcomes between the program group and the control group—as shown in Exhibit 5-11, though earnings for the program group were lower than earnings for the control group in the first four quarters after random assignment, there is no detectable impact in any quarter after random assignment.

One issue that might affect earnings impacts beyond these initial six quarters could be difficulty in finding a good job match after completing training, leading to temporarily lower earnings for the program group (Jovanovic 1979; Johnson 1978; Klerman and Karoly 1994; Carrington and Fallick 2015; Lechner, Miquel, and Wunsch 2011).[79] In addition, as discussed in Section 5.2, relative to the control group, members of the program group were significantly more likely to be in training into the second year after

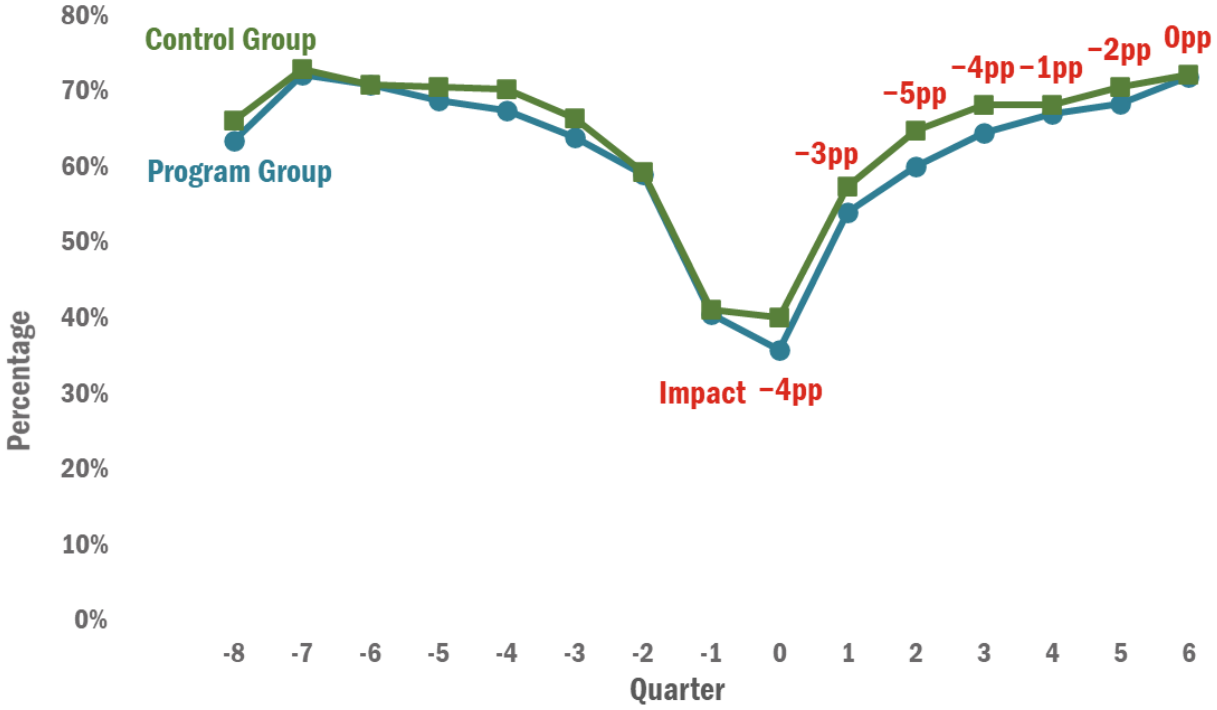
[79] Often after a period of unemployment or training, a worker takes the first available job, even if it is a poor "match" in that it does not use all the worker's skills. While working that job, the worker continues the job search—landing a sequence of better job matches, usually with higher wages and better non-wage job characteristics.

random assignment (see Appendix Exhibit H.2-9). Thus, inasmuch as this longer training delays earnings impacts, positive earnings impacts might be expected with the longer follow-up in the evaluation's final report.

- **Based on NDNH data, the study finds no clear evidence that FLH increased employment in any quarter during the 18-month follow-up period.**

The study finds no clear evidence of an impact on employment during the first six quarters after random assignment (Exhibit 5-12). In particular, the study finds no clear evidence of an impact on being employed in Q5 or Q6 as measured in the NDNH—a *secondary outcome*. As discussed in Section 5.2, though impacts on participation in program activities are detected through month 15 of the follow-up period, these impacts were relatively small and do not appear to have affected employment or earnings.

Exhibit 5-12: Impacts on Employment, by Quarter, FLH



SOURCE: National Directory of New Hires.
NOTES: On the x-axis, –# indicates quarters before random assignment; 0 reflects the quarter that random assignment occurred. Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 595 includes 300 program group and 295 control group members. "pp" denotes percentage points.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **Based on NDNH data, for an early cohort for whom three years of follow-up data are available, there is weak evidence that FLH increased earnings in Q4 through Q6; the study finds no clear evidence of an impact in Q7 through Q12.**

To this point, reported results on earnings and employment are for all sample members, but only through the sixth quarter after random assignment. For a cohort of applicants randomized early in the study period, 12 quarters (three years) of NDNH data are available. This cohort represents 59 percent of the study sample. For this early cohort, there is weak evidence that FLH had positive impacts on earnings in Q4 through Q6, but the study finds no clear evidence of an impact on earnings in Q7 through Q12 (see

Appendix Exhibit H.5-2).[80] Moreover, the study finds no clear evidence of an impact on employment for the early cohort. This indicates that any earnings increase was due to the program group working for more hours, earning higher wages, or both, compared to the control group. As discussed below, based on survey results, there is some evidence of an increase in full-time employment among the program group, but no evidence of increased wages.

- **Based on survey data, FLH produced positive impacts on full-time employment, but the study finds no clear evidence of effects on other job characteristics.**

In addition to employment and earnings, the 18-month survey asked about the characteristics of the sample member's current job (Exhibit 5-13 below). FLH increased full-time employment at follow-up, defined as working 35 hours or more per week, and decreased part-time employment (by 9 and 12 percentage points, respectively). Among those employed (a non-experimental comparison), 80 percent of the program group was employed full-time, compared with 67 percent of the control group. Similarly, a positive impact on hours worked of 3 hours per week is detected among those employed. There is also some evidence that FLH decreased self-employment.[81]

Despite FLH's positive impact on full-time employment, the study finds no clear evidence of an impact on earnings (Exhibit 5-13). At follow-up, both program and control group members (including those who did not work) held jobs that on an annualized basis paid on average about $26,500 per year.[82] Among those who worked, the hourly wage was approximately $20 per hour for both groups. The study also finds no clear evidence of an impact on a range of other measures of job quality including union representation, job benefits, and perceived opportunities for career advancement. See Appendix Exhibits H.5-5 and H.5-6 for a comparison of the field of employment at the time of the follow-up survey between the program group and control group.

Exhibit 5-13: Characteristics of Current Job, FLH

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Job Type					
Regular full-time or part-time employee (%)	60	61	−1	4	−1
Employed by a temporary help agency (%)	2	2	1	1	41
Employed by a company that contracts out your services (%)	2	2	1	1	43
Independent contractor or independent consultant (%)	2	3	−0	2	−14
Self-employed, including freelancer and day laborer (%)	1	4	−2*	1	−68
Other (%)	3	3	−0	1	−6
Pay and Hours					
Rate of pay per year ($)	27,175	26,211	964	2,277	4
Hourly wage, if employed ($/hour)	*18.85*	*19.96*	*−1.12*	*1.00*	*−6*
Hours worked per week	27	25	2	2	8
Hours worked per week, if employed	*37*	*34*	*3***	*1*	*10*
Full-time (35 or more hours per week, %)	58	49	9**	4	19

[80] The positive impacts are statistically significant at the 10 percent level: $p = 0.097$ in Q4, $p = 0.084$ in Q5, and $p = 0.098$ in Q6 (see Appendix Exhibit H.5-2).

[81] The impact on self-employment is statistically significant at the 10 percent level ($p = .074$; see Appendix Exhibit H.5-4).

[82] This measure is based on a survey response about earnings at the time of the interview. Note, however, that this is not earnings over the past year, but instead annual earnings given the current job.

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Full-time, if employed (%)	*80*	*67*	*13****	*5*	*20*
Part-time (less than 35 hours per week, %)	13	24	−12***	4	−48
Part-time, if employed (%)	*20*	*33*	*−13****	*5*	*−40*
Number of weeks at job since random assignment	34	35	−1	3	−2
Job represented by a union (%)	6	6	1	2	13
Job Benefits					
Health insurance (%)	53	48	5	5	10
Paid vacation (%)	52	48	4	4	8
Paid holiday (%)	56	53	3	5	6
Paid sick time (%)	48	41	7	4	17
Retirement/pension plan (%)	49	47	2	5	3
Job Schedule					
Regular daytime schedule (%)	52	52	1	5	1
Regular evening shift (%)	6	5	1	2	28
Regular night shift (%)	4	3	1	2	41
Rotating schedule (%)	1	3	−2	1	−70
Irregular schedule (%)	4	7	−2	2	−35
Other schedule (%)	4	5	−1	2	−15
Career Advancement					
Job offers career advancement opportunities:					
Strongly agree (%)	19	23	−4	4	−18
Agree (%)	27	28	−1	4	−2
Disagree (%)	15	14	1	3	4
Strongly disagree (%)	11	8	2	3	27

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.
NOTES: All outcomes in this table are exploratory. *Outcomes in italics* apply to the subset of survey respondents who were employed at follow-up, and thus are non-experimental. Where not italicized, outcomes apply to the full survey sample, and impact estimates are experimental. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 477 includes 250 program group and 227 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

The survey also asked whether respondents attributed obtaining a new job to completing a training program or receiving a certificate (see Appendix Exhibit H.5-7). Among all sample members, whether they attended training or not, about 17 percent of both the program and control group attributed getting a new job to completing a training program. This could reflect the similar levels of occupational training and credential receipt for the program and control groups.

5.6 Impacts on Broader Measures of Well-Being

The RTW logic model posits that improvement in labor market outcomes would in turn improve other measures of FLH participants' well-being, such as increased income and reduced receipt of public benefits. Given the lack of impact on earnings, one would not expect improvement in these other measures—and the study detects no such improvements.

- **Consistent with the NDNH-based results of no detected impacts on earnings, based on survey data, the study finds no clear evidence of an impact on own income as a result of FLH.**

Based on survey-reported income measures, the study finds no clear evidence that FLH had an impact on study members' income at the time of the survey (including benefits receipt and other sources of income beyond earnings; Exhibit 5-14). On average, sample members self-reported monthly income of approximately $2,400 in the month prior to the follow-up survey. The study finds no clear impact on public benefits receipt, a *secondary outcome*.

Exhibit 5-14: Income and Public Benefits Receipt, FLH

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Income					
Total own income before taxes last month ($)	2,500	2,406	94	170	4
Benefits Receipt					
Received any public benefits last month (%)	**27**	**31**	**−4**	**4**	**−13**
Received TANF last month (%)	4	1	2	2	162
Received SNAP last month (%)	20	21	−2	3	−7
Received UI last month (%)	1	3	−2	1	−60
Received other public benefits last month (%)	13	12	1	3	9

KEY: SNAP is Supplemental Nutrition Assistance Program; TANF is Temporary Assistance for Needy Families; UI is Unemployment Insurance.
SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.
NOTES: **Secondary outcomes are bolded**; exploratory outcomes are not bolded. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 477 includes 250 program group and 227 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

5.7 Subgroup Findings

As discussed in Chapter 2, the RTW Evaluation also explores how impacts vary with study members' baseline characteristics—that is, whether the FLH program was more effective for certain subgroups of the population served. Prior to beginning analysis, the evaluation specified subgroups to compare based on characteristics at the time of random assignment: *education level* (less than a bachelor's degree versus a bachelor's degree or more), *age* (49 or older versus younger than 49), and *employment status* (unemployed more than 12 months versus ever employed in the last 12 months, including those employed at application). In addition, based on guidance from the evaluation's Technical Working Group, the evaluation added a subgroup analysis on *gender*.

The evaluation focuses on whether there is **differential impact**; that is, whether the impact is different for one subgroup versus the other subgroup for any of the four characteristics listed above. The evaluation estimates subgroup impacts for the confirmatory and secondary outcomes, as well as for several key exploratory outcomes. In considering these results, it is important to note that the sample size is large enough to detect only large differential impacts on earnings between subgroups. To a lesser degree, such

sample size concerns apply to subgroup analyses of other outcomes, as well. Thus, substantively important differential impacts plausibly go undetected.

The study finds no consistent evidence of differential impacts on the confirmatory outcome, earnings in Q5 and Q6, or the secondary outcomes (see Appendix Exhibits H.7-1 to H.7-8). There is some evidence that older study members were more likely to participate in structured employment-related activities, driven by a weak differential impact on attending occupational training.[83] There is, however, no subsequent differential impact on educational attainment, employment, or earnings by age (see Appendix Exhibits H.7-3 and H.7-4).

[83] The differential impact on attending occupational training is statistically significant at the 10 percent level ($p = .061$).

6 Impact Findings for Worksystems Inc.'s Reboot Northwest Program

This chapter presents impact findings from Worksystems Inc. (WSI)'s Reboot Northwest (NW) program through 18 months after random assignment.[84] WSI is the Workforce Investment Board (WIB) for Oregon's Multnomah County (including the city of Portland) and Washington County. It operated the Reboot NW program from April 2015 through June 2019.

The Reboot NW program was designed to assist underemployed and long-term unemployed workers find skilled positions in the advanced manufacturing and information technology (IT)/software development industries. To do so, Reboot NW provided employment readiness courses, occupational training, work-based training, and job search assistance, along with financial and other supports.

Key Findings: Reboot NW

- Increased receipt of training, services, and participation in occupational training, work-based training, employment readiness courses, and job search activities.
- Increased educational attainment, including receipt of professional certifications.
- Did not increase average earnings five and six quarters after random assignment into the study.
- Did not affect other employment outcomes measured approximately 18 months after random assignment.
- Increased earnings beginning two years after random assignment for sample members who enrolled in the study early, who were observed through three years after random assignment.

This chapter is organized as follows. Section 6.1 provides an overview of the Reboot NW program context, program services provided, and the characteristics of the study sample. The balance of the chapter reports impacts—that is, program group/control group differences—structured following the logic model presented in Exhibit 2-1: participation in employment-related activities (Section 6.2); receipt of education- and employment-related supports, including financial assistance for occupational training (Section 6.3); educational attainment and career confidence (Section 6.4); labor market outcomes, including employment and earnings (Section 6.5); and other measures of well-being, hypothesized to result from improved labor market outcomes (Section 6.6). Section 6.7 reports impacts for selected subgroups. Unless otherwise noted, all results are from the 18-month follow-up survey. Appendix I provides additional results for Reboot NW.

6.1 Worksystems Inc.'s Reboot Northwest Program

This section provides a summary of the Reboot NW program context, target population and program services, and characteristics of the study sample.

6.1.1 Program Context

WSI is the lead agency for the Ready to Work (RTW) grant, administering Reboot NW in partnership with two other WIBs from two states: Clackamas Workforce Partnership in Oregon and Workforce Southwest Washington in Washington State (including the city of Vancouver). Together, as the Columbia-Willamette Workforce Collaborative, this coalition of three WIBs offered Reboot NW across six counties in the Portland/Vancouver metropolitan area. Specifically, the coalition's service area covered Clackamas, Multnomah, and Washington Counties (OR) and Clark (which includes the city of

[84] For a smaller cohort of study members randomly assigned early in the study period, the evaluation also examines earnings through the 12th quarter after random assignment.

Vancouver), Cowlitz, and Wahkiakum Counties (WA). The program operated in eight of the coalition's American Job Centers, locally called WorkSource centers.

In developing the Reboot NW program, based on anticipated growth across the region, WSI identified advanced manufacturing and IT/software development as key industries.[85] In particular, WSI staff reported that they anticipated strong demand for information security and software developer positions. Though they anticipated less growth in the advanced manufacturing industry, staff reported that current and projected retirements among that workforce created a need for skilled workers there.

6.1.2 Target Population and Services Provided by the Reboot NW Program

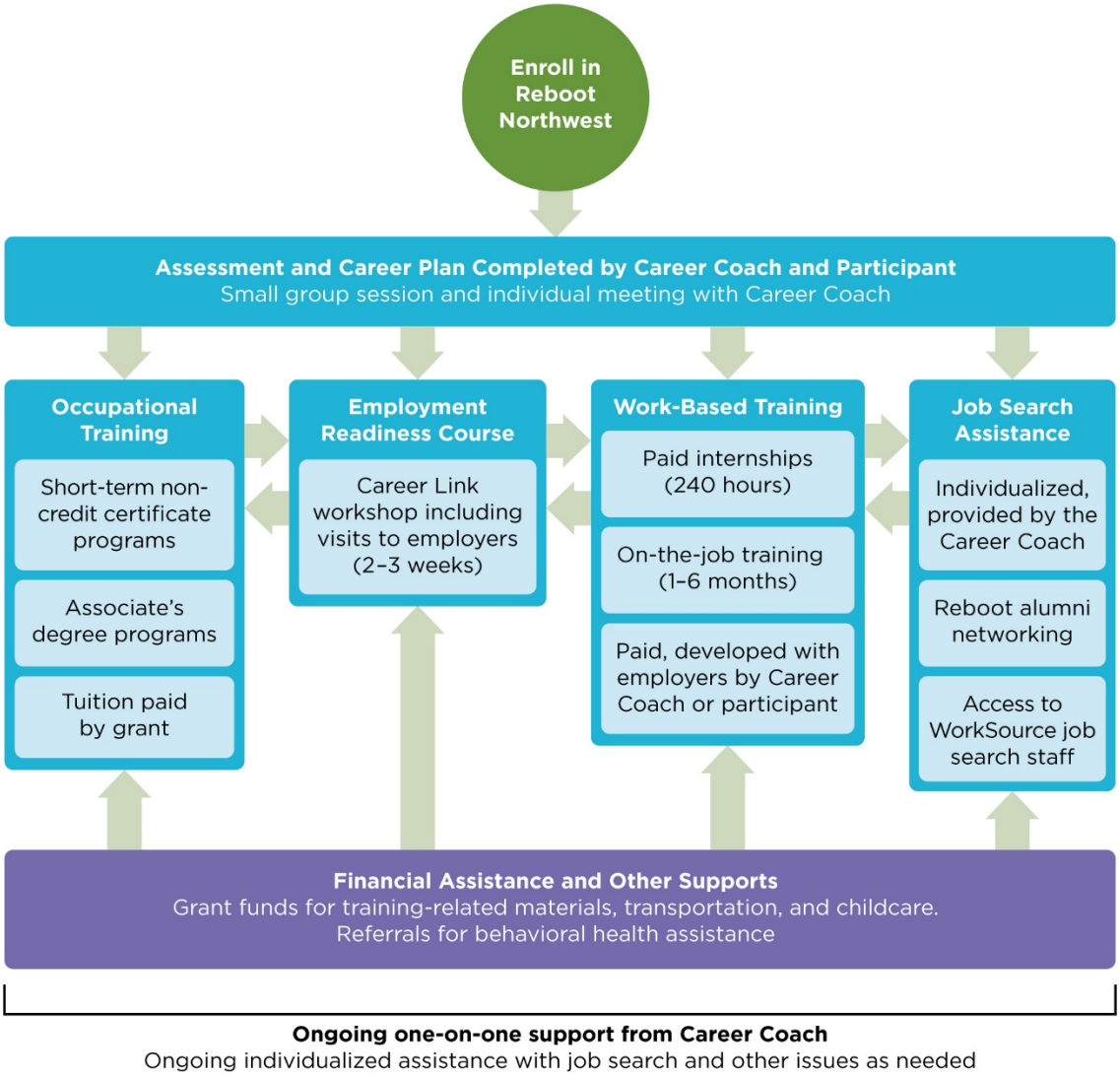
Reboot NW targeted underemployed and long-term unemployed workers and veterans or eligible veteran spouses. To be eligible, applicants had to be age 18 or older and legally able to work. Applicants also needed a high school diploma or GED and interest and/or experience in advanced manufacturing, IT, or software development. WSI's extensive and multifaced approach to recruit applicants for Reboot NW included printed materials and social media advertising; mailings to UI claimants; referrals from the local WorkSource centers, partner organizations, and training providers; Career Coach attendance at job seeker and industry events; and Career Coach review of job seeker profiles in the State of Oregon Employment Department database.

Potential applicants attended a group information session at a WorkSource center to learn more about Reboot NW and complete a questionnaire to assess eligibility for the program. Applicants then attended a meeting to confirm their eligibility and interest in IT or manufacturing and were randomly assigned. Those assigned to the program group enrolled in Reboot NW program activities as described below. Control group members received a list of other services available at the WorkSource center and in the community that they could choose to access, but were not actively referred to those programs by RTW staff (Martinson et al. 2017; see also Appendix Section I.1.2).

As shown in Exhibit 6-1 and described further in Exhibit 6-2, participants in Reboot NW received a variety of employment-related services. They began the program by meeting with a Career Coach to develop a career plan, set goals, and identify what training and services to pursue. The Career Coach customized the particular sequence and combination of Reboot NW services to meet the needs of the individual participant and coordinated services and supports throughout their tenure in the program. In contrast, regular WorkSource Career Coaches provided assistance to WorkSource center clients on a walk-in basis, but did not work with the same individuals over time and provide ongoing support tailored to their needs.

[85] State of Oregon Employment Department, https://www.qualityinfo.org/-/new-and-emerging-jobs-in-oregon-the-latest-trends.

Exhibit 6-1: Overview of the Reboot NW Program



SOURCE: Developed by Abt Associates based on staff reports and program materials.

Occupational training was available for those who needed it to develop new skills or update certifications to be competitive as job candidates in the target industries. Participants who needed to build employment readiness skills or wanted to explore career opportunities attended a career exploration and ***employment readiness course*** called Career Link. Reboot NW offered two types of ***work-based training*** that placed participants with employers. Career Coaches provided individualized ***job search assistance***. Finally, Reboot NW provided a range of other supports, including ***financial assistance*** and referrals for behavioral health assistance.

Exhibit 6-2: Primary Employment-Related Activities and Supports Provided by Reboot NW

Service	Description
Structured Employment Readiness Activities	
Occupational Training	• Occupational training in advanced manufacturing, IT, and software development was typically provided by a local community college or private training provider. Participants enrolled in short-term certificate programs or longer two-year associate's degree programs, with tuition funded by Reboot NW. • About two years into the RTW grant period, Reboot NW began offering cohort trainings whereby Reboot NW contracted with a training provider and enrolled groups of its participants. Sometimes designed for a specific employer, this training also included an employment readiness component and assistance in finding a job.
Employment Readiness Courses	• The two- to three-week Career Link workshop was designed to increase participants' employment readiness and job search skills, introduce them to industry experts and employers in advanced manufacturing and IT, and develop a supportive peer network.
Work-based Training	• Paid work experience internship positions lasted up to 240 hours (about six weeks) to enable the participant to develop specific technical skills. The participant worked for an employer, with the wages paid by the RTW grant. • On-the-job training lasted one to six months, with the participant's wages subsidized by the RTW grant and the expectation that the employer would retain the worker upon completion.
Other Services and Supports	
Job Search Assistance	• Career Coaches provided job search assistance for program participants ready to find employment. Activities included resume review and interview preparation. • Reboot NW also included peer support through networking groups with other participants who had finished other Reboot NW activities.
Financial Assistance and Other Supports	• Reboot NW provided financial assistance with transportation (e.g., bus passes, gas cards), training-related items (e.g., books, supplies), childcare, and one-time payments for emergencies such as utilities or rent. • Reboot NW contracted with two behavioral health providers to offer group and individual counseling for participants. Providers made informational presentations during the Career Link workshop and participants could follow up on their own to seek services. • A local housing authority in one Reboot NW location provided rental housing vouchers for select participants.

SOURCE: Developed by Abt Associates based on staff reports and program material.

6.1.3 Characteristics of the Study Sample

Exhibit 6-3 shows the characteristics of program group and control group members at the time of random assignment into the study (at "baseline"). (Appendix Section I.1.2 provides additional demographic information and tests for balance between members of the program group and control group at baseline.)

Exhibit 6-3: Selected Characteristics of Study Sample at Baseline, Reboot NW

Characteristic	Incidence
Demographics	
Gender (%)	
Women	24
Men	76
Race (%)	
Asian	8
Black or African American	6
White	77
Hispanic ethnicity (%)	8
Age (%)	
24 years or younger	4
25 to 34 years	23
35 to 44 years	24
45 to 54 years	26
55 years or older	23
Average age (years)	44
Household Status	
Marital status (%)	
Married	40
Widowed/divorced/separated	21
Never married	33
One or more own children in household age 6 or younger (%)	14
Education	
Education level (%)	
High school diploma or less	13
Some college credit but no degree	20
Technical or associate's degree	15
Bachelor's degree	37
Master's degree or more	14
Employment	
Employment status (%)	
Currently employed	18
Currently unemployed, but employed in last 12 months	50
Currently unemployed, and longer than 12 months since last employed	31
Weekly earnings, if employed ($)	370
Public Benefits	
Receiving any public benefits (%)	48
Supplemental Nutrition Assistance Program (%)	28
Temporary Assistance for Needy Families (%)	3
Section 8 or Public Housing assistance (%)	3
Unemployment Insurance (%)	25

SOURCE: Ready to Work Baseline Information Form (BIF). Sample size of 980 includes 493 program group and 487 control group members. Statistics in this table are computed based on the WSI study members who completed the BIF for the given question.
NOTES: Percentages do not sum to 100% for race and marital status because not all response categories are included in the exhibit.

As shown, three-quarters of Reboot NW study members were men (76 percent). Three-quarters of the study sample were White (77 percent). The average age of study members was 44 years old.[86] Aligning with the RTW grant's focus on aiding skilled workers experiencing long-term unemployment, most study members were unemployed at baseline (81 percent), and almost a third (31 percent) had been unemployed for more than a year.

Study members were well educated overall: only 13 percent had only a high school diploma or less. The majority had a bachelor's degree (37 percent) or more (14 percent). At baseline, average weekly earnings were $370 among those working. Almost half (48 percent) were receiving some form of public benefits; receipt of Unemployment Insurance (UI) and Supplemental Nutrition Assistance Program (SNAP) benefits were most common (about one-quarter for each).

6.2 Impacts on Participation in Employment-Related Activities

This section reports impacts on the second step of the RTW logic model (Exhibit 2-1: "Program Services"): participation in employment-related activities. Such employment-related activities include occupational training, work-based training, employment readiness courses, and job search assistance. The logic model posits that greater participation in such employment-related activities by the program group compared to the control group will eventually lead to increases in earnings and employment outcomes relative to the control group.

As noted in Chapter 2, the evaluation estimates the impact of Reboot NW by comparing:

- Average outcomes for the program group, who were offered the Reboot NW program

versus

- Average outcomes for the control group, who were not offered the Reboot NW program.

Not all program group members participated in Reboot NW. Though the control group could not participate in Reboot NW, they could seek out other services in the community, including other services and programs offered by the WorkSource centers.

This section first reports Reboot NW's impact on engagement (*participation levels*; that is, any participation) and intensity of engagement (*hours, weeks*) in each structured employment-related activity—employment readiness courses, occupational training, and work-based training—as well as across all three structured activities. This discussion addresses *cumulative* participation over the entire follow-up period. The section then describes program participation levels over time, namely for each month in the follow-up period. Last, it describes receipt of job search assistance, which was typically provided one-on-one and was not measured with the same level of detail as the structured activities.[87]

[86] There is weak evidence that women in the study sample were older than men at baseline; they were more likely to be between ages 40 and 60, and less likely to be under age 30 (Pearson chi-square test, $p = .06$).

[87] For job search assistance outcomes, the survey collected only whether the study member received this type of assistance and how many times.

- **Reboot NW increased both the level and hours of participation in structured employment-related activities overall.**

Reboot NW increased participation levels in the three structured employment-related activities overall, as well as separately in each of them. Reboot NW also increased hours of participation overall and in employment readiness courses, but did not increase hours of occupational or work-based training. Hours of participation overall and for each activity type are *secondary outcomes* for the RTW Evaluation (see Section 2.5). Exhibit 6-4 shows the impacts on receipt of any of these structured employment-related activities and the impact on hours of these activities (overall and by activity type).

Exhibit 6-4: Participation Level and Intensity of Participation in Structured Employment-Related Activities, Reboot NW

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey, measured as of 18 months after random assignment.
NOTES: Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 747 includes 400 program group and 347 control group members who completed the 18-month follow-up survey. "pp" denotes percentage points.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Although participation in structured employment-related activities overall was high among all study members, Reboot NW increased participation by 19 percentage points (89 percent of the program group versus 71 percent of the control group participated in any such activity; Exhibit 6-4). Moreover, Reboot NW increased total hours of participation in these activities by 115 hours (503 hours in the program group versus 388 hours in the control group). Reboot NW also increased the number of weeks of participation in these activities by six weeks (25 versus 19; Exhibit 6-5).[88]

Considering the three structured activities separately, the largest impact on participation is for employment readiness courses. Reboot NW increased the level of participation in employment readiness courses by 32 percentage points, compared to 12 percentage points for occupational training and 6 percentage points for work-based training. Furthermore, Reboot NW's overall impact on hours of participation is driven by the impact on hours of participation in an employment readiness course; there is no clear evidence of an impact on hours for occupational or work-based training.

Exhibit 6-5 shows impacts on participation level and intensity in more detail, including overall impacts on weeks of participation in the three structured employment-related activities and impacts on hours and

[88] See also Appendix Exhibit I.2-2 for a comparison of the distribution of total weeks of any structured employment-related activity between members of the program and control groups.

weeks of participation among those sample members who attended any activities. The top panel shows overall impacts on participation level and intensity for all three activities combined. Subsequent panels provide these same impact estimates separately for each type of activity.

Exhibit 6-5: Participation Detail in Structured Employment-Related Activities, Reboot NW

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Any Structured Employment-Related Activity					
Ever attended (%)	89	71	19***	3	26
Total hours attended	**503**	**388**	**115*** **	**44**	**30**
Total hours, for attendees	*570*	*551*	*19*	*52*	*3*
Total weeks attended	25	19	6***	2	31
Total weeks, for attendees	*28*	*28*	*1*	*2*	*3*
Hours per week, for attendees	*23*	*33*	*−10*	*8*	*−29*
Any Occupational Training					
Ever attended (%)	70	58	12***	4	20
Ever attended college-based training (%)	20	21	−2	3	−8
Ever attended non-college-based training (%)	55	40	15***	4	38
Total hours attended	**356**	**310**	**46**	**38**	**15**
Total hours, for attendees	*536*	*536*	*−1*	*54*	*−0*
Total weeks attended	18	15	3*	2	19
Total weeks, for attendees	*27*	*27*	*−1*	*2*	*−3*
Hours per week, for attendees	*29*	*24*	*4*	*7*	*18*
Any Work-Based Training					
Ever attended (%)	19	14	6**	3	42
Ever attended unpaid internships (%)	8	4	4**	2	99
Ever attended paid internships (%)	8	7	2	2	28
Ever attended on-the-job training (OJT, %)	5	4	2	2	47
Total hours attended	**82**	**62**	**20**	**18**	**32**
Total hours, for attendees	*439*	*453*	*−14*	*87*	*−3*
Total weeks attended	3	2	1	1	26
Total weeks, for attendees	*17*	*18*	*−1*	*3*	*−6*
Hours per week, for attendees	*29*	*29*	*0*	*2*	*0*
Employment Readiness Course					
Ever attended (%)	60	29	32***	3	110
Total hours attended	**65**	**13**	**52*** **	**9**	**396**
Total hours, for attendees	*110*	*48*	*62*** *	*17*	*129*
Total weeks attended	5	3	2***	1	96
Total weeks, for attendees	*9*	*10*	*−1*	*2*	*−7*
Hours per week, for attendees	19	6	14***	1	249

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of 18 months after random assignment.

NOTES: **Secondary outcomes are bolded**; exploratory outcomes are not bolded. *Outcomes in italics* apply to the subset of survey respondents who attended any training, and thus are non-experimental. Where not italicized, outcomes apply to the full survey sample, and impact estimates are experimental. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 747 includes 400 program group and 347 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.

Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **Reboot NW increased participation in *employment readiness courses*, as well as hours attending such courses.**

The survey asked study members whether they attended any courses focusing on workplace skills or "soft" skills such as time management, how to be a good employee, or working in a team. Reboot NW doubled the participation level in such employment readiness courses, from 29 percent of the control group to 60 percent of the program group, an impact of 32 percentage points.

Compared with its impact on level of participation in employment readiness courses, Reboot NW had a larger impact on intensity of participation, with an almost five-fold increase in hours attended. Hours of participation increased from 13 hours among control group members to 65 hours among program group members, an impact of 52 hours. Reboot NW also nearly doubled weeks of participation, from 3 to 5 weeks.[89]

Among those who attended such courses (a non-experimental comparison), average intensity of participation among the program group was 110 hours, more than double the 48 hours among the control group.[90] Although among attendees, weeks of participation was the same for both groups (approximately 10 weeks), program group members attended more hours per week (19 hours per week versus 6 hours per week). Because this duration is longer than the two- to three-week Career Link workshop, it appears that survey respondents might have reported the length of time in activities that included one-on-one assistance from staff.

- **Reboot NW increased participation levels in *occupational training,* but the study finds no clear evidence of an impact on hours of training.**

Reboot NW resulted in more sample members attending occupational training, but the study finds no clear evidence of an impact on hours of occupational training attended (Exhibit 6-5 above). Although occupational training was common among all study members, it was more common in the program group (70 percent) than in the control group (58 percent), an impact of 12 percentage points. Despite this positive impact on participation, Reboot NW did not increase hours of occupational training. There is weak evidence, however, that Reboot NW increased weeks of occupational training, from 15 weeks in the control group to 18 weeks in the program group, an impact of 3 weeks.[91]

Exhibit 6-5 also shows the impact on hours and weeks of occupational training among those who attended any occupational training (a non-experimental comparison). There are no program/control group differences in hours or weeks among attendees (approximately 536 hours and 27 weeks for both groups).

Consistent with Reboot NW's focus, the program increased participation in training in IT (including software development): in the program group, 48 percent attended occupational training in IT, an increase

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89 See Appendix Exhibit I.2-8 for a comparison of the distribution of total weeks attending an employment readiness course between members of the program and control groups.

90 Impacts (that is, program/control differences) on conditional outcomes—in this case, hours *among those attending*—should be interpreted with care. These impacts do not compare everyone in the program group to everyone in the control group. As such, the estimates are not experimental comparisons. To emphasize this caveat, exhibits report conditional outcomes in italics.

91 The impact on weeks of occupational training attended is statistically significant at the 10 percent level ($p = .092$; see Appendix Exhibit I.2-3). See also Appendix Exhibit I.2-4 for a comparison of the distribution of total weeks of occupational training between members of the program and control groups.

of 10 percentage points relative to the control group.[92] In contrast, despite Reboot NW's focus on advanced manufacturing, the study finds no clear evidence of an impact on participation in occupational training in that field (see Appendix Exhibit I.2-3).

Reboot NW's positive impact on participation in occupational training resulted from its impact on participation in non-college-based training (a 15 percentage point increase); the study finds no clear evidence of impact for college-based occupational training (Exhibit 6-5). This result is consistent with the impacts on training in IT but not in advanced manufacturing. Training in IT is often received from private training providers, but training in advanced manufacturing is generally available only from community colleges. For non-college-based occupational training, Reboot NW had a positive impact on both hours and weeks of participation (increases of 55 hours and 3 weeks; see Appendix Exhibit I.2-3).

- **Reboot NW increased participation in *work-based training*, but not hours of training.**

Work-based training was substantially less common than occupational training; 19 percent of program group members attended work-based training versus 70 percent for occupational training (Exhibit 6-5). Reboot NW increased participation in work-based training, however, by 6 percentage points (14 percent of the control group versus 19 percent of the program group). The study finds no clear evidence of impact on hours or weeks of work-based training, however.[93]

As shown in Exhibit 6-2, work-based training offered by Reboot NW included paid internships, with Reboot NW paying the participant, and paid on-the-job training, with the employer paying the participant and Reboot NW reimbursing the employer for part of the wage. Based on survey responses, however, Reboot NW's impact on participation in work-based training resulted from its impact on *unpaid* internships (a 4 percentage point increase, nearly double the rate in the control group; Exhibit 6-5). This result is surprising; it could be that participants did not consider the internships as "paid" because the funds came from the RTW program rather than directly from the employer. For unpaid internships, there is weak evidence of a positive impact on hours and weeks of participation (10 hours and 0.4 weeks; see Appendix Exhibit I.2-5).[94]

- **Impacts on rates of participation in structured employment-related activities peaked in month 2 after random assignment and faded after month 12.**

The evaluation also examines *impacts over time* on participation levels in any structured employment-related activity, as well as in occupational training, work-based training, or employment readiness courses; that is, for each month in the follow-up period. Service receipt impacts over time can be helpful in determining when one might expect employment and earnings impacts to emerge (see Section 6.5 for more discussion).

Exhibit 6-6 shows monthly participation rates in each of the three structured employment-related activities for the program group (on the left) and the control group (on the right). For the program group, rates of participation in any such activities were more than 60 percent the first three months after random

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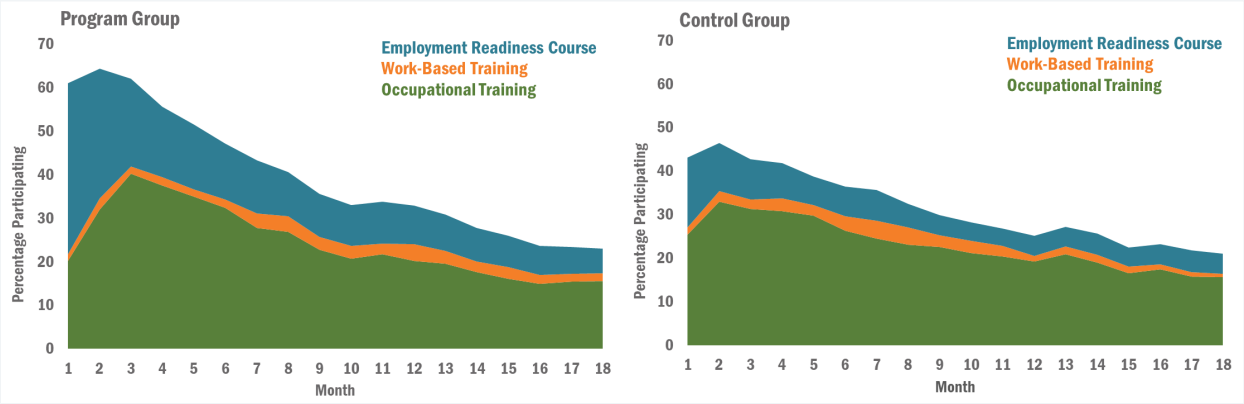
92 Coding of survey responses on industry of training combined all IT fields, including software development.

93 See Appendix Exhibit I.2-6 for a comparison of the distribution of total weeks of work-based training between members of the program and control groups.

94 The impacts on hours and weeks of attending an unpaid internship are statistically significant at the 10 percent level (p = .060 and p = .093, respectively).

assignment, falling to approximately 35 percent by month 9, and remaining between approximately 25 and 30 percent from month 13 through 18. Program group members primarily attended occupational training and, to a lesser extent employment readiness courses, with minimal participation in work-based training.

Exhibit 6-6: Participation in Structured Employment-Related Activities for the Program and Control Group, by Month Since Random Assignment, Reboot NW



SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey, measured as of 18 months after random assignment.
NOTES: The total sample of 747 includes 400 program group and 347 control group members who completed the 18-month follow-up survey.

Participation levels for the control group followed a similar pattern as for the program group–higher early on and decreasing over time–but at a somewhat lower level than for the program group throughout most of the follow-up period (starting at approximately 45 percent, and falling to approximately 20 to 25 percent in months 14 through 18). This indicates that the control group might have accessed other services available at the WorkSource centers after being randomly assigned to the control group.

Given these patterns in Exhibit 6-6, *impacts* on monthly participation in any structured employment-related activity (the difference between the program and control group) peaked at the start of the follow-up period. Impacts of approximately 19 percentage points are observed in months 1 through 3, falling to 9 percentage points by month 7 and remaining at 6 to 8 percentage points through month 12, after which the study finds no clear evidence of impact (see Appendix Exhibit I.2-9). Impacts on attending employment readiness courses are initially large (23 percentage points in month 1) and persist through month 15, although impacts decline to 6 percentage points or less by month 6 (see Appendix Exhibit I.2-12).[95] Impacts on participation in occupational training are observed in months 3 through 7 only (see Appendix Exhibit I.2-10).[96]

- **Reboot NW increased receipt of other employment-related activities, including job placement assistance, career counseling, and assistance with job readiness skills.**

The survey asked about receipt of a range of assistance related to job search. Such assistance included job placement assistance (e.g., assistance searching for work, referrals to jobs or employers, providing labor market information), career counseling (e.g., administering career interest surveys to identify suitable

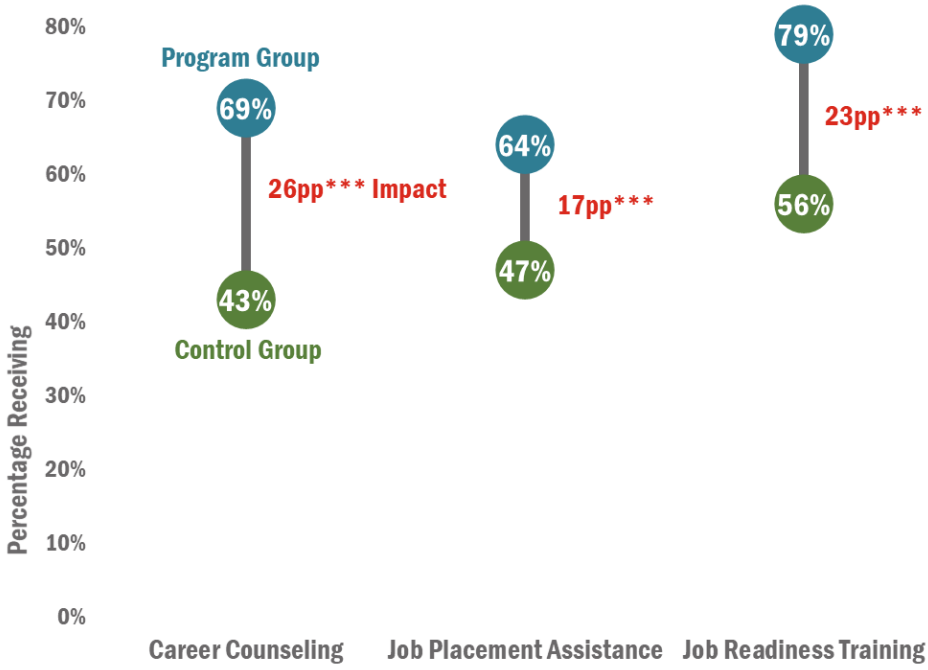
[95] The impacts on attendance in an employment readiness course are statistically significant at the 10 percent level in month 14 (p = .099) and month 15 (p = .096).

[96] The impact on attendance in occupational training is statistically significant at the 10 percent level in month 7 (p = .099).

jobs, providing information on how to change careers and relevant jobs and training programs), and assistance with job readiness skills (e.g., help with a resume, interviewing skills, and networking). Program group members received such assistance through one-on-one meetings with a Career Coach or as part of the structured Career Link workshop.

In contrast to the outcomes reported above for the three structured employment-related activities, less information was collected for these activities related to job search assistance: the survey asked whether the study member received this type of assistance and the frequency, but did not ask for more detailed measures of intensity (*hours, weeks)*. Reboot NW had substantial impacts on each type of job search assistance (Exhibit 6-7). The largest impact was on career counseling: an impact of 26 percentage points on receipt of any career counseling (69 percent of the program group versus 43 percent of the control group). Reboot NW also had impacts on receipt of assistance with job readiness skills (23 percentage points) and a slightly smaller impact on receipt of job placement assistance (17 percentage points).

Exhibit 6-7: Receipt of Job Search Assistance, Reboot NW



SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey, as of survey interview.
NOTES: Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 747 includes 400 program group and 347 control group members who completed the 18-month follow-up survey. "pp" denotes percentage points.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **Reboot NW increased receipt of assistance with workplace behaviors and soft skills.**

The survey asked a series of questions about receipt of assistance with skills that help workers succeed in the workplace as well as in their job search, such as acting professionally and communicating well. As expected, given that developing these workplace behaviors and skills was a major focus of Career Link and one-on-one assistance from Career Coaches, Reboot NW increased the receipt of such assistance. Reboot NW approximately doubled the proportion of study members who reported attending a program that provided "a great deal of attention" to acting professionally and communicating well, as well as

working in groups and staying motivated (see Appendix Exhibit I.2-14). The program had smaller impacts on other soft skills, such as managing stress, anger, and frustration; time management; and finding help with problems at school, work, or home.

6.3 Impacts on Receipt of Education- and Employment-Related Supports

This section considers more impacts on the second step of the RTW logic model (Exhibit 2-1, "Program Services"): education-related and employment-related supports such as financial assistance for occupational training; academic supports; and assistance with transportation, childcare, work expenses, and mental health issues. The logic model posits that supports that remove barriers to attending and persisting in the program will increase participation in employment-related activities and ultimately lead to increases in earnings and employment.

- **Reboot NW increased the receipt of financial assistance for occupational training.**

The survey asked study members how they funded their occupational training. Respondents could report they paid for training on their own or with the help of their family (through earnings, savings, or loans) or that they received support from other sources. (All funding outcomes were set to zero for study members who attended no occupational training.)

Consistent with the financial support Reboot NW provided for occupational training, the program decreased reliance on own/family resources and increased support from other sources, namely Reboot NW (Exhibit 6-8). Among all sample members (whether or not they attended occupational training), 33 percent of the control group members paid for training from their own or family funds, but only 26 percent of program group members did so, a decrease of 7 percentage points. Among those who attended any occupational training (a non-experimental comparison), 57 percent of the control group paid for training from their own or family funds, compared to 38 percent of the program group, a decrease of 20 percentage points (see Appendix Exhibit I.3-1).

Exhibit 6-8: Funding Sources for Occupational Training, Reboot NW

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Own or family earnings, savings, or loan (%)	26	33	−7**	3	−22
Received financial support for occupational training from non-family sources (%)	67	50	17***	4	35
Non-family funding sources:					
Free training program (%)	12	14	−2	2	−13
Program provider financial support (%)	18	19	−1	3	−6
From an American Job Center/state unemployment office (%)	51	23	28***	3	117
Any other funding source (%)	14	14	−0	3	−3

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.
NOTES: All outcomes in this table are exploratory. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 747 includes 400 program group and 347 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

In contrast, more program group members received financial support for training from other sources than did control group members (67 percent versus 50 percent), an increase of 17 percentage points. Based on

reported sources of tuition funding, Reboot NW's impact was driven by the increase in funding from an American Job Center (i.e., the WorkSource Centers out of which Reboot NW operated) or state unemployment office (51 percent of the program group versus 23 percent of the control group, a difference of 28 percentage points).

- **Reboot NW increased receipt of academic support and other assistance.**

Reboot NW had strong positive impacts on academic support services, both in the level and frequency of services. Reboot NW doubled the proportion of study members receiving any financial aid advising (an impact of 16 percentage points; see Appendix Exhibit I.3-2) and increased by roughly one-third the proportion receiving any academic advising (an impact of 12 percentage points) and tutoring (an impact of 5 percentage points). These impacts are consistent with Reboot NW Career Coaches providing academic advising and financial aid advising. In addition, study members enrolled in training could have received assistance of this nature from the training provider. Reboot NW also had positive impacts on assistance with transportation (an impact of 28 percentage points, from 20 percent in the control group to 48 percent in the program group) and with clothes/uniforms and tools (impacts of approximately 6 percentage points for both, see Appendix Exhibit I.3-2).

Although mental health services were offered as part of Reboot NW and discussed in the Career Link course, the study finds no clear evidence that the program increased receipt of mental health services compared to the control group (see Appendix Exhibit I.3-2). This is consistent with reports from program administrators that Reboot NW's mental health services were rarely used, possibly because of social stigma.

6.4 Impacts on Credential Receipt and Other Short-Term Outcomes

The RTW logic model (Exhibit 2-1, "Short-Term Outcomes") posits that the program's services and supports in turn will improve short-term outcomes—increase receipt of credentials and levels of career confidence, and decrease barriers to employment—which would subsequently result in improvements in labor market outcomes. This section reports impacts on short-term outcomes.

- **Reboot NW increased receipt of any certificate, credential, license, or degree.**

Relative to the control group, Reboot NW increased receipt of any certificate, credential, license, or degree (a *secondary outcome* for the RTW Evaluation; see Section 2.5).[97] Although the rate of educational attainment was fairly high among all study members, Reboot NW increased it by 13 percentage points (54 percent of the program group versus 40 percent of the control group; Exhibit 6-9). Reboot NW increased certificates received for completing occupational training by 18 percentage points (from 27 percent in the control group to 45 percent in the program group). Reboot NW also increased by 7 percentage points receipt of a professional certification or license indicating qualification to perform a specific job (18 percent of the program group versus 10 percent of the control group). The study finds no

[97] A *certificate* is a diploma or other credential awarded for completing a college-based program that required less than a year's worth of credit, or more than a year's worth but less than an associate's degree, or for completing a vocational/occupational training program. A *license* or *certification* is a credential awarded by a state or by an industry or professional association showing qualification to perform a specific job (e.g., certified medical assistant or an IT certification). See Appendix Exhibit I.4-2 for a comparison of the types of professional certifications or licenses received by members of the program group versus the control group. A *degree* includes an associate's, bachelor's, or higher degree.

clear evidence of an impact on receipt of college credits or degrees, consistent with the lack of impacts on college-based occupational training reported above (Exhibit 6-5).

Exhibit 6-9: Educational Attainment, Reboot NW

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Received any certificate, credential, license, or degree (%)	**54**	**40**	**13*** **	**4**	**33**
Received any occupational training certificate (%)	45	27	18***	3	66
Received any college credits (%)	8	11	−2	2	−20
College credential:					
Certificate (%)	5	4	0	2	4
Associate's degree (%)	4	4	−0	2	−4
Bachelor's degree or higher (%)	0	2	−1	1	−71
Received any professional certification or license (%)	18	10	7***	2	73

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.
NOTES: **Secondary outcomes are bolded**; exploratory outcomes are not bolded. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 747 includes 400 program group and 347 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **The study finds no clear evidence that Reboot NW increased confidence in career knowledge or improved factors that affect the ability to work.**

The survey asked a series of questions to measure career knowledge associated with finding and keeping jobs, such as increased awareness of steps needed to reach career goals and understanding of what taking those steps required. Reboot NW was hypothesized to improve career knowledge through its job search and employment readiness activities. However, the study finds no clear evidence that Reboot NW increased the program group's self-reported confidence in their career knowledge (see Appendix Exhibit I.4-3).

The survey also asked about a range of issues that might affect study members' ability to work, including access to affordable quality childcare or reliable transportation, or physical or mental health barriers. The study finds no clear evidence of impact in any of these areas (see Appendix Exhibit I.4-3).

6.5 Impacts on Labor Market Outcomes

The RTW logic model posits that Reboot NW's services would lead to positive short-term outcomes, which in turn would improve participants' employment and earnings outcomes (Exhibit 2-1, "Long-Term Outcomes"). This section reports impacts on labor market outcomes: first from the employer-reported administrative data from the National Directory of New Hires (NDNH), and then from the self-reported follow-up survey data.

The estimates of Reboot NW's impact on labor market outcomes are inconsistent with that hypothesis. In particular, despite the impacts on service receipt and credential attainment reported in Sections 6.2 to 6.4, the study finds no clear evidence that the program had an impact on average earnings in the fifth and sixth quarters after random assignment ("Q5" and "Q6"). As described in Section 2.5, this *confirmatory*

outcome is the study's main indicator of the extent to which the program is making progress toward its goals after 18 months.[98]

- **Based on NDNH data, the study finds no clear evidence of impact on earnings in the fifth and sixth quarters after random assignment as a result of Reboot NW.**

As discussed in Section 2.5, it might be expected that participants in a training program would work less and therefore earn less while they attend program activities, hence the confirmatory outcome excludes the first four quarters after random assignment. However, the study hypothesized that program group employment and earnings gains would appear by Q5, because by that time most program group members would likely have left Reboot NW and found employment.

There is no evidence, however, that Reboot NW had a positive impact on average earnings in Q5 and Q6 (about $7,500 per quarter for both groups; Exhibit 6-10). As is true with all estimates, the impact on the confirmatory outcome is estimated with uncertainty. Incorporating that uncertainty into a range of plausible impacts implies that the true impact on average quarterly earnings in Q5 and Q6 could be as low as −$1,145 or as high as +$691.[99]

Exhibit 6-10: Impacts on Earnings and Employment, Reboot NW

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Earnings					
Average earnings in Q5 and Q6 ($)	***7,441***	***7,668***	***−227***	***558***	***−3***
Average earnings in Q5 and Q6, if employed in Q5 or Q6 ($)	*10,525*	*10,767*	*−242*	*639*	*−2*
Cumulative earnings in Q1-Q6 ($)	34,809	36,210	−1,401	2,455	−4
Employment					
Ever employed during Q5 or Q6 (%)	**71**	**71**	**−0**	**3**	**−1**
Ever employed during Q1-Q6 (%)	81	80	2	2	2
Number of quarters employed during Q1-Q6	3.5	3.7	−0.1	0.1	−3
Longest job tenure during Q0-Q6 (quarters)	3.1	3.3	−0.1	0.1	−4

SOURCE AND FOLLOW-UP PERIOD: National Directory of New Hires; through six quarters after random assignment.
NOTES: ***Confirmatory outcome is bolded and italicized***; **secondary outcomes are bolded**; exploratory outcomes are neither bolded nor italicized. *Outcomes in italics* apply to the subset of sample members who were ever employed during Q5 or Q6, and are thus non-experimental. Where not italicized, outcomes apply to the full sample, and impact estimates are experimental. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]). The total sample of 972 includes 489 program group and 483 control group members. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

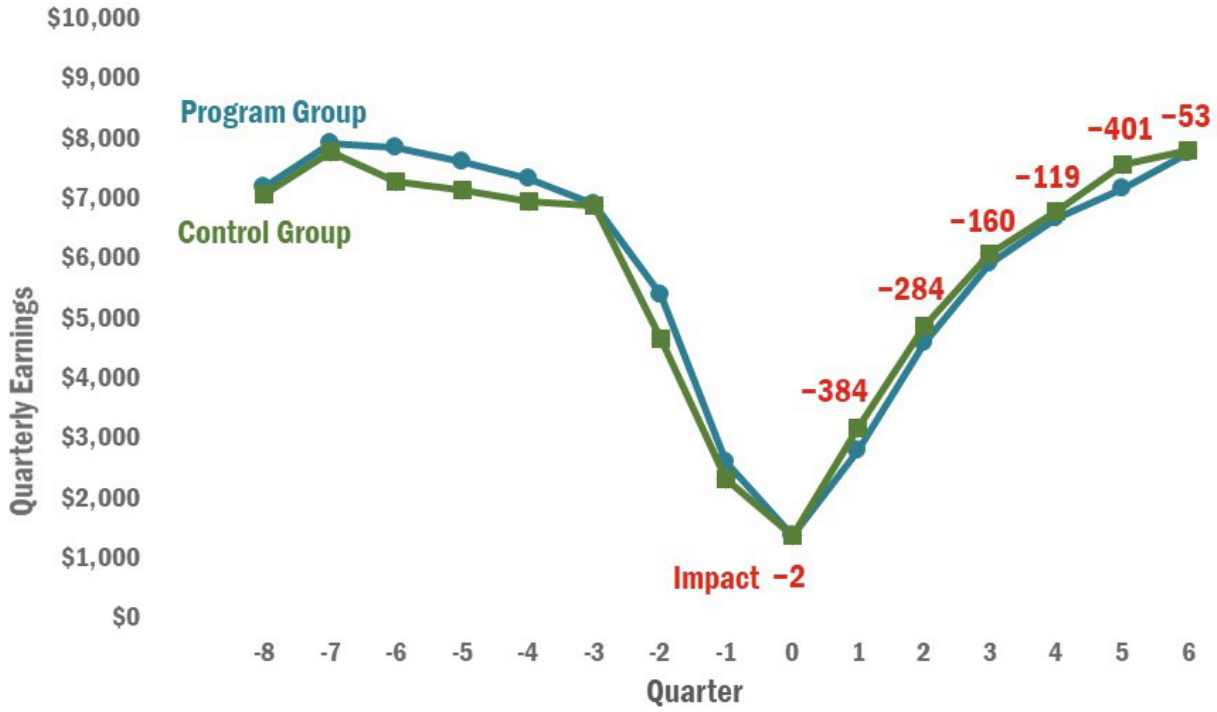
Exhibit 6-11 below reports the level of quarterly earnings over time for the program group (blue line) and the control group (green line) for the eight quarters before applying to Reboot NW and the following six quarters after random assignment. For each of the quarters after random assignment, the exhibit also

[98] See Appendix Exhibit A.1-2 for TOT impact estimates for average earnings in Q5 and Q6, employment in Q5 and Q6, and public benefits receipt.

[99] These values are the endpoints for a 90 percent confidence interval for the impact on average earnings in Q5 and Q6.

reports Reboot NW's impact on earnings (red numbers above the lines).[100] Exhibit 6-12 likewise plots quarterly employment from eight quarters before random assignment to six quarters after, and shows impacts on employment for each quarter after random assignment.

Exhibit 6-11: Impacts on Earnings, by Quarter, Reboot NW



SOURCE: National Directory of New Hires.
NOTES: On the x-axis, –# indicates quarters before random assignment; 0 reflects the quarter that random assignment occurred. Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 972 includes 489 program group and 483 control group members.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

As shown, for both the program and control group, employment and earnings declined sharply prior to applying to the Reboot NW program. As would be expected in a program serving the long-term unemployed, two years before random assignment only about 60 percent of sample members were employed (see Exhibit 6-12). In the year before random assignment, employment levels dropped sharply, to about 35 percent in the quarter before applying to Reboot NW. Exhibits 6-11 and 6-12 also show, however, that earnings and employment rebounded in the quarters immediately after random assignment, for the control group as well as the program group.

This observed earnings dip is consistent with patterns for applicants to job training and other social programs and has been widely documented in the literature (e.g., Ashenfelter 1978; Heckman and Smith 1999; Mueser, Troske, and Gorislavsky 2007). Individuals often apply to these programs soon after encountering particularly difficult circumstances or crises, such as the loss of a job. Some, but often far

[100] Appendix Exhibit I.5-1 also reports the estimated "impacts" on earnings and employment for the eight quarters before random assignment, to test for balance between the members of the program group and control group before applying to the program (there are no significant differences). Pre–random assignment quarterly data on earnings and employment are also included in the baseline balance table, Appendix Exhibit I.1-2.

from all, of that decline is usually temporary. Thus, employment and earnings rise even in the absence of the program (here represented by the control group) after applying to the program.

With respect to *impacts* on earnings—the (regression adjusted) difference in outcomes between the program group and the control group—as shown in Exhibit 6-11, the study finds no clear evidence of impact on earnings throughout the six quarters after random assignment.

- **Based on NDNH data, the study finds no clear evidence that Reboot NW affected employment rates in any quarter during the 18-month follow-up period.**

Just as Reboot NW did not have the expected initial negative impact on earnings, it likewise did not have negative impacts on employment during the first quarters after random assignment (Exhibit 6-12). Furthermore, the study finds no clear evidence of impact on employment in any of the six quarters after random assignment. In particular, the study finds no clear evidence of impact on being employed in Q5 or Q6—a *secondary outcome* (see Exhibit 6-10); in both treatment groups, approximately 70 percent of study members are employed. Although differences in participation in program activities persisted through month 12 after random assignment (see Section 6.2), these do not appear to have affected employment or earnings throughout the 18-month follow-up period.

Exhibit 6-12: Impacts on Employment, by Quarter, Reboot NW

SOURCE: National Directory of New Hires.

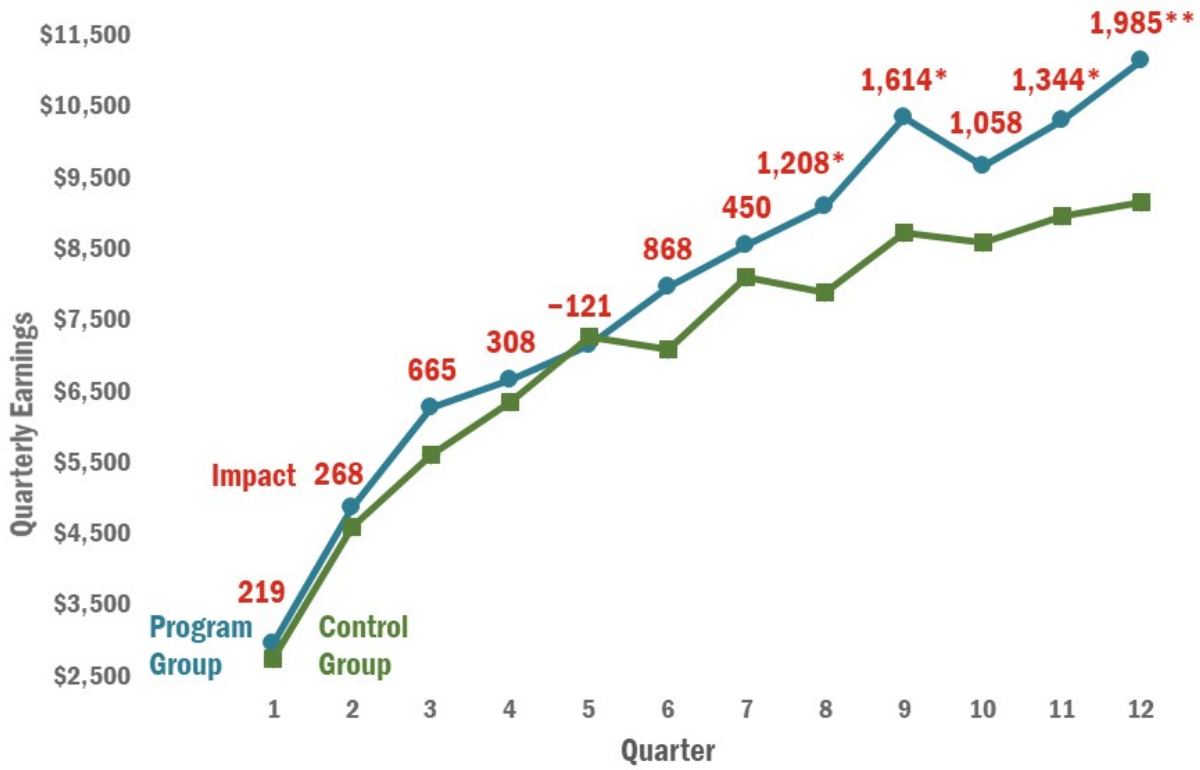
NOTES: On the x-axis, –# indicates quarters before random assignment; 0 reflects the quarter that random assignment occurred. Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 972 includes 489 program group and 483 control group members. "pp" denotes percentage points.

Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

- **Based on NDNH data, for sample members in an early cohort for whom three years of data are available, Reboot NW had positive impacts on earnings by three years after random assignment.**

To this point, reported results on earnings and employment are for all sample members, but only through the sixth quarter after random assignment. For a cohort of applicants randomized early in the study period, 12 quarters (three years) of NDNH data are available. This cohort represents 70 percent of the study sample. For this early cohort, Reboot NW had substantial positive impacts on earnings by Q12 ($1,985 per quarter), with some evidence of positive impacts as early as Q8 (Exhibit 6-13).[101] In contrast, the study finds no clear evidence of impact on employment throughout these twelve quarters (see Appendix Exhibit I.5-2). This suggests that the higher earnings detected by Q12 arose either from a higher hourly wage or from working more hours (data are not available to make this determination). The longer follow-up period available for the final report will be informative as to whether there are earnings impacts for the full sample beyond Q6.

Exhibit 6-13: Impacts on Earnings through 12 Quarters for Early Cohort, Reboot NW



SOURCE: National Directory of New Hires.
NOTES: Vertical axis does not start at $0. Reported impact may not equal the difference between the reported program and control group means because of rounding. The total sample of 677 includes 341 program group and 336 control group members of the early cohort. Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

[101] The positive impacts are statistically significant at the 5 percent level in Q12 ($1,985, p = .015) and at the 10 percent level in Q8 ($1,208, p = .088), Q9 ($1,614, p = .097), and Q11 ($,1,344, p = .082); see Appendix Exhibit I.5-2.

- **Based on survey data, the study finds no clear evidence of impact on a range of other employment-related outcomes, including measures related to job quality.**

In addition to employment and earnings, the 18-month survey asked about the characteristics of the sample member's current job (Exhibit 6-14). Based on survey responses, the program and control groups worked a similar number of hours per week (27 hours, including those not working) for a similar hourly wage (approximately $25 for those working). Thus, consistent with the NDNH-measured earnings through six quarters, the study finds no clear evidence of impact on either hours worked or the hourly wage at approximately 18 months after random assignment. At the time of the follow-up survey, both program and control group members (including those who did not work) held jobs that on an annualized basis paid on average about $33,500 per year.[102]

Exhibit 6-14: Characteristics of Current Job, Reboot NW

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Job Type					
Regular full-time or part-time employee (%)	53	58	−5	4	−8
Employed by a temporary help agency (%)	2	2	0	1	16
Employed by a company that contracts out your services (%)	3	5	−1	1	−28
Independent contractor or independent consultant (%)	5	2	3**	1	121
Self-employed, including freelancer and day laborer (%)	6	5	2	2	34
Other (%)	2	2	−0	1	−7
Pay and Hours					
Rate of pay per year ($)	33,550	33,365	184	2,363	1
Hourly wage, if employed ($/hour)	*25.18*	*24.60*	*0.58*	*1.10*	*2*
Hours worked per week	27	27	−0	1	−1
Hours worked per week, if employed	*37*	*37*	*0*	*1*	*1*
Full-time (35 or more hours per week, %)	56	56	−0	4	−1
Full-time, if employed (%)	*77*	*76*	*1*	*4*	*1*
Part-time (less than 35 hours per week, %)	17	18	−1	3	−6
Part-time, if employed (%)	*23*	*24*	*−1*	*4*	*−4*
Number of weeks at job since random assignment	34	35	−1	2	−3
Job represented by a union (%)	5	6	−1	2	−13
Job Benefits					
Health insurance (%)	51	54	−3	4	−6
Paid vacation (%)	47	51	−4	4	−7
Paid holiday (%)	46	50	−4	4	−8
Paid sick time (%)	49	55	−5	4	−10
Retirement/pension plan (%)	41	44	−3	4	−7
Job Schedule					
Regular daytime schedule (%)	56	59	−3	4	−5
Regular evening shift (%)	4	4	−0	1	−1
Regular night shift (%)	1	1	−0	1	−14
Rotating schedule (%)	1	1	−0	1	−0
Irregular schedule (%)	6	5	1	2	24
Other schedule (%)	4	4	0	1	11

[102] Corresponding to these results on hours worked and the hourly rate of pay, the study finds no clear evidence of impact on the annualized rate of pay. This annualized measure is based on a survey response about earnings at the time of the interview. Note, however, that this is not earnings over the past year, but instead annual earnings given the current job.

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Career Advancement					
Job offers career advancement opportunities:					
Strongly agree (%)	20	19	2	3	9
Agree (%)	29	26	3	4	11
Disagree (%)	12	14	−2	3	−14
Strongly disagree (%)	9	12	−4	2	−29

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.
NOTES: All outcomes in this table are exploratory. *Outcomes in italics* apply to the subset of survey respondents who were employed at follow-up, and thus are non-experimental. Where not italicized, outcomes apply to the full survey sample, and impact estimates are experimental. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 747 includes 400 program group and 347 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

There is likewise little evidence of a positive impact of Reboot NW on other measures of job quality 18 months after random assignment, such as union representation, job benefits, and perceived opportunities for career advancement. The one exception is that Reboot NW increased the proportion of study members working as an independent contractor or consultant, from 2 percent in the control group to 5 percent in the program group. See Appendix Exhibits I.5-5 and I.5-6 for a comparison of the field of employment at the time of the follow-up survey between the program group and control group.

The survey also asked whether respondents attributed obtaining a new job to completing a training program or receiving a certificate (see Appendix Exhibit I.5-7). For all sample members, including those who did not attend training, there is weak evidence that the program increased this rate by 7 percentage points (33 percent of the program group versus 26 percent of the control group).[103] Program group members were also more likely than control group members to report the training was useful to a subsequent job (33 percent versus 26 percent).

6.6 Impacts on Broader Measures of Well-Being

The RTW logic model posits that improvement in labor market outcomes in turn will improve other measures of Reboot NW participants' well-being, such as increased income and reduced receipt of public benefits. Given the lack of impact on earnings in the first six quarters, one would not expect—nor is there—improvement in these other outcomes 18-month after random assignment.

- **Consistent with NDNH-based results of no clear evidence of impact on earnings, based on survey data, the study finds no clear evidence of impact on own income as a result of Reboot NW.**

Based on survey-reported income measures, the study finds no clear evidence of impact on study members' income in the month prior to the follow-up survey (including benefits receipt and other sources of income beyond earnings; Exhibit 6-15). On average, sample members reported monthly income of

[103] The positive impact on obtaining a new job due to completing training or receiving a certificate is statistically significant at the 10 percent level (p = .052; see Appendix Exhibit I.5-7).

approximately $2,800. The study also finds no clear evidence of impact on the receipt of public benefits (a *secondary outcome*).

Exhibit 6-15: Income and Public Benefits Receipt, Reboot NW

Outcome	Program Group Mean	Control Group Mean	Impact (Difference)	Standard Error	Relative Impact (%)
Income					
Total own income before taxes last month ($)	2,776	2,869	−93	167	−3
Benefits Receipt					
Received any public benefits last month (%)	**16**	**18**	**−2**	**3**	**−10**
Received TANF last month (%)	1	0	1	1	159
Received SNAP last month (%)	11	15	−4	2	−24
Received UI last month (%)	4	3	1	1	51
Received other public benefits last month (%)	5	5	−0	2	−7

KEY: SNAP is Supplemental Nutrition Assistance Program; TANF is Temporary Assistance for Needy Families; UI is Unemployment Insurance.
SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey; as of survey interview.
NOTES: **Secondary outcomes are bolded**; exploratory outcomes are not bolded. Reported impact may not equal the difference between the reported program and control group means because of rounding. "Relative impact" represents impacts as a percentage of the corresponding control group mean (i.e., 100 x [impact / control group mean]); relative impact is blank if the control group mean is zero. The total sample of 747 includes 400 program group and 347 control group members who completed the 18-month follow-up survey. Appendix tables report item-specific sample sizes.
Statistical significance based on two-sided hypothesis tests; significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

6.7 Subgroup Findings

As discussed in Chapter 2, the RTW Evaluation also explores how impacts vary with study members' baseline characteristics—whether Reboot NW was more effective for certain subgroups of the population served. Prior to beginning analysis, the evaluation specified subgroups to compare based on characteristics at the time of random assignment: *education level* (less than a bachelor's degree versus a bachelor's degree or more), *age* (49 or older versus younger than 49), and *employment status* (unemployed more than 12 months versus ever employed in the last 12 months, including those employed at application). In addition, based on guidance from the evaluation's Technical Working Group, the evaluation added a subgroup analysis on *gender*.

The evaluation examines whether there is **differential impact**; that is, whether the impact of Reboot NW is different for one subgroup versus the other subgroup for any of the four characteristics listed above. The evaluation estimates subgroup impacts for the confirmatory and secondary outcomes, as well as for several key exploratory outcomes. In considering these results, it is important to note that sample size is large enough to detect only large differential impacts on earnings between subgroups. To a lesser degree, such sample size concerns apply to subgroup analyses of other outcomes, as well. Thus, substantively important differential impacts plausibly go undetected.

The study finds no consistent evidence of differential impacts by education level, age, employment status at baseline, or gender (see Appendix Exhibits I.7-1 to I.7-8).

7 Discussion

To assist workers experiencing long spells of unemployment resulting from the 2007-2009 recession, in October 2014, DOL awarded 24 Ready to Work (RTW) Partnership Grant Program awards totaling $170 million. Per the Solicitation for Grant Applications, grantees could use funds to provide a range of customized services to those workers, including staff guidance on career planning, occupational training, work-based training, employment readiness courses, and job search assistance. Within that broad guidance, each grantee had discretion to design its program activities based on local labor force needs.

The evaluation of RTW grants included an implementation study (Martinson, et al. 2017; Copson et al. 2020) and an impact study of four purposively selected grantees' programs: Maryland Tech Connection (MTC), operated by Anne Arundel Workforce Development Corporation (AAWDC); Skills to Work in Technology (STW-T) and Job Search Accelerator (JSA), operated by Jewish Vocational Service (JVS); Finger Lakes Hired (FLH), operated by RochesterWorks!; and Reboot Northwest, operated by Worksystems, Inc.

Drawing on an 18-month follow-up survey and National Directory of New Hires (NDNH) employment and earnings data, the RTW Evaluation's interim impact study estimates the impact on the full study sample through approximately 18 months after their random assignment into the study. The report also includes NDNH-only impact estimates through 30 months after random assignment for the early cohort. (The evaluation's final impact study will use NDNH data to assess impacts on earnings through 30 months after random assignment for the full sample and through 48 months after random assignment for the early cohort.)

The impact study estimates the impact of the RTW program; that is, outcomes for those offered the RTW program relative to what their outcomes would have been if they had not been offered the RTW program but had access to other services available in the community, including standard services available through WIOA. The evaluation team selected specific outcomes based on the grant program's logic model. The evaluation's confirmatory outcome (the main indicator of an RTW program's progress toward its goals within 18 months) is average earnings in the fifth and sixth quarters after random assignment. Based on the program's logic model, the evaluation also pre-specified seven other outcomes on interim service receipt, educational attainment, employment, and public benefits receipt as secondary outcomes. Additionally, the evaluation estimates impacts for subgroups based on education level, age, employment status at baseline, and gender.

This chapter first summarizes the service receipt, employment, and earnings impacts of the four grantee programs (Section 7.1). Then Section 7.2 considers four possible explanations for the impact study's finding that RTW had no detectable impact on earnings at 18 months after random assignment. Section 7.3 describes next steps.

7.1 Summary of Interim Results

Exhibit 7-1 summarizes results, for the four grantee programs, for the confirmatory outcome and seven secondary outcomes.[104] The exhibit includes the impact estimates and their statistical significance levels reported in Chapters 3 through 6. It also includes statistical significance levels based on the Bonferroni-Holm Family Wise error test to assess the impacts for the four grantees taken together.[105] The discussion that follows focuses on those impacts that remain statistically significant at the 5 percent level after the Bonferroni-Holm correction.

Exhibit 7-1: Summary of Estimated Impacts on Confirmatory and Secondary Outcomes, by Grantee Program

	MTC			JVS RTW			FLH			Reboot NW			Pooled	
Outcome	**Impact**	**SG**	**B-H**	**Impact**	**SG**	**B-H**	**Impact**	**SG**	**B-H**	**Impact**	**SG**	**B-H**	**Impact**	**SE**
Hours attended:														
Any structured activity	171	***	###	66	***	###	76	*	#	115	***	##	107***	18
Occupational training	50	***	##	38	**	##	56			46			48***	15
Work-based training	96	***	###	17	*		7			20			35***	7
Employment readiness courses	24	***	###	10	***	###	7	***	###	52	***	###	23***	3
Received any certificate, credential, license, or degree (%)	22	***	###	10	***	###	-2			13	***	###	11***	2
Average earnings in Q5 and Q6 ($)	***-1,281***	**	#	***240***			***13***			***-227***			***-313***	***288***
Ever employed during Q5 or Q6 (%)	-1			-1			0			-0			-0	1
Received any public benefits (%)	4	*		-2			-4			-2			-1	1

SOURCE AND FOLLOW-UP PERIOD: 18-month follow-up survey for hours of training and credential receipt (through 18 months after random assignment), and for benefits receipt (measured as of survey interview). National Directory of New Hires for average earnings in Q5 and Q6 and ever employed during Q5 or Q6, measured through six quarters after random assignment.

NOTES: SE=standard error. Table reports impact estimates on the unadjusted outcomes for the JVS RTW programs; see the opening section of Chapter 4 and Appendix G for more discussion. ***Confirmatory outcome is bolded and italicized***; all other outcomes are secondary outcomes. Exhibits in Chapters 3-6 report single grantee test results; see grantee-specific exhibits for sample sizes.

Statistical significance based on two-sided hypothesis tests. Single grantee (SG) test and pooled test significance levels are as follows: *** = 1 percent; ** = 5 percent; * = 10 percent. Bonferroni-Holm (B-H) Family Wise Error test significance levels are as follows: ### = 1 percent; ## = 5 percent; # = 10 percent.

The final two columns of Exhibit 7-1 (labeled "Pooled") view the RTW programs as similar—in that they responded to the same guidance and requirements as specified in the Solicitation for Grant Applications—and presents a summary estimate of their impact, using the average of the estimates across all four

[104] For JVS, Exhibit 7-1 reports impacts on the unadjusted measures of service receipt and credential receipt because these were the pre-specified secondary outcomes. (In contrast, the discussion in Chapter 4 focuses on the adjusted outcomes because of the survey response issue observed among JVS respondents.)

[105] As discussed in detail in Appendix Section A.2.3, including findings for all four grantees in one exhibit raises multiple comparison issues. The conventional statistical tests consider a result to be sufficient evidence of impact if it would occur by chance less than 5 percent of the time if there was truly no impact for *that one grantee program*. When the evaluation considers all four grantee programs together—if the evaluation does not adjust in some way—the evaluation is implicitly considering a result to be sufficient evidence of impact if it would occur by chance about 20 percent of the time; roughly speaking, 5 percent for each of the grantee programs. To address this multiple comparisons issue, the evaluation uses the Bonferroni-Holm test to compute the Family Wise Error rate; that is, to consider there to be a real impact for at least one of the grantee programs if that result would occur by chance less than 5 percent of the time when there was truly no impact for *any of the four grantee programs.* See Appendix Section A.2.3 for details of the computation of this estimate and its standard error (and therefore significance level).

grantees.[106] Because the combined sample is larger, these impacts are more precisely estimated than for the grantee programs individually.

- **All four grantees increased service receipt.**

The top panel of Exhibit 7-1 reports the impact of each RTW grantee program on service receipt. Defining total hours of any structured employment readiness activity as the sum of hours in occupational training, worked-based training, and employment readiness courses, the first row shows an impact on total hours for all four grantees.[107] Relative to what would have been received without the RTW program, the smallest increase is 66 hours for the JVS programs; the largest is 171 hours for MTC.

The next three rows in the first panel show impacts on each structured employment-related activity separately. Two programs increased hours of occupational training (MTC and the JVS programs). One program increased hours of work-based training (MTC).[108] All four programs increased hours attending employment readiness courses.

The middle panel of Exhibit 7-1 shows impacts on credential receipt. Three of the four programs increased receipt of any certificate, credential, license, or degree (MTC, the JVS programs, and Reboot NW).

- **For none of the grantees does the study find clear evidence of favorable impacts on earnings, employment, or receipt of public benefits.**

The bottom panel of Exhibit 7-1 shows impacts on earnings, employment, and public benefits receipt. As shown, for none of the programs does the study find evidence of a favorable impact on the confirmatory outcome: *average earnings in the fifth and sixth quarters after random assignment*. The study also does not find clear evidence that any of the programs improved employment in the fifth or sixth quarters, or decreased receipt of public benefits. Overall, the study therefore finds that—as of 18 months after random assignment—no grantee succeeded in increasing participants' employment and earnings.

7.2 Some Possible Explanations for the Lack of Impact on Earnings

The study found no clear evidence of a positive impact on earnings in the fifth and sixth quarters after random assignment for any of the four RTW grantee programs included in the evaluation, or for all four programs combined.[109] This section notes four possible and not mutually exclusive explanations for the

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106 Given that the grantees were purposively selected—in part based on anticipated strength of their program—this is likely an overestimate of the average impact across all 24 of the RTW grantees' programs.

107 In both the Bonferroni-Holm test (testing across all four grantee programs combined) and the standard statistical test (testing for the single grantee program alone), the estimated impact on total hours of any structured employment-related activity for FLH is significant only at the 10 percent level. As discussed in Section 2.3 and Chapter 5, the study sample for the evaluation of the FLH program was substantially smaller than for the other programs, reducing the statistical precision of the evaluation for that program.

108 Using the single grantee test, there is weak evidence that the JVS RTW programs had an impact on hours of work-based training. However, this chapter focuses on the Bonferroni-Holm Family Wise Error test because it considers the four programs jointly. Using that test, there is no evidence of an impact on work-based training.

109 As reported in the grantee-specific chapters, no program had detectable positive impacts on earnings. As shown in the last two columns of Exhibit 7-1, after pooling the four samples the study also did not detect earnings impacts. See Appendix Section A.3.2 for more information on how pooled impact estimates are calculated.

lack of earnings impacts. As appropriate, the discussion notes where an explanation appears more salient for some grantee programs than for others.

- **There are positive and substantively important impacts on earnings, but the study samples are too small to detect them.**

This study was designed to estimate grantee program-specific impacts. Given the sample sizes achieved by the grantees, the study estimates that these samples were sufficient to detect an impact on quarterly earnings of about $1,100 for FLH and $1,000 for the other three programs.[110] Given that the study sample members earned approximately $8,000 per quarter in the fifth and sixth quarters after random assignment, an impact of $1,000 per quarter would be about a 12 percent increase in earnings for this population (an impact of $1,100 for FLH would be 14 percent).

Pooling the four grantee study samples yields a sample size of more than 3,600. Considering the pooled sample, an impact on earnings of about $500 per quarter, or approximately a 6 percent increase in earnings, can be detected.[111] Exhibit 7-1 shows, however, that through the follow-up interval for this interim impact report, the study does not detect positive impacts on earnings—not for any grantee program alone, and not for the pooled sample.

It was not implausible that the RTW programs would have impacts of $500 or even $1,000 per quarter, the detectable limits with the study sample size. Some job training programs have shown impacts of $1,000 per quarter;[112] perhaps the customized services provided by the RTW grantees would have similar impacts for the relatively well-educated population they served. However, a non-experimental analysis of the earnings impacts of training programs for the unemployed suggests that impacts of less than $500 per quarter may be more likely (Leung and Pei 2020).[113] Thus, it seems possible that the RTW programs had positive impacts that the study could not detect.

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110 Per the impact study design (Chapter 2), grantees attempted to recruit at least 1,000 study members to randomly assign between the program group and the control group. Three grantees achieved this target. With a sample of that size, the study could detect an impact on earnings of approximately $1,000 per quarter. The fourth grantee, RochesterWorks!, achieved 60 percent of its target; as a result, the evaluation can detect impacts of only about $1,100 per quarter.

111 Detecting substantially smaller impacts was not possible given the focus on grantee program-specific impacts and the size of each RTW grantee program. Substantially better precision would have required a substantially larger sample. The evaluation already recruited some of the larger RTW grantees, and random assignment started shortly after the grants were awarded and continued nearly to the end of the original operational period of the grants, thus capturing most of the potential sample. A substantially larger sample would have required both selecting more grantees and pooling results.

112 Examples of such programs that have impacts of approximately $1,000 per quarter—usually offering a year or more of training—include Per Scholas (Greenberg and Schaberg 2020), Project QUEST (Roder and Elliot 2019), and Year Up (Fein, Dastrup, and Burnett 2021).

113 Leung and Pei (2020) analyze the impact of training on earnings among the unemployed. In Leung and Pei's data, average training duration is 4.7 quarters; that is, more than a year; three and four years after program entry, earnings increase by 7 percent. For the RTW programs, if it were the case that every program group member received 4.7 quarters of training and all members of the control group received no such services, the implied impact would be about $500 per quarter. As shown in Chapters 3 through 6, however, the intensity of RTW services for program group members was well under 4.7 quarters, and the control group received considerable services. Instead, for the RTW programs, net impact on services is about one quarter. Thus, inasmuch as the Leung and Pei results extrapolate to the RTW programs, the implied impact would be perhaps $100 per quarter.

- **This interim impact report is too early to detect impacts on earnings, but impacts might appear—for the full sample, or for subgroups—in the final report with longer follow-up.**

For some programs (MTC and FLH), participation rates in structured employment readiness activities remained higher for the program group than for the control group into the second year of the follow-up period. Participation in program activities, especially occupational and work-based training, often depresses employment. Furthermore, if participants were training for new occupations, which may have been the case for these long-term unemployed workers, they could reenter the market at entry-level wages in their new occupation. Thereafter, growth in experience and job changes would be expected to lead to wage growth over the next few years. In addition, until a good job match is established, earnings are likely to be lower, and there are likely to be periods of unemployment.[114] These three factors would delay positive earnings impacts.[115] This issue will be in part addressed by the *Final Impact Report*, which has a follow-up period of at least 3.25 years; impacts may potentially emerge in that report.

Consistent with this interpretation, this report has presented some hints of positive earnings and employment impacts.[116] For the JVS programs, those hints include positive impacts on survey-based measures of the annual rate of pay at follow-up, hourly wages, hours worked per week, and full-time employment. For FLH, those hints include positive impacts on survey-based measures of full-time employment and hours worked per week among those employed. For Reboot NW, those hints include positive impacts for the early cohort of almost $2,000 per quarter on NDNH-reported earnings in the 12th quarter after random assignment, with weak evidence of positive impacts beginning by the 8th quarter.

- **Relative to what was available outside of RTW, the programs did not increase service receipt sufficiently to cause detectable impacts on earnings.**

The RTW programs *did provide* considerable services (occupational training, work-based training, employment readiness courses, and job search assistance) and produced statistically significant increases in hours and levels of service receipt. Moreover, participants attended program activities for a substantial amount of time, from 12 weeks in the FLH program (see Exhibit 5-5) to 25 weeks in Reboot NW (see Exhibit 6-5).

The previous paragraph considers the *levels* of services received by the program group. In contrast, the RTW logic model implies that *impacts* on earnings arise not from the *level* of services provided by the programs but from the *impact* on services provided. That is, what matters is the *difference* in services received by the program group versus the control group. Thus, even if the program group received a lot of

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[114] Often after a period of unemployment or training, a worker takes the first available job, even if it is a poor "match" in that it does not use all the worker's skills. While working that job, the worker continues the job search—landing a sequence of better job matches, usually with higher wages and better non-wage job characteristics. For more on job match theory and its application to similar issues, see Jovanovic (1979), Johnson (1978), and Klerman and Karoly (1994). See Leung and Pei (2020) for recent empirical evidence consistent with this explanation.

[115] Some empirical evidence is consistent with delayed emergence of clear evidence of positive earnings impacts. In the experimental literature, this is the pattern for Project QUEST (Roder and Eliot 2019), but not for any of the other recent studies (see Klerman, et al. 2021). In the non-experimental matching literature, this pattern is more common. Heinrich et al. (2008) and Leung and Pei (2020) both find delayed emergence of positive impacts on earnings.

[116] The outcomes considered in the balance of this paragraph were pre-specified as exploratory only, the lowest level of focus for the evaluation.

services, if the control group received the same level of the same kind of services, one would not expect to observe impacts.

As shown in Chapters 3 through 6, although the RTW programs had a positive impact on service receipt, a large share of each control group also received services. Looking at weeks attended as an example, the *impacts* on service receipt are considerably smaller than the *level* of services received by the program group, ranging from 3 weeks for FLH to 13 weeks for JVS.[117] Impacts on service receipt may be smaller because most of the programs were located in an American Job Center. Because of this, similar but non-RTW-funded services were readily accessible by control group members.

Perhaps the resulting service differential between the program and control groups was not large enough to substantially raise earnings; it is possible that a more intensive program or one that resulted in a stronger service contrast would have increased earnings. This line of argument—that statistically positive but small impacts on services are not sufficient to generate detectable impacts on earnings—is an emerging theme in labor market studies (Weiss et al. 2015).[118]

- **RTW's customized approach did not provide the appropriate content or intensity of services needed by its participants to improve their employment outcomes.**

Compared to the conventional population served by the workforce system, the RTW population was substantially older and better educated.[119] Earlier studies on displaced workers, who typically had relatively successful work histories but spells of unemployment and other characteristics similar to the RTW population, have found they faced unique challenges to employment. These include employer age discrimination, emotional distress due to unemployment, and outdated skills (Holzer 2021; Jacobson, Lalonde, and Sullivan 1993, 2005a, 2005b).

The RTW grant programs intended to address those challenges, and it is plausible that these issues could be addressed with the RTW service content and intensity. In particular, it may be that given participants' relatively high education levels and experience in the labor market, the duration and intensity of the employment services were not sufficient to change their established earnings trajectories. Some of the RTW grant programs did offer longer-term occupational training (particularly FLH and Reboot NW), including options lasting up to two years (Martinson et al. 2017). However, as discussed, participants'

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117 At MTC, the program group completed 15 weeks of any structured activity, an impact of 7 weeks (see Exhibit 3-5). In the JVS programs, the program group completed 16 weeks of employment-related activities (as adjusted for the survey response issue), an impact of 13 weeks (see Exhibit 4-4). At FLH, the program group completed 12 weeks of activities, an impact of 3 weeks (see Exhibit 5-5). And at Reboot NW, the program group completed 25 weeks of activities, an impact of 6 weeks (see Exhibit 6-5).

118 An RTW program might increase earnings without increasing hours of services if the services provided were qualitatively superior to those otherwise available. For example, counseling might allow students to achieve credentials with fewer wasted college credits. The evaluation provides no direct evidence on the quality or fit of the services provided. However, some limited evidence is inconsistent with sharply higher quality. First, for the most part, the grantees did not design custom training programs for individual program participants. Instead, program group members were sent to existing training programs, which in general were available to the control group, as well. (On the other hand, perhaps better counseling induced program group members to attend training programs that were better—absolutely, or for the given individual.) Second, the implementation study suggests that the RTW programs found it difficult to generate work-based training slots (Copson et al. 2020). Without substantial work-based experience, one might not expect substantially larger impacts.

119 U.S. Department of Labor, Employment and Training Administration, *WIOA Annual Report Results, WIOA National Performance Summary, Program Year 2016*, https://www.dol.gov/agencies/eta/performance/results/annual-results.

primarily attended shorter rather than longer-term offerings. This suggests a challenge in engaging older and more educated workers in longer-term activities, potentially because they want to return to work quickly.

Moreover, perhaps the services offered by these four RTW programs were not the appropriate mix; perhaps some different service strategy would substantially raise earnings for this population. For instance, given that the economy had begun improving by the time the RTW programs began enrollment, the services offered may have been less effective for the shifting economic environment. Furthermore, it appears that the types of credentials that participants earned, or the field of training targeted did not result in earnings above the level that this unemployed but older and better educated worker population could make without the RTW program.[120]

7.3 Closing Thoughts

Using NDNH administrative data, the RTW Evaluation's final impact report will extend follow-up for employment and earnings: for the *full sample*, from the 18th month to at least the 39th month (3.25 years) after random assignment; and for the *early cohort*, from the 36th month to the 57th month (4.75 years). For that final report, the confirmatory outcome will be *average earnings in the 5th through 10th quarters after random assignment* (i.e., months 15 through 30). It is possible that those longer-term results will diverge from the interim results presented here. As noted, there are some hints in the interim, 18-month results that those longer-term results might be different.

It is important to note that the follow-up period for this interim report occurred prior to the emergence of the COVID-19 pandemic (i.e., follow-up through March 2020), and that the grantee programs had ended operations well before the pandemic took hold (June or October 2019). The longer follow-up period of the final report (through early 2021) will reflect the significant and unanticipated economic downturn due to COVID-19 that started in March 2020. That downturn could affect impacts. The likely direction of that effect on impacts is unclear.

[120] This line of argument would be consistent with larger impacts for more conventional participants—those who are younger, less educated, with shorter spells of unemployment. The subgroup results (by education level, by age, and by length of unemployment at baseline) provide no evidence for that conjecture. Note, however, that the subgroup analyses have lower power, such that they could detect only quite large differences in impacts between groups.

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