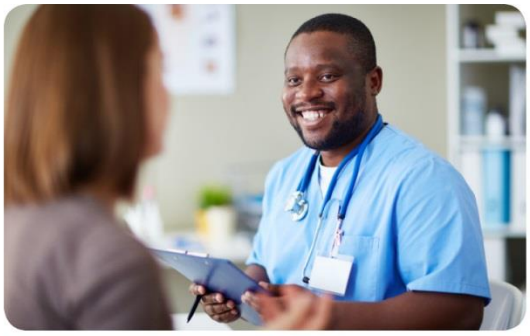

Health Profession Opportunity Grants (HPOG 1.0) Impact Study Interim Report:

Program Implementation and Short-Term Impacts

OPRE 2018-16a
May 2018

HPOG
Health Profession Opportunity Grants

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May 2018

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We also acknowledge the cooperation and assistance of the 23 HPOG grantees and more than 10,000 study participants who made this research possible. Local HPOG program administrators and staff were key partners in ensuring the study reached its recruitment targets, obtained and recorded critical intake and participation data, and captured data on the training and services offered through HPOG programs. Further, they welcomed the study's site teams for site visits that enriched the implementation analyses. We also thank the study participants whose agreement to be in the study and whose responses to the follow-up survey made the impact analyses presented here possible.

Table of Contents

List of Exhibits

List of Boxes

Overview

In 2010, the Administration for Children and Families (ACF) within the U.S. Department of Health and Human Services awarded the first round of five-year HPOG grants (HPOG 1.0) to 32 organizations in 23 states; five were tribal organizations. The purpose of the HPOG Program is to provide education and training to Temporary Assistance for Needy Families (TANF) recipients and other low-income individuals for occupations in the healthcare field that pay well and are expected to either experience labor shortages or be in high demand. HPOG 1.0 grantees designed and implemented programs to provide eligible participants with education, occupational training, and support and employment services to help them train for and find jobs in a variety of healthcare professions. The ACF Office of Planning, Research, and Evaluation supports a multipronged research and evaluation strategy to assess the success of the HPOG Program. To assess its effectiveness, the first round of HPOG programs was evaluated using an experimental design in which program applicants were assigned at random to a "treatment" group that could access the program or a "control" group that could not, and then their outcomes compared. This document reports on the programs' implementation and short-term impacts, those that arose roughly five calendar quarters after random assignment. It reports an average impact across the diverse HPOG 1.0 programs.

Primary Research Questions

- What impacts did the locally implemented HPOG programs as a group have on the outcomes of participants and their families?
- To what extent did those impacts vary across selected subpopulations?
- Which locally adopted program components influenced average impacts?
- To what extent did participation in a particular HPOG component(s) change the impact?

Purpose

The HPOG 1.0 Impact Study is making an important contribution to the field's collective knowledge about sector-based and career pathways programs. Because it found that HPOG had a positive impact on short-term "educational progress" (having completed or being currently enrolled in program training), the evaluation also may be able to detect impacts on longer-term employment and earnings in subsequent follow-up findings. Most other evaluations focus on a single program usually selected for its promise, and the results of those evaluations are generalizable to programs that are similar to the one evaluated. In contrast, the HPOG 1.0 Impact Study considers a large collection of diverse locally implemented programs, all operating in their own way under broad ACF guidelines. The benefit of this approach is that it helps to assess whether the general HPOG model—across many implementations of it—is effective in achieving its goals. That assessment could have implications for policy and program design, as well as for future research.

Key Findings

According to a follow-up survey (initiated 15 months after randomization) and national administrative data (pinned to the fifth follow-up quarter):

- About 68 percent of the treatment group versus about 60 percent of the control group had completed or were currently enrolled in training. This measure of educational progress was the study's *confirmatory outcome*; as such, the favorable impact is a sign that HPOG is on track toward its main objective of increasing labor market success.
- The treatment group was no more likely than the control group to be employed, but the treatment group was more likely to be employed in the healthcare sector (about 53 percent versus 41 percent).
- The treatment group earned slightly more than the control group. The $137 difference represents a 4 percent increase in the fifth follow-up quarter.
- These observed impacts arose because of the differences between the training and supportive services available to the treatment group versus the control group. Indeed, the major difference was the treatment group's greater access to supportive services. The treatment group reported receiving more academic, personal, and financial services than did the control group.
- Although HPOG was effective for a wide variety of people (e.g., across age, race/ethnicity, parental status), generally it appears to be more effective for those who enter the program with the advantages of some college or a degree, fewer barriers to school/work, or employment. Individuals with these characteristics benefited more from HPOG than did participants who were less advantaged at entry.

Methods

The HPOG 1.0 Impact Study used an experimental evaluation design to assess the impacts of 42 local HPOG programs in 23 of 32 first-round grantees nationwide. By randomizing eligible applicants to treatment and control groups, the evaluation provides rigorous evidence to inform the adult training field about sector-based and career pathways programs. In 19 of the 42 programs, the evaluation also analyzed how certain program enhancements—emergency assistance to address unexpected needs (such as a car repair or utility shutoff), non-cash incentives to encourage certain behaviors (such as perfect attendance) or meeting certain program milestones (such as completing a certification), and facilitated peer support to foster social and emotional connections among students and with faculty and staff—might improve on impacts of the standard HPOG program. The evaluation also used non-experimental methods to examine the relative contributions of various program characteristics.

The study's impact analysis used administrative data from the first five quarters after study participants were randomized and data from a follow-up survey initiated 15 months after they were randomized. The implementation analysis used data from a variety of sources, including administrative data from HPOG programs, qualitative data collected through in-person interviews during site visits, and various surveys of HPOG grantees, staff, management, and partners/stakeholders.

Executive Summary

The Health Profession Opportunity Grants (HPOG) Program provides education and training to Temporary Assistance for Needy Families (TANF) recipients and other low-income individuals for occupations in the healthcare field that pay well and are expected to either experience labor shortages or be in high demand.[1] The Administration for Children and Families (ACF) within the U.S. Department of Health and Human Services awarded the first round of HPOG grants (HPOG 1.0) to 32 grantees to run programs that met the following criteria:

- Target skills and competencies demanded by the healthcare industry.
- Support "career pathways"—clearly defined routes that allow participants to build a career, rather than simply getting training for a job, by advancing through successively higher levels of education and training, exiting into employment at multiple possible points.
- Result in employer- or industry-recognized, portable education credentials (e.g., certificates or degrees) and professional certifications and licenses (e.g., a credential awarded by a Registered Apprenticeship program).
- Combine support services with occupational training to help participants overcome barriers to succeeding in training and finding and keeping a job.
- Provide training at times and locations that are easily accessible to targeted populations.

ACF's Office of Planning, Research, and Evaluation supports a multipronged research and evaluation strategy to assess the success of the HPOG Program. To assess its effectiveness, ACF contracted with Abt Associates to evaluate HPOG's impact.

Evaluation design. The evaluation used an experimental design in which eligible program applicants were assigned at random to a "treatment" group that could access the program or a "control" group that could not, and then compared their outcomes. Of those 32 grantees, this HPOG 1.0 Impact Study focused on 23 grantees that operated 42 local programs nationwide.[2]

By having randomized applicants to treatment and control groups, the evaluation can provide strong evidence to assess the effectiveness of HPOG in pursuing its dual policy goals. In 19 of the 42 programs, the study also analyzed whether specific program enhancements produced better impacts than a standard HPOG program without those enhancements. In addition to these experimental analyses, the HPOG 1.0 Impact Study used non-experimental strategies to look for key ingredients to HPOG's success.

Data sources. The study's impact analysis used data from the National Directory of New Hires covering the first five quarters after study participants were randomized, plus data from a follow-up survey of study participants initiated 15 months after they were randomized. Its implementation analysis also used administrative data from HPOG programs; surveys of HPOG

[1] Authority for these demonstrations is included in the Affordable Care Act (ACA), Public Law 111-148, 124 Stat. 119, March 23, 2010, sect. 5507(a), "Demonstration Projects to Provide Low-Income Individuals with Opportunities for Education, Training, and Career Advancement to Address Health Professions Workforce Needs," adding sect. 2008(a) to the Social Security Act, 42 U.S.C. 1397g(a).

[2] By "program," we mean a unique set of services, training courses, and personnel; a single grantee may operate one or more programs.

grantees, staff, management, and partners/stakeholders; and qualitative data collected by the research team during site visits.

Major Finding

In the short term, **more HPOG participants had completed or were currently enrolled in occupational training than would have been without HPOG.** This "educational progress" measure was the study's *confirmatory outcome*, or the outcome for which a positive impact signals that HPOG is making progress toward its goals. Under the logic model, certain program design elements (i.e., training and supportive services) are intended to help individuals stay connected to the program and achieve desired program milestones, which predict more favorable labor market outcomes in the longer term. As such, the favorable impact is a sign that HPOG is on track toward its main objective of increasing labor market success.

Key Implementation Findings

- **HPOG was implemented as planned and was fully operational when the Impact Study began.**

Overall, grantees successfully implemented multiple individual HPOG programs meeting the broad guidelines set by ACF. The 42 programs included in the Impact Study all offered diverse opportunities for treatment group members to prepare for and enroll in healthcare occupational training and to receive a variety of case management and counseling services, as well as financial, academic, personal, and family supports. The earliest program to begin random assignment did so in March 2013, or about 2½ years after ACF awarded the grants. The research team had determined that programs were implemented and stable by that time.

- **HPOG programs used financial, academic, and behavioral criteria to determine whether applicants were eligible.**

ACF's grant guidelines required HPOG programs to serve recipients of Temporary Assistance for Needy Families (TANF) and other low-income adults. Programs set their own eligibility criteria. Across all 42 programs, the median income limit to be eligible was 200 percent of the federal poverty line. HPOG programs also used academic skills and behavioral criteria. Criteria levels for reading and math were mostly set to match the admission standards for occupational training in healthcare: eighth-grade levels were most common, although some training courses required higher skills as a prerequisite. Most HPOG programs also considered applicants' "suitability" for training and employment in healthcare, selecting for motivation, appropriate social skills, and other personal characteristics that program operators believed were needed for success.

- **Most eligible applicants were single and female, and more than half had dependent children. When they applied, 26 percent were already in school and 43 percent were employed.**

Most eligible applicants were "nontraditional" postsecondary education students, older and likely to have children. The "typical" eligible HPOG applicant (the pool from which study participants were randomly assigned) was female (89 percent), unmarried (84 percent), and 20-34 years old (56 percent), with dependent children (63 percent). When randomized (at "baseline"), 26 percent of participants were already in school and 43 percent were employed.

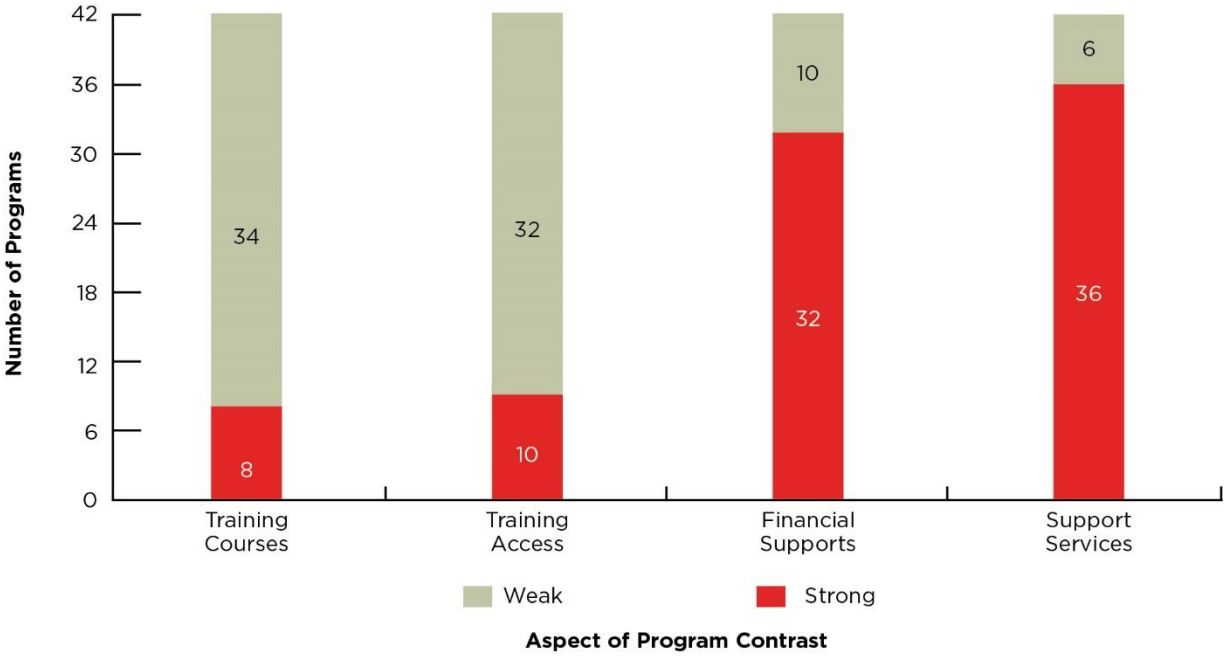
- **HPOG programs offered a wide variety of pre-training activities, training courses, and support services. Many participants took advantage of these opportunities.**

Pre-training activities helped prepare program participants for training and employment in healthcare. The most common activities taken up were soft skills training (45 percent of the treatment group) and an introduction to healthcare careers workshop (34 percent). Some healthcare occupational training courses were relatively short (two to three months) and for entry-level jobs; some were longer (nine months or more), for a variety of nursing jobs. According to administrative data, about 77 percent of the treatment group had enrolled in a training course within 15 months of entering the study. HPOG programs offered a variety of support services such as case management, academic and career advising, tuition assistance, and transportation and childcare assistance; these services were widely available and used. Almost 90 percent of treatment group members received case management, and 84 percent received academic or career counseling.

- **The major difference between opportunities available to the treatment group versus the control group was HPOG's more extensive financial and other support services.**

Relatively few HPOG programs (fewer than one-quarter) offered treatment group members access to training courses that were very different from what was available to control group members. However, treatment group members in most (more than three-quarters) of HPOG programs had access to more financial and support services than did the control group, as illustrated in Exhibit ES.1. The Exhibit shows the number of programs that had a strong or a weak contrast with the control group for four aspects of program services. The HPOG logic model posits that such supports help participants stay in and complete training. For this reason, the evaluation aims to evaluate HPOG's short-term impact on *educational progress* as its confirmatory outcome.

Exhibit ES.1: Contrasts between Treatment and Control Conditions



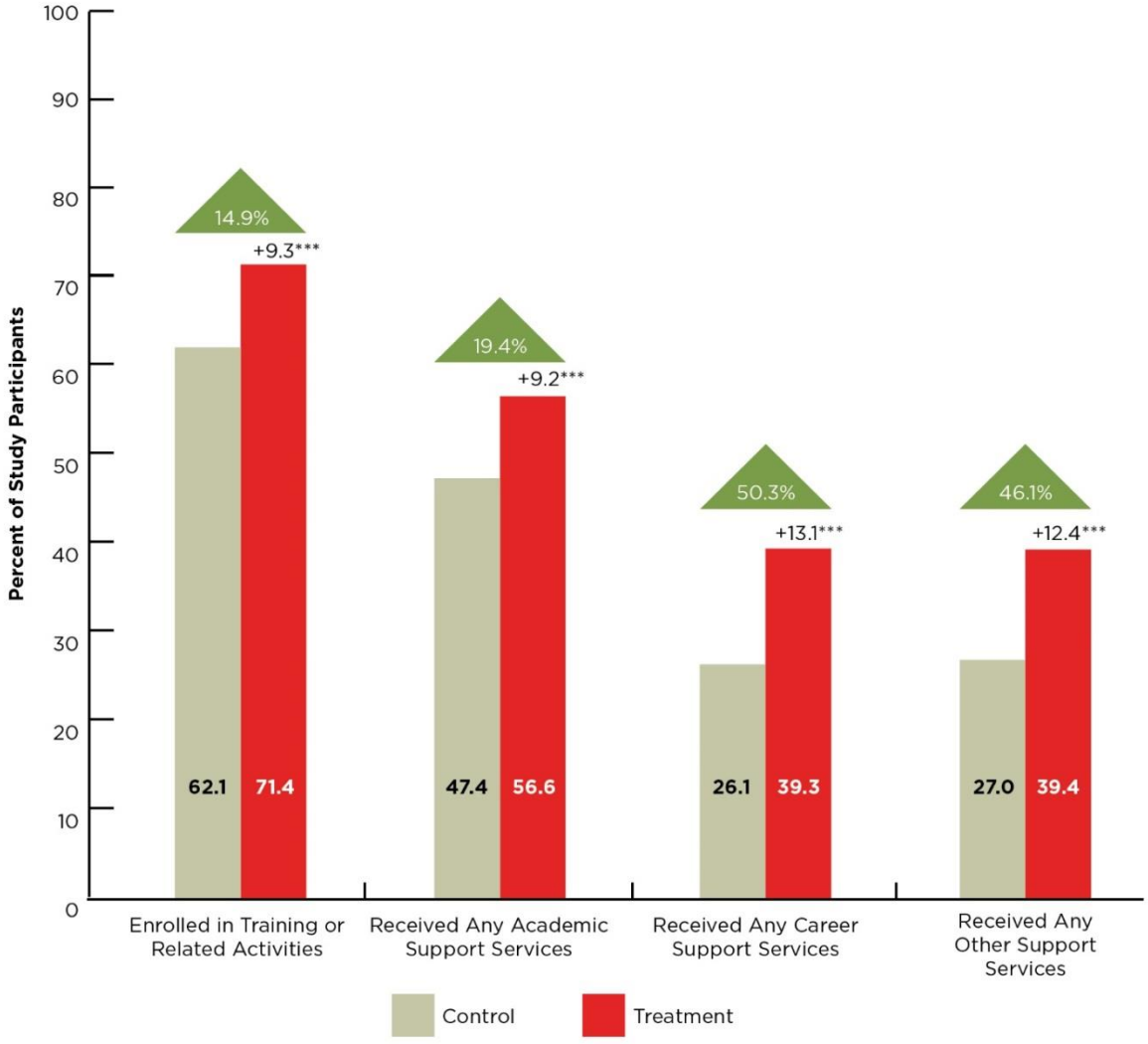
Sample Size and Source:
Programs: 42. HPOG Evaluation Design Implementation Plans.

Key Impact Findings

- **HPOG increased the likelihood that an individual would enroll in occupational training.**

As shown in Exhibit ES.2, 71 percent of the treatment group had enrolled in any training (including occupational classes, credit classes, or pre-training activities). This was 9 percentage points more than the control group, 62 percent of whom had enrolled in training, a rate that reflects that HPOG programs were generally located in training-rich environments. That so many of the study participants, treatment and control, were working (43 percent) and were already in school (26 percent) when they applied to HPOG suggests they were relatively well motivated to succeed in training.

Exhibit ES.2: Summary of HPOG's Impacts on Participation in Training and Services



Notes: Statistical significance levels for two-sided tests are indicated with asterisks, as follows: *** = 1 percent; ** = 5 percent; * = 10 percent. The more asterisks, the more likely the finding is not due to chance. For statistically significant results, relative impact magnitudes are shown in triangles.

Sample Sizes and Sources:

Enrolled in Training or Related Activities, and Received Any Career Support Services: Treatment: 6,801. Control: 3,649. HPOG and PACE follow-up surveys.

Received Any Academic Support Services, and Received Any Other Support Services: Treatment: 5,566. Control: 2,525. HPOG follow-up survey.

HPOG also increased how much academic support, career support, and other types of support services an individual received. For example, 57 percent of the treatment group versus 47 percent of the control group reported receiving academic supports such as financial aid advising, academic advising, assessments, and tutoring. About 39 percent of the treatment group versus 26 percent of the control group reported receiving career counseling or other career supports. This finding is reinforced by the implementation analysis observation that HPOG meaningfully expanded access to supportive services.

- **HPOG increased the likelihood that individuals had completed or were enrolled in training in the short term.**

As of the follow-up survey, which was initiated 15 months after randomization, 68 percent of the treatment group had completed or was currently enrolled in training versus 60 percent of the control group, as shown in Exhibit ES.3. In the evaluation's research design, this effect on participants' educational progress is a sign that HPOG is on track toward its main goal of increasing labor market success. Further analyses suggest that educational progress improved largely because HPOG program participants were more likely than the control group to *complete* the occupational training they enrolled in.

- **HPOG did not increase the likelihood that individuals were employed in the fifth follow-up quarter; but it did make them more likely to be employed in healthcare and to have access to health insurance through their employer. It also slightly increased their earnings.**

Although the treatment group was no more likely than the control group to be employed (both about 69 percent; see Exhibit ES.3), HPOG did increase employment in the healthcare sector: 53 percent of the treatment group was in a healthcare job versus 41 percent of the control group, as of the follow-up survey. This supports the conclusion that at least in the short term, HPOG fulfilled its policy goal of increasing the healthcare labor force. HPOG increased program participants' access to employer-sponsored health insurance by a statistically significant 2 percentage points (56 percent in the control group versus 58 percent in the treatment group). Having employer-sponsored health insurance is an indicator of higher quality jobs and aligns with the legislative charge that HPOG guide participants into better jobs, including with better wages and benefits. HPOG also increased earnings by $137 in the treatment group in the fifth follow-up quarter (from $3,345 in quarterly earnings in the control group to $3,482 in the treatment group, a 4 percent increase; see Exhibit ES.3).

- **HPOG did not decrease the share of individuals receiving public assistance benefits.**

The treatment group was no less likely than the control group to receive TANF. Neither did HPOG affect receipt of other public assistance benefits such as Medicaid and Supplemental Nutrition Assistance Program (SNAP).

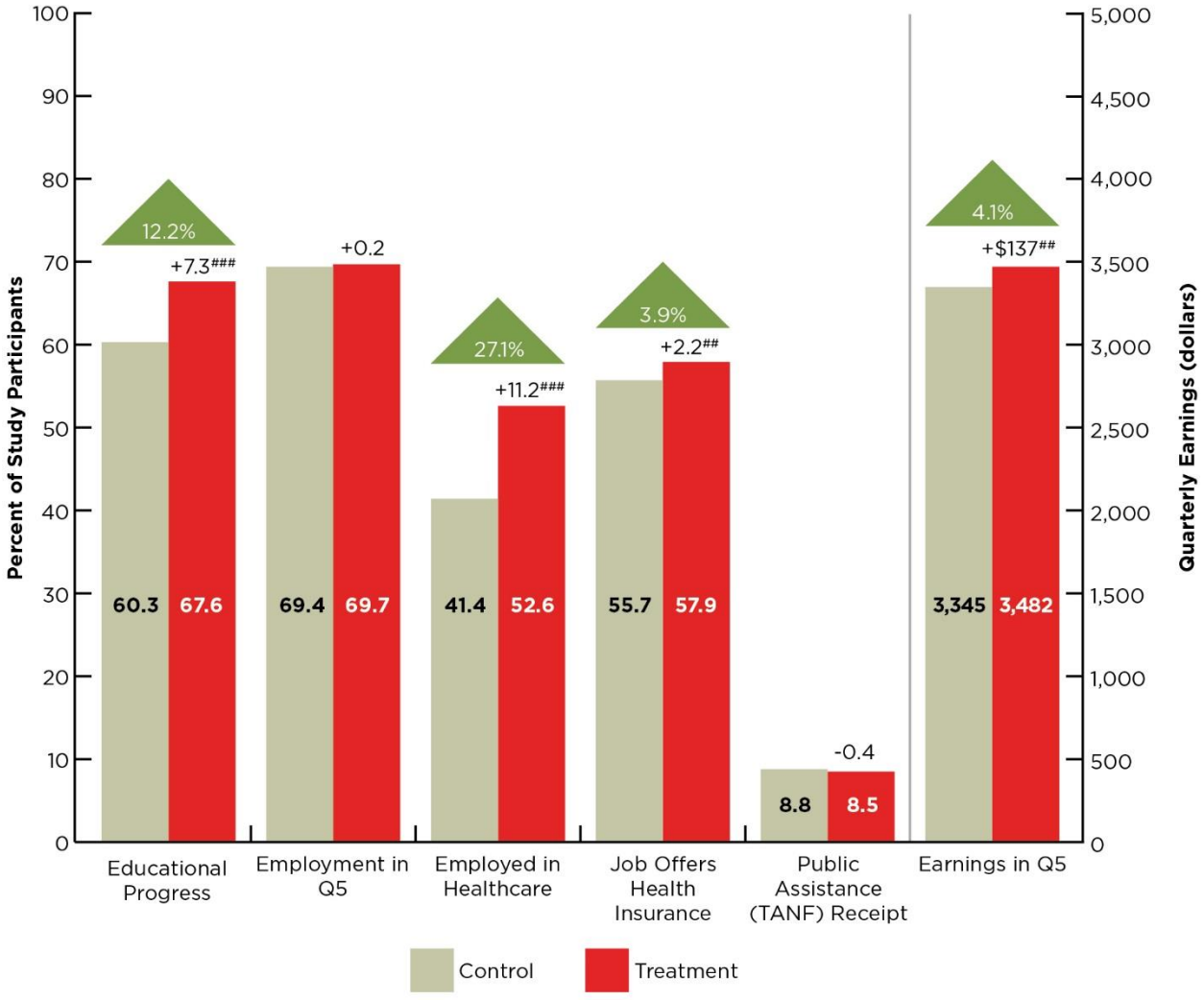
- **HPOG improved educational progress for individuals across all major demographic groups.**

Impacts on educational progress were consistently positive, regardless of participants' age, race/ethnicity, or whether they had dependent children.

- **In general, HPOG appears to be more effective for individuals with more advantages when they enter the program than for others.**

Some treatment subgroups, as defined by their baseline characteristics, benefitted more from HPOG than did others. Those participants who came to the program already with some college experience or a college degree experienced larger improvements in educational progress, were more likely to be employed in healthcare, and earned more than did participants without a high school diploma or equivalent. Those employed at baseline experienced greater impacts in educational progress, employment, employment in healthcare, and earnings. Those who were not receiving TANF at baseline experienced larger improvements in healthcare sector employment and earnings than those who were receiving TANF at baseline.

Exhibit ES.3: Summary of HPOG Impacts on Confirmatory and Secondary Outcomes



Notes: Statistical significance levels for one-sided tests are indicated with hashtags, as follows: ### = 1 percent; ## = 5 percent; # = 10 percent. The more hashtags, the more likely the finding is not due to chance. For statistically significant results, relative impact magnitudes are shown in triangles.

Sample Sizes and Sources:

Educational Progress, and Employed in Healthcare: Treatment: 6,801. Control: 3,649. HPOG and PACE follow-up surveys.

Employment in Q5, and Earnings in Q5: Treatment: 8,673. Control: 5,044. National Directory of New Hires.

Job Offers Health Insurance, and Public Assistance (TANF) Receipt: Treatment: 5,566. Control: 2,525. HPOG follow-up survey.

- **Adding any of the three enhancements (emergency assistance, non-cash incentives, and facilitated peer support groups) to an HPOG program's standard offerings did not improve its impacts.**

In a subset of HPOG programs, the study analyzed the separate impact of each of three program enhancements, initially chosen for their potential for improving key outcomes. In each of these 19 HPOG programs, applicants were randomly assigned to a control group, to a treatment group offered that program's standard offerings, or to a treatment group offered that standard program plus an enhancement. Enhanced treatment group members reported receiving the enhancements at a much greater rate than the standard treatment group reported.[3] No enhancement, however, led to more favorable impacts on any key outcome (educational progress, employment, employment in healthcare, earnings) relative to the program's standard version. In fact, the peer support enhancement appears to have had a negative influence on educational progress, perhaps because the enhancement required those treatment group members to invest time that otherwise would have been spent in training. A possible explanation for these results related to implementation: because the enhancements were added to HPOG programs already in operation, implementation may have differed from the components' implementation in existing programs and diminished the enhancements' potential effectiveness.

- **Certain program components—including access to financial assistance, childcare and transportation—are associated with more favorable HPOG impacts, specifically on educational progress.**

A non-experimental analysis (comparing HPOG programs against one another rather than against control groups) considered whether selected program characteristics influenced the magnitude of program impacts. All other factors being equal, HPOG programs that offered easier access to tuition assistance and other financial supports had relatively larger impacts on educational progress. The same was true for HPOG programs that offered greater access to childcare and transportation. No selected program components or implementation strategies were associated with larger impacts on employment, employment in healthcare, or earnings.

Conclusion and Implications in the Short Term

The HPOG 1.0 Impact Study is making an important contribution to the field's collective knowledge about sector-based and career pathways programs. Because it found that HPOG had a positive impact on the short-term "educational progress" measure (having completed or being currently enrolled in occupational training), the evaluation also may be able to detect impacts on longer-term employment and earnings, which flow next in the program's logic model.

Most other notable evaluations focus on single programs at a time. These are usually programs that have shown promise, and the results of those evaluations are generalizable to programs that are similar to the one evaluated. In contrast, the HPOG 1.0 Impact Study considers a large collection of diverse programs, all operating in their own way under broad ACF guidelines. The benefit of this approach is that it helps to assess whether the general model—across many

[3] Though standard treatment group members and control group members could not access the enhancement services that HPOG offered, they may have been able to get those or similar services in the community, and indeed reported doing so in small numbers.

implementations of it—is effective in achieving its goals. That assessment could have implications for policy and program design, as well as for future research.

1. Introduction

The Health Profession Opportunity Grants (HPOG) Program provides a response both to the increasing demand for qualified healthcare professionals and to the challenges that low-skilled individuals have in securing family-supporting jobs that offer advancement opportunities. In September 2010, the U.S. Department of Health and Human Services (HHS) Administration for Children and Families (ACF) awarded a first round of HPOG grants to 32 grantees in 23 states to provide education and training to Temporary Assistance for Needy Families (TANF) recipients and other low-income individuals for occupations in the healthcare field that pay well and are expected either to experience labor shortages or to be in high demand. Grantees included government agencies, community-based organizations, postsecondary educational institutions, and tribal-affiliated organizations. Those 23 grantees implemented 42 local HPOG programs.[4]

ACF's Office of Planning, Research, and Evaluation (OPRE) supports a multipronged research and evaluation strategy to assess the success of the HPOG Program in achieving its two goals: to improve occupational training opportunities for disadvantaged adults while providing a skilled workforce to meet the growing needs of the healthcare sector. To assess its effectiveness, ACF contracted with Abt Associates to evaluate HPOG's impact. The Impact Study focuses on the initiative's impacts on individuals; it does not assess HPOG's overall contribution to the nation's skilled healthcare workforce. The HPOG 1.0 National Implementation Evaluation (NIE) study considers how employers rate HPOG graduates as one measure of HPOG's influence on the broader healthcare sector.[5] This document reports the impacts of the first round of HPOG funding on individual outcomes, as of about five quarters into the study period (short-term impacts).

1.1 Career Pathways Research and HPOG

ACF's HPOG Program uses the career pathways framework of postsecondary occupational training and education to address the challenge of preparing nontraditional student populations for gainful employment while considering their various assets and challenges related to education and work. As articulated in the Funding Opportunity Announcement (FOA) (HHS 2010), the HPOG model aims to:

- target skills and competencies demanded by the healthcare industry;
- support "career pathways"—clearly defined routes that allow participants to build a career, rather than simply getting training for a job, by advancing through successively higher levels of education and training, exiting into employment at multiple possible points;

[4] A second round of 32 grants ("HPOG 2.0") was awarded in 2015 through extension of the HPOG Program by the Protecting Access to Medicare Act (PAMA) of 2014 (H.R. 4302; Public Law. 113–93, April 1, 2014, Title I Medical Extenders, Section 208, "Extension of Health Workforce Demonstration Project for Low-Income Individuals," Section 2008(c)(1) of the Social Security Act (42 U.S.C. 1397g(c)(1)) is amended by striking "2014" and inserting "2015."

[5] For more information on the HPOG NIE, see **The HPOG Research and Evaluation Portfolio** textbox on page 3.

- result in employer- or industry-recognized, portable education credentials (e.g., certificates or degrees) and professional certifications and licenses (e.g., a credential awarded by a Registered Apprenticeship program);
- combine support services with education and occupational training to help participants overcome barriers to training and work; and
- provide training at times and locations that are easily accessible to targeted populations.

This Impact Study looks at the first round of HPOG grants (see **The HPOG Research and Evaluation Portfolio** textbox on page 3 for discussion of how this study and report fit within ACF's larger career pathways research portfolio). In its design, HPOG is a sectoral training program operating within the career pathways framework. Having a sectoral focus means that programs train individuals for occupations in a specific industrial sector, such as healthcare in the case of HPOG. The career pathways framework involves trainings that

- are associated with clearly defined and industry-recognized credentials;
- build to add higher competencies in a defined career path;
- are flexibly delivered to accommodate nontraditional students;
- are integrated with work-based learning opportunities (such as internships, externships, clinical placement); and
- integrate varied supports aimed to ensure students' program persistence, program completion, and subsequent workplace success.

The specific occupations and jobs that were the focus of HPOG were, most commonly, Certified Nurse Assistant (CNA), Licensed Nurse Practitioner (LPN), and also community health worker, home health aide, health sector information technology, pharmacy technician, and phlebotomy.

Research on HPOG informs a field of practitioners and policymakers eager for information on what is most effective from sectoral-based, career pathways interventions. What makes the HPOG 1.0 Impact Study distinctive is that, unlike other recent research that singles out "promising" programs, it considers the collective of a diversity of programs. That is, HPOG funded many diverse programs, each implementing its own version of sectoral and career pathways–based training aligned with the set of guidelines in the FOA. The evaluation pools across 23 grantees and considers the 42 distinct programs that they operated over a five-year grant period.

This Impact Study reports an average impact that blends across diverse programs. As a result, this "blended," average impact may be seen as obscuring some information about the more- or less-effective models within the funding stream. A benefit of this evaluation approach is that it assesses whether the general model—across its many implementations—is effective in achieving its goals. In addition to reporting on this cross-site, aggregate effect of HPOG funding, the evaluation, as elaborated later, examines a wide variety of disaggregated impacts, including impacts on selected program components and impacts defined by various subgroups of individuals.

The HPOG Research and Evaluation Portfolio

ACF's Office of Planning, Research, and Evaluation (OPRE) is using a multipronged research and evaluation strategy to assess the implementation, outcomes, and impacts of two rounds of HPOG grants.

HPOG First Round (HPOG 1.0)

HPOG Implementation and Outcomes Research. For the first round of HPOG funding, awarded in 2010, a research team conducted implementation and outcomes research for the 27 non-tribal grants to explore how the programs were being implemented across grantees, what individual-level outcomes and outputs occurred, and how HPOG influenced service delivery systems. Data sources included surveys of grant directors and staff and administrative data on participant characteristics and training and service participation. The results of the research are summarized in:

- A descriptive implementation and outcomes report available here: https://www.acf.hhs.gov/sites/default/files/opre/final_nie_di_and_outcome_study_report_clean_b508.pdf
- A systems change analysis available here: https://www.acf.hhs.gov/opre/resource/systems-change-under-the-health-profession-opportunity-grants-program
- A final report on the implementation research is forthcoming.

HPOG 1.0 Impact Study. For 23 of the 27 first-round grants, the research team conducted an experimental study—the HPOG 1.0 Impact Study—to assess the impacts of the HPOG intervention. For the HPOG 1.0 Impact Study, beginning about 2½ years after the grants were awarded, applicants to these programs were assigned at random to a "treatment" group that could access the program or a "control" group that could not.

- This *HPOG 1.0 Impact Study Interim Report* assesses short-term outcomes for the treatment and control groups based on surveys initiated about 15 months after random assignment and on administrative data on employment and earnings. It also draws on the implementation research results for the 23 grantees and site visits conducted specifically for the Impact Study.

PACE Study. Three of the 23 HPOG grantees are also participating in another OPRE-sponsored evaluation of career pathways programs begun in 2007 called *Pathways for Advancing Careers and Education (PACE)*.

- Program-level reports on the implementation and early impacts of each of the nine PACE programs are under development. Current and forthcoming reports from the PACE project can be found at https://www.acf.hhs.gov/opre/research/project/pathways-for-advancing-careers-and-education

Longer-Term Follow-Up Studies. OPRE is also funding the research team to conduct longer-term follow-up (at approximately 36 and 70 months after random assignment) to continue tracking outcomes for both HPOG and PACE programs under the *Career Pathways Intermediate Outcomes Study* and the *Career Pathways Long-Term Outcomes Study*.

HPOG Second Round (HPOG 2.0)

OPRE is sponsoring implementation and impact evaluations of a second round of HPOG grants, awarded in 2015. The second-round evaluation will also use survey and administrative data to assess short- and longer-term outcomes for new applicants to the second-round programs.

For More Information on All of These Research Activities

https://www.acf.hhs.gov/opre/research/project/evaluation-portfolio-for-the-health-profession-opportunity-grants-hpog
http://www.career-pathways.org/acf-sponsored-studies/hpog/

Important Terms for This Report

Program Terms

- ***Career pathways***—a framework for occupational training (usually in a specific industrial sector) that combines education, training, and support services that align with the skill demands of local economies and helps workers to enter or advance within a specific occupation or occupational cluster.
- ***HPOG*** **or** ***HPOG Program***—the national Health Profession Opportunity Grants initiative, including all grantees and their programs.
- ***HPOG grantee***—the entity receiving the HPOG grant and responsible for funding and overseeing one or more local programs.
- ***HPOG program***—a unique set of services, training courses, and personnel; a single grantee may fund one or more programs. ***Program-level data*** denotes information collected about the 42 individual HPOG programs that are part of the Impact Study.
- ***HPOG administrative division***—a program intake location(s) with a dedicated case management and/or counseling staff that advises participants, connects them to education and training, and provides participants with support services or refers them to these services; a program may have one or more such divisions. ***Division-level data*** denotes information collected about individual administrative divisions.
- ***HPOG program operator***—the lead organization directly responsible for the administration of an HPOG program.
- ***HPOG partners***—other organizations directly involved in the operations of the HPOG program (these were respondents to the HPOG stakeholder/network survey).
- ***HPOG stakeholders***—organizations that play no role in program operations but have an interest in the HPOG program's implementation and success.
- ***Network***—the group of organizations, including HPOG program operators, partners, and stakeholders, that interact to support HPOG program operations.
- ***Sectoral training***—training for occupations in a specific industrial sector, such as healthcare.
- ***Workforce Investment Act (WIA)***—the major federal workforce development program during the years of the first-round of HPOG operation. WIA funded state and local **Workforce Investment Boards (WIBs)** that made decisions about how to distribute funds to support local workforce development services. In FY2014, WIA was reauthorized as the **Workforce Innovation and Opportunity Act (WIOA)**.

Impact Terms

- A ***confirmatory impact*** informs the extent to which the program is making progress toward its goals. If no confirmatory impacts appear as predicted, then the tested program would not be considered successful. The single confirmatory outcome in this report is the impact of the pooled HPOG treatment groups on "educational progress," defined as having completed or being currently enrolled in training.
- ***Secondary impacts*** measure the overall impact on additional outcomes identified in the HPOG logic model.
- ***Exploratory impacts*** measure program effects that may help improve our understanding of findings from the confirmatory and secondary analyses.

As a part of ACF's career pathways research portfolio, the HPOG 1.0 Impact Study includes both an impact evaluation and associated implementation research. The impact analysis uses an experimental design, where eligible applicants to HPOG programs were randomized to "treatment" groups (who could access the programs) or a "control" group (who could not). The difference between the groups' average outcomes is the impact of HPOG. The impact evaluation asks several key research questions:

1. What impacts do the locally implemented HPOG programs as a group have on the outcomes of participants and their families?
2. To what extent do those impacts vary across selected subpopulations?
3. Which locally adopted program components influence average impacts?
4. To what extent does participation in a particular HPOG component(s) change the impact?

Understanding HPOG's implementation is essential to interpreting the Impact Study's results. Separate research has extensively documented HPOG's implementation and operations (see Werner et al. 2016, for example). The implementation analysis that accompanies the Impact Study, including its underlying research questions, is presented in Chapter 2 and focuses on what is most essential for understanding HPOG's impacts. It describes the intervention, including the context in which it operated, and how HPOG varied from what was otherwise available in the community to program applicants. This last point is important: it is necessary to understand the control conditions in order to gauge how different HPOG was from what was normally available in the community. The implementation research also describes the experiences of HPOG program participants in their access to the training, training-related activities, and support services that HPOG made available.

For this interim report, "educational progress" is the confirmatory outcome. Defined as *having completed or being currently enrolled in program training*, it is the outcome we use to measure whether HPOG is on track toward its long-term objective of increasing labor market success. Future reports will measure impacts after a longer follow-up period, at approximately 36 and 72 months after randomization. At those points, we hypothesize, the impacts of HPOG training will be fully realized. For those future reports, we designate employment and earnings as the confirmatory outcomes. The study's logic model (see Exhibit 1.1) shows how the program inputs and outputs lead to these expected outcomes.

In brief, the model suggests how program context, administration, and content associate with anticipated education, training, and labor market outcomes. The model illustrates the factors influencing program design and implementation, program outputs, and program outcomes. Some of the factors, such as the conditions listed in the box labeled "Contextual Factors," are beyond the discretion of program designers and operators. Although program designers have some choice in determining the eligible population, the larger group of low-income individuals from which eligible participants are drawn is also a factor for each program.

Although HPOG had a single set of guidelines in its FOA, each program had some choice in determining its program administration and other aspects of program design; each program took a distinctive intervention approach. Although the evaluation considers HPOG as a whole, the study is also interested in disaggregating the relative effects of various program elements. These include the program components—or *what* a program chose to offer—and its administration and implementation strategies—or *how* a program chose to deliver services. These program specifics

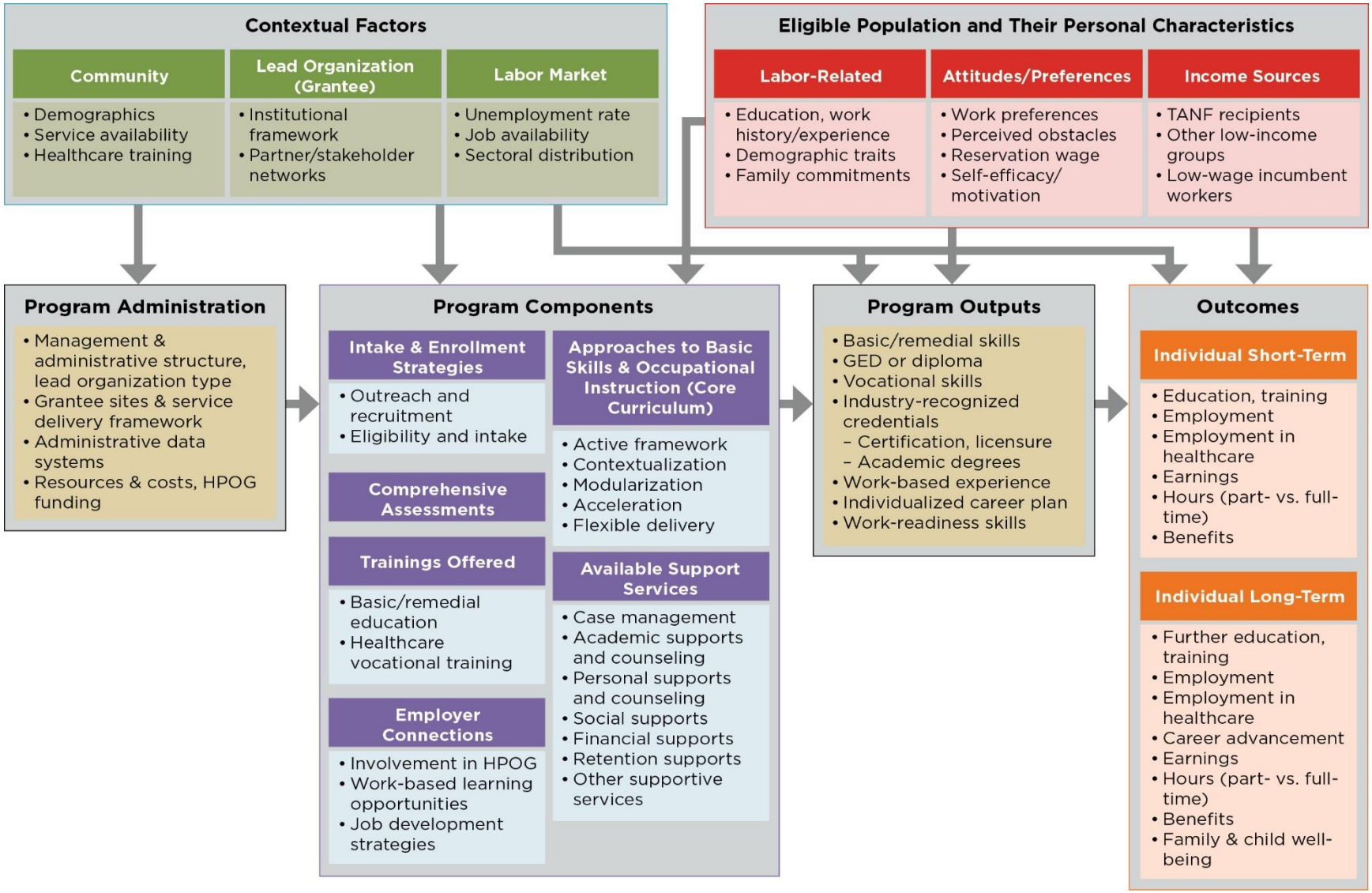
are hypothesized to be associated with more favorable program outcomes, but the specific relationships are an open empirical question.

The logic model also illustrates the relationship between individual participant characteristics and the program. For example, it implies that those participants with family obligations or varying levels of underlying motivation may experience the program differently, which may lead to differential impacts. Similarly, one might expect those participants with varying levels of education or prior labor market attachment to also experience differential impacts. This observation motivates the study's subgroup analyses.

Each of the "Program Component" groups represented in the logic model has a role in supporting the overall objective of providing occupational training to low-income individuals, leading to stable employment in the healthcare industry:

- ***Intake and enrollment strategies*** were designed to identify, recruit, and enroll eligible individuals with the motivation, behavior, and basic skills needed to succeed in completing occupational training in healthcare.
- ***Comprehensive assessments*** identified individual strengths and needs required to enroll in and complete training in healthcare.
- ***Trainings offered*** are the occupational courses offered and intended to focus on occupations in demand and accessible to individuals with the relevant skills and employment goals.
- ***Employer connections*** refers to the ways in which HPOG programs engage healthcare industry employers in support of training curricula and employment.
- ***Basic skills and occupational instruction*** adopted by programs aimed to support career pathways and serve nontraditional postsecondary students.
- ***Support services*** respond to academic, personal, and financial needs common among low-income individuals and support training completion, which leads to employment in healthcare.

Exhibit 1.1: HPOG Career Pathways Framework Logic Model



1.1.1 Evaluation Design

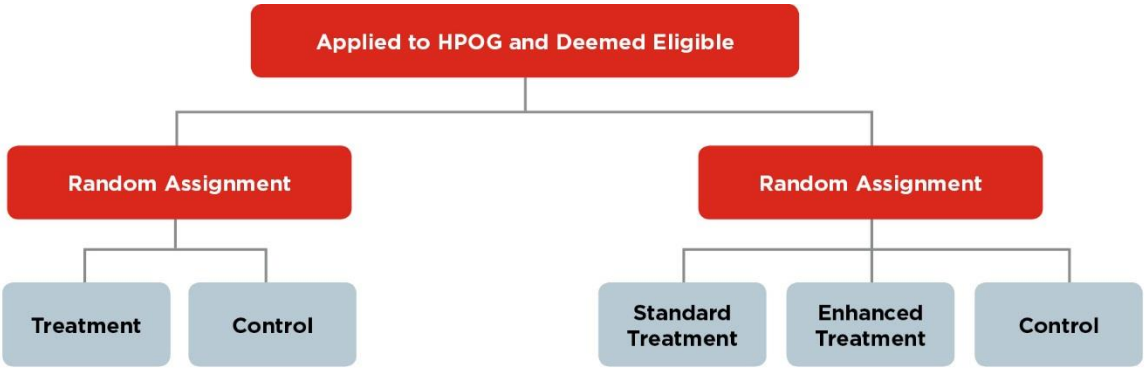
To evaluate HPOG, the study randomized eligible applicants to the 42 local HPOG programs into a control group, which had access to existing education, training, and support services in the community, or into a treatment group, which had access to an HPOG program. Random assignment began about 2½ years into the grant period. At that point, the research team had worked with grantees enough to establish that their programs were operating as designed and were enrolling and training the expected numbers of eligible participants, and that they were fully prepared to undertake randomization as part of the evaluation.

In 19 of the 42 programs, randomization to treatment involved two alternate groups: one treatment group had access to the standard HPOG program, and one treatment group had access to an enhanced version of HPOG. Three enhancements were tested—emergency assistance, non-cash incentives, and facilitated peer support—but each of the 19 programs operated only one of the enhancements. The incorporation of these second treatment groups provides an opportunity to learn whether the enhancements offered an improvement on the standard program. Exhibit 1.2 illustrates how random assignment generally worked, and which grantees had a second treatment group.

The study combines the standard and enhanced treatment groups to form a "pooled" treatment group for the overall impact and subgroup impact analyses. Only for the assessment of the effectiveness of the three program enhancements do we separate the standard and enhanced treatment groups. This is justified by the observation that some of the programs that appear on the left side of Exhibit 1.2 included the components that were accessed via a lottery in the programs that appear on the right side. Indeed, the HPOG 1.0 Impact Study assesses the impact of a national initiative, including many implemented variants that responded to federal guidance on program design. The impact of the collection of locally designed and locally implemented HPOG programs provides evidence on the effectiveness of HPOG as a funding stream.

In addition to analyzing this planned variation in program design, the evaluation includes analyses of the natural variation that existed across the HPOG programs. This variation took two forms: that each program designed and implemented its own version of HPOG, and the individual participants' experience and exposure to various aspects of HPOG. The study's Design Report (Peck et al. 2014) and Analysis Plan and associated supplements (Harvill, Moulton, and Peck 2015; 2017) elaborate on all aspects of these varied analyses; some additional details appear in this report's appendices.

Exhibit 1.2: Random Assignment Processes



Programs with a Single Treatment Group

- Pima County (AZ) Community College District
- San Diego (CA) Workforce Partnership-MAAC South
- San Diego (CA) Workforce Partnership-Metro CTS
- San Diego (CA) Workforce Partnership-North County Lifeline
- Pensacola (FL) State College
- Will County (IL) WIB-Central States SER
- Will County (IL) WIB-College of Lake
- Will County (IL) WIB-Instituto del Progreso Latino
- Will County (IL) WIB-Jewish Vocational Services
- Will County (IL) WIB-Joliet Junior College
- Kansas Department of Commerce-Heartland Works, Inc.
- Kansas Department of Commerce-Southeast KANSASWORKS, Inc.
- Kansas Department of Commerce-Workforce Alliance of South Central Kansas
- Kansas Department of Commerce-Workforce Partnership
- Kansas Department of Commerce-WorkforceOne
- Louisiana WIB SDA-83 Inc.
- Central (NE) Community College
- Schenectady County (NY) Community College
- Eastern Gateway (OH) Community College
- Central Susquehanna (PA) Intermediate Unit
- Edmonds (WA) Community College
- Workforce Development Council of Seattle-King County (WA)
- Milwaukee (WI) Area WIB

Programs with Two Treatment Groups, by Enhancement

Emergency Assistance

- Full Employment Council (MO)
- Bergen (NJ)-Bergen Community College
- Bergen (NJ)-Brookdale Community College
- Bergen (NJ)-Community College of Morris
- Bergen (NJ)-Hudson County Community College
- Bergen (NJ)-Middlesex County College
- Bergen (NJ)-Passaic County Community College
- Bergen (NJ)-Sussex County Community College
- Bergen (NJ)-Union County College
- Bergen (NJ)-Warren County Community College
- NY Research Foundation of CUNY-Hostos Community College

Non-cash Incentives

- Gateway Community and Technical College (KY)
- Bergen (NJ)-Essex County College
- Suffolk County (NY) Department of Labor
- South Carolina Department of Social Services
- Alamo (TX) Community College District and University Health System

Facilitated Peer Support

- The WorkPlace (CT)
- New Hampshire Office of Minority Health
- Buffalo and Erie County (NY) WDC

Source: Peck et al. (2014)

1.1.2 Sample of Grantees, Programs, Divisions, and Individuals

Of the 32 HPOG grantees funded beginning September 29, 2010, the 23 grantees that were not otherwise engaged in ACF's HPOG evaluation research[6] were included in this HPOG 1.0

[6] All of the HPOG 1.0 grantees were part of some evaluation research, whether through an ACF-sponsored university partnership research study, tribal evaluation, or the HPOG Impact Study. Those non-tribal grantees collecting individual-level data as part of another evaluation were not required to participate in the Impact Study; all the rest were. All of the non-tribal HPOG grantees are also part of the National Implementation Evaluation (NIE) of HPOG, and they were required to participate in the Impact Study, with a small number of exceptions. In three cases,

Impact Study. Three of the 23 grantees were also part of another evaluation in ACF's research portfolio, *Pathways for Advancing Careers and Education (PACE)* (see **The HPOG Research and Evaluation Portfolio** textbox on page 3). That PACE project collected data on these grantees and evaluated them as individual programs.[7]

These 23 grantees operated 42 distinct programs; they took in participants at 92 locations, which we refer to as "administrative divisions." Random assignment of participants into the study began in some programs in March 2013, or about 2½ years after the September 29, 2010, grant award; had begun in all programs by September 2013; and ended in November 2014.

Over that time, as shown in Exhibit 1.3, programs randomized 13,802 participants. In 20 of 23 the grantees, for each person randomized into the control group, two persons were randomized into the treatment group (a ratio of 1:2). In the three HPOG/PACE grantees, the ratio was 1:1. In those programs that had a second treatment group, the ratio was 1:1:1. Over the course of the study—as is commonly the case—some members of the sample asked to be withdrawn. As a result, the final sample that the analysis considers was 13,717 participants, including 5,044 control group members and 8,673 treatment group members (7,209 in standard treatment groups and 1,464 in enhanced treatment groups).

Exhibit 1.3: HPOG Impact Study Sample Sizes by Experimental Group

Group	Total Sample	Standard Treatment	Enhanced Treatment	Control Group
Grantees	23	23	10	23
Programs	42	42	19	42
Administrative Divisions	92	92	32	92
Individuals randomly assigned	13,802	7,231	1,468	5,103
Study sample, as of September 2016	13,717	7,209	1,464	5,044
Follow-up survey respondents	10,450	5,633	1,168	3,649

Notes: For the 19 programs that offered enhanced treatment, each program operated only one of the three enhancements tested. One grantee operated some programs that offered the emergency assistance enhancement and some programs that offered the non-cash incentives enhancement.

1.1.3 Data Sources

This Impact Study draws on data from a variety of sources. Its implementation analysis uses data from

- HPOG programs' management information system, called the Performance Reporting System (PRS), which was used by all programs to collect administrative data;
- HPOG grantee survey, collected by the HPOG National Implementation Evaluation (NIE);
- HPOG staff/management survey, collected by the NIE;

incumbent worker programs were exempted from the Impact Study because of challenges with treatment-control group spillover and contamination potential. In addition, one program was not included in the Impact Study because it did not enroll any new participants after random assignment began.

[7] These grantees were Pima Community College (AZ), San Diego Workforce Partnership (CA), and WDC of Seattle-King County (WA).

- HPOG stakeholder/network survey, collected by the NIE;
- Evaluation Design Implementation Plans developed to describe evaluation procedures in each HPOG program; and
- qualitative data collected through on-site observations and monitoring of program operations throughout the study period.

This Impact Study's impact analysis uses data from

- PRS;
- HPOG grantee and staff/management surveys;
- HPOG study participant survey collected at baseline (supplemental to the PRS baseline data);
- PACE baseline information form for the programs evaluated in the PACE Study;
- HPOG and PACE study participant follow-up surveys, initiated 15 months after randomization;[8] and
- employment and earnings data from the National Directory of New Hires (NDNH).

The NDNH administrative data are available for the full sample. The follow-up survey, which had a 76 percent response rate, covers 10,450 members of the study sample (see Exhibit 1.3). Additional details of the study sample covered in various data sources and how the evaluation handled missing data are discussed in Appendix A.

1.2 Organization of the Report

The balance of this report proceeds as follows:

- **Chapter 2**—the context in which HPOG was implemented, including the control conditions, and the program's design and implementation, including participants' enrollment in various trainings and receipt of various supports. The chapter also characterizes the program's target population and the study's sample's characteristics.
- **Chapter 3**—the extent to which the HPOG treatment group reported experiencing different levels of training and services relative to the control group. This chapter establishes the "service contrast"— the impacts on training and support services participation—that results in the impacts reported in subsequent chapters.
- **Chapter 4**—findings related to the first research question, regarding the overall impact of HPOG.
- **Chapter 5**—findings related to the second research question, regarding the impact of HPOG on selected subgroups of interest.

[8] Members of the study sample were first approached to complete the survey in the 15th month following their random assignment date; the median length of time of survey completion was 18 months, and the range was 13 to 27 months.

- **Chapter 6**—findings from the study's experimental test of three selected program enhancements (emergency assistance, non-cash incentives, and facilitated peer support). As such, it is one of the ways in which the report addresses the third research question, regarding which locally adopted program components influence average impacts.
- **Chapter 7**—additional findings regarding the effectiveness of selected program components, as another way to provide insights on the third research question. In contrast to the experimental analysis in Chapter 6, the non-experimental analysis in Chapter 7 leverages the study's substantial cross-program variation to explore additional aspects of the effectiveness of the program's context, design, and implementation.
- **Chapter 8**—findings and their implications for policy and practice.

The report also includes several appendices:

- **Appendix A**—the sample, including sample withdrawals, survey data coverage, and administrative data coverage. It also reports how the study dealt with imputing missing data—including unit and item nonresponse—and computed and used survey nonresponse weights.
- **Appendix B**—summary and additional technical details of the impact analyses.[9]
- **Appendix C**—expanded results for Chapter 3 impact analyses (for training and support services participation). Both here and in subsequent appendices, the expanded results include outcome-specific sample sizes, standard errors, *p*-values, and 90 percent confidence intervals, in addition to providing the control and treatment group means, differences, relative differences, and statistical significance levels.
- **Appendix D**—expanded results for Chapter 4 impact analyses (on confirmatory, secondary, and exploratory outcomes). It also provides the results of an analysis of the program's impacts for just those programs judged at baseline to have a meaningful treatment-control contrast (i.e., the analysis excludes those programs that had a relatively rich service environment available to control group members).
- **Appendix E**—expanded results for Chapter 5 impact analyses (for subgroups).
- **Appendix F**—expanded results for Chapter 6 impact analyses (for the three experimental tests of enhancements).
- **Appendix G**—expanded results for Chapter 7 analyses (the non-experimental assessments of the contribution of selected program characteristics to program impacts).
- **Appendix H**—methods used for and results of the study's endogenous subgroup analyses, which are used to answer the Impact Study's fourth research question, regarding the role of individual participation in certain program components.

[9] For the study's pre-specified plans, refer to the following documents: *Health Profession Opportunity Grants Impact Study Design Report* (Peck et al. 2014); *Health Profession Opportunity Grants Impact Study Technical Supplement to the Evaluation Design Report: Impact Analysis Plan* (Harvill, Moulton, and Peck 2015); and *Health Profession Opportunity Grants (HPOG) Impact Study: Amendment to the Technical Supplement to the Evaluation Design Report* (Harvill, Moulton, and Peck 2017). These documents were made public at https://osf.io/2bz8k/ via the Open Science Framework (OSF) registry for transparently establishing research plans.

2. HPOG Program Design and Implementation

HPOG grantees designed and implemented programs to provide eligible low-income adults with access to pre-training activities, training courses, and support services to help them get jobs and advance in a variety of healthcare professions. In developing their programs, grantees were guided by the FOA issued by ACF (HHS 2010).

The HPOG FOA included general guidelines, leaving grantees with a great deal of discretion in designing their programs. For example, although the FOA mandated that grantees serve TANF recipients and other low-income adults, it left it up to grantees to define "low-income" and to develop their own basic academic skills and behavioral criteria for eligibility. Grantees had to make choices about how best to prepare the largely nontraditional students their HPOG program would serve for the academic and social experiences of occupational training in healthcare. Most programs implemented pre-training seminars, workshops, orientations, "boot camps," and courses designed to prepare and orient program participants and help them make good choices about training courses and career paths.

Grantees also had to make choices about how best to design and operate their HPOG programs in response to local healthcare labor market conditions. For example, grantees decided which training courses to offer in response to local demand. Occupations might range from entry-level positions, such as certified nursing assistant and home health aide, to higher-level positions, such as licensed vocational nurse and registered nurse.

Summary of Key Findings: Program Design and Implementation

- **Overall, grantees successfully implemented multiple individual HPOG programs** meeting the broad guidelines set by ACF. Given the flexibility of those guidelines, programs offered a range of opportunities for treatment group members to prepare for and enroll in healthcare occupational training and to receive a variety of case management and counseling services, as well as financial, academic, personal, and family supports.
- **All programs served TANF recipients and other low-income individuals**, but different programs set different financial, academic, and behavioral criteria to determine whether applicants were eligible. Criteria levels for reading and math were mostly set to match the admission standards for occupational training in healthcare: eighth-grade levels were most common, although some training courses required higher skills as a prerequisite.
- **Most eligible individuals were nontraditional postsecondary education students, older and more likely to have children.** The "typical" HPOG participant was female (89 percent), unmarried (84 percent), 20-34 years old (56 percent), with dependent children (63 percent).
- **Upon entering the study, 26 percent of study participants were already in school and 43 percent were employed.**
- **Pre-training activities helped prepare program participants for training and employment in healthcare.** The most common activities participants received were soft skills training (45 percent of the treatment group) and an introduction to healthcare careers workshop (34 percent).

continued

The length of these trainings ranged from a few months to several years. Finally, grantees varied in their choices about the number and type of support services made available to participants, as well as in their choices of providing supports directly or referring participants to available community resources.

As was evident in the flexibility the FOA allowed grantees, HPOG was not based on a uniform model. Grantees developed their programs based on determinations about which healthcare occupations were most in demand in their community, which groups of low-income adults could benefit from HPOG, the levels of effort and commitment that might be expected from targeted populations, and which supports might be most effective in ensuring that participants enrolled in and completed their training.

The implementation study asked the following questions:

- How were the HPOG programs designed, and how did the programs operate across the HPOG grantees and programs?
- What trainings and services did HPOG treatment group members experience?
- What services were available in the community, and to what extent did HPOG differ from the control conditions?

Key Findings continued

- **Pre-training activities helped prepare program participants for training and employment in healthcare.** The most common activities participants received were soft skills training (45 percent of the treatment group) and an introduction to healthcare careers workshop (34 percent).
- **Some healthcare occupational training courses were relatively short (two to three months) and for entry-level jobs; some were longer (nine months or more), for a variety of higher-level nursing jobs.** Within 15 months of entering the study, about 77 percent of the treatment group had enrolled in a training course and 53 percent had completed a training course. The most common jobs that treatment group members trained for were nursing aides, orderlies, and attendants.
- **Academic, personal and family, and financial support services were widely available and used.** Almost 90 percent of the treatment group received case management services and 84 percent received academic or career counseling.
- **The major difference between opportunities available to the treatment group versus those available to the control group was HPOG's richer financial and other support services.**

In this chapter we describe the design choices that grantees made and how similar and different the 42 HPOG programs were on key implementation measures implicit in the logic model. We begin the chapter with a summary of HPOG's geographic and economic context. Next, we describe how programs marketed and recruited for HPOG, as well as how they set eligibility requirements. We describe the results of the eligibility criteria and the characteristics of the participants when they entered the study (study sample at baseline). We then report on what programs *offered* and on what treatment group members *received*. Finally, we detail how HPOG differed from other programs and services available in the community, providing a picture of the control conditions, sample traits, and intervention responsible for the estimated impacts of HPOG as presented later in this report.[10]

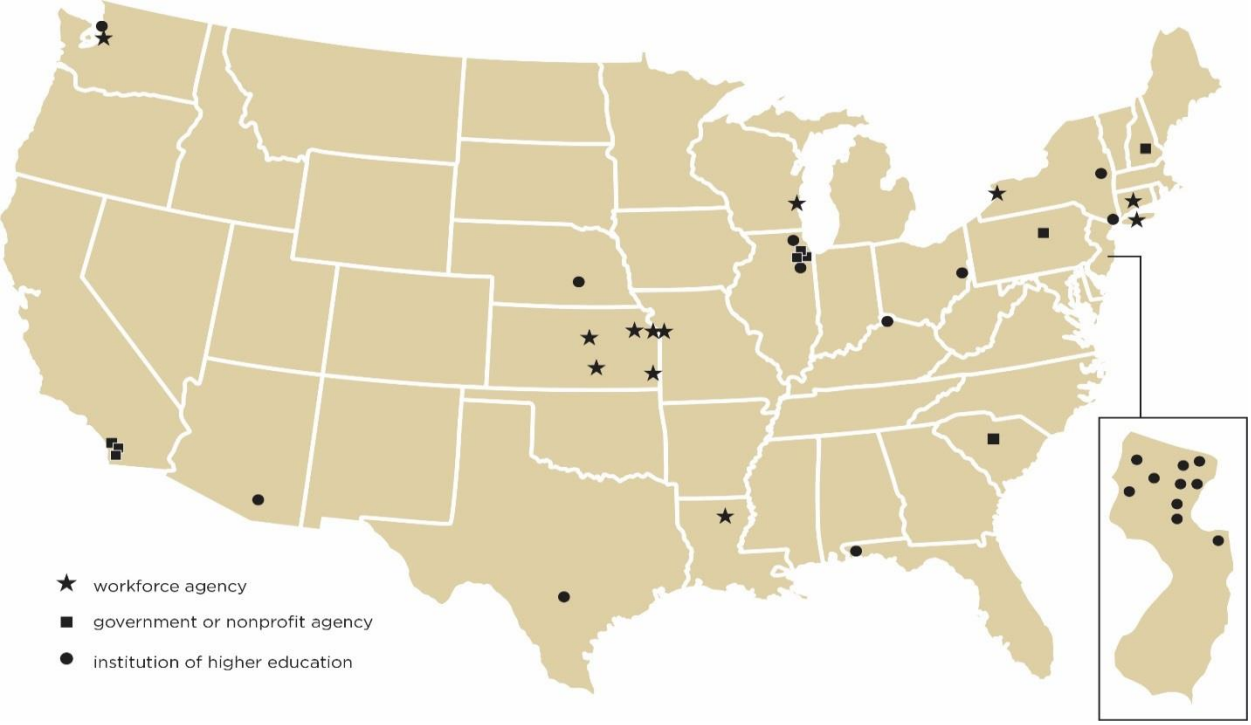
[10] For more information on HPOG's design and implementation, see Werner et al. (2016).

2.1 HPOG Program Context

- **HPOG programs operated in diverse settings, enhancing the potential generalizability of Impact Study results.**

The 42 programs included in the HPOG 1.0 Impact Study operated in 19 states (Exhibit 2.1), whose labor markets varied. The healthcare sector experienced dramatic growth nationally, beginning before and continuing throughout HPOG implementation. From 2004 to 2014, both employment and wages grew for most of the occupations for which HPOG programs provided training (Bernstein et al. 2016).[11] The rate of healthcare sector job openings exceeded rates of job openings for the economy as a whole from 2001 to 2014, indicating that the job market for healthcare workers expanded faster than the job market for all workers. At the same time, healthcare sector hiring rates were consistently lower than overall hiring rates, indicating a shortage of trained healthcare workers relative to other sectors. (Bureau of Labor Statistics [BLS] 2015).

Exhibit 2.1: Geographic Distribution of HPOG Programs in the Study



Notes: The map identifies the central office location and not necessarily the service area reach of the program.
Sample Size and Source:
Programs: 42. HPOG PRS.

According to the grantee survey, HPOG programs varied in the size of their service areas, from single counties to an entire state, with programs most frequently serving multiple counties in a state (19 programs, 45 percent). Two programs served an entire state, 16 programs (38

[11] The jobs for which HPOG programs generally train are in the Bureau of Labor Statistics category "Production and Non-supervisory Workers." This category includes occupations such as nursing aides, home health aides, medical assistants, and medical coders and billing workers that are on the first steps of healthcare career pathways.

percent) served a single county, and seven programs (17 percent) served other combinations of geographic units. Communities where HPOG programs operated varied in their urbanicity, with 29 programs (69 percent) providing services in urban settings, 31 programs (74 percent) providing services in suburban settings, and 20 programs (48 percent) providing services in rural settings. Many programs served participants in multiple settings. This spatial diversity is relevant because urban- and rural-serving programs face distinct challenges in providing training, especially when it comes to transportation.

Another dimension of contextual diversity is the administrative structure and configuration of program operators. The three main types of operators are indicated by symbols in Exhibit 2.1:

- ***Institution of higher education***—21 program operators, mostly community and technical colleges; represented by a circle.
- ***Workforce agency***—12 program operators, including Workforce Investment Boards (WIBs) and One-Stop career centers; represented by a star.
- ***Government or nonprofit agency***—9 program operators, including nonprofit institutions, state agencies, and a quasi-governmental agency; represented by a square.

The type of agency or institution operating HPOG programs is relevant because it brings with it a culture and mission closely related to its broader institutional goals and strengths. Though each type of grantee and program operator may have had some set of in-house capacity, they often needed to fill in gaps in training and support service opportunities. They did so by partnering with other agencies. For example, though community colleges are well positioned to provide occupational training, they may not typically provide all of the support services that an HPOG program needs to serve its participants. As a result, programs had to contract for those services, hire staff to provide them, or rely on community resources. Similarly, WIBs operating an HPOG program often offered the range of support services needed by HPOG participants, but they typically did not themselves offer training, instead paying providers to do so.

Grantees could operate a single program or multiple programs. Most grantees funded and oversaw or operated a single program; four grantees funded and oversaw or operated multiple distinct programs. This study uses the program as the main unit of analysis because it is the unit where characteristics of training and service offerings are defined. As established in the study's Design Report, a program is "a unique set of services, training courses, and personnel" (Peck et al. 2014, 4).

- **HPOG was implemented as planned and was fully operational when the Impact Study began.**

Some operators began serving participants within weeks of the September 29, 2010, grant award date, particularly operators that simply expanded or adapted existing programs. Others—generally grantees and operators that established new programs—began serving participants several months after grant award. The research team had determined that programs were implemented and stable by the time they began study intake. Grantees and programs included in the HPOG 1.0 Impact Study are identified, along with details about program operator type, in Appendix A, Exhibit A.1.

2.2 Program Design, Implementation, and Administration

- **All programs served TANF recipients and other low-income individuals, but each program set its own financial, academic, and behavioral eligibility criteria.**

Within the general guidelines of the FOA, 23 grantees implemented 42 distinct HPOG programs. All HPOG programs recruited and served TANF recipients and other "low-income" individuals, with that precise definition left to each grantee's discretion. The proportion of the sample who were TANF recipients at baseline was relatively low, at just 12.5 percent (see Exhibit 2.5).

Most programs set minimum grade-level standards for reading and math. Most also assessed applicants' suitability for a career in a healthcare profession. HPOG programs provided a wide array of participant support services, including case management, academic and career counseling, personal and family supports, and financial assistance. Nearly all programs offered training for select entry-level positions, including nursing aides, orderlies, and attendants. Other commonly offered training courses included those for medical assistants and pharmacy technicians. HPOG programs also offered longer-term training courses for higher-wage jobs, such as licensed vocational and registered nurses. In this section we elaborate on how similar and different HPOG programs were on these dimensions.

2.2.1 Marketing, Recruitment, and Eligibility

In this subsection we focus on how program operators marketed their HPOG programs, recruited applicants, and selected applicants for entry. We close with a description of the characteristics of the study sample resulting from the application process.

Marketing and Recruitment

HPOG programs used a variety of strategies to inform prospective applicants about HPOG (Exhibit 2.2). For example, staff from all 42 programs reported relying on partnerships with and referrals from other organizations and word of mouth. Other common modes of marketing and recruitment included promoting the program through grantee and partner websites and social media (35 programs, 83 percent) and making in-person presentations around the communities served by HPOG (34 programs, 81 percent). All programs also used other strategies, some of which included toll-free information hotlines, direct mail campaigns, and door-to-door marketing. As reported in in-person interviews during the study team's site visits, program management and staff in most programs believed word of mouth was the most successful strategy.

Given the relatively extensive and active public information campaign conducted by HPOG programs, grantees reported that many applicants were aware of what the program offered and were motivated to apply and be accepted into HPOG. During the random assignment period, applicants were also informed about the evaluation and that some eligible applicants might be assigned to the control group (meaning they would not have access to HPOG's training, activities, and services).

Exhibit 2.2: Modes of Outreach and Recruitment

Mode	Number of Programs	Percentage of Programs
Partnerships with or referrals from other organizations	42	100
Word of mouth	42	100
Distributed print materials	40	95
Internet-based strategies	35	83
In-person presentations in the community	34	81
Partnerships with or referrals from employers	28	67
TV or radio public service announcements	16	38
Other strategies	42	100

Notes: Responses do not sum to 100 percent because multiple responses were permitted.
Sample Size and Source:
Programs: 42. HPOG grantee survey.

Eligibility and Intake

In serving TANF recipients and other low-income adults more broadly, grantees exercised discretion in defining their target populations. In addition to setting income limits, grantees also developed a range of eligibility criteria based on applicants' educational attainment and basic skills ability, criminal background checks or drug tests, and personal characteristics. In developing eligibility criteria and intake processes for their programs, grantees sought to balance the goal of serving individuals who already had many of the skills needed to succeed in training and jobs in healthcare with the goal of serving individuals who might need significant investments in basic academic skills and work-related knowledge and behavior.

Income Eligibility. All HPOG programs considered TANF recipients to be income eligible.[12] In determining income eligibility for those applicants not receiving TANF cash benefits, programs applied one or more measures of income to a variety of standards. These included some percentage of the federal poverty level (FPL) for a specific household size; income eligibility for TANF (whether receiving TANF or not); income eligibility for the Supplemental Nutrition Assistance Program (SNAP); and a program-specific income threshold. According to the grantee survey, for the 31 programs that used some percentage of the FPL to determine income eligibility, the median program eligibility threshold was 200 percent of FPL, and the eligibility threshold ranged from 150 to 250 percent of FPL.

Educational Attainment and Basic Skill Requirements. For HPOG participants to succeed in completing postsecondary healthcare occupational training courses, they needed adequate basic skills. In setting entry requirements for educational attainment and basic skills, programs had to balance the goal of helping relatively low-skilled applicants improve in the academic skills they needed to enroll in occupational training versus the goal of meeting HPOG's performance benchmarks for course completions within the five-year term of the grants.

Exhibit 2.3 summarizes how programs approached the issue of academic eligibility for HPOG. On educational attainment, programs were almost evenly split on requiring a high school diploma or its equivalent (53 percent required it and 48 percent did not). Not surprisingly,

[12] There is no federal income eligibility standard for TANF. Instead, each state sets its own income eligibility requirement.

programs requiring the diploma were also more likely to have minimum basic skill requirements. On skill requirements, almost all of the programs requiring a high school diploma had eligibility requirements for math and reading skill levels (21 programs out of 22, or 95 percent). Among programs not requiring a diploma, a much smaller percentage had math and reading requirements (9 out of 20, or 45 percent).

Exhibit 2.3: Eligibility Requirements for Educational Attainment and Academic Skills

Requirements	Number of Programs	Percentage of Programs
High school diploma or equivalent required	**22**	**53**
…and minimum skill level in math and reading required	21	50
…and minimum skill level in reading only required	1	2
…but no minimum skill requirement	0	0
No high school diploma or equivalent required	**20**	**48**
…but minimum skill level in math and reading required	9	21
…but minimum skill level in reading only required	3	7
…and no minimum skill level required	8	19

Sample Size and Source:
Programs: 42. HPOG grantee survey.

Overall, 34 programs set minimum skill levels for reading and 30 set minimum skill levels for math, but they varied in grade-level standards. Of the 34 programs that set eligibility standards for reading, 33 responded to questions about grade-level requirements (Exhibit 2.4). They were nearly evenly split across grade-level standards below, at, or above eighth grade. Of the 30 programs that set eligibility standards for math, 29 responded to questions about grade-level requirements. Almost half set the standard below eighth grade, with roughly one-quarter at eighth grade and one-third above eighth grade.[13]

Exhibit 2.4: Grade-Level Eligibility Requirements

	Programs with Minimum Reading Level (n=33)		Programs with Minimum Math Level (n=29)	
Minimum Grade Level	Number	Percentage	Number	Percentage
Below eighth grade	10	30	13	45
Eighth grade or equivalent	12	36	7	24
Above eighth grade	11	33	9	31

Sample Size and Source:
Programs: 41. HPOG grantee survey.

Skill requirements could vary somewhat by specific training courses. For example, one program required participants interested in the Phlebotomy track to be "college-ready." Another program required a General Educational Development certificate (GED) for participants interested in Certified Nursing Assistant (CNA) and Home Health Aide training. As we report in Section 2.2.2, most of the more popular occupations for which HPOG participants trained require some credential indicating educational attainment, as shown in Exhibit 2.8. These eligibility screens helped ensure that the pool of participants interested in a particular track would be prepared for

[13] Although programs set these eligibility requirements for basic academic skills, they admitted some applicants who did not meet the requirements (Werner, Buell, and Sick 2016).

that training. If they were not prepared, then either the screens or needs assessments early in training would identify the needs to be addressed through pre-training activities including remedial classes.

Criminal Background and Other Checks. Most HPOG programs screened applicants for conditions that might keep them from receiving a license and/or getting a job in healthcare, such as a criminal record or current use of illegal drugs. This was important in order to ensure that participants would not be training for jobs for which they could not qualify. According to the grantee survey, 31 programs (74 percent) checked all or some applicants for past felonies, and 27 programs (64 percent) also checked for misdemeanors.

Although most HPOG programs used these checks, programs did not necessarily reject all applicants who failed them. Some programs tried to find appropriate training courses and career ladders for applicants who had criminal records, and checking was necessary to permit that. For example, one HPOG program developed a course for dental prosthesis technicians specifically for applicants with felony convictions. That occupation entails no direct patient contact, and it does not ordinarily disqualify job seekers who have felony convictions. Other HPOG programs would help applicants who had criminal records to expunge their records or apply for Certificates of Relief, or they partnered with organizations to place such applicants into non-healthcare career paths.

Personal and Behavioral Screening. Almost all HPOG programs also assessed applicants' relevant personal and psycho-social qualities, according to the grantee survey. In their application processes, those programs evaluated applicants' career interests (30 programs, 77 percent), job readiness (24 programs, 60 percent), interpersonal skills (18 programs, 49 percent), motivation (28 programs, 74 percent), and coping skills (12 programs, 32 percent).

Results of Eligibility Criteria: Study Sample Characteristics at Baseline

- **Most eligible individuals were "nontraditional" postsecondary education students, averaging 32 years old. Most were single and female, with dependent children.**

The use of the eligibility criteria described above resulted in a diverse HPOG Impact Study sample. As presented in Exhibit 2.5, demographically, the study sample was overwhelmingly female (89 percent), unmarried (84 percent), and almost two-thirds (63 percent) had one or more dependent children. About half percent were unmarried with dependent children. About one-third of the sample identified as non-Hispanic black/African American, about a quarter identified as Hispanic/Latino of any race, and the remaining identified as non-Hispanic white/Caucasian or another race. The average HPOG participant was 32 years old, with about one-third of the sample in each of the three age categories: younger than age 25, ages 25 to 34, and age 35 or older. About a fifth of the sample reported being born outside the United States.[14]

[14] Note that the HPOG 1.0 FOA specified that "Eligible program participation is limited to individuals who are citizens of the United States or who meet the immigrant eligibility requirements for Federal Public Benefits. Successful applicants receiving an award are responsible for verifying the citizenship or immigrant eligibility of potential beneficiaries, and must demonstrate the extent to which they will provide such verification" (HHS 2010).

- **About a quarter of study participants were already in school, and 43 percent were employed when they entered the study.**

By design, HPOG grantees targeted an economically disadvantaged population. At the time of entry into the study, 43 percent of the study sample was working. On average, sample members had earned less than $10,000 in the year before applying to HPOG. Some of the sample was receiving public assistance at the time of program entry: 13 percent were receiving TANF cash assistance and 56 percent were receiving government food assistance in the form of SNAP or Special Supplemental Nutrition Program for Women, Infants and Children (WIC). Compared with most other recent national occupational training programs for low-income individuals, HPOG programs had comparable income eligibility cutoffs but served a higher proportion of TANF recipients (Werner et al. 2016).

Exhibit 2.5: Characteristics of the Study Sample at Baseline

Characteristic	Full Sample
Sex (%)	
Male	11.2
Female	88.8
Dependent Children (%)	
None	37.1
One or two	46.2
Three or more	16.7
Marital Status (%)	
Married	16.4
Married, no dependent children	3.3
Married, with dependent children	13.0
Not married	83.6
Not married, no dependent children	34.0
Not married, with dependent children	49.6
Race and Ethnicity (%)	
Hispanic/Latino of any race	23.6
Black/African American, non-Hispanic	34.0
Other (includes white/Caucasian), non-Hispanic	42.4
Age (%)	
Less than 25 years	31.8
25-34 years	33.8
35+ years	34.3
Place of Birth (%)	
Born in the United States	81.9
Born outside the United States	18.1
Educational Attainment (%)	
Less than 12th grade	12.1
High school graduate/GED	34.3
Some college	34.2
College degree	19.4

Characteristic	Full Sample
Credential/Degree Completion (%)	
Postsecondary degree/certificate	20.2
Occupational skills license or certification	25.8
School Enrollment at Baseline (%)	
Currently in school	25.8
Not in school	74.2
Expect to Participate in HPOG (%)	
Full-time	73.5
Part-time	26.5
Employment in Past Year (mean)	
Quarters employed in year prior to baseline (range is 0 to 4)	2.4
Current Employment (%)	
Working	42.6
Not working	57.4
Barriers to School/Work (fairly often or very often) (%)	
Childcare arrangements	16.6
Transportation	18.0
Participant's illness or health condition	12.3
Alcohol or drug use	0.8
Earnings in Past Year ($)	
Average quarterly earnings in year prior to baseline	2,317
Public Assistance Use (%)	
Receiving WIC/SNAP	55.8
Receiving TANF	12.5

Sample Sizes and Sources:
Treatment: 8,673. Control: 5,044. HPOG PRS, PACE Baseline Information Form, and National Directory of New Hires.

As noted above, to help ensure that participants could meet basic skill requirements of healthcare training courses, many programs set minimum academic grade-level standards. Related to educational attainment, 88 percent of the sample had completed high school or an equivalent at baseline. A fifth had completed a postsecondary degree/certificate, and about a quarter had an occupational skills license or certification. HPOG served a small proportion of individuals without a high school diploma (12 percent). This in part reflects the academic skill levels required by healthcare occupational training courses and the influence of those requirements on eligibility standards.

In brief, the eligibility criteria that programs imposed were varied and aimed at attracting low-income adults who generally had the necessary skills to enroll in occupational training for healthcare. Members of the study sample had to meet these eligibility requirements, which implies that they likely were well motivated. That conclusion also aligns with the observation that a relatively large share were working (43 percent) or already in school (26 percent) when they applied to the HPOG program. This makes two consequences likely: first, that many assigned to the treatment group would take advantage of the training and supports that HPOG offered; second, that the control group would not abandon their interest in training, but pursue it in a non-HPOG setting.

2.2.2 Pre-training, Support Services, and Occupational Training Opportunities

In this subsection we describe the services and training opportunities made available by HPOG programs and taken up by the study's treatment group. The analysis of treatment group experiences in this chapter examined only a subset of the study's treatment group members: those for whom we had 15 months of follow-up data in the PRS. To be in this subset, they had to have been randomized on or before June 30, 2014 (whereas randomization extended through November 2014 for the full sample), so that we could observe them for 15 months before the end of the HPOG grant period (September 29, 2015). The resulting sample size is 6,742 (78 percent of the treatment group).[15]

We begin the section with an overview of how the HPOG programs' training and services opportunities reflected the career pathways framework.

Career Pathways Framework

- **Programs varied in the extent to which they represented the principles of the career pathways framework.**

ACF intended HPOG programs to embody the career pathways framework in practice, integrating its elements, as described in Section 1.1, into their program design and implementation. Before describing in more detail the training, pre-training activities, and support services offerings of HPOG, in this subsection we assess the degree to which HPOG programs conformed to the framework. Exhibit 2.6 presents findings on how many programs included specific key aspects of the career pathways framework, as well as the number of career pathways elements incorporated by programs.

As summarized in Exhibit 2.6, most HPOG programs reported on the grantee survey that training courses were organized to be stackable with other, related courses (35 programs, 83 percent). In addition, about two-thirds of programs provided training courses that aligned as stackable credits to support multiple career pathways (28 programs, 67 percent). Half of the programs reported they offered a range of training courses that participants could pursue independently, without necessarily connecting the activities to related courses in a specific career pathway (21 programs, 50 percent). Finally, about 90 percent of programs offered flexible scheduling for courses, including holding classes on evenings and weekends. Staff at numerous programs reported in the grantee survey that they offered stackable credentials, such as placing students in Certified Medical Assistant (CMA) training once they passed their CNA test, because CMAs are paid higher wages. One program provided work-based learning opportunities in which small groups of students had the opportunity to practice patient care skills, such as taking vital signs and transferring patients from bed to wheelchair. Another program offered accelerated Home Health Aide classes for those participants who already had CNA certificates (10 hours, delivered over two Saturdays).

In addition to these individual measures of the characteristics of training courses, we also created a summary measure, Presence of Career Pathways Principles. To construct the

[15] Some programs requested and secured a no-cost grant extension from ACF and continued entering data into the PRS through June 2016. Because other programs stopped at the end of the original grant period, we use that date (September 29, 2015) as the 15-month cutoff for this analysis.

summary measure, a program could earn a point for each of the following: (1) opportunities that emphasize career pathways are available; (2) opportunities that target individuals with skill, education, and work experience deficits are available; (3) curricula accommodate multiple learning modes and capabilities; (4) accommodations for nontraditional student populations are made; (5) opportunities to orient and acclimate nontraditional student populations to the healthcare profession are available; (6) training options provide stackable credentials; (7) training options allow for choices among multiple career pathways; and (8) healthcare or occupational training activities are designed (or redesigned/compressed) for accelerated completion.

Across all programs, the average score on this measure was 4.14, on a 0-8 scale, indicating that about half of these characteristics of the career pathways framework were in effect. As with other aspects of HPOG program implementation, the extent to which programs embodied the career pathways framework varied. Five programs scored 0 or 1; at the other end of the range, eight programs scored 7 or 8. The evaluation captures this diversity in its composite, aggregate assessment across the 42 HPOG programs that were in the Impact Study.

Exhibit 2.6: Characteristics of Healthcare Training Courses Supporting Career Pathways

Characteristic	Number of Programs	Percentage of Programs
Training options provide credentials that are stackable	35	83
Set of training options support multiple career pathways	28	67
Program offers a range of training activities that can be pursued independently	21	50
Presence of Career Pathways Principles (summary measure, overall mean = 4.14)[a]		
Programs scoring 0-1	5	12
Programs scoring 2-6	29	69
Programs scoring 7-8	8	19

*Notes: R*eponses do not sum to 100 because multiple responses were permitted.

[a] Range is 0-8. A higher score indicates a greater presence of career pathways principles.

Sample Size and Source:

Programs: 41. HPOG grantee survey.

Occupational Training Opportunities, Including Pre-training Activities and Basic Skills Instruction

Within the career pathways framework in which HPOG operated, programs offered treatment group members a variety of pre-training activities, including basic skills classes, in order to prepare them for the training opportunities available thereafter. In this subsection we detail those offerings and the treatment group's participation in them.

- **Pre-training activities helped prepare program participants for training and employment. "Soft skills" activities, often mandatory, were the most often offered and enrolled in.**

Pre-training Activities and Basic Skills Classes. Even in those programs with relatively high eligibility standards for basic academic skills, some HPOG participants needed additional preparation to be successful in healthcare training. Within the framework provided by the HPOG grant, programs decided which specific pre-training activities they should include, whether to tailor the activity for HPOG, and whether any or all HPOG participants should be required to attend the activity or class.

The most frequently offered pre-training activity was "soft skills" training (35 programs, 85 percent), as shown in Exhibit 2.7. In general, such training focuses on personal and social skills and behavior appropriate to the workplace. In HPOG, this included an emphasis on how to behave around patients and in other healthcare settings. Also particularly important for HPOG, half of the programs (21 programs, 50 percent) offered introduction to healthcare careers workshops. These workshops generally explored the range of jobs in healthcare, their potential career pathways, and how to combine academic training and practical experience to enter and move along those pathways. Slightly fewer programs offered computer and financial literacy courses, prerequisite subject courses (such as Chemistry or Biology, for example), and training in study skills and other behaviors needed for success in education and training courses.

Many programs made attendance at pre-training activities mandatory for all or some HPOG participants, reflecting programs' belief in the importance of pre-training activities in preparing participants to succeed in occupational training. For example, soft skills training—the most widely available pre-training activity—was mandatory for all or some participants in 28 of the 35 programs that offered it (80 percent), according to the grantee survey. Where offered, introduction to healthcare careers workshops, financial literacy workshops, and computer/technological skills training were also more likely than not to be mandatory for all or some HPOG participants.

The pre-training activity treatment group members enrolled in most frequently was soft skills training, with 45 percent of them participating (Exhibit 2.7). Next was the introduction to healthcare careers workshop (34 percent).

HPOG programs were less likely to include formal basic skills classes among their offerings. For example, Adult Basic Education (ABE) and high school equivalency degree classes were available directly at only 18 and 16 programs, respectively (43 and 38 percent, respectively). Nine programs (21 percent) offered English as a Second Language (ESL) classes or pre-high school equivalency degree classes. Programs reported relatively few HPOG participants enrolled in basic skills classes. Only about 1 percent of them enrolled in ABE classes, 1 percent in high school equivalency degree/pre-high school equivalency degree classes, and less than 1 percent in ESL classes.

Exhibit 2.7: Pre-training Activities Offered and Participation by 15 Months after Random Assignment

Pre-training Activities	Number of Programs[a]	Percentage of Treatment Group Participating[c]
Soft skills training[b]	35	44.6
Introduction to healthcare careers workshop	21	34.1
High school equivalency degree or pre-high school equivalency degree classes[b]	18	1.0
Computer/technological skills training[b]	16	N/A
Adult Basic Education	16	1.0
Financial literacy workshop[b]	15	N/A
Prerequisite subject courses	14	12.6
College skills training[b]	12	3.8
English as a Second Language instruction	9	0.3
Integrated basic skills into some healthcare training courses[b]	7	N/A

Notes: Results do not sum to 100 percent because multiple responses were permitted.
Treatment group sample restricted to those randomly assigned on or before June 30, 2014, to ensure 15 months of follow-up in the PRS.
Activities for which participation data are not available in the PRS are denoted N/A (Not Applicable).
Sample Sizes and Sources:
[a] Programs: 42, unless otherwise noted. HPOG grantee survey.
[b] Programs: 41. HPOG grantee survey.
[c] Standard and Enhanced Treatment: 6,742. HPOG PRS.

That relatively few HPOG programs provided basic skills classes directly, as opposed to referring treatment group members to services in the community, may be due to several reasons. For example, programs may have reduced the need for basic skills training by establishing eligibility criteria tied to occupational training course academic skill requirements. Also some programs opted not to spend grant money directly on ABE because it was available in the community. Those programs that did directly provide ABE most often referred HPOG participants in need of basic skills classes to other providers in the community. Finally, seven programs (17 percent) reported they integrated basic skills activities into some healthcare training courses. For example, one program deployed a basic skills instructor in the classroom during occupational training classes to review materials and help students with reading, writing, and test-taking skills.

- **HPOG programs offered a wide variety of healthcare training courses, most for an occupation that required a recognized credential for employment.**

Occupational Training Opportunities. HPOG programs provided a wide range of healthcare training opportunities based on local labor market information and staff judgments about demand for specific healthcare professions, available local training provider supply, and the needs and choices of target populations. Almost all occupations that HPOG programs provided training for require a recognized credential for employment. Exhibit 2.8 presents the range of credentials generally required nationally, by specific occupations, as well as the typical length of training, based on full-time attendance. As shown, some occupations have different training periods and credential requirements depending on state guidelines (Registered Nurse) or the professional level of the occupation (medical records or health information technicians). The occupations listed are illustrative and do not represent all available HPOG courses.

Exhibit 2.8: Commonly Pursued Healthcare Training Courses by Credential(s) Needed for Employment

Training	Typical Length of Training	Typical Credential(s) Needed for Employment
Home health aides	6-8 weeks	No formal educational credential
Orderlies, attendants	6-8 weeks	High school diploma or equivalent
Psychiatric aides	6-8 weeks	High school diploma or equivalent
Medical records and health information technicians	6-9 months	Postsecondary non-degree award
Registered nurses	2 years	Associate's degree
Registered nurses	4 years	Bachelor's degree

Notes: Activities are categorized following Bureau of Labor Statistics Standard Occupational Classifications.
Source: Bureau of Labor Statistics (2015).

Treatment group members participated in and completed healthcare occupational courses at relatively high rates. By 15 months after random assignment, 77 percent of the treatment group overall enrolled in a training course, 53 percent completed at least one training course, and 7 percent were still in training, according to the PRS data. For those completing courses, the average time to complete was 3.8 months.

- **Some healthcare occupational training courses were relatively short and for entry-level jobs; some were longer, for a variety of higher-level nursing jobs.**

Across the 42 programs in the study, the occupations for which HPOG programs offered training, for example, and treatment group members participated in, as shown in Exhibit 2.9, reflect the diversity in length of training and credentialing requirements evident in the examples offered in Exhibit 2.8. For example, most programs (38 programs, 90 percent) offered shorter-term HPOG training for nursing aides, orderlies, and attendants—trainings that typically lead to becoming a CNA. On average, for the 37 percent of participants who enrolled in and completed such training within 15 months after random assignment, the average time to complete was 2.3 months.

On the other hand, a majority of programs also offered longer-term training such as those for licensed vocational nurses (24 programs, 57 percent) and registered nurses (23 programs, 55 percent). Some 6 percent and 5 percent of the treatment group participated in them, respectively. Participants who completed licensed vocational nurse training by 15 months after random assignment took an average of 9.6 months, and those completing registered nurse training took 7.9 months. Importantly, a majority of those training in either nursing discipline were already enrolled in school at the time of random assignment, and about a quarter and a third, respectively, were still in training 15 months later.

The available training course choices for HPOG participants represented a wide range in potential wages. As of May 2016, for example, CNAs had a median annual income of $27,650 (BLS 2017c). Licensed vocational nurses had a median income of $44,090 (BLS 2017b). Both of these occupations require a postsecondary certificate, rather than a degree. The highest-paid profession on the list of training options—registered nurse—had a median income of $68,450 (BLS 2017d).

Exhibit 2.9: Occupational Training Enrollment and Completion by 15 Months after Random Assignment

Training	Number of Programs[a]	Enrollment[b] (%)	Enrollment[b] (N)	In School at Time of Random Assignment[c] (%)	Completed Training[c] (%)	Time to Complete[d] (months)	Enrollees Still in Training[c] (%)	Dropped Out Before Completing[c] (%)
Nursing aides, orderlies, and attendants	38	36.5	2,461	18.4	84.9	2.3	1.4	13.7
Medical records and health information technicians	34	7.8	527	10.8	65.8	4.6	8.2	26.0
Medical assistants	34	6.9	463	23.1	56.6	5.9	14.3	29.2
Licensed vocational nurses	24	6.4	433	54.0	41.6	9.6	25.2	33.3
Phlebotomists	26	5.6	375	17.3	70.1	3.2	9.9	20.0
Registered nurses	23	5.4	366	70.2	27.9	7.9	30.6	41.5
Psychiatric and home health aides	20	4.4	298	12.1	88.6	1.8	0.3	11.1
Pharmacy technicians	33	3.1	208	19.2	72.1	3.7	3.8	24.0
Healthcare support occupations (all others)	24	2.6	176	7.4	69.9	4.1	5.7	24.4
Diagnostic-related technologists and technicians	25	2.5	169	23.7	68.0	2.5	16.6	15.4
Emergency medical technicians and paramedics	24	1.9	130	36.2	78.5	3.2	3.1	18.5

Notes: Occupations that enroll less than 1 percent of the sample are omitted.

Time to complete is the average time to complete trainings for trainings that were completed within 15 months after random assignment. Time spent in courses before random assignment for those already in school is not included.

Treatment group sample restricted to those randomly assigned on or before June 30, 2014, to ensure 15 months of follow-up in the PRS. Individuals who enrolled in more than one course are included in multiple rows of the exhibit. In total, 77 percent of the sample enrolled in training.

Sample Sizes and Sources:

[a] Programs: 42. HPOG grantee survey.

[b] Standard and Enhanced Treatment: 6,742. HPOG PRS.

[c] Sample size is given by the number of enrollees.

[d] Sample includes only those who completed courses within 15 months after random assignment.

Support Services

Support services can help individuals overcome practical, personal, or family challenges to enrolling and remaining in training. For that reason, they may be important contributors to HPOG's potential to affect course completion, certification, and employment. In this subsection we describe five types of support services offered to HPOG participants while they were active in the program: case management, academic supports, personal and family supports, financial assistance, and employment assistance services. What "active" means varied by program. Some programs considered participants active for life, permitting them to access services even after completing a course of training. Some offered employment transition and retention services after participants completed training or exited the program. Other programs effectively stopped providing services to participants once they completed training.

- **Academic, personal and family, and financial support services were widely available and used.**

Case Management. Almost all of the HPOG programs in the Impact Study (41 programs, 98 percent; Exhibit 2.10) had in-house case managers. Case managers assisted HPOG participants in planning, attending, and completing training and in finding and retaining jobs. Case managers assessed participants' needs for services; provided support directly or referred participants to providers in the community; monitored participants' progress; and provided coaching and counseling services to help participants address crises and life challenges. For example, in one program, case managers met with their students weekly, either in person or via telephone, email, or social media, to make sure they were attending classes and succeeding academically. If necessary, case managers connected students with tutors or other supports. Another program's staff reported that case managers provided services "all over the map," from eviction prevention to finding temporary shelter and accessing food banks. When this program's staff learned one student was using drugs, they sought information about drug counseling.

Case managers were an important personal touchpoint between the treatment group and the HPOG program. In carrying out their diverse duties, case managers and other program frontline staff—as reported on the staff/management survey—were in contact with participants relatively frequently: 41 percent of staff reported meeting in person with students at least once weekly, and another 18 percent met with students two or three times monthly.

In general, case managers were experienced in their roles. On the staff/management survey, more than half of case managers reported having been conducting the same or similar activities for at least two years. Some 88 percent of HPOG case managers had postsecondary degrees, with one-third possessing a master's degree or higher.

Academic Supports. Many HPOG participants were nontraditional students; more than half had dependent children (63 percent), many were already employed at entry (43 percent), and about one-third were age 35 or older (34 percent). To help them enroll, persist in, and complete training, HPOG programs provided a variety of services designed to assist their participants with academic and socialization challenges associated with a return to the classroom. These services included academic and career counseling, tutoring, peer support activities, and mentoring. Mentoring and peer support services aimed to cultivate social connections among participants, as well as between them and program instructors, case managers, counselors, and other HPOG program staff. One program hired a full-time health science tutor to meet with students in groups, as well as one-on-one. In another program, instructors provided tutoring for students before and after class, as well as by telephone.

As shown in Exhibit 2.10, almost all HPOG programs (39 of 42 programs, 93 percent) offered treatment group members academic and career counseling, and more than three-fourths offered tutoring services (32 programs, 76 percent). About two-thirds (28 programs, 67 percent) offered peer support activities, and 40 percent (17 programs) offered mentoring activities. For example, one program provided mentoring to medical assistant students during their clinical rotations. Another program hired a phlebotomy instructor as a tutor for the program. In yet another, career coordinators had relatively small caseloads and intentionally developed mentor/mentee relationships with their students.

Exhibit 2.10: Academic and Career Counseling and Support Offered and Received by 15 Months after Random Assignment

Service	Number of Programs[a]	Percentage of Treatment Group Receiving Service[b]
Case management/career advisor/navigator	41	89.4
Academic Supports		
Academic and career counseling	39	83.9
Tutoring	32	19.8
Peer support activities	28	N/A
Mentoring activities	17	N/A

Notes: Results do not sum to 100 percent because multiple responses were permitted.
Treatment group sample restricted to those randomly assigned on or before June 30, 2014, to ensure 15 months of follow-up in the PRS.
Services for which participation data are not available in the PRS are denoted N/A (Not Applicable).
Sample Sizes and Sources:
[a] Programs: 42. HPOG grantee survey.
[b] Standard and Enhanced Treatment: 6,742. HPOG PRS.

According to the grantee survey, the majority of the 39 programs that offered academic and career counseling required all participants to attend (30 programs, 77 percent). However, tutoring was available on a voluntary basis for HPOG participants in about two-thirds of the 32 programs that offered it (20 programs, 63 percent). Most programs that offered academic counseling and advising reported that the HPOG program operators employed their own staff (including case managers, for example) responsible for these services (29 programs, 74 percent of programs that offered the services). Similarly, a majority of the program operators offering tutoring directly employed staff to provide the service (19 programs, 59 percent of those offering tutoring).

According to the PRS data, almost all HPOG treatment group members (92 percent) received an academic or training support service in the first 15 months after random assignment. As shown in Exhibit 2.10, case management/career advising was the most common academic or training support service received, almost universally (89 percent). Counseling services also were common: 84 percent of participants received services such as academic counseling, advising, mentoring or peer support, and tutoring in the first 15 months after random assignment.

Personal and Family Supports. In addition to providing academic and career choice supports, HPOG programs also made available personal and family supports. Like academic and training supports, these services were also intended to increase enrollment and persistence in and completion of training by helping treatment group members overcome practical and personal challenges. These supports included financial assistance for transportation and childcare, housing assistance, and support for a range of other social service needs. The most commonly available of these supports were transportation (41 of 42 programs, 98 percent) and childcare assistance (38 programs, 90 percent), as shown in Exhibit 2.11. A majority of programs also offered non-SNAP food assistance, housing assistance, legal assistance, medical assistance, family engagement and preservation services, and financial assistance for driver's licenses.

Exhibit 2.11: Personal and Family Services and Supports Offered and Received by 15 Months after Random Assignment

Service	Number of Programs[a]	Percentage of Treatment Group Receiving Support[b]
Transportation assistance	41	41.8
Childcare assistance	38	6.2
Food assistance (other than SNAP)	31	3.6
Primary and other medical care	31	5.5
Short-term/temporary housing	30	1.0
Legal assistance	28	0.4
Addiction or substance abuse services	28	0.1
Housing assistance	25	0.1
Family preservation services	23	0.4
Driver's license assistance	22	0.5
Family engagement services	21	0.4

Notes: Results do not sum to 100 percent because multiple responses were permitted.
Treatment group sample restricted to those randomly assigned on or before June 30, 2014, to ensure 15 months of follow-up in the PRS.
Sample Sizes and Sources:
[a] Programs: 42. HPOG grantee survey.
[b] Standard and Enhanced Treatment: 6,742. HPOG PRS.

Almost half of the treatment group received some personal and family support in the first 15 months after random assignment (48 percent), according to PRS data. Transportation assistance was by far the most common of these supports, received by 42 percent of HPOG participants. Programs provided other personal and family support services to fewer participants. Examples are childcare assistance (6 percent) and help with medical care (6 percent), including assistance accessing healthcare screenings or physicals required by employers. Less than 1 percent of the treatment group received housing assistance, such as help paying first month's rent or utility bills.

As mentioned above, HPOG programs were not expected to provide all of their available services or training opportunities themselves. In fact, programs varied in how they provided personal and family services and supports, either directly or through referrals to other community resources. For example, although all but one of the HPOG programs provided direct assistance for their participants' transportation needs, programs typically provided other, more specialized services through referrals to local service providers. According to the grantee survey, nearly all programs offering addiction or substance abuse services, legal assistance, family preservation services, family engagement services, and primary or medical care did so through referrals.

Financial Assistance. Costs associated with training can be important barriers to enrollment, persistence, and completion, especially for the low-income population HPOG targets. Many programs provided treatment group members with training- and work-related financial assistance, such as tuition assistance or tuition waivers, payments for school supplies and uniforms, and payments for or waivers of fees for certifications and licensing exams. In fact, all HPOG programs offered some form of financial assistance for education- and training-related costs. For example, according to the grantee survey, 41 of 42 programs (98 percent) covered all or part of students' tuition costs, with half of all programs (21 programs, 50 percent) covering all

tuition costs. All programs also covered the cost of books, licensing and certification fees, exam preparation fees, uniforms, supplies, and tools. According to the grantee survey, almost half of all programs (19 programs, 45 percent) offered financial assistance for the purchase of computers or other equipment.

In addition to providing assistance directly, many programs also relied on other sources of financial assistance for participants. The two most common sources not funded by HPOG were Pell grants and Workforce Investment Act (WIA) Individual Training Accounts (ITAs). For example, one program's staff reported using these sources to help students cover the costs of tuition, textbooks, uniforms (scrubs), transportation, and childcare.

Employment Assistance Services. To help treatment group members find and retain a job related to their healthcare training, all HPOG programs provided multiple employment assistance services including personal employment and career counseling, individual employment assistance, job search training, job listings, and ongoing communication with local healthcare employers. Almost all programs also provided job retention services, such as program staff making follow-up calls to participants to ensure a smooth transition into work life or help navigating work-related challenges.

All HPOG programs used multiple strategies to help HPOG participants find jobs (Exhibit 2.12). For example, every HPOG program advised them on career and job searches, provided individual job search assistance, and provided job listings. Ninety-five percent or more of programs offered job search skills workshops, had staff meet with potential employers, provided job-readiness workshops, and operated or referred HPOG participants to job fairs. By 15 months after random assignment, most treatment group members had used the employment assistance services—71 percent received advising on career and job choices; 53 percent received individual job search assistance.

Exhibit 2.12: Employment Assistance Services Offered and Received by 15 Months after Random Assignment

Service	Number of Programs[a]	Percentage of Treatment Group Receiving Service[c]
Advising on career and job choices	42	71.4
Individual job search assistance	42	52.7
Providing job listings	42	N/A
Job search skills workshops[b]	40	N/A
Identifying job openings for program graduates	40	N/A
Meeting with employers to identify job openings for graduates	40	N/A
Operating or referring to job fairs	40	N/A
Job-readiness workshops[b]	39	15.1
Job retention services	39	24.9
Job screening	35	N/A
Post-placement services (e.g., in-person meetings, phone check-ins)	30	N/A

Notes: Results do not sum to 100 percent because multiple responses were permitted.
Treatment group sample restricted to those randomly assigned on or before June 30, 2014, to ensure 15 months of follow-up in the PRS.
Services for which participation data are not available in the PRS are denoted N/A (Not Applicable).
Sample Sizes and Sources:
[a] Programs: 42, unless otherwise noted. HPOG grantee survey.
[b] Programs: 41. HPOG grantee survey.
[c] Standard and Enhanced Treatment: 6,742. HPOG PRS.

- **Partner and Stakeholder Involvement Programs partnered with other organizations to help provide training and services to HPOG participants; the purpose and structure of those partnerships varied.**

The FOA for HPOG made it clear that ACF expected grantees and program operators to leverage community resources where available and rely on institutional partners to provide some HPOG services and training. Grantees provided many services directly themselves, as we discussed in the prior subsection. They also relied on other institutions and community resources to provide core program supports or training courses. For example, some program operators provided no occupational training directly, but either paid for HPOG participants to enroll in training courses elsewhere or contracted directly with a partner institution to provide one or more courses for HPOG students. Similarly, many HPOG programs referred their participants to available community resources, such as subsidized childcare.

On average, each HPOG program operator worked actively with 18 other organizations to make available occupational training, pre-training activities, and support services. About one-third of HPOG partner organizations were educational institutions (32 percent). Less than one-quarter were nonprofit organizations (19 percent), government agencies (18 percent), workforce development agencies (17 percent), or employers and other business sector organizations (12 percent; most of these were healthcare employers). The remaining 2 percent of partners were other types of organizations. Most often, grantees and programs found partners to provide training or services that they did not. However, partnerships did not necessarily always follow this pattern. Many partners were of the same institutional type as program operators and helped provide more opportunities for HPOG participants.

Along with program operators, HPOG partner organizations were engaged in virtually every facet of program implementation, including outreach and referral, pre-training services and activities, support services, and occupational training in healthcare (Exhibit 2.13). Partner organizations were nearly always involved in referring applicants (41 of 42 programs, 98 percent); counseling and support services (42 programs; 100 percent); job development (40 programs, 95 percent); marketing and outreach (39 programs, 93 percent); occupational training (39 programs, 93 percent); and job placement activities (39 programs, 93 percent).

The reliance on non-HPOG sources for some training, pre-training activities, and support services is particularly notable in the context of the HPOG 1.0 Impact Study's design. As explained in the introduction to this report, the study uses an experimental design in which eligible individuals are randomly assigned either to a treatment group able to participate in HPOG or to a control group not allowed to participate in HPOG but free to receive any training or supportive services in the community for which they are eligible. Those other training and services are likely to include some also made available to treatment group members through HPOG by its partners.

When such training, training-related activities, and supportive service opportunities are plentiful in the community, it can diminish the contrast between what the treatment group and control group experience, in both the content and the quantity of those opportunities. In the next section of this chapter, we assess the difference in the opportunities available to HPOG treatment and control group members.

Exhibit 2.13: Partner and Stakeholder Involvement in Program Activities

Activity in Support of HPOG	Number of Responding Partners and Stakeholders[b]	Programs with at Least One Partner or Stakeholder Reporting Involvement in Activity		Program Average Percentage of All Partners and Stakeholders Involved in Activity[a]
		Number[c]	Percentage	
Referral and outreach	**382**	**41**	**98**	**81**
Referral of applicants	379	41	98	72
Marketing and outreach	373	39	93	67
Training and training-related activities	**377**	**41**	**98**	**68**
Curriculum development	369	29	69	21
Occupational training	374	39	93	47
Pre-training activities	373	37	88	42
Basic academic skill classes	371	38	90	41
Employment assistance	**377**	**41**	**98**	**67**
Job development activities	366	40	95	59
Job placement activities	372	39	93	44
Recruitment or hiring of program participants	371	32	76	27
Planning and design of grant activities	**375**	**32**	**76**	**35**
Counseling and support services	**373**	**42**	**100**	**60**

Notes: Referral and outreach, training and training-related activities, and employment assistance are aggregates that were not specified in the survey. Involvement in one of these means involvement in any activities grouped below it.

[a] This column reports, for the average program, the percentage of all of the partners that were involved in the identified activity.

Sample Sizes and Sources:

[b] Partners and stakeholders: 386. HPOG stakeholder/network survey.

[c] Program-level summaries: 42. HPOG stakeholder/network survey.

2.3 Control Group Conditions and the Experimental Contrast

The design of the HPOG 1.0 Impact Study means that differences between the pooled treatment and control groups in relevant outcomes after random assignment can be interpreted as HPOG's impact on those outcomes. In order for a difference in outcomes to arise, the program that the HPOG treatment group is exposed to needs to be meaningfully different from the control conditions—that is, what the treatment group would have been exposed to in the absence of HPOG.

An important goal of the implementation study was to understand the control conditions and assess the strength of the contrast between treatment group and control group conditions after random assignment. The assessment addresses two issues:

- the degree to which programs provided services during the application process and before random assignment to individuals who ended up randomized to the control group, potentially "contaminating" them with some exposure to HPOG; and
- the degree to which control group members had access in the community to the same or similar HPOG components the treatment group members could access.

As part of their application process, most HPOG programs (36 of 42 programs, 86 percent) held mandatory orientation sessions, according to the grantee survey. Generally, the sessions

informed applicants about HPOG: what training courses were available, their academic requirements, what types of jobs required which credentials, and which support services were available. Although this information likely had little to no effect on an applicant's likelihood of success in enrolling, persisting in, and completing training, it was communicated to both future treatment and future control group members. We comment on this exposure of control group members to HPOG program information—for example, about potential courses, occupations in demand, range of support services, institutional resources that may also be available to control group members—because any potential effect likely would be to decrease differences between treatment group and control group outcomes—that is, decrease estimated impacts.

The degree to which control group members had the opportunity to access the same or similar service and training opportunities as the treatment group is a more serious issue in interpreting the experimental results reported in coming chapters. If control group members were able to receive the same type, amount, and quality of training courses and supports, then the experiment would likely have no contrasting conditions against which to compare treatment group experiences and outcomes. The **Examples of Program Offerings** textbox on this page describes examples of the control conditions in two WIB-operated and community college–operated HPOG programs. In the absence of HPOG—or in being denied access to HPOG because they were randomized to the control group—applicants seeking occupational training may or may not have had access to these kinds of services. The offerings are sometimes not inconsequential, but they do vary in their availability across locations. Indeed, in some locations, the HPOG program offerings were markedly richer than the control conditions; in other locations, the difference between HPOG and the control condition was more modest.

Examples of Program Offerings Available to Control Group Members in HPOG Program Communities

WIB-Operated: According to staff in one WIB-operated HPOG program, the majority of participants would not be able to take advantage of a training program without the supportive services provided through the HPOG grant. The WIB operates in an impoverished rural community, with low educational levels and almost no public transportation. Also, WIA funds were very limited. Without the HPOG program's funding and support, very few people would be able to access occupational training and even fewer would be able to obtain the needed supportive services that promote retention and completion.

Community College-Operated: An Allied Health program in one college offered HPOG-specific programming and supports to treatment group members, but similar, less intensive programming and supports to control group members. All eligible community members could access numerous developmental education opportunities offered at the college, such as GED and ESL services, state opportunity grants, veterans' benefits, and the state-based Basic Food Employment and Training (BFET) program. BFET provides employment-readiness opportunities. Similarly, community college students could enroll in occupational training opportunities through Allied Health and other career pathways programs. Students could also access support services such as advising, counseling, career counseling, and emergency assistance.

We assessed the strength of the contrast in opportunities available to treatment and control groups along four program aspects—(1) specific training courses, (2) training access, (3) financial assistance, and (4) support services—as detailed in Exhibit 2.14.

Specific Training Courses. One program with a strong contrast used HPOG funding to contract for HPOG-specific courses with a local community college. Conversely, a program with a weak contrast reported that training available to control group members was "extensive and nearly identical to HPOG."

Training Access. A program with a weak contrast operated in a catchment area served by the federal Title XX Social Services Block Grants to states. As such, control group members enrolled in Title XX programs were able to get the same training as treatment group members, through a different funding stream. Programs with a strong contrast in this aspect made arrangements with training providers (usually community colleges) to hold a number of training course slots open for HPOG participants and to release the slots to other students only after HPOG students were enrolled.

Financial Assistance. A number of HPOG programs with a strong contrast either waived or paid in full for their participants' tuition for healthcare courses, whereas other low-income non-HPOG students taking the same courses had to pay some portion of tuition, perhaps directly or through loans.

Support Services. Finally, recall that most HPOG programs had dedicated case managers and/or counselors who either provided direct support services (e.g., career, academic, financial counseling) or established relationships with other agencies to which they could refer treatment group members. In those programs, the extent and diversity of the HPOG services contrasted substantially with the control conditions. Very few programs and agencies available to control group members offered the same ease of access to a comprehensive range of support services.

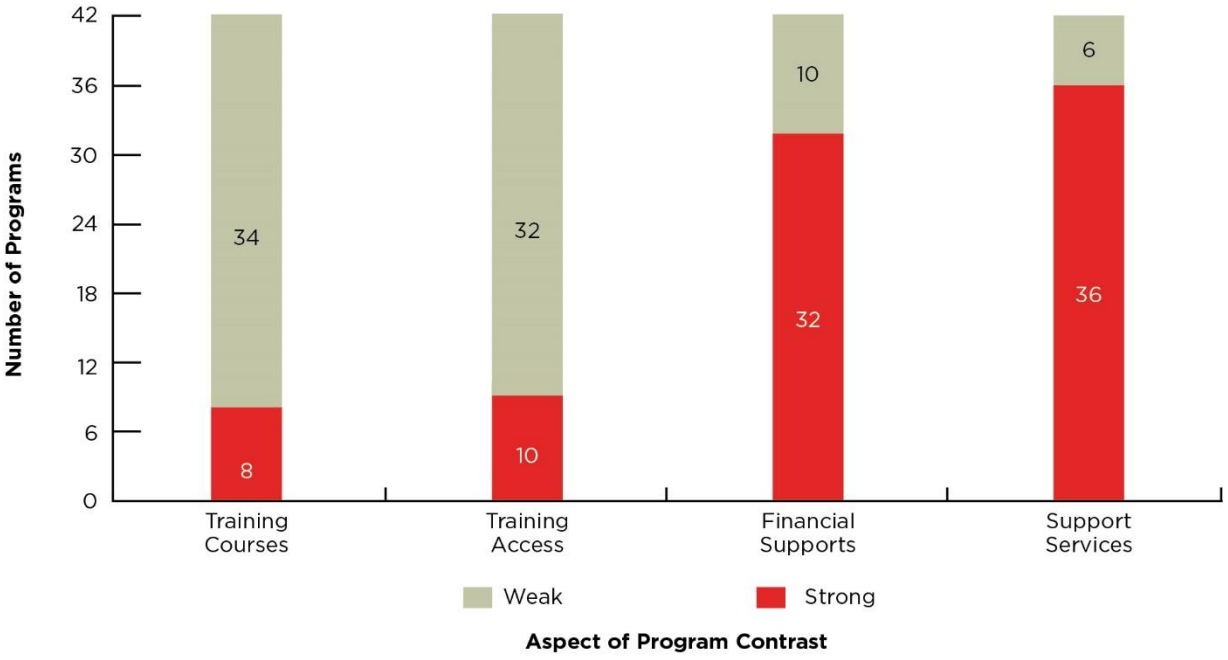
The results of our strength of contrast assessment appear in Exhibits 2.14 and 2.15.

Exhibit 2.14: Details of Contrast Strength Assessment

Program Aspect	Contrast Question	Coding Decision	Number of Programs with Strong Contrast
Specific training courses	Did the treatment group have access to specific occupational training courses not available to the control group?	Yes = If a specific course(s) were developed and reserved for HPOG	8
Training access	Did the treatment group enjoy preferred access to available occupational training courses in the community?	Yes = If the treatment group got preferred access to one or more occupational training courses	10
Financial assistance	Did the treatment group have access to more financial assistance than the control group?	Yes = If the treatment group had access to more financial assistance (either overall or for more needs)	32
Support services	Did the treatment group have access to more support services than the control group?	Yes = If the treatment group had access to more types of supports and/or more intensive supports of the same type	36

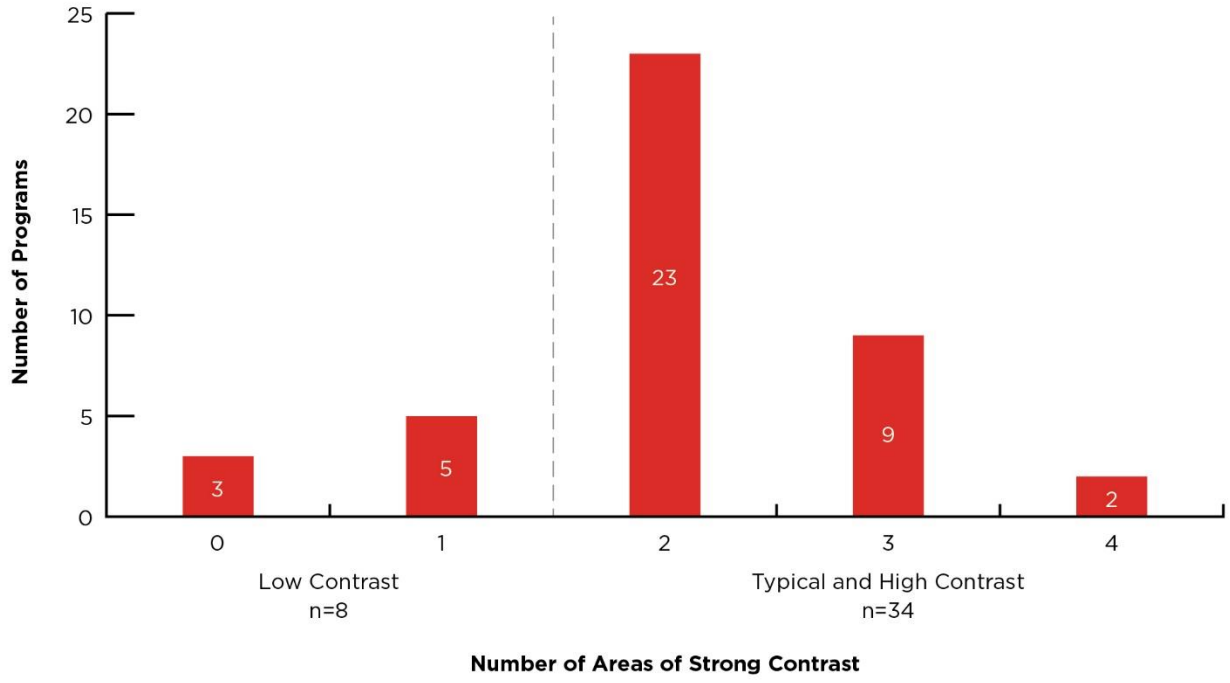
Sample Size and Source:
Programs: 42. HPOG Evaluation Design Implementation Plans.

Exhibit 2.15: Distribution of Programs with Contrast Conditions, by Program Aspect



Sample Size and Source:
Programs: 42. HPOG Evaluation Design Implementation Plans.

Exhibit 2.16: Distribution of Programs, by Degree of Strong Contrast across Program Aspects



Sample Size and Source:
Programs: 42. HPOG Evaluation Design Implementation Plans.

- **The major difference between opportunities available to the treatment group and those available to the control group was HPOG's richer financial and other support services.**

As Exhibit 2.15 makes clear, the difference between HPOG programs and their corresponding control conditions is less driven by training courses and training access (fewer than one-quarter of the programs showed a contrast in these two aspects) and more driven by large expansions in financial assistance and other support services (more than three-quarters of the programs showed contrast in those aspects). Aggregating by program across the four aspects creates a summary of the extent of contrast that existed between HPOG programs and their corresponding control conditions. As Exhibit 2.16 shows, eight of the programs had strong contrast in none or one of the program aspects assessed, which we consider "low" contrast. The remaining 34 HPOG programs had strong contrast in at least two of the four aspects assessed, which we consider "typical" or "high" contrast.

The results of our assessment of the experimental (treatment vs. control conditions) contrast have important implications for expected impacts of HPOG. As the implementation analysis in this section reveals, relatively few HPOG programs had a contrast with control conditions in the aspects of specific training course content or training access. This implies that most control group members had available to them courses very similar in type, amount, and quality to the courses available to the treatment group members. On the other hand, most treatment group members had more financial assistance and support services available to them than did the control group members. The HPOG Program logic model posits that such supports contribute to enrollment in, persistence in, and completion of training. This suggests that such conditions make it more likely that we will detect impacts of HPOG on participants' educational progress.

In this chapter we summarized how HPOG programs were designed and implemented; what pre-training activities, training, and support services they offered; and the extent to which treatment group members took up those offerings. In the next chapter, we report findings on whether or not treatment group members experienced more training and support than did control group members.

3. HPOG Impacts on Training and Services Participation

In this chapter we report findings on HPOG's impact on participation in training and support services by comparing their receipt by treatment group members versus by control group members. The analyses are based on responses to items about training enrollment and experience with various supports asked of all HPOG study participants in the follow-up survey initiated 15 months after randomization.

These findings lay a foundation for the interpretation of the impacts on other outcomes presented in later chapters by characterizing the contrast in training and services experienced by treatment versus control group members.

The follow-up survey data differ from the administrative data in the PRS in two key ways. First, the survey data are based on study participants' self-reports of the training and services they received, whereas the PRS data are program records of student enrollments in training and services.[16] Second, the PRS data include only training and services provided by the HPOG programs, whereas the survey data capture any training and services participants reported receiving regardless of source, including non-HPOG training and services available to both the treatment and control groups.

Summary of Key Findings: Training and Services Participation Impacts

- **HPOG increased enrollment in training.** As of the follow-up survey, 71 percent of the treatment group had enrolled in any training (including occupational training courses, credit courses, or pre-training activities). This was 9 percentage points more than the control group. Almost two-thirds of the control group (62 percent) had also enrolled in training.
- **The treatment group received more supports than did the control group.** HPOG increased receipt of academic supports such as academic advising, career supports such as counseling, and other supportive services, such as emergency assistance. The implementation analysis observation that HPOG meaningfully expanded access to supportive services reinforces this finding.
- **That enrollment in training and receipt of supports differed indicates that HPOG could generate longer-term effects on education- and employment-related outcomes**.

The textbox **How to Read the Impact Tables in This Report** on page 41 describes how to read the exhibits that report impact results and how to interpret those results.

[16] As such, the survey results represent that individuals *reported* enrolling in training; but (to avoid cumbersome language re: self-reports) we reference that they "enrolled in training." Using that convention: According to administrative data, 77 percent of treatment group members enrolled in training; according to the survey, 71 percent of treatment group members enrolled in training. This difference may be due to recollection problems for survey responders, or it may be due to differences (between staff reports in the administrative data and self-reports in the survey data) in understandings of what counts as enrolling in training.

Analytic Methods Used to Estimate HPOG's Impact

Conceptually, the difference between the treatment group's mean outcome and the control group's mean outcome is the program impact. Although this difference can be computed using simple subtraction, in practice it is common to use multiple regression. Doing so increases the precision with which the impact is estimated.

- The HPOG 1.0 Impact Study estimates the "intention-to-treat" (ITT) impacts of *being given access* to the HPOG program using a regression model that adjusts the impact (i.e., the difference between average outcomes for treatment and control group members) by controlling for characteristics measured at baseline.
- The overall impact and the subgroup impact analyses combine the standard treatment and the enhanced treatment groups into a single "pooled" treatment group, whose outcomes are compared to those of the control group.
- The regression model is multi-level in its structure to account for the nesting of individuals within administrative divisions and within programs. This structure allows us to model the difference in outcomes at each level while also accounting for "clustering" at that level, accurately computing the standard errors (which reflect the precision of impact estimates).
- The outcomes for which we estimate impacts are measured with either administrative data or survey data. Administrative data have relatively few missing values (<5 percent); and the survey data represent the roughly 76 percent of the total sample who responded to the follow-up survey. For outcomes generated from the administrative data, we use multiple imputation to deal with missing values. For outcomes generated from survey data, we use nonresponse weights to address unit nonresponse and multiple imputation to address item nonresponse.
- The analysis model includes a series of baseline covariates drawn from both administrative and survey data sources. We use multiple imputation to address missing baseline covariates from administrative data and missing item-level covariates from survey data.

The study's Analysis Plan (Harvill et al. 2015) and its Amendment (Harvill et al. 2017) provide details on the analysis estimation procedure. Appendix A provides additional detail on missing data handling, and Appendix B summarizes the impact estimation model.

How to Read the Impact Tables in This Report

The impact tables presented in this report all contain similar content. For example, the sample table below presents HPOG's impact on study participants' enrollment in training. The table reports the level of the outcome for both the treatment and control groups. The numbers in the table below show that 71 percent of the treatment group and 62 percent of the control group enrolled in training during the follow-up period.

The *difference* between the two mean outcomes is the **impact** of being in the treatment group. It is the evaluation's experimental design that allows this impact to be interpreted as the causal effect of being in the treatment group. The table's "Impact" column shows that the treatment group was 9 percentage points more likely than the control group to enroll in training. (Due to rounding, reported impacts may differ from differences between reported means for the treatment and control groups.)

The **relative impact** in the next column is computed as the impact divided by the control group mean, and it places in context the magnitude of the treatment-control difference. In the example below, the treatment group mean of 71 percent is *15 percent larger* than the control group mean of 62 percent. An impact of 9 percentage points is smaller relative to a control group mean of 62 percent than to, for example, a control group mean of 10 percent. In that instance, the relative impact of that same 9 percentage points would be *90 percent,* rather than 15.

Sample Table: Impacts on Enrollment in Training

	Treatment Group Mean	Control Group Mean	Impact	Relative Impact
Enrolled in training or training-related activities since random assignment (%)	71.4	62.1	9.3***	15.0

Notes: Statistical significance levels for two-sided tests are indicated by asterisks as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
Sample Size and Sources:
Treatment: 6,801. Control: 3,649. HPOG and PACE follow-up surveys.

Impacts marked with one or more asterisks are statistically significant, indicating that it is unlikely that the impact is due to chance. The number of asterisks indicates whether the impact is statistically significant at the 10 percent (*), 5 percent (**), or 1 percent (***) level. In the table above, the impact is statistically significant at the 1 percent level, providing strong evidence that it was HPOG that increased the percentage of students enrolled in any training since random assignment. The more asterisks, the less likely the finding is due to chance.

Some impacts' statistical significance is flagged by use of hashtags instead of asterisks. The hashtag indicates that the test is one-sided; that is, we have a directional hypothesis. The example in this textbox uses asterisks because it is a two-sided test.

Appendix B provides technical details related to the analytic model used to estimate the impacts reported in these tables.

3.1 Measures of Training and Services Participation

Data on training and services participation come from the HPOG and PACE follow-up surveys of all study participants. These data capture the training and services received by treatment group and control group members and from HPOG and non-HPOG sources.[17]

3.1.1 Receipt of Training Measures

To assess HPOG's impact on enrollment in training, we constructed the following measure to capture whether study participants enrolled in training since random assignment:

- ***Enrolled in any training or pre-training activities since random assignment***, including classes providing regular college credit; classes providing occupational training; classes to learn English as a second language; or basic skills classes.

Additionally, we report separate impact estimates for enrollment in each specific type of class used to construct this measure, which include:

- Enrolled in any classes providing regular college credit;
- Enrolled in any classes providing occupational training, but not for college credit;
- Enrolled in any classes to learn English as a second language, not counting regular college classes or occupational training; and
- Enrolled in any classes to improve basic skills, including classes to improve basic reading, writing, or math skills or prepare for a high school equivalency or college placement test.

3.1.2 Receipt of Services Measures

Using follow-up survey data, we constructed the following measures to capture study participants' receipt of support services:

- ***Receipt of any academic support services since random assignment***—including financial aid advising services; academic advising (e.g., help choosing courses); assessments of skill sets (e.g., using ACT's WorkKeys and Compass, or Tests of Adult Basic Education); tutoring; or peer support services.
- ***Receipt of any career support services since random assignment***—including career counseling or job search or placement assistance.
- ***Receipt of any other support services since random assignment***—including help arranging supports to manage school or work (e.g., childcare, transportation); personal counseling; non-cash incentives (e.g., a gift card for completing a course); or emergency assistance or funds to cover the costs of an unexpected personal crisis (e.g., utility shutoff or car repair).

[17] Among treatment group members who responded to the follow-up survey, 96 percent had enrolled in training, received services, or participated in pre-training activities.

We estimate HPOG's impact on receipt of academic support services, career support services, and other support services, as well as the individual support services that comprise each of these three measures.

3.2 Impacts on Enrollment in Training

- **HPOG increased enrollment in training.**

As of the follow-up survey, 71 percent of the treatment group enrolled in any training, 9 percentage points more than the control group (Exhibit 3.1).[18] Almost two-thirds of the control group (62 percent) also enrolled in training, which indicates that the entire sample was relatively motivated and that the programs generally were located in training-rich environments. As such, HPOG's impact on training enrollment—a 15 percent improvement—is an increase over an already high level of school attendance. That is, the program helped more people enroll in training who otherwise would not have.

This impact on training enrollment is driven by increased enrollment in occupational training courses: 11 percentage points more of the treatment group than the control group enrolled in occupational training courses. This difference represents a 42 percent relative increase and confirms that HPOG met its goal of increasing access for low-income individuals to occupational training.

As shown in Exhibit 3.1, there is no evidence that HPOG influenced enrollment in any other types of class. As noted in Chapter 2, more than half of HPOG programs did not offer ABE classes, and many limited program eligibility to those applicants who did not need ABE to meet the requirements of occupational courses. Given this, it is perhaps not surprising that HPOG did not lead to an increase in enrollment in ESL or basic skills classes.

Exhibit 3.1: Impacts on Enrollment in Training and Training-Related Activities

Enrollment (%)	Treatment Group Mean	Control Group Mean	Impact	Relative Impact
Enrolled in any training or pre-training activities since randomization	**71.4**	**62.1**	**9.3*** **	**14.9**
Any enrollment in credit classes	35.6	36.9	-1.3	-3.5
Any enrollment in occupational classes	38.6	27.3	11.3***	41.5
Any enrollment in ESL classes	3.5	2.5	1.0	40.9
Any enrollment in basic skills classes	12.1	9.9	2.2	21.9

Notes: All findings are exploratory. They are intended to support interpretation of impact findings.
Statistical significance levels for two-sided tests are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
Sample Sizes and Sources:
Treatment: 6,801. Control: 3,649. HPOG and PACE follow-up surveys.

[18] Additional detail on the impact findings in this chapter is available in Appendix C.

3.3 Impacts on Receipt of Academic, Career, and Other Support Services

- **HPOG increased receipt of a wide range of academic support services, career support services, and other types of support services.**

As shown in Exhibit 3.2, HPOG increased receipt of academic support services by 9 percentage points; career support services by 13 percentage points; and other support services (such as emergency assistance) by 12 percentage points.

Exhibit 3.2: Impacts on Receipt of Support Services

Service Measure (%)	Treatment Group Mean	Control Group Mean	Impact	Relative Impact
Academic Support Services				
Received any academic support services[a]	**56.6**	**47.4**	**9.2*** **	**19.4**
Received financial aid advising services[b]	27.1	24.4	2.7**	10.9
Received academic advising services[b]	30.9	25.1	5.7***	22.8
Received assessment services[a]	27.1	20.2	6.9***	34.1
Received tutoring services[b]	17.2	14.6	2.6***	18.0
Received peer support services[a]	9.5	5.7	3.8***	66.1
Career Support Services[b]				
Received any career support services	**39.3**	**26.1**	**13.1*** **	**50.3**
Received career counseling services	25.2	15.4	9.8***	63.6
Received job search services	30.8	19.2	11.7***	61.0
Other Support Services				
Received any other support services[a]	**39.4**	**27.0**	**12.4*** **	**46.1**
Received help arranging supports[b]	19.7	11.2	8.4***	75.3
Received counseling services[a]	12.2	9.8	2.4***	24.9
Received non-cash incentives[a]	10.1	2.2	7.9***	358.5
Received emergency assistance services[a]	14.4	10.8	3.6***	33.2

Notes: All findings are exploratory. They are intended to support interpretation of impact findings.
Statistical significance levels for two-sided tests are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
Sample Sizes and Sources:
[a] Treatment: 5,566. Control: 2,525. HPOG follow-up survey.
[b] Treatment: 6,801. Control: 3,649. HPOG and PACE follow-up surveys.

These increases exist on top of what, in some cases, is a relatively high level of service receipt within the control group. For example, about half (47 percent) of the control group reported that they received some form of academic support services, and HPOG increased that to 57 percent, a 19 percent relative impact.

For other services, the control group reported lower levels of receipt: about one-quarter (26 percent) of the control group reported receiving any career support services, whereas more than a third (39 percent) of the treatment group reported receiving these services. This 13 percentage point difference represents a 50 percent relative impact. Similarly, about one-quarter (27 percent) of the control group reported receiving any other support services, whereas more than a third (39 percent) of the treatment group did.

Within the category of Other Support Services, the greatest treatment-control differences exist for receipt of help arranging supports and non-cash incentives (relative impacts of 75 and 359 percent, respectively). We attribute the increased receipt of help arranging supports to HPOG's wide use of case managers and counselors (almost 90 percent of the treatment group received case management services).

Some programs offered non-cash incentives where students were rewarded for demonstrating certain behaviors (such as perfect attendance) or meeting certain program milestones (such as completing a certification). Generally, control group members reported very low levels (just 2 percent) of exposure to non-cash incentive schemes, versus a much greater prevalence (10 percent) in the treatment group, which represents a more than three-fold relative impact. The large increase in the opportunity to receive non-cash incentives as part of their program experience has two likely causes: one is the introduction of non-cash incentives as an HPOG enhancement assigned experimentally in five programs; the other is its presence as a naturally occurring feature of three HPOG programs.

3.4 Implications for HPOG Impacts

Under the logic model, certain program design elements (i.e., training and supportive services) are intended to help individuals stay connected to the program and achieve desired program milestones, which then associate with more favorable labor market outcomes in the longer term. The differences in the pooled treatment group's and control group's enrollment in training and reported receipt of academic, career, and other support services indicate that HPOG could generate longer-term effects on education- and employment-related outcomes.

4. HPOG Impacts on Training, Employment, and Income

The HPOG programs are intended to provide education and training that builds low-income adults' skills and abilities, enabling them to secure employment, specifically high-quality jobs in the healthcare sector, increase earnings, and reduce dependence on public assistance benefits. In this chapter we present early impacts (arising about five quarters after randomization) that measure HPOG's progress toward these goals.

The HPOG career pathways framework logic model (see Exhibit 1.1) identifies six kinds of short-term outcomes of key interest:

- educational progress;
- employment;
- employment in healthcare;
- job quality;
- earnings; and
- public assistance benefits.

These are outcome *domains*. An outcome domain describes an underlying concept that one or more related outcomes measure. Two outcomes that measure the same underlying concept but in different ways are said to be in the same domain.

In our publicly available Analysis Plan, which was written before we analyzed outcomes data for this report, we pre-specified a single preferred outcome measure in each of these domains, designating one measure as "confirmatory" (confirming that HPOG was on track to succeed) and the other five measures as secondary (Harvill, Moulton, and Peck 2015).[19] By identifying a single preferred measure in each of a small number of domains, we protect against drawing false conclusions. This is because with each additional test performed, the probability of finding at least one false positive impact increases. We present findings for additional measures in the same domains as well as outcomes in new domains, and those impacts are considered exploratory.

Summary of Key Findings: Training, Employment, and Income Impacts

- **HPOG increased educational progress.** As of the follow-up survey, 68 percent of the treatment group had completed training or was currently enrolled compared to 60 percent of the control group, a 7 percentage point increase.
- **The impact on educational progress is largely driven by an increase in completion of occupational training.**
- **HPOG had no detectable impact on employment.** The treatment group was no more likely than the control group to be employed.
- **HPOG increased employment in the healthcare sector.** As of the follow-up survey, 53 percent of the treatment group was in a healthcare job compared to 41 percent of the control group.
- **HPOG increased job quality**, defined as access to employer-sponsored health insurance, by 2 percentage points (from 56 percent in the control group to 58 percent in the treatment group).
- **HPOG increased earnings by $137 in the fifth follow-up quarter.**
- **The treatment group was no more or less likely to receive TANF than the control group.**

[19] ACF makes evaluation plans publicly available as part of its commitment to transparency in evaluation, as described in its *Evaluation Policy* (ACF 2012).

Because the HPOG follow-up survey would be initiated 15 months after randomization, we anticipated that some participants might still be enrolled in training, especially those in longer-term programs such a nursing. As a result, the effects of completing training might not yet be fully realized. For this reason, we selected a comprehensive measure of "educational progress"—completion of or current enrollment in training—as the confirmatory outcome for this follow-up point. We also specified educational progress because HPOG's logic model hypothesizes that employment and earnings impacts will be realized sequentially after educational progress has been made.[20]

To measure HPOG's impact, we compare the outcomes for treatment group members (individuals offered access to the HPOG program) to the outcomes for control group members (those who were not).[21] Because the offer of access to HPOG was assigned randomly, this treatment-control difference in outcomes is attributable to the HPOG program. (Technically, we measure the impact of being *offered* HPOG, rather than the impact of *participating* in HPOG. However, because more than 96 percent of individuals who were offered access to the HPOG program experienced some exposure to the HPOG program, those two numbers are practically the same).

These estimated impacts reflect the experience of individuals in 42 different HPOG programs. As described in Chapter 2, these programs varied extensively in administrative structure and in services and training offered, as well as in opportunities available to the control group. The programs also may have differed in the effectiveness of their program model and the fidelity with which that model was implemented. Appendix B describes the analytic approach to estimating impacts and accounting for variation across programs. By averaging across programs, the estimates presented in this chapter measure the effect of funding and implementing the national HPOG Program.

4.1 Outcome Measures

These outcomes are drawn from two different data sources. The majority of outcomes, including the confirmatory outcome of educational progress, come from the HPOG and PACE follow-up surveys.[22] The earnings and employment outcomes come from the National Directory of New Hires (NDNH), an administrative data set that includes workers' quarterly wage data as reported by employers to state Unemployment Insurance agencies.

[20] For subsequent follow-up reports, employment and earnings will be the confirmatory outcomes.
[21] We combine the standard treatment and the enhanced treatment groups to create a single treatment group that includes all individuals offered access to HPOG.
[22] The HPOG follow-up survey instrument is available in the appendix to the Design Report (Peck et al. 2014). For the PACE follow-up survey instrument, see OPRE (2013).

Terms Relevant to Chapters 4, 5, and 6

A **confirmatory impact** informs the extent to which the program is making progress toward its goals. If no confirmatory impacts appear as predicted, then the tested program would not be considered successful. The single confirmatory outcome in this report is the impact of the pooled HPOG treatment groups on "educational progress," defined as having completed or being currently enrolled in training.

Secondary impacts measure the overall impact on additional outcomes identified in the HPOG logic model.

Exploratory impacts measure program effects that may help improve our understanding of findings from the confirmatory and secondary analyses.

Our preferred employment and earnings outcomes measure impacts in the fifth follow-up quarter after the calendar quarter in which random assignment took place (a three-month window beginning 13 to 15 months after random assignment). The study participants were first approached to complete the follow-up survey in the 15th month following their random assignment date, and the median length of time of survey completion was 18 months.[23] The follow-up period for employment and earnings outcomes ranges from 13 to 18 months.

4.1.1 Training-Related Outcomes

For the confirmatory measure, we considered individuals to be making educational progress if they had completed training or were currently enrolled in training. We constructed this confirmatory outcome as follows:

- ***Completed training or currently enrolled in training (confirmatory):*** (1) completed a professional, state, or industry certificate, license, or credential; (2) completed a degree; (3) was currently taking classes for college credit; or (4) was currently enrolled in training. This outcome is simply referred to as ***educational progress***.

To create that confirmatory outcome, we combined four measures, which we report on separately as well, as follows:

- ***Obtained a certificate, license, or credential***—completed a professional, state, or industry certificate, license, or credential. This outcome is simply referred to as ***program completion***.
- ***Completed college degree***, whether associate's or bachelor's.
- ***Currently enrolled in course for credit***.
- ***Currently enrolled in occupational training***.

[23] The resulting distribution of the timing of responses was as follows: about 60 percent of the sample responded in 18 months or less; 35 percent of the sample responded in 19-24 months; and the remaining 6 percent responded in 25 months or more. The mean length of time to respond to the survey for treatment group members was 18.1 months; for control members it was 18.5 months. This difference of approximately 12 days in average response times is statistically significant at the 1 percent level. Appendix A provides additional details.

Additional training-related, exploratory outcomes are defined as follows:

- ***Completed college degree or obtained certificate, license, or credential***.
- ***Currently enrolled in course for credit or in occupational training.***
- ***Earned any college credits***.
- ***Perception of progress toward long-range educational goals***—strongly or somewhat agrees with the statement "I am making progress towards my long-range educational goals."

4.1.2 Employment-Related Outcomes

HPOG was created to train individuals in healthcare professions for two reasons: to meet the growing labor market demand for healthcare workers, and to enable low-income individuals to obtain high-quality jobs in the healthcare sector. In the set of employment-related outcomes, we include the following domains: employment, employment in healthcare, job quality, barriers to employment, and self-efficacy.

Employment Domain

To measure employment, we determined whether wages were reported to the NDNH for a particular period of time after randomization. If no wages were reported for that quarter, the individual was not considered to have been employed.[24] Measures in this domain are as follows:

- ***Employment in Q5 (secondary)***—employment for the fifth quarter after the quarter of randomization. In subsequent chapters, this outcome is simply referred to as ***employment***.
- ***Employment in Q4***—employment for the fourth quarter after the quarter of randomization.
- ***Employment in Q3***—employment for the third quarter after the quarter of randomization.
- ***Employment in Q2***—employment for the second quarter after the quarter of randomization.
- ***Employment in Q1***—employment for the first quarter after the quarter of randomization.
- ***Cumulative employment (Q1-Q5) (range is 0-5)***—number of quarters employed for the first through fifth quarter after randomization.

Employment in Healthcare Domain

Measures in this domain are as follows:

- ***Current or most recent job in healthcare (secondary)***—was currently employed in a job in the healthcare sector or (if not employed) most recent job was in the healthcare sector. In subsequent chapters, this measure is simply referred to as ***employment in healthcare***.
- ***Currently employed in a healthcare job***.

[24] In addition, we consider individuals who earned less than $58, which corresponds to eight hours of work at the 2016 federal minimum wage, not to have been employed. Appendix A describes how we distinguish between missing data and no earnings.

Job Quality Domain

Health insurance is an important measure of job quality not only because employer benefits can represent a significant proportion of total compensation but also because low-wage workers are generally less likely than their more advantaged counterparts to have employer-provided health insurance (BLS, 2017a). The measure in this domain is as follows:

- ***Current or most recent job offers health insurance (secondary)***—was currently employed in a job that offered health insurance or (if not employed) most recent job offered health insurance.[25] In this report, this outcome is simply referred to as ***job quality***.

Future reports will consider a greater number of variables to represent the domain of job quality.

Barriers to Employment Domain

The focus on providing supportive services is a hallmark of the HPOG programs. These services implicitly respond to barriers to participation in school and work. As such, it is important to measure the prevalence of barriers at follow-up. We also analyze whether barriers as measured at baseline are associated with differential impacts (in Chapter 5's subgroup analyses).

We examined whether the following barriers "very often" interfered with school, work, job search, or family responsibilities:

- ***Childcare arrangements***.
- ***Transportation***.
- ***Alcohol or drug use***.
- ***An illness or health condition.***
- ***Another situation.***

In addition, we measured the number of barriers people faced that "very often" interfered with school, work, job search, or family responsibilities:

- ***Number of barriers (range is 0-5)***—the number of barriers, among the five listed above.

Self-Efficacy Domain

Self-efficacy refers to "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura 1997). Self-efficacy is hypothesized to improve employment and earnings by improving job search and by increasing performance in the workplace (Bandura 1982; Kanfer and Hulin 1985).

- ***Generalized Self-Efficacy Scale***—combines individual responses to nine statements (ranging from "not at all true" to "entirely true") in the HPOG follow-up survey. For example, respondents indicated their agreement with the statements, "I can always manage to solve difficult problems if I try hard enough" and "It is easy for me to stick to my aims and accomplish my goals." This measure, formalized as the Generalized Self-Efficacy Scale by

[25] This measure is available for programs only in the HPOG study; comparable data are not available for the three programs also in PACE.

Schwarzer and Jerusalem (1995), was constructed by assigning a score from 1 to 4 to each response and then averaging the scores. A higher score represents greater agreement with the statements and stronger self-efficacy.

4.1.3 Income-Related Outcomes

This set of outcomes includes measures in the domains of earnings, public assistance benefits, and economic conditions. Increasing earnings and reducing dependence on public assistance benefits are key goals of HPOG.

Earnings Domain

We defined earnings as the sum of all wages reported to the NDNH over a specific number of quarters after random assignment. If no wages were reported for that quarter, then we recorded earnings as zero. Measures in this domain are as follows:

- ***Earnings in Q5 (secondary)***—earnings in the fifth quarter after the quarter of randomization. In subsequent chapters, this measure is simply referred to as ***earnings***.
- ***Earnings in Q4***—earnings in the fourth quarter after the quarter of randomization.
- ***Earnings in Q3***—earnings in the third quarter after the quarter of randomization.
- ***Earnings in Q2***—earnings in the second quarter after the quarter of randomization.
- ***Earnings in Q1***—earnings in the first quarter after the quarter of randomization.
- ***Cumulative earnings (Q1-Q5)***—earnings in the first through fifth quarter after the quarter of randomization.

Public Assistance Benefits Domain

We used the HPOG follow-up survey to measure public assistance receipt at the individual level and the HPOG and PACE follow-up surveys to measure public assistance receipt at the household level.[26] If HPOG has positive impacts on earnings and employment, we would also expect a reduction in dependence on public assistance benefits. Measures in this domain are as follows:

- ***TANF receipt***—individual received TANF in the prior month.
- ***Number of major welfare programs (individual) (range is 0-3)***—number of the following programs the individual received benefits from in the prior month: TANF, SNAP, WIC.
- ***Number of major welfare programs (household) (range is 0-3)***—number of the following programs the household received benefits from in the prior month: TANF, SNAP, WIC.
- ***Any government assistance (individual)***—individual received benefits from any one of the following programs in the prior month: TANF, SNAP, WIC, Unemployment Insurance, Medicaid, Subsidized Childcare, Section 8 or Public Housing, Low-Income Home Energy

[26] The measurement of public assistance receipt differed across HPOG and PACE sites and between baseline data collection and the follow-up survey. Therefore, baseline measures for some public assistance programs do not appear in Chapter 2.

Assistance Program (LIHEAP), or free or reduced-price lunch through the National School Lunch Program (NSLP).

- ***Any government assistance (household)***—household received benefits from any one of the following programs in the prior month: TANF, SNAP, WIC, Unemployment Insurance, Medicaid, Subsidized Childcare, Section 8 or Public Housing, LIHEAP, or free or reduced-price lunch through the NSLP.

Economic Conditions Domain

The exploratory measures of financial situation, available in the HPOG and PACE 15-month follow-up surveys, are self-reports of monthly income and use of loans. For the purpose of data privacy, we transformed continuous monthly income to the median continuous income within a categorical income measure.[27] On the follow-up survey, items addressing income followed the items asking whether the individual received any income from any of the public assistance benefits programs listed above and from other non-wage sources; this was to encourage respondents to include non-wage income in their reported income. Measures in this domain are as follows:

- ***Personal monthly income***—total income the individual received from all sources in the prior month.
- ***Household monthly income***—total income the household received from all sources in the prior month.
- ***Loans in either own or parents' name for school/living expenses***.
- ***Loans in parents' name for school/living expenses***.

4.2 Impacts on Educational Progress

- **HPOG increased *educational progress,* defined as having completed or being currently enrolled in training.**

As of the follow-up survey, 68 percent of the treatment group had completed training or was currently enrolled versus 60 percent of the control group, a 7 percentage point increase. Exhibit 4.1 below presents impacts on educational progress and on other, related measures of education and training. We discuss the impacts of HPOG on each of the outcomes that make up the educational progress measure.

[27] Specifically, each individual was assigned the median value of income from within seven categories ($0, $500 or less, $501-$1,000, $1,001-$1,500, $1,501-$2,000, $2,001-$2,500, and $2,500 or more) of the overall income distribution. Use of the median, rather than the mean, helps with undue influence of large incomes on impact estimation. For an alternative estimate, see Appendix D.

Exhibit 4.1: Impacts on Educational Progress

Outcome (%)	Level of Evidence	Treatment Group Mean	Control Group Mean	Impact	Relative Impact
Completed training or currently enrolled in training	**Confirmatory**	**67.6**	**60.3**	**7.4###**	**12.2**
Obtained certificate, license, or credential	Exploratory	49.5	39.5	10.0***	25.3
Completed college degree	Exploratory	17.9	17.9	−0.1	−0.4
Currently enrolled in course for credit	Exploratory	15.9	16.7	−0.8	−4.8
Currently enrolled in occupational training	Exploratory	4.4	4.4	0.0	0.6
Currently enrolled in course for credit or in occupational training	Exploratory	20.2	20.4	-0.2	-0.9
Completed college degree or obtained certificate, license, or credential	Exploratory	58.2	49.1	9.0***	18.4
Earned any college credits	Exploratory	28.5	28.6	−0.1	−0.3
Perception of progress toward long-range educational goals	Exploratory	0.8	0.8	0.1***	9.4

Notes: Confirmatory and secondary findings use a one-sided hypothesis test, and exploratory findings use a two-sided hypothesis test.
Statistical significance levels for one-sided tests are indicated with hashtags as follows: ### = 1 percent; ## = 5 percent; # = 10 percent.
Statistical significance levels for two-sided tests are indicated with asterisks as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
Sample Sizes and Sources:
Treatment: 6,801. Control: 3,649. HPOG and PACE follow-up surveys.

- **The increase in educational progress seems to be driven largely by the treatment group's greater *completion* of training.**

Exploratory analyses suggest that the impact on educational progress is driven largely by an increase in completion of occupational training. As of the survey follow-up, 50 percent of the treatment group had obtained a certificate, license, or credential versus 40 percent of the control group. This 10 percentage point improvement represents a 25 percent relative impact.

There is considerable variation among certificates, licenses, and credentials. Some certifications such as Phlebotomy Technician are regulated by national organizations such as the National Healthcareer Association and require that the recipient demonstrate competence on an exam. Such certifications are nationally recognized by employers. Other certificates are awarded by the training provider. Such certificates may be valued by local employers, especially if the employer explicitly partnered with the training provider, or may be less valuable. Given the similarity in the terms—both nationally recognized certifications and training provider-awarded certificates may be called "certificates"—it is difficult to obtain reliable survey data that distinguish among the various types of certificates, licenses, or credentials.[28] For this reason, we do not attempt to differentiate impacts by type of credential.

We do not detect impacts on current enrollment either in credit-bearing courses or in occupational training. A larger proportion of the sample (16-17 percent) was enrolled in credit-bearing classes than in occupational training (4 percent). Current enrollment in credit-bearing

[28] In administering the 15-month follow-up survey, data collectors were instructed to provide the following description of what it means to complete a certificate, license, or credential: "A professional certification or license shows you are qualified to perform a specific job like Licensed Realtor, Certified Medical Assistant, Certified Construction Manager, or an IT certification" (Peck et al. 2014).

courses could reflect any of ongoing enrollment in longer-term training programs that lead to a degree, enrollment in the next training on the career ladder, or reenrollment after program exit.

We also do not detect impacts on earning college credits or completing college degrees. These findings are consistent with the requirements of the occupations for which HPOG programs trained participants. As described in Chapter 2, the vast majority of the treatment group enrolled in trainings for occupations that require postsecondary non-degree awards. Given this focus on occupational training, it is conceivable that HPOG could shift enrollment away from credit-bearing college courses and actually reduce completion of college degrees. This does not appear to have been the case. Although college completion is very slightly lower (0.1 percentage point) for the treatment group than for the control group, this difference is not significant, and HPOG does not appear to have meaningfully decreased completion. The 90 percent confidence interval for the impact on college completion ranges from about −1 to 1 percentage point, which allows us to conclude that HPOG had neither a large positive nor a large negative effect.

4.3 Impacts on Employment, Job Quality, and Self-Efficacy

HPOG does not appear to have affected employment in the fifth calendar quarter after randomization. Even so, it did increase employment in the healthcare sector—as it was designed to do—by about one-fourth (27 percent) and increased access to employer-sponsored health insurance by 4 percent. Exhibit 4.2 presents findings on a range of employment-related outcomes.

- **Although the treatment group was no more likely than the control group to be employed, HPOG did increase employment in the healthcare sector.**

We observe a small decrease of 0.2 percentage point in employment as of quarter five, but this difference is not significantly distinguishable from zero. We can, however, conclude that HPOG did not have a large positive or negative impact on employment: the 90 percent confidence interval for the impact on employment in the fifth follow-up quarter ranges from about −1 to 2 percentage points. In the first two follow-up quarters, HPOG reduced employment, presumably because some treatment group members were engaging in training rather than working, as is commonly observed in evaluations of job training programs. Section 4.5 reports employment over time.

HPOG increased the proportion of individuals whose current or most recent job is in the healthcare sector: 41 percent of the control group was employed in healthcare, whereas 53 percent of the treatment group was. This increase of 11 percentage points represents a 27 percent relative increase. HPOG increased the proportion of those whose current job is in the healthcare sector from 34 percent to 44 percent, an increase of 10 percentage points.[29]

[29] Note that the healthcare employment impact is estimated using survey data, whereas overall employment comes from NDNH administrative data. Although the two sources consider different time periods (with NDNH centered around the 15th month after randomization and survey centered around the 18th month), employment means and impacts from NDNH and survey sources are quite similar. According to the survey, 68 percent of the control group and 70 percent of the treatment group were employed at follow-up, and the difference between the two is not statistically significant. The employment result based on survey data is shown in Appendix D, Exhibit D.2.

Exhibit 4.2: Impacts on Employment-Related Outcomes

Outcome	Level of Evidence	Treatment Group Mean	Control Group Mean	Impact	Relative Impact
Employment[a]					
Employment in Q5 (%)	**Secondary**	**69.7**	**69.4**	**0.2**	**0.3**
Employment in Q4 (%)	Exploratory	68.9	67.5	1.4	2.1
Employment in Q3 (%)	Exploratory	65.9	66.5	−0.6	−0.9
Employment in Q2 (%)	Exploratory	62.2	63.7	−1.5*	−2.4
Employment in Q1 (%)	Exploratory	55.7	60.3	−4.6***	−7.7
Cumulative employment (Q1-Q5) (range is 0-5)	Exploratory	3.2	3.3	−0.1	−1.5
Employment in Healthcare[b]					
Current or most recent job in healthcare (%)	**Secondary**	**52.6**	**41.4**	**11.2###**	**27.1**
Currently employed in a healthcare job (%)	Exploratory	43.7	33.8	9.9***	29.5
Job Quality[c]					
Current or most recent job offers health insurance (%)	**Secondary**	**57.9**	**55.7**	**2.2##**	**3.9**
Barriers to Employment[b]					
Childcare arrangements (%)	Exploratory	0.2	0.2	−0.02**	−10.1
Transportation (%)	Exploratory	11.6	11.4	0.1	1.2
Alcohol or drug use (%)	Exploratory	0.3	0.4	−0.1	−31.8
An illness or health condition (%)	Exploratory	6.5	6.5	0.0	0.0
Another situation (%)	Exploratory	5.6	6.1	−0.5	−7.8
Number of barriers (range is 0-5)	Exploratory	0.4	0.4	−0.02*	−5.4
Self-Efficacy[c]					
Generalized Self-Efficacy Scale (range is 1-4)	Exploratory	3.2	3.1	0.03**	0.8

Notes: Confirmatory and secondary findings use a one-sided hypothesis test, and exploratory findings use a two-sided hypothesis test.
Statistical significance levels for one-sided tests are indicated with hashtags as follows: ### = 1 percent; ## = 5 percent; # = 10 percent.
Statistical significance levels for two-sided tests are indicated with asterisks as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
Employment outcomes list the follow-up quarter: Q5 refers to the fifth follow-up quarter.
Sample Sizes and Sources:
[a] Treatment: 8,673. Control: 5,044. National Directory of New Hires.
[b] Treatment: 6,801. Control: 3,649. HPOG follow-up survey.
[c] Treatment: 5,566. Control: 2,525. HPOG and PACE follow-up surveys.

Together, these findings suggest that although HPOG did not affect overall employment, it did shift the sector of employment, helping individuals move into the healthcare sector to a greater degree than they otherwise would have.

- **HPOG increased job quality, defined as access to employer-sponsored health insurance.**

HPOG increased the proportion of individuals whose current or most recent job offers health insurance from 56 percent to 58 percent, an increase of 2 percentage points. Employer-provided health insurance represents job quality: these benefits are an important part of compensation that is often lacking in jobs for low-wage workers.

HPOG slightly decreased barriers to employment. On average, both the control group and the treatment group reported fewer than one barrier. The impact (a decrease of 0.02 percentage point, which rounds to 0) represents a less than 5 percent decrease in barriers but is statistically

different from zero. Across both groups the most commonly reported barriers are the need for childcare and transportation. HPOG decreased the proportion of individuals experiencing barriers associated with childcare arrangements from 17 percent to 15 percent, a 2 percentage point decrease, but we do not detect an impact of HPOG on barriers associated with transportation. Between 11 and 12 percent of the treatment and control groups reported transportation-related barriers. We do not detect an impact on barriers associated with alcohol or drug use, an illness or health condition, or another situation.

Similarly, HPOG very slightly increased participants' perceived self-efficacy. In the control group, the average self-efficacy outcome is 3 (on a scale of 0-4), which corresponds to a typical response of "mostly true" to a series of statements along the lines of "I can solve most problems if I invest the necessary effort" (Schwarzer and Jerusalem 1995). The only higher response option available is "exactly true," leaving little room for HPOG to increase self-efficacy on this measure. Although the impact is small (an increase of 0.02 percentage point, which represents a less than 1 percent increase), it is statistically different from zero.

4.4 Impacts on Earnings and Income

- **HPOG increased earnings by $137 in the fifth follow-up quarter.**

As shown in Exhibit 4.3, the control group earned $3,345, on average, in the fifth follow-up quarter, which corresponds to annual earnings of $13,380 if sustained for the entire year.[30] The treatment group earned approximately 4 percent more, $3,482, in that quarter, corresponding to annual earnings of $13,928 if sustained.[31] However, exploratory findings suggest that earnings patterns were changing across the follow-up quarters. We discuss the patterns of earning impacts over time further in Section 4.5.

[30] NDNH employment and earnings data were under-reported by the state of Washington in several quarters between 2014 and 2016. For approximately 3 percent of the impact sample, the fifth quarter after random assignment was one of the under-reported quarters. However, sensitivity analyses suggest that this does not meaningfully affect findings (see Appendix D for more detail).

[31] To investigate whether this increase in earnings is due to an increase in hourly wages, an increase in hours worked, or both, we analyzed survey measures of earnings and hours worked. These analyses produced no evidence that HPOG increased weekly earnings or hourly wages, but showed that HPOG increased hours worked by half an hour per week. The results of this analysis appear in Appendix D, Exhibit D.4.

Exhibit 4.3: Impacts on Income-Related Outcomes

Outcome	Level of Evidence	Treatment Group Mean	Control Group Mean	Impact	Relative Impact
Quarterly Earnings ($)[a]					
Earnings in Q5	**Secondary**	**3,482**	**3,345**	**137##**	**4.1**
Earnings in Q4	Exploratory	3,173	3,070	103	3.4
Earnings in Q3	Exploratory	2,779	2,772	7	0.3
Earnings in Q2	Exploratory	2,317	2,477	−160***	−6.5
Earnings in Q1	Exploratory	1,806	2,065	−259***	−12.6
Cumulative earnings (Q1-Q5)	Exploratory	13,544	13,713	−170	−1.2
Public Assistance Benefits					
TANF receipt (%)[b]	**Secondary**	**8.5**	**8.8**	**−0.4**	**−4.1**
Number of major welfare programs (individual) (range is 0-3)[b]	Exploratory	1.0	1.0	−0.0	−1.6
Number of major welfare programs (household) (range is 0-3)[c]	Exploratory	1.1	1.1	−0.0	−0.6
Any government assistance (individual) (%)[b]	Exploratory	66.3	66.3	0.0	0.0
Any government assistance (household) (%)[c]	Exploratory	73.1	72.4	0.7	1.0
Economic Conditions[c]					
Personal monthly income ($)	Exploratory	1,445	1,473	−29	−2.0
Household monthly income ($)	Exploratory	2,440	2,439	1	0.0
Loans in either own or parents' name for school/living expenses (%)	Exploratory	21.9	28.1	−6.2	−22.0
Loans in parents' name for school/living expenses (%)	Exploratory	1.5	4.8	−3.4	−69.6

Notes: Confirmatory and secondary findings use a one-sided hypothesis test, and exploratory findings use a two-sided hypothesis test.
Statistical significance levels for one-sided tests are indicated with hashtags as follows: ### = 1 percent; ## = 5 percent; # = 10 percent.
Statistical significance levels for two-sided tests are indicated with asterisks as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
Earnings outcomes list the follow-up quarter: Q5 refers to the fifth follow-up quarter.
Sample Sizes and Sources:
[a] Treatment: 8,673. Control: 5,044. National Directory of New Hires.
[b] Treatment: 5,566. Control: 2,525. HPOG follow-up survey.
[c] Treatment: 6,801. Control: 3,649. HPOG and PACE follow-up surveys.

- **The study did not detect an effect of HPOG on TANF receipt.**

Both the treatment and control groups demonstrated low levels of individual TANF receipt, between 8 and 9 percent.[32] There is no detectable difference in the proportion participating in TANF at the time of the follow-up survey. Given these values, the evaluation would be able to detect an impact on this measure, only if it were approximately 1 percentage point or more (see Appendix D).[33]

Across a range of exploratory measures of public assistance benefits, there is no evidence that HPOG reduced benefits. The measure for the number of major welfare programs counts

[32] For comparison, between 10 and 11 percent of treatment and control group members were participating in TANF at baseline in the HPOG programs included in this analysis (for data availability reasons, this analysis does not include the three HPOG/PACE programs).
[33] Given that 9 percent of the control group participated in TANF, a roughly −2 percentage point impact corresponds to a 21 percent reduction in TANF participation.

individual or household participation in TANF, Medicaid, and SNAP. On average, individuals in both the treatment and control groups participated in one of these programs, with SNAP and Medicaid more prevalent than TANF.[34]

The outcomes related to government assistance include a large number of programs with a wide range of eligibility requirements—indeed, Unemployment Insurance is available to individuals at all levels of household income and wealth. Among the full list of programs, SNAP remains the most commonly reported, and high rates of participation are consistent with the level of earnings and income reported by control group members.

HPOG has no detectable impact on monthly personal or household income. Monthly household income of treatment group members was nearly identical to that of control group members.[35] The goal of the HPOG program is to increase job earnings and to reduce public assistance benefits. One reason that we might see an increase in earnings but not monthly income has to do with the composition of income: if increased earnings associates with reduced income from public assistance, then the offset could net to zero. For this to be the case—and given that we do not observe a statistically significant decrease in participation in public assistance—the reduction in income from public assistance would need to come through decreased payments to individuals rather than individuals leaving public assistance. However, we cannot test this hypothesis directly because we do not have data on public assistance benefit amounts.

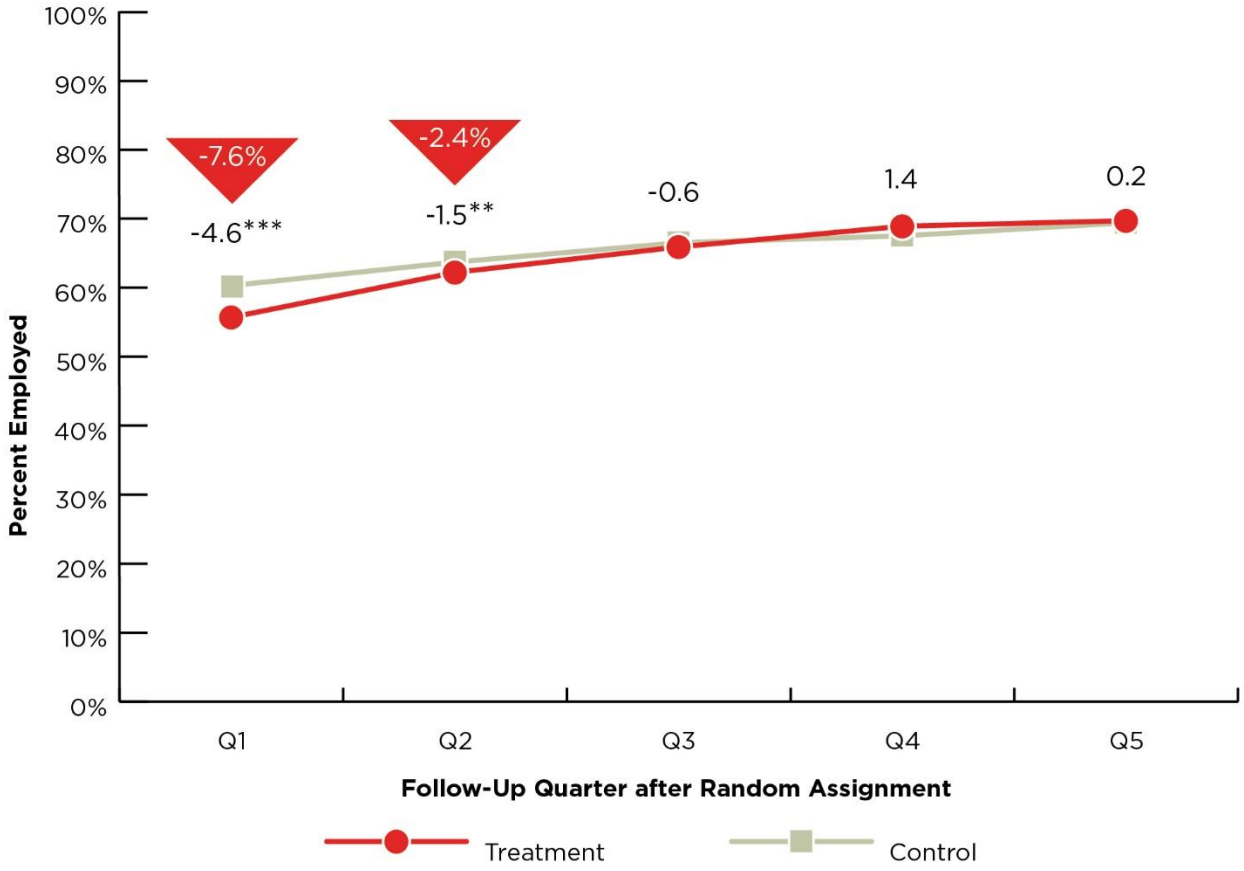
Finally, the analysis of loans in one's own or parents' name reveals no statistically significant difference between the treatment and control groups.[36] The analysis of loans in one's parents' names is similar, finding no detectable difference in outcomes between the groups.

4.5 Impacts on Employment and Earnings over Time

In the first two follow-up quarters, HPOG decreased employment, presumably because participants were engaging in training rather than working. HPOG decreased employment by 5 percentage points in the first follow-up quarter and by 2 percentage points in the second. In subsequent quarters, we do not detect a difference in employment. Exhibit 4.4 graphically depicts employment for the treatment and control groups over time.

[34] At follow-up, 43 percent of the sample participated in SNAP and 46 percent participated in Medicaid.
[35] These income measures are of more sources of income than earnings from work alone, are from a different data source, and are measured over a different period of time. The administrative measure of earnings includes only earnings from work and covers a three-month span. The income measure reported here includes job earnings, public assistance benefits, and other types of income, over the follow-up time period. Prior to reporting the level of income, survey respondents were asked whether they received income or benefits from child support, family and friends, grants or loans from school, or all the public assistance programs listed above (Peck et al. 2014).
[36] One might wonder why an impact as seemingly large as this is not flagged as statistically significant. Because this variable has relatively more missing data to impute, the resulting impact is noisily estimated; therefore, we cannot conclude that its value is nonzero.

Exhibit 4.4: Time Trends in Employment Outcomes



Notes: Statistical significance levels for one-sided tests are indicated with hashtags as follows: ### = 1 percent; ## = 5 percent; # = 10 percent.
Statistical significance levels for two-sided tests are indicated with asterisks as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
For statistically significant results, relative impact magnitudes are shown in triangles.
Sample Size and Source:
Treatment: 8,673. Control: 5,044. National Directory of New Hires.

A visual inspection of trends in earnings suggests that earnings were growing faster for treatment group members than for control group members, as seen in Exhibit 4.5. Although HPOG reduced earnings in the first two follow-up quarters, by $259 and $160 respectively, HPOG increased earnings in the fifth follow-up quarter by $137. This pattern is commonly observed in evaluations of job training programs, where individuals temporarily leave or reduce employment to focus on training and then return to the labor market with improved skills.

Exhibit 4.5: Time Trends in Earnings Outcomes

Notes: Statistical significance levels for one-sided tests are indicated with hashtags as follows: ### = 1 percent; ## = 5 percent; # = 10 percent.
Statistical significance levels for two-sided tests are indicated with asterisks as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
For statistically significant results, relative impact magnitudes are shown in triangles.
Sample Size and Source:
Treatment: 8,673. Control: 5,044. National Directory of New Hires.

4.6 Discussion

This study is an evaluation of a large federal grants program. The impacts reported are average impacts across the grants made by the program and, as such, reveal the effects of this portfolio of investments. However, each of these 42 programs offered a unique set of services to a local population with specific characteristics. This report does not address the effectiveness of any single program that received HPOG funding. Some programs were located in especially training-rich environments, where control group members had access to many of the same training courses and support services as treatment group members. Other programs were located in environments where fewer options were available to control group members. Control conditions aside, the HPOG programs themselves also varied, creating varying levels of contrast between the control conditions and what was available to the treatment group. Indeed, there is considerable variation in the underlying conditions leading to impacts across HPOG programs.

The impacts of HPOG on educational progress, program completion, employment, employment in healthcare, job quality, and earnings likely vary across programs. Chapter 2 identified many dimensions along which the HPOG programs varied among themselves, as well as in contrast to locally available training and services for the control group. Some programs had a weak

contrast, and one might expect little or no impacts in those places. Conversely, other programs created a much stronger contrast in implementing HPOG compared with what was already available, and one might expect relatively larger impacts there. Despite not estimating program-specific impacts, we did undertake a sensitivity analysis, excluding those programs where contrast was deemed to be especially weak (see Exhibit 2.16). We did not detect a difference between the overall effect of HPOG, averaged across all programs, and the average effect of typical- and high-contrast programs on educational progress, employment, employment in healthcare, job quality, earnings, or TANF receipt. The programs with typical or high contrast had more-favorable impacts on educational progress and employment in healthcare than did low-contrast programs (see Appendix D).[37]

In addition to calling into question the strength of the treatment-control contrast in some programs, the relatively high levels of control group outcomes in the HPOG 1.0 Impact Study also raise the question of whether HPOG targets the population most likely to benefit from training. The next chapter investigates impacts for individuals who entered the program with a range of characteristics. These investigations will help us understand whether HPOG was more effective for individuals who entered with more or less favorable baseline characteristics.

In further exploratory analyses, we consider whether impacts vary across programs with various design and administrative characteristics (full results appear in Appendix D).

We estimate experimental impacts for programs operated by workforce development agencies, by community colleges and other higher education institutions, and by other types of organizations. We also analyze impacts for programs by average duration of training. We do not detect a difference in impacts between WIB/One Stop programs and higher education institutions. Programs operated by government agencies or nonprofits have more-favorable impacts on educational progress and program completion and have less-favorable impacts on TANF receipt than do programs operated by workforce agencies or community colleges.

There is also variation in impacts across programs with short, medium, and long durations of typical training. Programs with short or medium durations have larger impacts on educational progress than the long duration programs. Medium duration programs have a larger impact on program completion than long duration programs do, and short duration programs have a larger impact on earnings than medium duration programs do. One possible explanation for these findings is that it is too early for the impacts of programs with longer duration training: about one fifth of participants report being enrolled in training as of the follow-up survey (see Exhibit 4.1).

In a variety of ways, the remaining chapters of the report address impact variation. We investigate how impacts vary for subgroups of individuals who enter with various characteristics (Chapter 5), whether adding additional components to the standard HPOG program increases program impacts (Chapter 6), and how local program characteristics correlate with impact

[37] Another way to consider cross-program impact variation is to examine the difference in impacts between the most and least effective programs. The most effective 25 percent of programs have an impact of 11 percentage points or larger on educational progress, and the least effective 25 percent of programs have an impact of 4 percentage points or smaller. The most effective 25 percent of programs are estimated to increase employment in the fifth follow-up quarter by 2 percentage points or more and increase earnings by $340 or more in the fifth follow-up quarter. In contrast, the least effective 25 percent of programs are estimated to decrease employment by 2 or more percentage points and decrease earnings by $66 or more in the same quarter.

magnitude (Chapter 7). These chapters focus on the limited set of outcomes that capture the key patterns in overall impacts: educational progress, program completion, employment, employment in healthcare, job quality, and earnings.

5. HPOG Impacts by Subgroup

This chapter adds to the full-sample impacts in the previous chapter by reporting variation in the impacts for selected subgroups of interest, including demographically defined groups, and policy-relevant groups. Throughout this chapter we report impacts based on the comparison of mean outcomes between the pooled treatment group and the control group. We report impacts for each subgroup as well as the results of statistical tests for whether these reported impacts differ from each other.

The demographic subgroups are defined by age, race/ethnicity, and presence of dependent children. Information on impact variation by demographic subgroup does not explain *why* subgroup differences might exist, nor does it point explicitly to any specific changes that HPOG can make to serve these participants more effectively. Instead, it simply disaggregates the overall impact by these subgroup traits. Therefore, we report impacts for these subgroups only for our confirmatory outcome of educational progress.

We also examine impacts on subgroups defined by school enrollment, expectations for participation in HPOG, educational attainment, barriers to school/work, employment, and public assistance status—all at baseline (the time of their application to the HPOG program).[38] We label these subgroups as "policy-relevant" because the variation in findings across them could suggest specific changes in program design, implementation, or policy. A program cannot change a person's age, but it could choose to target people with more or less education, for example, as fitting to program goals. Similarly, a program can respond to specific kinds of participants' needs through their program design and

Summary of Key Findings: Impacts by Subgroup

- **Across demographic subgroups, impacts of HPOG on educational progress were consistently favorable,** regardless of participants' age or race/ethnicity or whether they had dependent children.
- **Among those who entered with some college,** HPOG increased educational progress by 16 percentage points, program completion by 12 percentage points, employment in healthcare by 12 percentage points, and earnings by $217.
- **Among those who entered with no barriers to work/school,** HPOG increased educational progress by 5 percentage points, program completion by 9 percentage points, employment in healthcare by 11 percentage points, and earnings by $239.
- **Among those who entered already employed,** HPOG increased all five outcomes, including earnings by $483.
- Those who were **not receiving TANF at baseline** experienced larger improvements in healthcare sector employment and earnings than those who were receiving TANF at baseline.
- Together, these findings suggest that **HPOG was more effective for those who entered the program with more advantages.** They benefited more from HPOG than did participants who were less advantaged at entry.

[38] Note that some of the defining characteristics for the policy relevant groups are also outcomes of interest—school enrollment, employment, and public assistance status. Those baseline characteristics may change over time. For example, it is possible that an individual who was not in the TANF subgroup at baseline may be receiving TANF benefits at follow-up. Similarly, someone in the unemployed subgroup at baseline may be employed at follow-up.

services. For policy-relevant subgroups, we report impacts for our confirmatory outcome of educational progress and for our secondary outcomes. For the public assistance subgroups, we also report impacts on TANF receipt at follow-up.

5.1 Demographic Subgroups

- **HPOG had a consistently favorable impact on educational progress across subgroups defined by age, race/ethnicity, and presence of dependent children.**

Impacts on educational progress for the selected demographic subgroups are all favorable, ranging from 6 to 8 percentage points, as shown in Exhibit 5.1.

Exhibit 5.1: Impacts on Educational Progress, by Demographic Subgroup

Subgroup	Treatment Group Mean	Control Group Mean	Impact	Relative Impact
Age				
Less than 25	62.1	56.2	6.0***	10.7
25 or older	69.5	62.0	7.6***	12.2
Race/Ethnicity				
Hispanic/Latino of any race	62.6	54.5	8.1***	15.0
Black/African American, non-Hispanic	63.8	57.6	6.2***	10.8
Other (includes white/Caucasian), non-Hispanic	73.1	66.0	7.1***	10.8
Dependent Children				
No dependent children	69.5	62.4	7.2***	11.5
One or more dependent children	66.1	59.0	7.0***	11.9

Notes: Statistical significance levels for two-sided tests are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
Sample Sizes and Sources:
Treatment: 6,801. Control: 3,649. HPOG and PACE follow-up surveys.

Despite observing within-subgroup impacts, there is no evidence of between-subgroup differences in impacts. That is, although each subgroup's impact is nonzero, the difference between the impact for one subgroup (such as participants who are under age 25) and the impact for the complementary subgroup (participants age 25 or over) is not distinguishable from zero.

5.2 Policy-Relevant Subgroups

We turn next to an examination of the subgroup impacts on those groups labelled "policy-relevant." This section reports these subgroup impacts in the following order: school enrollment, expectations for participation in HPOG, educational attainment, barriers to school/work, employment, and public assistance status.

- **Depending on the subgroup, HPOG's impacts varied on the outcomes of interest: educational progress, program completion, employment, employment in healthcare, and earnings; and for the public assistance subgroups, the outcome of TANF at follow-up.**

5.2.1 School Enrollment at Baseline

Individuals who were already enrolled in school at baseline demonstrate a preference for pursuing education and training independent of their assignment or not to HPOG. At the time they entered the study, 28 percent reported they were currently in school.

Individuals in the treatment group who were not in school at baseline experienced positive impacts on educational progress (3 percentage points), program completion (10 percentage points), employment (2 percentage points), employment in healthcare (11 percentage points), and earnings ($157), as shown in Exhibit 5.2.

For individuals who were in school at baseline, there are positive and statistically significant impacts on educational progress (16 percentage points), program completion (11 percentage points), employment in healthcare (14 percentage points), and earnings ($402).

Exhibit 5.2: Impacts by School Enrollment at Baseline

Outcome	Treatment Group Mean	Control Group Mean	Impact	Relative Impact
Not Enrolled in School at Baseline – 72% of Sample				
Educational progress (%)[a]	**60.3**	**57.0**	**3.3****	**5.8**
Program completion (%)[a]	44.9	34.6	10.3***	29.6
Employment (%)[b]	75.0	72.9	2.1**	2.9
Employment in healthcare (%)[a]	53.8	42.5	11.4***	26.7
Earnings ($)[b]	3,710	3,553	157**	4.4
Enrolled in School at Baseline – 28% of Sample				
Educational progress (%)[a]	**77.4**	**61.2**	**16.2*****	**26.4**
Program completion (%)[a]	45.3	34.7	10.6***	30.5
Employment (%)[b]	74.0	74.5	−0.6	−0.8
Employment in healthcare (%)[a]	58.3	44.4	13.9***	31.3
Earnings ($)[b]	4,031	3,629	402***	11.1

Notes: Statistical significance levels for two-sided tests are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
Employment and earnings are measured in the fifth quarter after random assignment.
Sample Sizes and Sources:
[a] Treatment: 5,566. Control: 2,525. HPOG follow-up survey.
[b] Treatment: 7,116. Control: 3,501. National Directory of New Hires.

Understanding Differences in Impacts for Policy-Relevant and Public Assistance-Defined Subgroups

To report on the *differences in impacts between policy-relevant* and *public assistance-defined subgroups*, this section uses a series of bar graphs to help show which subgroups seemed to fare better, and along which outcomes of interest.

In each exhibit, a line divides the top and bottom, which are labeled with the subgroups being compared. The "more advantaged" subgroup is at the top and the "less advantaged" is at the bottom. For example, in the first of these graphs (Exhibit 5.3), the subgroups are "Enrolled" in school at baseline and "Not Enrolled" in school at baseline, respectively.

A bar above the line indicates that impacts are larger for the top subgroup, and a bar below the line indicates that impacts are larger for the bottom subgroup. The difference in impacts is calculated by subtracting the impact for the subgroup at the bottom of the graph from the impact for the subgroup at the top of the graph.

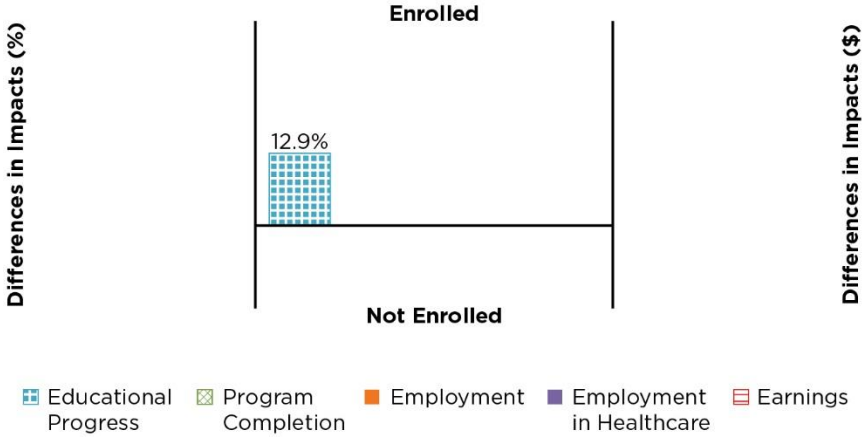
Only if there is a statistically significant difference (at the 10 percent level) in the impacts between subgroups will a bar representing that difference appear. Each bar is labeled with the magnitude of the difference in impacts between the subgroups.

Along the horizontal axis is a key to the five outcomes examined: educational progress, program completion, employment, employment in healthcare, and earnings.

- **The impact of HPOG on educational progress was more favorable for those already in school than for those not enrolled in school at baseline.**

Comparing those study participants who were and were not enrolled in school at baseline, Exhibit 5.3 shows one bar, which represents that there is a statistically significant difference in the impacts between these two subgroups, and it is on the educational progress outcome. The impact for those enrolled in school at baseline is 13 percentage points *larger* than the impact for those who were not enrolled in school at baseline. None of the other four comparisons of reported impacts for these subgroups is statistically significant, as shown by the lack of any other bars in Exhibit 5.3.

Exhibit 5.3: Differences in Impacts by School Enrollment at Baseline



Notes: The graph compares impacts for the subgroups listed at the top and the bottom of the panel. A bar appears in the graph if differences in subgroup impacts are statistically significant at the 10 percent level. Outcomes that are not represented are not statistically significantly different between subgroups. A bar above the line indicates that impacts are larger for the top subgroup, and a bar below the line indicates that impacts are larger for the bottom subgroup.
Sample Sizes and Sources:
Educational Progress, Program Completion, and Employment in Healthcare: Treatment: 6,801. Control: 3,649. HPOG and PACE follow-up surveys.
Employment and Earnings: Treatment: 7,116. Control: 3,501. National Directory of New Hires.

Expectations for Participation in HPOG at Baseline

Individuals were asked when they entered the program whether they expected to participate in HPOG full-time or part-time. The response to this question could indicate a commitment to self-investment (i.e., the individual is devoted to completing the training) or it could indicate the existence of other responsibilities, including job or family obligations. Nearly three-quarters of respondents reported they would participate in HPOG full-time.

Among individuals who planned to participate in HPOG part-time, HPOG had a positive impact on program completion (8 percentage points) and employment in healthcare (10 percentage points), as shown in Exhibit 5.4. We do not detect an impact for this subgroup on other measures. In contrast, among individuals who planned to participate in HPOG full-time, HPOG had a positive impact on educational progress (9 percentage points), program completion (10 percentage points), employment in healthcare (11 percentage points), and quarterly earnings ($126).

- **The impact of HPOG on educational progress was more favorable for those who expected to participate full-time than for those who expected to participate part-time.**

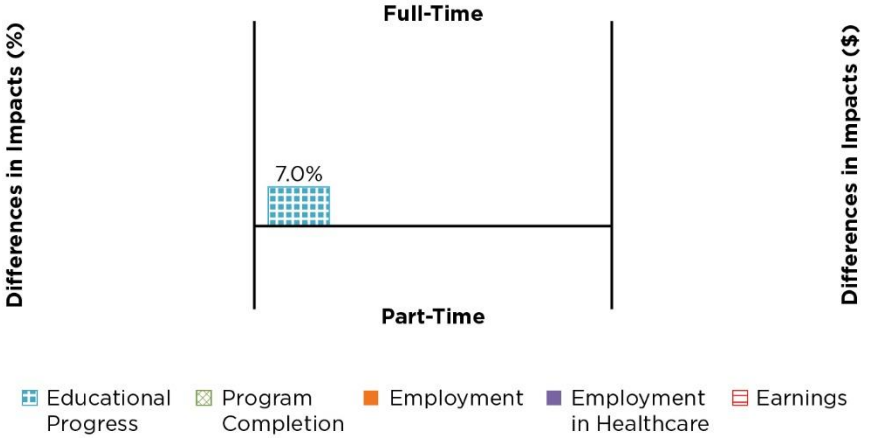
As shown in Exhibit 5.5, the between-subgroup difference in educational progress impacts favors those who expected to participate in HPOG full-time: that subgroup had a 7 percentage point larger impact on its educational progress versus those who expected to participate part-time. The impacts on other outcomes for those who expected to participate part-time versus full-time are not different from each other.

Exhibit 5.4: Impacts by Baseline Expectations for Participation in HPOG

Outcome	Treatment Group Mean	Control Group Mean	Impact	Relative Impact
Part-Time – 26% of Sample				
Educational progress (%)[a]	**62.2**	**60.3**	**1.9**	**3.1**
Program completion (%)[a]	46.3	38.2	8.1***	21.3
Employment (%)[b]	72.2	71.1	1.1	1.5
Employment in healthcare (%)[a]	51.4	41.7	9.7***	23.4
Earnings ($)[b]	3,580	3,475	105	3.0
Full-Time – 74% of Sample				
Educational progress (%)[a]	**69.1**	**60.3**	**8.9*** **	**14.7**
Program completion (%)[a]	49.9	40.0	9.9***	24.9
Employment (%)[b]	68.6	68.5	0.1	0.2
Employment in healthcare (%)[a]	52.1	41.2	10.9***	26.4
Earnings ($)[b]	3,424	3,298	126*	3.8

Notes: Statistical significance levels for two-sided tests are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
Employment and earnings are measured in the fifth quarter after random assignment.
Sample Sizes and Sources:
[a] Treatment: 6,801. Control: 3,649. HPOG and PACE follow-up surveys.
[b] Treatment: 8,673. Control: 5,044. National Directory of New Hires.

Exhibit 5.5: Differences in Impacts by Baseline Expectations for Participation in HPOG



Notes: The graph compares impacts for the subgroups listed at the top and the bottom of the panel. A bar appears in the graph if differences in subgroup impacts are statistically significant at the 10 percent. Outcomes that are not represented are not statistically significantly different between subgroups. A bar above the line indicates that impacts are larger for the top subgroup, and a bar below the line indicates that impacts are larger for the bottom subgroup.
Sample Sizes and Sources:
Educational Progress, Program Completion, and Employment in Healthcare: Treatment: 6,801. Control: 3,649. HPOG and PACE follow-up surveys.
Employment and Earnings: Treatment: 7,116. Control: 3,501. National Directory of New Hires.

5.2.3 Educational Attainment at Baseline

The academic eligibility standards imposed by many of the HPOG grantees underscore the importance of prerequisite training in predicting favorable outcomes. As a result, we may expect heterogeneity in HPOG impacts by educational attainment at baseline. About 12 percent of study participants had less than a high school diploma; 34 percent had a high school diploma or GED; 36 percent had some college, but no degree; and 18 percent had a college degree.[39]

The results that disaggregate impacts by these educational attainment subgroups reveal more favorable impacts of HPOG for those who entered with higher levels of educational attainment. It seems that HPOG's services focused more on enrollment in and completion of training for participants who came with the requisite academic skills, as opposed to raising the basic skills of those with lower educational attainment.

As shown in Exhibit 5.6, among those entering either with less than a high school diploma or with a high school diploma or equivalent, HPOG did not have a significantly positive impact on educational progress. However, among those entering HPOG with some college or a degree, HPOG had large positive impacts—16 and 5 percentage points, respectively. The subgroup entering with less than a high school diploma experienced no impact on program completion, whereas those with more education did.

For employment, the pattern of impacts within each subgroup is similar to the one we saw for the entire sample. Although we did not detect an impact on employment for any subgroup, HPOG increased employment in healthcare for all subgroups. Unlike educational progress (where impacts are concentrated among individuals with high levels of educational attainment at baseline), those with both low and high levels of baseline educational attainment see improvements in employment in healthcare.

HPOG reduced earnings by $225 per quarter for individuals who entered the study with less than a high school diploma. Among individuals who entered with some college, HPOG increased quarterly earnings by $217. The study's overall positive impact on earnings appears to be driven by the experience of individuals who enter with higher levels of education.

[39] Throughout this chapter some of the values describing the proportion of the sample in each subgroup differ slightly from what was reported in Chapter 2. Chapter 2 reported the raw data describing the study sample, whereas this chapter relies on results from the impact analysis, which involved additional data imputation and weighting. See Appendix A for details.

Exhibit 5.6: Impacts by Educational Attainment at Baseline

Outcome	Treatment Group Mean	Control Group Mean	Impact	Relative Impact
Less than 12th Grade – 12% of Sample				
Educational progress (%)[a]	**56.7**	**58.1**	**−1.4**	**−2.4**
Program completion (%)[a]	46.5	43.6	2.9	6.7
Employment (%)[b]	62.4	61.4	1.1	1.8
Employment in healthcare (%)[a]	44.4	36.9	7.5***	20.3
Earnings ($)[b]	2,503	2,729	−225*	−8.3
High School or Equivalent – 34% of Sample				
Educational progress (%)[a]	**53.9**	**52.1**	**1.9**	**3.6**
Program completion (%)[a]	44.3	34.3	10.0***	29.1
Employment (%)[b]	72.8	71.8	1.0	1.4
Employment in healthcare (%)[a]	50.6	41.9	8.6***	20.6
Earnings ($)[b]	3,389	3,302	87	2.6
Some College – 36% of Sample				
Educational progress (%)[a]	**74.0**	**58.4**	**15.5*****	**26.6**
Program completion (%)[a]	52.9	41.2	11.7***	28.4
Employment (%)[b]	69.1	69.1	−0.1	−0.1
Employment in healthcare (%)[a]	54.0	41.9	12.1***	28.9
Earnings ($)[b]	3,521	3,303	217***	6.6
Degree – 18% of Sample				
Educational progress (%)[a]	**84.5**	**79.4**	**5.1*****	**6.5**
Program completion (%)[a]	49.7	41.4	8.3***	20.0
Employment (%)[b]	70.8	71.3	−0.5	−0.7
Employment in healthcare (%)[a]	55.8	42.5	13.3***	31.2
Earnings ($)[b]	4,270	4,045	225	5.6

Notes: Statistical significance levels for two-sided tests are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent. Employment and earnings are measured in the fifth quarter after random assignment.

Sample Sizes and Sources:

[a] Treatment: 6,801. Control: 3,649. HPOG and PACE follow-up surveys.

[b] Treatment: 8,673. Control: 5,044. National Directory of New Hires.

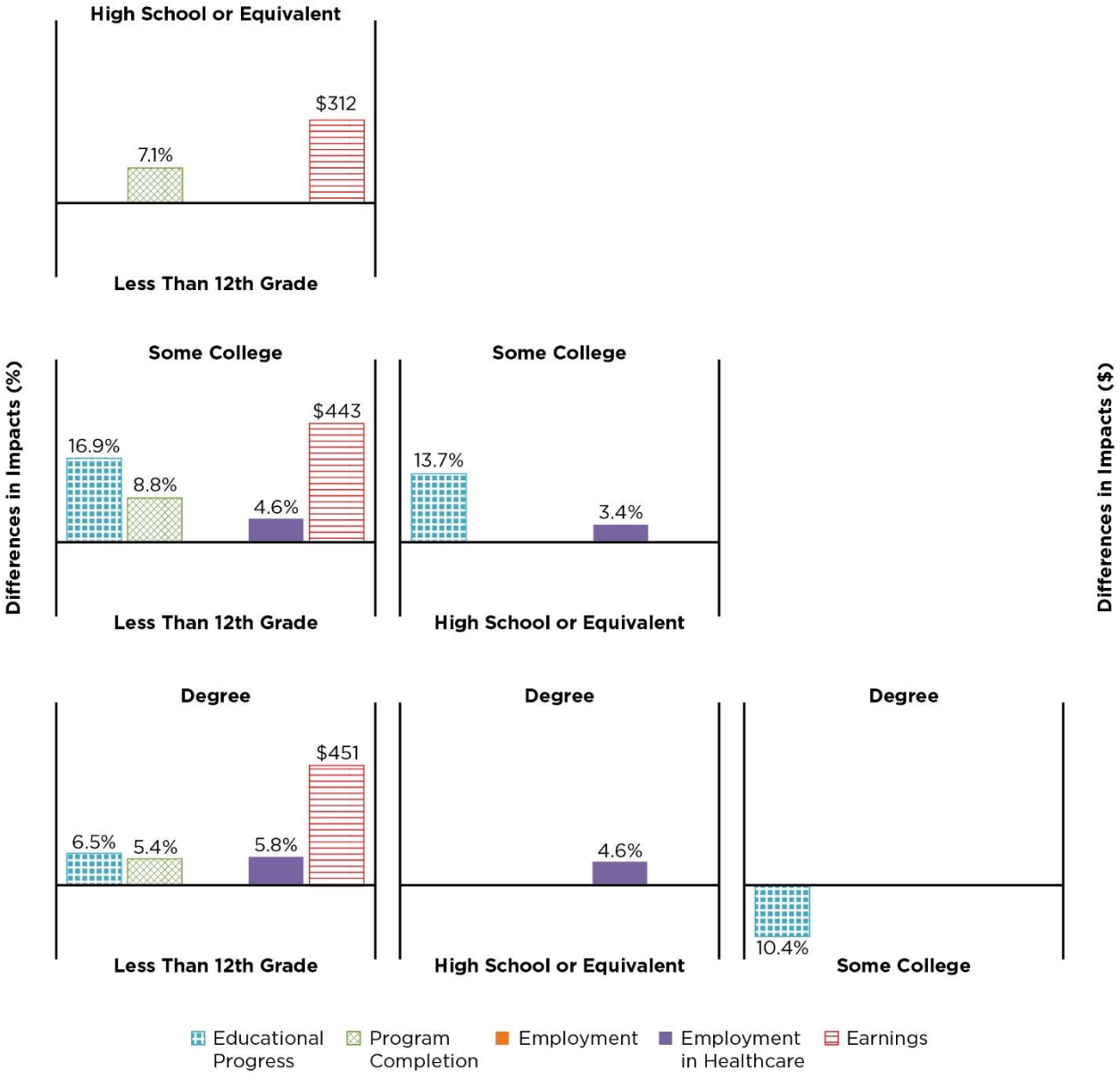
- **The impact of HPOG on several outcomes was more favorable for individuals with greater levels of education at baseline than for those with less education.**

We observe statistically significant differences in impacts across baseline educational attainment subgroups, as shown in Exhibit 5.7. Among individuals who entered with some college, HPOG had larger impacts on educational progress, program completion, employment in healthcare, and earnings than it did on individuals who entered with lower levels of education. For example, compared with those entering with less than a high school diploma, those who entered with some college experienced a 17 percentage point greater impact on educational progress and a $443 greater impact on earnings. These differences are meaningfully large: this differential earnings impact of $443 is more than three times the size of the study's overall, average treatment effect of $137.

Among individuals who entered with a college degree versus those who entered with some college, the differentials were similar, except in educational progress, where individuals who

entered with some college experienced higher impacts (10 percentage points). Individuals who entered with some college appear to both have been able to succeed in training with HPOG support and have needed HPOG support more than did individuals who entered with a degree.

Exhibit 5.7: Differences in Impacts by Educational Attainment at Baseline



Notes: The graph compares impacts for the subgroups listed at the top and the bottom of the panel. A bar appears in the graph if differences in subgroup impacts are statistically significant at the 10 percent level. Outcomes that are not represented are not statistically significantly different between subgroups. A bar above the line indicates that impacts are larger for the top subgroup, and a bar below the line indicates that impacts are larger for the bottom subgroup.

Sample Sizes and Sources:

Educational Progress, Program Completion, and Employment in Healthcare: Treatment: 6,801. Control: 3,649. HPOG and PACE follow-up surveys.

Employment and Earnings: Treatment: 7,116. Control: 3,501. National Directory of New Hires.

5.2.4 Barriers to School/Work at Baseline

When they entered the study, participants reported how often childcare, transportation, illness, or alcohol or drug use interfered with school and/or work. We considered one of these factors to be a barrier if a sample member reported it interfered with work or school "fairly often" or "very often." We focus on the number of reported barriers as a policy-relevant subgroup because certain HPOG program components, such as support services, may alleviate some of these barriers; however, the existence of multiple barriers may be hard for participants to overcome, inhibiting their ability to achieve favorable outcomes. The results for this subgroup defined by "barriers" indicate some favorable impacts for those who entered with any number of barriers, and the most favorable outcomes for those who entered with the fewest barriers.

The categories for this subgroup analysis were individuals who reported two or more, one, or zero barriers at baseline. Among those who reported one barrier, childcare (37 percent) and transportation (37 percent) were the most common. Among those who reported two or more barriers, childcare and transportation again were the most common (52 percent each).

Those entering the study with a range of barriers (from none to two or more), experienced similar impacts on educational progress, as shown in Exhibit 5.8. HPOG increased educational progress and program completion rates for all three subgroups. Impacts on employment were not detected for any subgroup. However, HPOG increased employment in healthcare for all subgroups, with impacts ranging from 8 to 11 percentage points.

HPOG *reduced* quarterly earnings by $260 for individuals who entered with two or more barriers and *increased* earnings by $239 for individuals who reported no barriers.

Exhibit 5.8: Impacts by Barriers to School and Work at Baseline

Outcome	Treatment Group Mean	Control Group Mean	Impact	Relative Impact
Two or More Barriers – 10% of Sample				
Educational progress (%)[a]	**65.9**	**59.7**	**6.2*** **	**10.4**
Program completion (%)[a]	48.3	41.0	7.3***	17.8
Employment (%)[b]	63.7	66.1	−2.5	−3.7
Employment in healthcare (%)[a]	49.8	41.5	8.3***	19.9
Earnings ($)[b]	2,764	3,024	−260**	−8.6
One Barrier – 24% of Sample				
Educational progress (%)[a]	**66.2**	**60.0**	**6.2*** **	**10.4**
Program completion (%)[a]	48.7	39.8	8.9***	22.5
Employment (%)[b]	67.4	67.8	−0.4	−0.6
Employment in healthcare (%)[a]	50.6	40.8	9.8***	24.1
Earnings ($)[b]	3,120	3,178	−58	−1.8
No Barriers – 66% of Sample				
Educational progress (%)[a]	**68.0**	**60.6**	**7.4*** **	**12.2**
Program completion (%)[a]	49.2	39.3	9.9***	25.1
Employment (%)[b]	71.3	70.2	1.0	1.5
Employment in healthcare (%)[a]	52.7	41.7	11.1***	26.6
Earnings ($)[b]	3,700	3,461	239***	6.9

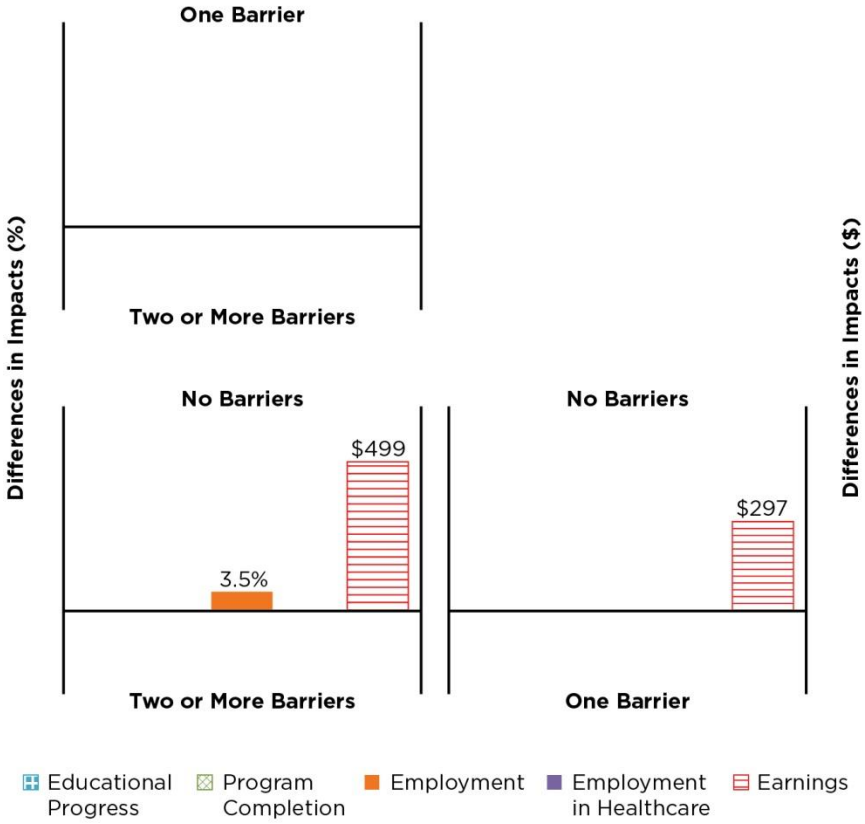
Notes: Statistical significance levels for two-sided tests are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
Employment and earnings are measured in the fifth quarter after random assignment.
Sample Sizes and Sources:
[a] Treatment: 6,801. Control: 3,649. HPOG and PACE follow-up surveys.
[b] Treatment: 8,673. Control: 5,044. National Directory of New Hires.

- **HPOG's impact employment or earnings was more favorable for those with no barriers than for those with any barriers.**

Exhibit 5.9 depicts differences in impacts by number of barriers to school and work reported. There are no detectable differences in impacts between the subgroups with one versus two or more barriers. Instead, the differences arise between those with no barriers versus the other subgroups.

Two outcomes differed across the barriers subgroups: employment and earnings. On employment, HPOG had a 3.5 percentage point larger impact for those who entered with no barriers versus two or more barriers. On earnings, HPOG had a systematically larger impact for individuals with no barriers: $499 larger versus those with two or more barriers and $297 larger versus those with one barrier. Like the educational attainment subgroups, these differences are multiples larger than the study's overall, average treatment effect of $137.

Exhibit 5.9: Differences in Impacts by Barriers to School and Work at Baseline



Notes: The graph compares impacts for the subgroups listed at the top and the bottom of the panel. A bar appears in the graph if differences in subgroup impacts are statistically significant at the 10 percent level. Outcomes that are not represented are not statistically significantly different between subgroups. A bar above the line indicates that impacts are larger for the top subgroup, and a bar below the line indicates that impacts are larger for the bottom subgroup.

Sample Sizes and Sources:

Educational Progress, Program Completion, and Employment in Healthcare: Treatment: 6,801. Control: 3,649. HPOG and PACE follow-up surveys.

Employment and Earnings: Treatment: 7,116. Control: 3,501. National Directory of New Hires.

5.2.5 Employment at Baseline

Next, we discuss impact variation according to employment status when participants entered the study: 43 percent reported they were employed. Employment at time of program entry can be a predictor of favorable earnings impacts after training. This subgroup analysis reveals more favorable impacts of HPOG among those who were already employed versus those who were unemployed.

Individuals who were employed when they entered the study, HPOG had favorable impacts on educational progress (9 percentage points), program completion (12 percentage points), employment, (6 percentage points), employment in healthcare (17 percentage points), and earnings ($483), as shown in Exhibit 5.10. For individuals who were not already employed, HPOG increased educational progress (6 percentage points), program completion (7 percentage points), and employment in healthcare (6 percentage points), but *decreased* employment (3 percentage points) and earnings ($139).

Exhibit 5.10: Impacts by Employment at Baseline

Outcome	Treatment Group Mean	Control Group Mean	Impact	Relative Impact
Employed − 43% of Sample				
Educational progress (%)[a]	**70.6**	**61.6**	**9.0*** **	**14.6**
Program completion (%)[a]	52.3	40.1	12.3***	30.6
Employment (%)[b]	81.7	76.0	5.6***	7.4
Employment in healthcare (%)[a]	62.6	45.5	17.1***	37.5
Earnings ($)[b]	4,348	3,865	483***	12.5
Not Employed − 57% of Sample				
Educational progress (%)[a]	**64.9**	**59.2**	**5.7*** **	**9.6**
Program completion (%)[a]	46.5	39.1	7.4***	19.0
Employment (%)[b]	60.9	64.3	−3.4***	−5.3
Employment in healthcare (%)[a]	44.1	38.2	5.9***	15.4
Earnings ($)[b]	2,829	2,968	−139**	−4.7

Notes: Statistical significance levels for two-sided tests are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
Employment and earnings are measured in the fifth quarter after random assignment.
Sample Sizes and Sources:
[a] Treatment: 6,801. Control: 3,649. HPOG and PACE follow-up surveys.
[b] Treatment: 8,673. Control: 5,044. National Directory of New Hires.

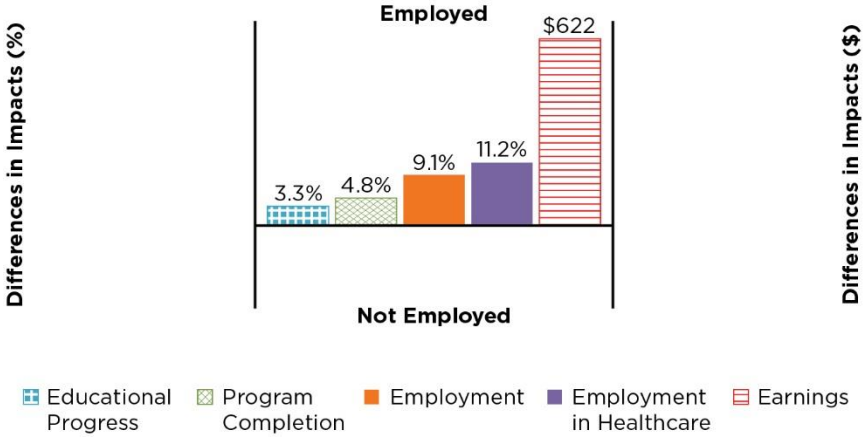
- **The impact of HPOG on all five outcomes was more favorable for individuals who were employed than for those who were not employed at baseline.**

As shown in Exhibit 5.11, the difference in impacts between the two subgroups is detectable for all outcomes: impacts are demonstrably more favorable for individuals who were employed at baseline than for those who were not. Most notably, the difference in impacts on earnings is quite large: those who were employed at baseline experienced a $622 larger impact on earnings than those who were not employed at baseline.

Along with the other subgroup findings, this subgroup finding flags that HPOG is especially successful at improving the outcomes of those who come in with more advantages, such as more education, fewer barriers, and being employed at baseline.

This subsection has discussed what we have called “policy-relevant” subgroups, named as such because there is a direct program action that might be taken in response to findings for a given subgroup. For example, where we observe that HPOG is less effective for those with less baseline education, programs might consider strengthening their academic supports or enhancing their contextualized instruction to better serve that subgroup. The final policy-relevant subgroup we consider is defined by public assistance status. Because individuals receiving TANF at baseline experience disadvantages across multiple dimensions, including those examined for other policy-relevant subgroups, any observed differential impacts might imply a multi-pronged programmatic response.

Exhibit 5.11: Differences in Impacts by Employment at Baseline



Notes: The graph compares impacts for the subgroups listed at the top and the bottom of the panel. A bar appears in the graph if differences in subgroup impacts are statistically significant at the 10 percent level. Outcomes that are not represented are not statistically significantly different between subgroups. A bar above the line indicates that impacts are larger for the top subgroup, and a bar below the line indicates that impacts are larger for the bottom subgroup.

Sample Sizes and Sources:

Educational Progress, Program Completion, and Employment in Healthcare: Treatment: 6,801. Control: 3,649. HPOG and PACE follow-up surveys.

Employment and Earnings: Treatment: 7,116. Control: 3,501. National Directory of New Hires.

5.2.6 Public Assistance Subgroups

HPOG is intended to serve TANF recipients and other low-income individuals; reducing individual use of public assistance is a program goal. To investigate variation in impacts by public assistance receipt at baseline, we define three subgroups by their status at baseline: individuals who were receiving TANF; those who were receiving WIC or SNAP but not TANF; and those who were not receiving WIC, SNAP, or TANF. Nearly all of the individuals receiving TANF at baseline were also receiving SNAP.[40] Within the study sample, these three subgroups represent 12 percent (TANF), 46 percent (WIC/SNAP only), and 42 percent (no assistance), respectively.

To aid in interpreting the subgroup results, we first provide some information on the composition of these subgroups. The public assistance-defined groups represent a composite of the other policy-relevant subgroup traits. In brief, these subgroups represent varying levels of disadvantage, as indicated by the baseline characteristics associated with them (see Exhibit 5.12). Individuals in the TANF subgroup were more disadvantaged at baseline than either of the other two subgroups: at program entry, they were less likely to be already enrolled in school, less likely to have completed some college or a degree, more likely to report one or more barriers to school or work, and less likely to be employed. On these same measures, the WIC/SNAP-only subgroup was more disadvantaged than the no-assistance subgroup.

[40] These categories are defined based on participation in TANF and WIC/SNAP. Individuals in the "no assistance" subgroup might be receiving other public benefits such as Medicaid, housing aid, or Unemployment Insurance.

Exhibit 5.12: Baseline Characteristics by Public Assistance Receipt

Baseline Characteristic (%)	TANF	WIC/SNAP Only	No Assistance	Significant Difference
Enrolled in school [a]	9.7	22.9	32.9	‡†+
Expect to participate in HPOG full-time [b]	76.4	75.8	72.5	†+
Some college or college degree [c]	44.7	50.4	59.6	‡†+
No barriers to school and work [d]	50.2	56.2	70.7	‡†+
Employed [e]	19.4	39.1	53.5	‡†+

Notes: Observations with missing data are not included in the analysis. Statistical significance for pair-wise tests for differences between groups significant at the 10 percent level as follows: ‡ = TANF vs. WIC/SNAP-only; † = TANF vs. No Assistance; + = WIC/SNAP-only vs. No Assistance.

Sample Sizes and Sources:

[a] 9,910. HPOG PRS.

[b] 12,729. HPOG PRS, PACE Baseline Information Form.

[c] 13,086. HPOG PRS, PACE Baseline Information Form.

[d] 13,271. HPOG PRS, PACE Baseline Information Form.

[e] 12,571. HPOG PRS, PACE Baseline Information Form.

The baseline characteristics presented in Exhibit 5.12 also align with the other policy-relevant subgroups, for whom we analyzed and reported impacts. Those subgroup analyses identified more favorable impacts for individuals who, at baseline, were already enrolled in school, expected to participate in HPOG full-time, had already completed some college or a college degree, had no barriers to school and work, and were employed. Given the association of these traits with the public-assistance-defined subgroups, we might expect to see the most favorable impacts for the no-assistance subgroup and least favorable impacts for the TANF subgroup.

Exhibit 5.13 presents impacts for the three subgroups. The pattern of impacts on education and employment outcomes across these three subgroups is similar to the pattern in the overall sample. HPOG increased educational progress and program completion for all three subgroups. Although we do not detect impacts on employment for any of the public assistance subgroups, HPOG increased employment in healthcare for all three subgroups, with outcomes ranging from 8 to 12 percentage points higher for those in the treatment group than for their control group counterparts.

We do not detect an impact on quarterly earnings for either the TANF or WIC/SNAP-only subgroups, while HPOG increased quarterly earnings by $244 for individuals who were not receiving public assistance at baseline. This finding aligns with the overall finding that those more advantaged at baseline experienced greater impacts through HPOG.

For all individuals receiving TANF at baseline, use of TANF decreased greatly by the time of follow-up. By definition, 100 percent of the TANF subgroup was receiving TANF at baseline. As of the follow-up survey, about one-third (32.6 percent) of treatment group members and about one-sixth (15.5 percent) of control group members in this subgroup reported receiving TANF. This means that TANF receipt decreased on average more for the control group than for the treatment group: access to HPOG is associated with relatively higher TANF use (of 17 percentage points) at follow-up.

Although we do not know with certainty why treatment group individuals who were receiving TANF at baseline decreased TANF use less than their control group counterparts in the short

term, there are several possible explanations. There are multiple reasons why individuals leave the TANF caseload. For example, recipients may enter employment and lose income eligibility for TANF. Because most TANF recipients are required to work, prepare for work, or actively look for work, some are sanctioned off of TANF for failure to comply with the work rules. Finally, some TANF recipients may reach their time limit for eligibility or may no longer have dependent children. Because treatment and control groups are randomly assigned, there is no reason to believe that the treatment or control group would differ in terms of the length of time they had received TANF prior to randomization or in the age of their children. Therefore, the explanation for our finding for the TANF subgroup is most likely a combination of the first two situations. First, it is likely that HPOG participants receiving TANF at baseline were approved for training by their TANF agency, thereby fulfilling their work requirement and preserving their TANF eligibility during training. Second, because control group members were not invited to enroll in HPOG, they may have been more likely to seek more immediate employment, or simply leave TANF, rather than comply with work requirements. Longer-term follow-up is warranted to assess how this impact evolves over time, as more and more treatment group members finish training and enter employment.

Within the subgroup of those receiving only WIC/SNAP at baseline, none of the treatment or control group members received TANF at baseline (by definition). Without access to the HPOG program, 13 percent of control group members in this subgroup received TANF at follow-up. Treatment group members in the subgroup were less likely to receive TANF at follow-up (9 percent) than control group members, a 5 percentage point difference. Levels of participation in TANF are higher at follow-up than at baseline because of the way the subgroup was defined. However, HPOG reduced TANF receipt at follow-up among treatment group members relative to their control group counterparts.

- **The impact of HPOG on healthcare employment, on earnings, and on TANF receipt was more favorable for individuals in the WIC/SNAP-only subgroup than for those receiving TANF at baseline.**

As shown in Exhibit 5.14, HPOG has more favorable impacts on employment in healthcare, earnings, and TANF receipt at follow-up for individuals in the WIC/SNAP-only subgroup than for those who were receiving TANF at baseline.[41] HPOG program staff reported anecdotally that TANF HPOG participants faced more challenges to program retention and completion than did non-TANF HPOG participants, including greater housing and childcare needs and lower income at program intake (Rulf Fountain et al., 2015).

[41] Because a reduction in TANF receipt is a favorable impact, the sign of differences in impacts is hard to interpret. HPOG reduces TANF receipt at follow-up by 4.7 percentage points compared with controls for the WIC/SNAP subgroup (impact is 4.7), and HPOG increases TANF receipt at follow-up compared with controls by 17.0 percentage points for the TANF subgroup (impact is 17.0). As a result, HPOG reduces TANF receipt at follow-up by 21.7 percentage points *more* for the WIC/SNAP subgroup than for the TANF subgroup (difference in impacts is –21.7). For this reason, in Exhibit 5.14, the bar representing the difference in impacts on TANF at follow-up outcome points *away* from the subgroup with the more favorable finding.

Exhibit 5.13: Impacts by Public Assistance Receipt at Baseline

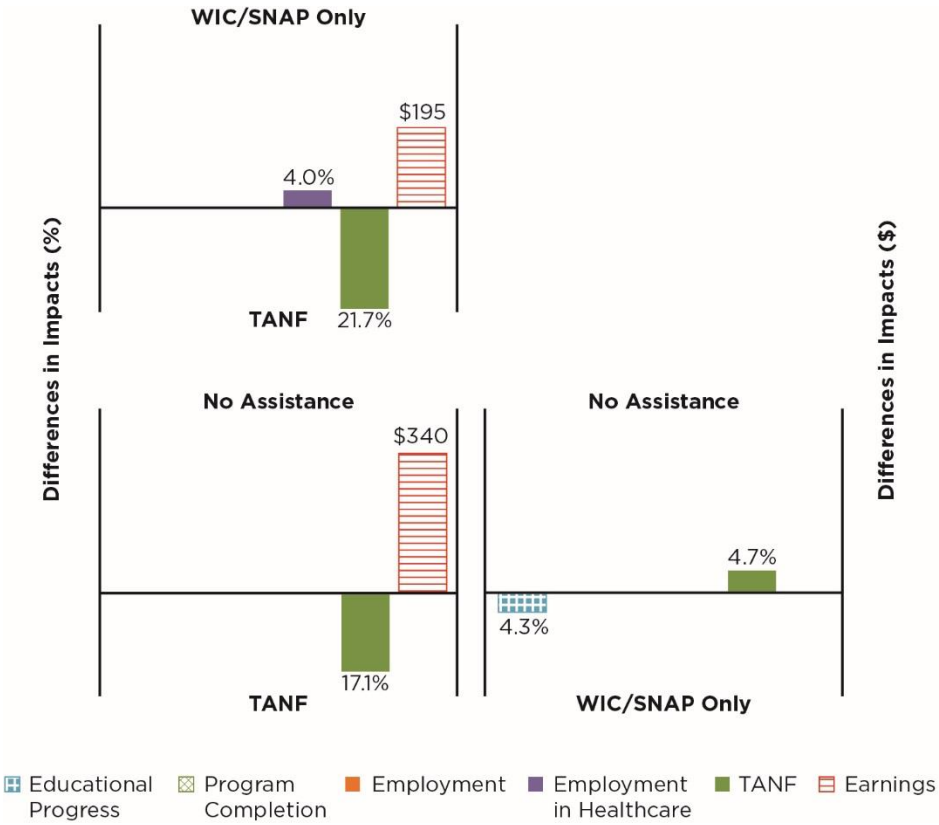
Outcome	Treatment Group Mean	Control Group Mean	Impact	Relative Impact
Received TANF − 12% of Sample				
Educational progress (%)[a]	**64.9**	**58.5**	**6.5*** **	**11.0**
Program completion (%)[a]	51.6	42.0	9.6***	22.8
Employment (%)[b]	59.2	58.3	0.9	1.5
Employment in healthcare (%)[a]	46.4	38.3	8.2***	21.4
Earnings ($)[b]	2,388	2,484	−96	−3.9
TANF at follow-up (%)[c]	32.6	15.5	17.0***	109.6
Received WIC/SNAP Only − 46% of Sample				
Educational progress (%)[a]	**64.9**	**55.8**	**9.2*** **	**16.4**
Program completion (%)[a]	48.6	37.6	10.9***	29.1
Employment (%)[b]	67.0	67.3	−0.2	−0.3
Employment in healthcare (%)[a]	51.2	39.0	12.2***	31.2
Earnings ($)[b]	3,129	3,030	99	3.3
TANF at follow-up (%)[c]	8.5	13.2	−4.7***	−35.5
No Assistance − 42% of Sample				
Educational progress (%)[a]	**71.1**	**66.2**	**4.9*** **	**7.4**
Program completion (%)[a]	48.7	40.9	7.8***	19.1
Employment (%)[b]	75.5	74.7	0.8	1.0
Employment in healthcare (%)[a]	54.8	45.1	9.7***	21.5
Earnings ($)[b]	4,210	3,966	244***	6.2
TANF at follow-up (%)[c]	2.4	2.4	−0.0	−1.1

Notes: Statistical significance levels for two-sided tests are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
Employment and earnings are measured in the fifth quarter after random assignment.
Sample Sizes and Sources:
[a] Treatment: 6,801. Control: 3,649. HPOG and PACE follow-up surveys.
[b] Treatment: 8,673. Control: 5,044. National Directory of New Hires.
[c] Treatment: 5,566. Control: 2,525. HPOG follow-up survey.

- **The impact of HPOG on educational progress and TANF receipt was more favorable for individuals who were in the WIC/SNAP-only subgroup than for those receiving no assistance at baseline.**

HPOG's impact on educational progress is 4 percentage points larger for the WIC/SNAP-only subgroup than for the no-assistance subgroup, and HPOG reduces TANF participation at follow-up compared with controls by 5 percentage points more for the WIC/SNAP-only subgroup than for the no-assistance subgroup. One possible explanation is that individuals who were receiving WIC/SNAP at baseline were more in need of HPOG's services than were individuals who were not receiving any assistance. This explanation is consistent with the observation that control group outcomes are higher for individuals who were not receiving public assistance at baseline than for individuals who were receiving WIC/SNAP at baseline (Exhibit 5.14).

Exhibit 5.14: Differences in Impacts by Public Assistance Receipt at Baseline



Notes: The graph compares impacts for the subgroups listed at the top and the bottom of the panel. A bar appears in the graph if differences in subgroup impacts are statistically significant at the 10 percent level. Outcomes that are not represented are not statistically significantly different between subgroups. A bar above the line indicates that impacts are larger for the top subgroup, and a bar below the line indicates that impacts are larger for the bottom subgroup. For the TANF at follow-up outcome, larger impacts for the bottom subgroup (bar below the line) mean that findings are more favorable for the top subgroup.

Sample Sizes and Sources:

Educational Progress, Program Completion, and Employment in Healthcare: Treatment: 6,801. Control: 3,649. HPOG and PACE follow-up surveys.

Employment and Earnings: Treatment: 7,116. Control: 3,501. National Directory of New Hires.

TANF: Treatment: 5,566. Control: 2,525. HPOG follow-up survey.

In sum, when analyzing variation in impacts among the subgroups defined by public assistance receipt, we do not see a direct relationship between levels of advantage and HPOG impacts as we had observed in the previously discussed policy-relevant subgroups. On the one hand, the impact of HPOG was less favorable for individuals who were receiving TANF at baseline than for either of the two other subgroups (WIC/SNAP only and no assistance). On the other hand, the impact of HPOG was more favorable for the WIC/SNAP-only subgroup than for the no-assistance subgroup. That is, the least advantaged group (TANF recipients) fare least well, but the middle-advantaged group (WIC/SNAP only) fares relatively better, with the most advantaged group (no assistance at baseline) falling in the middle.

5.3 Discussion

Past research on the heterogeneity of impacts generally concludes that welfare reforms and related job training interventions have larger impacts on individuals who are less advantaged, because their experiences in the absence of the treatment would not have been favorable (e.g., Michalopoulos 2004). The subgroup findings reported here stand in contrast to this conclusion.

We generally find evidence of more favorable impacts among subgroups with the more favorable counterfactual outcomes. For example, those participants with the *highest* levels of educational attainment when they entered the program, who had fewer barriers to school/work, and who were already employed at baseline had *more favorable* impacts under HPOG than did less advantaged individuals. The magnitude of these differences is large, relative to the study's overall, average impacts.

One plausible explanation for this is that the prerequisite requirements for successful participation in HPOG and favorable educational progress are more substantial for HPOG than they are for other job training interventions. For example, a prerequisite course in anatomy and physiology for an HPOG participant is much more substantively important than is earning a high school diploma for a non-sectoral job training intervention. The prerequisite and overall academic skill requirements for healthcare occupations are more highly regulated by state certification boards than are occupations in many other industries.

Another potential explanation is that the greater financial assistance and other support services provided by HPOG was a major factor in allowing students to remain in school and complete training. Participants with more favorable prospects for success were also highly motivated and more likely than less well-educated and experienced individuals to achieve high academic outcomes even without HPOG. The additional HPOG supports helped carry even more of this treatment group to completion.

That said, differential impacts observed among the public assistance-defined subgroups highlight the need for additional supports: because those who were receiving TANF at baseline showed some less favorable impacts relative to those who were not receiving TANF but were receiving WIC or SNAP, programs should consider how to enrich their programs in an effort to support this important target group.

6. Impacts of HPOG Program Enhancements

In this chapter we investigate whether adding specific program components to a standard HPOG program changes the program's impact. As articulated in Chapter 1, the HPOG 1.0 Impact Study team, in partnership with ACF, devised an experimental test of the effectiveness of three program enhancements:

- emergency assistance;
- non-cash incentives; and
- facilitated peer support groups.

These were chosen according to four criteria: evidence of likely impact, feasibility, evaluability, and grantee interest (Peck et al. 2014). This chapter explores the effects of the HPOG enhancements on the five outcomes of interest: educational progress (confirmatory), program completion, employment, employment in healthcare, and earnings.

Summary of Key Findings: Program Enhancement Impacts

- **Enhanced treatment group members reported receiving the enhancements at a much greater rate than the standard treatment group members reported.** Though standard treatment group members and control group members could not access the specific enhancements offered by HPOG, they may have been able to get similar services elsewhere in the community.
- **No enhancement increased HPOG's impact compared with the impact of the standard program** any key outcome (educational progress, program completion, employment, employment in healthcare, earnings).
- **The peer support enhancement may have had a negative impact on educational progress**, perhaps because it required those enhanced treatment group members to invest time that otherwise would have been spent on training.

Of the 42 programs in this study, 19 tested enhancements (see Exhibit 1.2): 11 emergency assistance, five non-cash incentives, and three facilitated peer support. In those places, instead of study participants being randomly assigned to either a treatment or a control group (two-armed randomization), they were assigned to one of three groups: standard treatment, enhanced treatment, or control (three-armed randomization). The standard treatment groups were offered the local HPOG program as developed by the grantee. The enhanced treatment groups were offered the extra component in addition to the standard local HPOG program.

Within the set of programs testing a particular enhancement, the difference in mean outcomes between the enhanced treatment group and the standard treatment group measures the impact of the program enhancement as an add-on to the standard program. That is, this estimate captures how adding the program enhancement changes HPOG's impact, given the already-existing features of the program.[42]

[42] For the experimental analyses of the effect of the three program enhancements, we used a three-level model to estimate program enhancement effects while controlling for program and individual factors. Details of the model specification can be found in Appendix B and in *Amendment to the Technical Supplement to the Evaluation Design Report* (Harvill, Moulton, and Peck 2017).

6.1 Emergency Assistance

Emergency assistance provided support to HPOG program participants for sudden financial needs such as car repair, childcare, eviction prevention, and payment of utilities. Financial difficulties are among the most commonly cited barriers to low-income students' entering and completing postsecondary education (e.g., ED 2002; Richburg-Hayes et al. 2015). Prior research has shown that making financial resources available to low-income students faced with unforeseen expenses can increase school retention and completion (Lauff and Ingels 2013). HPOG program staff cited unanticipated financial needs as a major reason for program drop-out and suggested that easier access to emergency funds could buffer participants in times of crisis and improve program persistence and completion.

We investigated whether individuals who had access to emergency assistance as part of the HPOG program fared better than individuals who had access to the HPOG program without emergency assistance. Not all individuals who had access to emergency assistance used the benefit: 18 percent of the enhanced treatment group reported receiving emergency assistance. However, it is possible that individuals who did not use the service still benefitted from having the option available; part of the value of emergency assistance is that it may make participants informed about its existence feel more secure about continuing in training should risky situations arise that might otherwise become challenges to participation. Among those participants who do access the support, they may actually be more secure in their ability to continue and complete training.

- **The emergency assistance enhancement did not increase HPOG's impact.**

From our analysis we conclude that offering emergency assistance did not meaningfully increase HPOG's impact on educational progress, program completion, or the other outcomes of interest. Exhibit 6.1 presents the estimated impacts of offering emergency assistance in addition to the standard HPOG program. These impact estimates are generally small in magnitude and are not statistically different from zero. We estimate that the true impact of emergency assistance on educational progress falls in the −6 to 3 percentage point range, and the true impact on program completion falls in the −7 to 3 percentage point range (see Appendix F).

Exhibit 6.1: Estimates of the Contribution of Emergency Assistance to Impact Magnitude

Outcome	Enhanced Treatment Group Mean	Standard Treatment Group Mean	Impact	Relative Impact
Educational progress (%)[a]	**66.2**	**68.0**	**−1.8**	**−2.6**
Program completion (%)[a]	45.9	48.0	−2.1	−4.4
Employment (%)[b]	72.5	72.0	0.5	0.7
Employment in healthcare (%)[a]	48.5	50.8	−2.3	−4.6
Earnings ($)[b]	4,091	3,921	170	4.3

Notes: Sample includes 11 programs offering emergency assistance as a randomized enhancement. Employment and earnings are measured in the fifth quarter after random assignment.

Statistical significance levels for two-sided tests are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Sample Sizes and Sources:

[a] Enhanced Treatment: 529. Standard Treatment: 707. Control: 537. HPOG follow-up survey.

[b] Enhanced Treatment: 675. Standard Treatment: 910. Control: 781. National Directory of New Hires.

It is possible that enhanced treatment group members who received emergency assistance may have gotten more out of the HPOG program than they would have if the assistance had not been available. We explore this possibility further in Appendix H. Even if emergency assistance recipients experienced larger impacts of HPOG, the low rate of receipt of emergency assistance could result in negligible impacts for the enhanced treatment group relative to the standard treatment group. Some 18 percent of individuals offered emergency assistance as an add-on to the local standard HPOG program (enhanced treatment group) reported receiving emergency assistance versus 8 percent of individuals in that HPOG program who received emergency assistance through some source in the community (standard treatment group).[43,44]

Program staff implementing emergency assistance reported the enhancement helped minimize barriers for participants, providing relief when unexpected life circumstances arose that might have otherwise resulted in them dropping out of a course or the program entirely. Staff reported that participants in at least four programs had been extremely grateful (and relieved) to learn that emergency assistance was available. One program reported the benefit of having flexibility in how the funds could be spent as a major strength; staff of another program mentioned they quickly put in place effective procedures whereby partners were trained on the forms and tracking system to get the enhancement up and running.

Despite the stated benefits of emergency assistance by program staff, there were sometimes difficulties putting the enhancement into action. At least five programs reported a barrier they encountered was the delay between an identified participant need and final approval/release of funds. Programs operated by community colleges in particular had difficulty implementing the enhancement due to institutional barriers that constrained them from delivering immediate funds to participants. The approval process set by most colleges could take anywhere from one to four weeks, which could be a long time in an emergency situation. Likewise, for short training courses (e.g., less than six weeks), the time required to release funds made the enhancement less effective. In one program, staff reported that the enhancement placed a large burden on its finance department due to the tax information required to process requests. Similarly, three programs reported a lot of paperwork also involved for students. Participants were required to complete a form providing evidence that the need was indeed an emergency and, further, to develop an action plan to prevent the circumstance from occurring again in the future.

Finally, program staff worried that some participants did not take advantage of the enhancement either because they were uncomfortable with the potential stigma associated with receiving the emergency funds or because they were not comfortable disclosing the necessary information on the paperwork.

[43] This difference is statistically significant. Appendix F includes tables comparing the services received by the enhanced treatment groups versus the standard treatment groups for each of the program enhancements.
[44] We estimate that emergency assistance would need to increase educational progress by 7 percentage points above the level experienced by the standard HPOG treatment group to be detectable. Given that there is only a 10 percentage point difference in service receipt (18 versus 8 percent), the impact of emergency assistance on those who received it would need to be 70 percentage points for the average impact to be 7 percentage points. This calculation assumes that individuals who did not receive emergency assistance did not receive any benefit from the offer of emergency assistance and that the benefit of emergency assistance is the same regardless of the service provider for enhanced treatment group and standard treatment group members.

6.2 Non-cash Incentives

Non-cash incentives offered by HPOG allowed participants to earn points for achieving specific program milestones and then convert those points into tangible rewards, such as vouchers redeemable at the college bookstore, work-related equipment (such as scrubs or a stethoscope), or gift cards to support meeting basic needs (such as for transportation/gas or food). For example, some sites awarded points to participants to reinforce desirable behaviors such as attending class, handing in homework on time, or attending job fairs. When participants accrued sufficient points, they were able to redeem them for things they would otherwise have had to pay for out of pocket, such as course-required books or interview-appropriate clothing. Other sites assigned points for results-based accomplishments such as completing courses with high grades, gaining employment, or retaining employment, and then participants could redeem points for gift cards to local grocery stores and gas stations. The private sector has used incentive programs widely for decades to promote and reward desired behaviors and outcomes. More recently, incentive rewards have appeared in education and public program settings. In HPOG, the goal of these behavior- and results-based incentives was to increase training attendance and completion.

- **The non-cash incentives enhancement did not increase HPOG's impact.**

Our analysis finds, however, that these incentives do not appear to have meaningfully increased training completion and may have decreased it. We do not detect impacts of non-cash incentives on educational progress, program completion, employment, employment in healthcare, or earnings, as shown in Exhibit 6.2. We estimate that the true impact on educational progress of adding non-cash incentives to HPOG was between −7 and 3 percentage points, and the true impact on program completion was between −9 and 2 percentage points.

Exhibit 6.2: Estimates of the Contribution of Non-Cash Incentives to Impact Magnitude

Outcome	Enhanced Treatment Group Mean	Standard Treatment Group Mean	Impact	Relative Impact
Educational progress (%)[a]	**54.1**	**56.3**	**−2.1**	**−3.8**
Program completion (%)[a]	34.7	38.1	−3.4	−9.0
Employment (%)[b]	69.3	72.1	−2.8	−3.9
Employment in healthcare (%)[a]	47.8	44.4	3.4	7.5
Earnings ($)[b]	3,226	3,349	−124	−3.7

Notes: Sample includes five programs offering non-cash incentives as a randomized enhancement. Employment and earnings are measured in the fifth quarter after random assignment.
Statistical significance levels for two-sided tests are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
Sample Sizes and Sources:
[a] Enhanced Treatment: 309. Standard Treatment: 704. Control: 467. HPOG follow-up survey.
[b] Enhanced Treatment: 399. Standard Treatment: 890. Control: 634. National Directory of New Hires.

Non-cash incentives increased enrollment in training, however. Individuals with access to non-cash incentives as an add-on to the local standard HPOG program (enhanced treatment group) enrolled in occupational training at a rate 7 percentage points higher than did individuals offered the standard HPOG program (treatment group), and they enrolled in training or training-related activities at a rate 6 percentage points higher (see Appendix F, Exhibit F.4).

It is possible that non-cash incentives increased outcomes for individuals who received them but that this effect was diluted by the lack of impact on individuals who did not receive them. Although individuals with access to non-cash incentives through HPOG (enhanced treatment group) were more than four times as likely to report receiving them than were individuals in the standard treatment group, only 37 percent of individuals of the enhanced treatment group reported receiving them (versus 7 percent of the standard treatment group; see Appendix F, Exhibit F.4). When staff were asked whether the non-cash incentive affected participants' likelihood of starting or completing training or getting a job, staff of three programs reported they did believe that the incentive was making a difference on these outcomes. Staff at one of these programs reported the enhancement generated excitement during the trainings, and that students viewed it as a game. At another program staff reported the enhancement was having a positive influence, and that it helped keep students in training.

HPOG programs developed the incentive milestones (e.g., high course grades, excellent course attendance, job attainment) to align with achievements required of students to be successful in their programs, and staff reported the enhancement made participants excited about reaching the milestones. Staff in one program reported that participants were responsible for calling and informing the staff about their milestones, and that participants were eager to do so. Staff at another program reported they were having more contact with participants in the enhanced treatment group after they completed training than with participants not offered non-cash incentives. At least three programs implementing non-cash incentives reported the enhancement helped motivate students to attend classes and workshops. Finally, staff from at least one HPOG program reported the enhancement resulted in participants planning out when to make milestones for the enhancement, suggesting it was helping participants establish goals, which was promising for completion rates.

The low use of non-cash incentives (37 percent) may be explained by difficulties with implementation. At least two programs reported the main barrier to implementing the non-cash incentive enhancement was the additional paperwork it created, and that purchasing the gift cards was often a long and cumbersome process. Programs reported there was a lot of red tape in distributing the gift cards. Program staff reported that operationalizing earning and redeeming the non-cash incentives was cumbersome at times. At one program staff reported that a lot of their students were confused by some of the logistics of the enhancement and were having a hard time interpreting the points and understanding how to use them. Two programs reported that some students forgot about their points or were planning to hold onto them for later, but never redeemed them.

The non-cash incentives may not have been targeted effectively. Management from one program reported they did not believe the dollar amounts on the gift cards they used as rewards were high enough to incentivize students to engage with the enhancement. For example, one program allotted five points (equivalent to $5) for a week's worth of perfect class attendance, and another offered $50 for gaining and retaining employment in the healthcare field for 20 days. At least three programs reported the incentives were rewarding students for positive behaviors in which they were already engaging (e.g., attending class) and so couldn't be certain whether the enhancement was actually affecting participants' behaviors. This possibility is supported by recent literature on incentives in education, which suggests that incentives have less effect on intrinsically motivated people (Segal 2012).

6.3 Peer Support

Facilitated peer support offered through HPOG was designed to foster social and emotional connections among students and with faculty and staff. Nontraditional students tend to have lower levels of social integration (Tinto 1993), something peer support may help remedy. Anecdotal evidence from HPOG programs and other training programs for low-income populations suggests that strong peer connections can foster greater program attachment and group identification. Each of the three programs that implemented the peer support enhancement designed its enhancement differently, both in terms of the activities that were offered and how the programs were structured.

For example, one program addressed self-improvement topics such as increasing motivation and positive self-talk, whereas another program focused on more concrete skills such as household budgeting and conflict resolution. Similarly, the structure of programs varied—one program offered a dual format with monthly in-person meetings and weekly online sessions. Another organized peer support by cohort, coinciding with the start of its various healthcare training programs, and included alumni from those programs. The third program provided peer support based on participants' training track and only offered peer support to its longer-term tracks (those lasting more than eight weeks) to allow sufficient time for group bonding. The personal relationships developed through these activities were intended to increase participants' engagement with the HPOG program and to increase program persistence and completion.

- **The facilitated peer support enhancement did not increase HPOG's impact. Instead, offering the enhancement reduced the enhanced treatment groups' program completion and earnings relative to the standard treatment group.**

Our analysis finds that adding peer support to the standard HPOG program reduced program completion and earnings. As presented in Exhibit 6.3, facilitated peer support reduced the impact of HPOG on program completion by 7 percentage points, and the enhanced treatment group earned $421 less than the standard treatment group. Differences are not statistically significant for other outcomes.

Exhibit 6.3: Estimates of the Contribution of Facilitated Peer Support to Impact Magnitude

Outcome	Enhanced Treatment Group Mean	Standard Treatment Group Mean	Impact	Relative Impact
Educational progress (%)[a]	**62.9**	**68.7**	**−5.8**	**−8.4**
Program completion (%)[a]	42.1	48.6	−6.6*	−13.5
Employment (%)[b]	75.8	77.3	−1.5	−1.9
Employment in healthcare (%)[a]	58.2	55.3	2.9	5.2
Earnings ($)[b]	4,196	4,618	−421*	−9.1

Notes: Sample includes three programs offering peer support as a randomized enhancement. Employment and earnings are measured in the fifth quarter after random assignment.

Statistical significance levels for two-sided tests are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Sample Sizes and Sources:

[a] Enhanced Treatment: 330. Standard Treatment: 448. Control: 354. HPOG follow-up survey.

[b] Enhanced Treatment: 390. Standard Treatment: 541. Control: 458. National Directory of New Hires.

One explanation for these negative impacts is that facilitated peer support competed with participants' time for studying and attending to family needs, thereby crowding out training instead of supporting access to training. The study required that peer support group meetings occur at least twice per month, and preferably weekly. Programs that found it infeasible for participants to meet weekly could meet in person less frequently and on the off weeks use alternative forms of communication with students such as conference calls, emails, or texting.

Program staff reported that participants found attending peer support challenging and worked to increase attendance. Program staff cited both the extra commitment required of participants and difficulty finding a time that accommodated varied schedules as major contributors to low attendance. One of these programs addressed low attendance by adding attendance incentives and changing the meeting time so it was more convenient for students. This led to a slight increase in participation rates. However, after receiving feedback that some participants would attend the peer support groups only if they were mandatory, the program made them a requirement for all enhanced treatment group members.

Program staff perceived peer support to be beneficial to participants, reporting strengths of the enhancement in terms of content and results. Staff in two programs reported that the trainers they hired did an excellent job covering relevant topics and were able to identify with the participants. The peer support groups allowed students to build a high level of trust and open up to share their stories. The groups provided a network of and connection to a group of similar people, who were able to build a sense of accountability and consistency. The facilitation gave the participants a voice and sense of agency. Meetings were a safe environment where they could learn from and among peers the college- and work-readiness skills needed to complete training and keep a job.

We interpret program staff's description of attendance challenges to reflect the time constraints facing HPOG participants, many of whom are single mothers. Low rates of attendance by themselves cannot explain the enhancement's negative effects. However, if the additional time required by the peer support enhancement resulted in overwhelming participants who already were having difficulty keeping up with program requirements, that may have led to higher program drop-out. The difficulty participants had with the additional time commitment suggests that peer support participants had less time than they might otherwise have to devote to activities beyond course-specific requirements. If this is the case, it is possible that peer support groups are beneficial, but perhaps not for HPOG participants with limitations on their time.

6.4 Discussion

All three of the tested enhancements—emergency assistance, non-cash incentives, and facilitated peer support—sought to increase program persistence and completion relative to the standard HPOG program. We did not find evidence of that, and the peer support add-on seems to have reduced program completion and earnings.

These findings reflect the experience of a limited set of HPOG programs. Emergency assistance was tested in 11 programs, non-cash incentives in five programs, and peer support in three programs. They are not representative of the full set of HPOG programs. In Appendix F, we investigate whether the overall impacts of programs varied based on whether they tested emergency assistance, non-cash incentives, or peer support or did not test any enhancements.

Impacts on educational progress, employment, or employment in healthcare did not differ between program subgroups; however, in the programs that tested emergency assistance, earnings increased by $411 in the fifth follow-up quarter, and this impact is larger than the impact on earnings of programs that tested non-cash incentives, tested peer support, and did not test any enhancements.

The enhancements do not operate in isolation, but are linked to the other components of the HPOG program. For example, non-cash incentives were explicitly awarded based on attaining specific program milestones. Moreover, these enhancements were added on to existing HPOG programs that had been operating for two to three years. The enhancements might have been more effective had they been intentionally integrated into the original program design or combined with different standard HPOG programs. Or it could be the case that the package of HPOG program components is what is successful on the whole, and these three specific components do not contribute meaningfully to that whole. Evidence from these analyses suggests that none of these three single add-on components offers a meaningful improvement to the HPOG standard program.

In line with the study's experimental design, this chapter presents impacts of the *offer* of the enhancements. We might expect HPOG's impact to be larger for the subgroup of study participants who *received* the service of interest. The supplemental analyses that focus on take-up (rather than the offer) of selected program components is the subject of Appendix H, where we present impacts on the subsets of study participants who were most likely to receive the enhancements and other select services.

7. Influence of Program Characteristics on Program Impacts

In this chapter we examine how program characteristics influence the magnitude of program impacts. The HPOG programs that have a second treatment group provide the best evidence on these questions, but only for samples of limited size and only for the three HPOG components being tested experimentally as program enhancements. Beyond these three add-on components and beyond the programs in which the enhancements are being tested experimentally, the rest of the HPOG programs demonstrate important variation in their design and implementation.

Summary of Key Findings: Influence of Program Characteristics

- HPOG programs that offered easier access to tuition assistance and other financial supports had relatively larger impacts on educational progress.
- HPOG programs that offered greater access to childcare and public transportation also had relatively larger impacts on educational progress.
- HPOG programs where case managers provided a larger number of services to program participants showed smaller impacts on employment. This finding indicates that programs that provide "specialized" case management may be better positioned to increase employment.

With this observation, we take advantage of that naturally occurring variation in *what* specific services are offered by programs (program components) and in *how* these services are delivered (implementation features) to extend findings about how these characteristics of the HPOG intervention influence impacts.

After discussing the HPOG program characteristics of interest, we present and discuss estimates of the influence of these program characteristics on impact magnitude.

7.1 Program Characteristics

For this analysis we grouped the various HPOG program characteristics of interest into three types of measures for inclusion in our analytic model.[45,46] The program characteristics types are summarized in the **Terms Relevant to Chapter 7** textbox on page 92, and the analytic methods are summarized in the **Summary of Methods** textbox on page 93.

The three types of measures are *program components, implementation features,* and *participant composition measures,* are elaborated in Exhibit 7.1. Program components are the *what* of the HPOG intervention. Implementation features are the *how,* capturing the practices and views of HPOG program management and staff, which may determine the magnitude of program impacts. *Participant composition measures* capture the characteristics of all study participants within a given administrative division. If the treatment group's HPOG experiences are influenced by their control group peers, then this could subsequently influence their outcomes, as well.

[45] Exhibit G.1 in Appendix G describes all candidate model specifications considered for this analysis.
[46] In Harvill, Moulton, and Peck (2015), Appendix A provides detailed operationalization of the measures used in this analysis.

Exhibit 7.1: Program Characteristics of Interest, by Type of Measure

Domain	Variable Name	Variable Definition and Description	Mean (Standard Deviation)	Observed Range
Program Components				
Presence of career pathways principles	Career pathways framework	The extent to which available offerings and program content are based on the principles of the career pathways framework. The measure counts the number of elements of the career pathways framework (out of a total of eight) that the HPOG program implemented.	4.53[a] (2.01)	0–8
Case management	Case manager, counselor services provided	The number of services that case managers and counselors deliver. The measure counts the number of the following services that they deliver that "meet the needs" of their HPOG program's participants: participant monitoring; academic counseling; career counseling; counseling to identify personal and supportive service needs; financial counseling; job search/placement assistance; and job retention services.	4.55 (1.74)	0–7
Comprehensive services	Tuition and other financial services	Access to and delivery of tuition and other financial services. The measure sums two scales: a 0 to 1 scale that captures the percentage of tuition covered by that HPOG program and a 0 to 1 scale that captures the extent to which it delivers financial services that "meet the needs" of that program's participants.	1.32 (0.34)	0.27–2[b]
Comprehensive services	Childcare and transportation	Access to childcare and transportation. The measure sums three scales: a 0 to 2 scale that captures the percentage of the HPOG program's service area with access to public transportation; a 0 to 3 scale that captures the extent to which that program provides transportation assistance; and a 0 to 3 scale that captures the extent to which that program provides childcare assistance.	4.04 (1.24)	2–7[c]
Implementation Features				
Management/ staff focus	Education is the primary goal of the program	Percentage of management and staff who report education is the primary goal of their HPOG program (as opposed to employment or both equally).	27.7% (22.8)	0–100
Management/ staff focus	Employment is the primary goal of the program	Percentage of management and staff who report employment is the primary goal of their HPOG program (as opposed to education or both equally).	15.3% (19.7)	0–100
Participant Composition				
Baseline education	GED	The division-level percentage of study participants with a GED.	21.4% (17.0)	0–83[d]

Notes: In Harvill, Moulton, and Peck (2015), its Appendix A provides detailed operationalization of the measures described in this exhibit. Unless specified, the observed range represents the full theoretical range. All means are reported as observed in the individual-level data, meaning that program component means are weighted by the number of individuals in each program; and implementation feature and participant composition means are weighted by the number of individuals in each division.

[a] This value reported in Chapter 2 was 4.14 for this variable's mean; that represents the mean across 42 programs, whereas the value reported here (4.53) is the average across the sample of individual program participants. [b] Range is 0 to 2. [c] Range is 0 to 8. [d] Range is 0 to 100.

Terms Relevant to Chapter 7

Program components describe the services available to HPOG treatment group members. These data are measured at the program level based on responses to the National Implementation Evaluation (NIE) grantee survey.

Implementation features describe how services were delivered to those HPOG treatment group members. These data are measured at the administrative division level based on responses to the NIE staff/management survey.

Participant composition measures are division-level aggregations of individual-level baseline characteristics.

In what follows, we describe these measures and their hypothesized relationship with HPOG program impacts.

7.1.1 Program Component Measures

- ***Presence of Career Pathways Principles.*** The career pathways framework involves a constellation of services and basic academic and occupational training strategies intended to assist low-income individuals and other nontraditional postsecondary students in completing increasingly complex courses articulated by specific sectoral skill requirements. The study's grantee and staff/management surveys collected information on the extent to which these career pathways elements and principles were in place in a given HPOG program. We constructed a measure that captures the extent to which those were present in a program's offerings and content. We hypothesize that if the career pathways framework is an improvement over standard training models, then those HPOG programs that more closely represent those principles in practice will have more favorable outcomes.
- ***Services Provided by Case Managers and Counselors.*** Case managers and counselors are the frontline staff most directly in contact with program participants and most directly responsible for meeting their needs and fostering their program completion and employment success. Some HPOG programs use generic case managers (under various titles) who might provide basic case management as well as a variety of personal, financial, academic, and employment counseling. Other HPOG programs use specialist case managers or counselors who focus on specific bundles of support services (e.g., academic and career counseling; personal and financial counseling; employment and retention counseling). The generic approach may be more convenient for participants and may lead to a deeper and more personal relationship between case manager and student. On the other hand, specialists may be more skilled and effective in their specific roles.

  The measure we constructed for this analysis is a scale that captures the number of services that case managers and counselors delivered. We hypothesize that programs where case managers and counselors provide a greater number of services are less likely to provide specialized case management. Examining the number of services that case managers and counselors deliver holds the potential to inform a recommendation to the field regarding the choice of "generic" versus "specialized" case management.

- ***Access to Tuition and Other Financial Services.*** All HPOG programs provide some financial assistance, ranging from full tuition waivers to partial tuition assistance, as well as

assistance for academic supplies, exam fees, uniforms, etc. Relieving the financial burdens that low-income participants experience may lead them to have greater success in completing the program. The measure we constructed for this analysis captures both the percentage of tuition covered by the HPOG program and the extent to which financial services (e.g., coverage of book costs, licensing and certification fees, uniforms and supplies, etc.) are provided.[47] This measure allows the study to test whether increased access to financial services and supports is related to the impact of HPOG.

Summary of Methods for Analyzing the Influence of Program Characteristics

To relate program characteristics to impact magnitude, we extend the multi-level, multivariate model used to estimate the overall HPOG impact in Chapter 4 by interacting the treatment indicator with measures of program characteristics (see Appendix G for the model specification).

We tested various models—both theoretically and empirically based—to ascertain which would be the "best" model, whose results we would report in this chapter. The reason we undertook this process of testing various model specifications is that we face limited degrees of freedom: analytically there is a limit on the number of variables that can be included. This limit is driven by the number of units at the division and program levels.

We used the Akaike Information Criterion (AIC) to determine which of the candidate models was the "best" model, and which program characteristics would be included. Harvill, Moulton, and Peck (2017) provides a detailed description of the method used to construct the model used to report findings in this chapter. Appendix G, Exhibit G.1 summarizes the results of this model-building strategy.

- ***Access to Childcare and Transportation.*** Childcare and transportation assistance are reportedly critical supports for HPOG's low-income population, of whom more than 60 percent have dependent children. This measure captures both the share of the program area that has access to public transportation and the availability of childcare and transportation services provided by programs.[48] This measure allows the study to test whether increased access to childcare and transportation services is related to the impact of HPOG.

[47] This continuous measure ranges from 0 to 2 and is constructed by summing two separate scales. The first scale ranges from 0 to 1 and captures the percentage of tuition covered by HPOG, where 0 points are awarded for no coverage; 0.25, 0.5, or 0.75 point for partial coverage; and 1 point for full coverage. The second scale also ranges from 0 to 1 and captures the extent to which financial services are delivered that meet the needs of program participants. Five types of financial services are considered, including book costs; licensing and certification fees; exam and exam preparation fees; uniforms, supplies, and tools; and technology equipment. Programs that cover 100 percent of tuition and offer all possible financial services receive the maximum of 2 on this measure.

[48] This continuous measure ranges from 0 to 8 and is constructed by summing three separate scales. The first scale ranges from 0 to 2 and captures the percentage of a program's service area with access to public transportation, where 2 points are awarded if the entire area has access to public transportation, 1 point if 75 percent has access, and 0 points otherwise. The second scale ranges from 0 to 3 and captures the extent to which transportation assistance is delivered by a program and meets the needs of program participants. The third scale ranges from 0 to 3 and captures the extent to which childcare assistance is delivered by a program and meets the needs of program participants. For the subscales ranging from 0 to 3, 2 points are awarded if the program directly delivers the service and 1 point if the program provides a referral. If the program does not "agree" or "strongly agree" that the program meets participants' needs for the service, 1 point is deducted.

7.1.2 Implementation Features Measures

- ***Extent to Which Program Is Education or Employment Focused.*** HPOG programs must balance participants' more immediate need for employment with the goal of establishing the groundwork for longer-term educational and career advancement. We include two measures related to management and staff focus: the percentage of management and staff who report that education is the primary goal of the program; and the percentage of management and staff who report that employment is the primary goal of the program.[49] These measures allow the study to determine the extent to which staff and management focus—be it on education or on employment—associates with HPOG's impacts on education- and employment-related outcomes.

7.1.3 Participant Composition Measures

Participant composition measures are division-level aggregations of individual-level baseline characteristics. Participant composition measures capture the characteristics of study participants' peers within a given administrative division, which may influence the outcomes of treatment group members through peer effects. We selected only one participant composition measure to include in our analysis model: percentage of study participants with a GED.

7.2 Influence of Program Characteristics on Impacts

The goal of this chapter is to determine whether cross-division and cross-program variation in HPOG program characteristics can explain variation in HPOG impacts. However, if HPOG's impact does not vary meaningfully across programs, we may be unlikely to find evidence that variation in program characteristics determines the magnitude of HPOG's impact. We begin by describing the extent to which HPOG's impact varies across programs.

- **HPOG's impact varies across programs on four outcomes (educational progress, employment, employment in healthcare, and earnings).**

As presented in Exhibit 7.2, we find:

- ***The impact of HPOG on educational progress varies significantly across programs.***[50] The most effective 25 percent of programs have an impact of 11 percentage points or larger on educational progress, and the least effective 25 percent of programs have an impact of 4 percentage points or smaller.
- ***The impact of HPOG on program completion*** **does not** ***vary significantly across programs.*** The most effective 25 percent of programs have an impact of 13 percentage points or larger on program completion, and the least effective 25 percent of programs have an impact of 7 percentage points or smaller.
- ***The impact of HPOG on employment varies significantly across programs.*** The most effective 25 percent of programs have an impact of 2 percentage points or larger on

[49] Management and staff who do not fall into one of these two categories reported that education and employment are equally important goals of their HPOG program.
[50] This conclusion is based on a test of whether the estimated standard deviation of the program-level impact is statistically different from zero using a two-sided hypothesis test.

employment, and the least effective 25 percent of programs have an impact of −2 percentage points or smaller.

- ***The impact of HPOG on employment in healthcare varies significantly across programs.*** The most effective 25 percent of programs have an impact of 14 percentage points or larger on employment in healthcare, and the least effective 25 percent of programs have an impact of 8 percentage points or smaller.
- ***The impact of HPOG on earnings varies significantly across programs.*** The most effective 25 percent of programs increased quarterly earnings by $340 or more, and the least effective 25 percent of programs reduced quarterly earnings by $66 or more.

Exhibit 7.2: Impact Variation across Programs

Outcome	Average Impact	Standard Deviation of Program-Level Impact (Standard Error)	25th Percentile Program-Level Impact	75th Percentile Program-Level Impact
Educational progress (%)[a]	7.3###	4.8** (2.2)	4.0	10.6
Program completion (%)[a]	10.0***	3.9 (2.7)	7.4	12.6
Employment (%)[b]	0.2	2.6*** (0.6)	−1.6	2.0
Employment in healthcare (%)[a]	11.2###	4.3** (2.1)	8.3	14.1
Earnings ($)[c]	137#	301*** (12)	−66	340

Notes: Average impacts are reproduced from overall impact exhibits in Chapter 4 and describe the mean difference between the treatment group and control group outcomes. The standard deviation of program-level impact is a statistical estimate that describes the extent to which impacts varied across programs. If the standard deviation of program-level impact is not zero, impacts varied across programs. A two-sided test was used to determine whether the estimated standard deviation of the program-level impact is statistically different from zero; that is, whether impacts varied across programs. Bootstrapped standard errors for the estimated standard deviation appear in parentheses. Estimation of 25th and 75th percentiles assumes normality.

Statistical significance levels for one-sided tests are indicated with hashtags as follows: ### = 1 percent; ## = 5 percent; # = 10 percent.

Statistical significance levels for two-sided tests are indicated with asterisks as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Sample Sizes and Sources:

42 HPOG and PACE programs and 92 administrative divisions.

[a] 10,318 observations from the HPOG and PACE follow-up surveys.

[b] 13,199 observations from the National Directory of New Hires.

[c] 13,233 observations from the National Directory of New Hires.

We conclude that there is notable variation in HPOG's impact on educational progress, employment, employment in healthcare, and earnings across programs. In contrast, the impact of HPOG on program completion does not statistically significantly vary across programs. This implies that we are unlikely to find evidence that variation in program characteristics determines the magnitude of HPOG's impact on program completion (because there is no cross-program variation in impacts on program completion). Therefore, in this chapter we do not report whether program characteristics are associated with HPOG's impact on program completion.

Exhibit 7.3 presents estimates of the influence of program characteristics on impact magnitude. Because estimates of the influence of these program characteristics are identified by the

naturally occurring (i.e., non-randomized) variation in program components and implementation features, these estimates are non-experimental. We focus on how program components and implementation features relate to impact magnitude, because these characteristics could be incorporated into future programs, whereas participant composition could not. We summarize the findings presented in Exhibit 7.3 as follows, focusing on a limited set of outcomes for ease of exposition:

- **HPOG programs with greater access and delivery of comprehensive services had a larger impact on educational progress.**

HPOG programs that offer greater access to and delivery of tuition and other financial services and programs that offer greater access to childcare and public transportation experienced larger impacts on educational progress.[51] For example, a one-unit (or 0.81 standard deviation) increase in the childcare/transportation scale is associated with a 2 percentage point increase in HPOG's impact on educational progress.

- **HPOG programs where case managers provided more services had a lower impact on employment.**

HPOG programs where case managers provide a larger number of services to program participants experienced decreased impacts on employment. Each additional service provided by case managers is associated with a 1 percentage point decrease in HPOG's impact on employment.[52]

- **HPOG programs that scored higher on a presence of career pathways measure had a lower impact on employment in healthcare.**

Greater alignment with the principles and elements of the career pathways framework is associated with a negative impact on employment in healthcare professions.[53] A one-unit (or 0.50 standard deviation) increase in the extent to which available offerings and program content are based on principles of the career pathways framework is associated with a 1 percentage point decrease in HPOG's impact on employment in healthcare.

[51] These findings are robust to alternative model specifications, as detailed in Appendix G.4.
[52] The relationship between the number of services provided by case managers and impacts is not significant in one out of two alternative model specifications (see Appendix G.4).
[53] As described in Appendix G, the estimate associated with this finding is not statistically significant in one out of two alternative model specifications. However, the magnitude of the estimate is similar across alternative model specifications.

Exhibit 7.3: Influence of Program Characteristics on HPOG's Impact

Program Characteristic	Educational Progress (%)[a]	Employment (%)[b]	Employment in Healthcare (%)[a]	Earnings ($)[c]
Program Components				
Career pathways framework (range is 0-8)	−0.6	−0.5	−1.1*	−34
Case manager services provided (range is 0-7)	1.0	−0.8*	0.4	−44
Tuition and other financial services (range is 0-2)	5.1*	−2.0	4.1	144
Childcare and transportation (range is 0-8)	2.4***	−1.0	1.0	−57
Implementation Features				
Education is the primary goal of the program (%)	−6.9	3.0	5.0	328
Employment is the primary goal of the program (%)	−5.8	5.4	4.2	426
Participant Composition Measures				
GED (%)	17.4**	1.5	19.6**	−158

Notes: All program characteristics are grand mean centered. Program characteristics measured as a percentage are reported in 10 percentage point increments, such that a one-unit increase in the measure corresponds to a 10 percentage point increase.
Statistical significance levels for two-sided tests are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
Sample Sizes and Sources:
[a] Programs: 42. Divisions: 87. Individuals: 10,318. HPOG and PACE follow-up surveys.
[b] Programs: 42. Divisions: 87. Individuals: 13,199. National Directory of New Hires.
[c] Programs: 42. Divisions: 87. Individuals: 13,233. National Directory of New Hires.

7.3 Discussion

HPOG programs that offer greater access to and delivery of tuition assistance and other financial services and programs that offer greater access to childcare and transportation show relatively larger impacts on educational progress. However, we generally do not find evidence that the program components and implementation features of interest are impact drivers for employment-related outcomes.

Although adult training offered via a career pathways framework has become an increasingly popular strategy, analysis of HPOG data finds that greater alignment with the career pathways framework does not distinguish programs in terms of their impacts on educational progress, employment, or earnings when controlling for other program characteristics. In this analysis, the variable capturing the presence of career pathways principles was important enough to be selected to the model, but it does not distinguish itself as an important independent driver of overall HPOG impacts. This may be due to the fact that where career pathways principles are present in an HPOG program, they are also present in the local training system (and available to the control group), because almost all HPOG programs provided participants access to existing training, rather than developing their own training courses. But, perhaps more importantly, the unfavorable impact reported in Exhibit 7.3 is not replicated in alternative specifications of the analysis (see Appendix G). For example, when the participant composition measure is excluded from the analysis, the variable representing the presence of career pathways principles no longer shows an impact. As such, we put little weight in this result and caution against over interpretation.

This analysis also examines whether “generic” versus “specialized” case management leads to larger impacts. We hypothesized that HPOG programs where case managers and counselors

provide a greater number of services are more likely to be providing generic case management. We find that HPOG programs where case managers provide a larger number of services to program participants experienced decreased impacts on employment. This finding indicates that programs that provide "specialized" case management (e.g., case managers that specialize in employment and retention counseling) may be better positioned to increase employment.

By intent, HPOG serves a low-income population that faces barriers to enrolling, persisting, and completing training, as well as career advancement. Financial constraints is one of the most commonly cited barriers to low-income students' entering and completing postsecondary education (e.g., Dynarski and Scott-Clayton 2013; ED 2002; Patel and Rudd 2012; Richburg-Hayes et al. 2015). We find that HPOG programs offering greater access to and delivery of tuition and other financial services have relatively larger impacts on educational progress, supporting the hypothesis that financial assistance facilitates academic participation. However, the impacts of increased access to and delivery of tuition and other financial services do not extend to employment outcomes as of the fifth follow-up quarter.

Another barrier that low-income populations may face is lack of access to transportation or childcare. HPOG programs with relatively easier access to childcare and transportation also demonstrate larger impacts on educational progress. These supports are important to improving academic participation. However, we do not observe evidence that increased access to transportation or childcare is associated with more favorable employment outcomes as of this follow-up time point.

Finally, this analysis tests whether the education versus employment focus of a program is associated with impacts on educational progress and employment-related outcomes. Prior research has demonstrated that an emphasis on quick job entry is associated with an increase in the effectiveness of employment assistance programs in the short run, at least among the welfare reform efforts examined in that work (Bloom, Hill, and Riccio 2003). However, the career pathways framework also emphasizes education "organized as a series of manageable steps leading to successively higher credentials and employment opportunities in growing occupations" (Fein 2012). We do not find any evidence that staff and management beliefs about the primary goal of their HPOG program (employment vs. education) are associated with impacts on education- or employment-related outcomes as of this follow-up time point.

We caution that the findings presented in this chapter are non-experimental and could be subject to bias, as the reported effects are identified by the natural (i.e., non-experimental) variation in program components and implementation features across programs and divisions. That is, the estimates of the relative effects of these aggregate-level variables could be associated with other characteristics of the programs that choose to put them into place. The bias concern arises from the possibility that one or more division- or program-level factors that influence the impact of HPOG have been omitted from the model used to produce the findings presented in this chapter. For example, dynamism of executive leadership in the HPOG service delivery organization is unmeasured, may affect impact magnitude at the program level, and may be related to the program characteristics that are the focus of this chapter. If this is the case, then the program characteristic effects will be biased.

8. Discussion and Conclusion

The HPOG 1.0 Impact Study uses an experimental evaluation design to assess the impacts of 42 HPOG 1.0 programs operated by 23 grantees nationwide. By randomizing eligible applicants to treatment and control groups, the evaluation provides strong evidence to assess the effectiveness of HPOG in pursuing its dual policy goals of improving quality training opportunities for disadvantaged individuals and providing a skilled workforce to meet the needs of the healthcare sector. The large study sample permits analysis of a variety of subgroups, as identified at baseline, to ascertain the extent to which HPOG is more or less effective for certain groups. The study also includes a second treatment group in 19 of those programs to analyze whether and how much specific program enhancements influence the impacts of a standard HPOG program without those enhancements.

In addition to these experimental analyses, the HPOG 1.0 Impact Study also uses non-experimental strategies in an attempt to identify key ingredients to HPOG's success.

In this concluding chapter, we first place the HPOG project and its short-term results in the context of the recent evaluation research literature on similar programs for similar populations. We then explore implications of the study's findings for future research, program design, and policy.

8.1 Findings in the Context of Recent Research

The major finding of the HPOG 1.0 Impact Study is that HPOG improved program participants' educational progress (defined as *having completed or being currently enrolled in program training*; by 7 percentage points) relative to what would have occurred in the absence of the program, affirming the confirmatory hypothesis about HPOG's short-term impact. Although there was no impact on employment rates by the fifth follow-up quarter, HPOG treatment group members versus control group members were more likely (by 11 percentage points) to be employed in the healthcare sector, and they had slightly higher earnings (by $137).

Overall evaluation study design is an important factor when selecting relevant research results to compare with HPOG. In particular, we need to be mindful that although many of the otherwise relevant recent evaluations assess the effects of individual programs, HPOG's core design pools multiple local programs funded under a national initiative. Therefore, a sensible benchmark for the overall effect of a national job training program is the findings from the WIA Adult and Dislocated Worker Programs Gold Standard Evaluation (McConnell et al. 2016). Because of its focus on sectoral training, including training in healthcare professions, we also compare HPOG findings with findings from impact evaluations of WorkAdvance (Hendra et al. 2016) and Green Jobs and Health Care (GJ-HC) (Martinson et al. 2016), with the caution that those other studies evaluate programs individually.

To align HPOG impacts with those from the WIA Gold Standard Evaluation, we focus on contrasts that compare the full-WIA group versus the core-WIA group. The full-WIA group had access to Individual Training Accounts (ITAs) and other training services, including intensive services, such as job search assistance, and core services. The core-WIA group had access to core services available to all individuals at American Job Centers (AJCs), such as self-directed use of a resource room for job search and other employment-related information (McConnell et

al. 2016). Those participants in the full-WIA group could use their ITAs as vouchers to purchase training services from WIA-approved vendors. For the comparison, we focus on similar outcomes between HPOG and WIA in the educational progress/training, employment, earnings, and public assistance benefits domains.

The impact of full-WIA on completion of occupational training is larger than that of HPOG: full-WIA increased completion by 15 percentage points (McConnell et al. 2016), whereas HPOG increased completion (i.e., earned certificate, license, or credential) by 10 percentage points. However, although the impact of WIA on training completion is relatively greater than that of HPOG, the proportion of full-WIA customers that completed training (27 percent) is much lower than the levels of completion in both the HPOG treatment group (50 percent) and the HPOG control group (40 percent). The HPOG sample—including the control group—appears to be especially motivated to enroll in and complete training, perhaps in part due to the active outreach and marketing conducted by HPOG programs, as well as their eligibility screens for academic skill level and suitability for training in healthcare.

HPOG did not have a detectable impact on employment in the fifth follow-up quarter—about 69 percent of both the HPOG treatment and control groups were employed—but it did increase earnings by 4 percent in that quarter. Full-WIA increased employment in the fifth follow-up quarter by 6 percentage points, from 62 percent employment among core customers to 68 percent employment among full-WIA customers, and it increased earnings by about 8 percent (McConnell et al. 2016).[54] The impacts of full-WIA are larger than those of HPOG, but the level of employment in the HPOG control group is higher than that of the full-WIA group.

Although there are no detectable impacts on employment overall in the fifth follow-up quarter, HPOG increased employment in healthcare from 41 to 53 percent: this increase represents a 27 percent relative improvement. This pattern is similar to those reported by other sectoral training programs. In the evaluation of WorkAdvance, for example, one program out of the four tested had an impact on employment at the time of follow-up (a 10 percentage point increase), and all four programs had impacts on employment in their targeted industrial sectors, with impacts for each program ranging from 12 to 41 percentage points (Hendra et al. 2016). None of the four GJ-HC programs had impacts on employment in the fifth follow-up quarter, but two of the programs (one healthcare and one green-jobs) reported impacts on employment in the targeted sector, a 16 percentage point and a 12 percentage point increase, respectively (Martinson et al. 2016).

The HPOG control group was more likely to be employed in its targeted sector at the time of the follow-up survey than were the control groups in all but one of the WorkAdvance programs and in the two GJ-HC programs that showed impacts on sectoral employment (Hendra et al. 2016; Martinson et al. 2016).

The HPOG treatment group received TANF at a slightly lower rate than the control group, but the difference is not statistically significant. Similarly, in the WIA Gold Standard Evaluation, 15 percent of full-WIA group customers and 17 percent of core customers received cash

[54] The WIA Gold Standard Evaluation report uses a 5 percent threshold for statistical significance and therefore does not report the impact on earnings as statistically significant (McConnell et al. 2016, C.56). We use a 10 percent threshold for significance, and by this standard, the impact on earnings is statistically significant.

assistance, which includes TANF and Social Security; the difference is not distinguishable from zero (McConnell et al. 2016).

In comparison with other, similar programs, the HPOG treatment group overall had higher favorable *outcomes* for educational attainment and employment, but did not have greater *impacts* than the other programs. These differences suggest that though the HPOG program may have served a more motivated population than these other programs, it seems similarly effective in improving individuals' results.

8.2 Implications for Future HPOG Research

The impact results demonstrate that HPOG improved the confirmatory outcome of educational progress at this first, relatively early follow-up time point. Given that the HPOG logic model posits that such progress will result in longer-term impacts on employment and earnings, it will be important to continue to track impacts over longer follow-up periods. ACF has funded ongoing research that estimates impacts over periods of 36 months and 70 months after random assignment (see textbox on page 3). Reports on those evaluation efforts are scheduled for 2019 and 2021, respectively. Additionally, ACF has funded a comprehensive evaluation of the second round of grants under HPOG 2.0.

8.3 Implications for Program Design

The study analyzed the differential impacts of selected program components and implementation strategies, as well as the differential impacts for individuals receiving specific services and meeting specific milestones. Major lessons for program design and administration include the following:

- ***HPOG programs added more financial assistance and support services than were available through existing training programs in the community.*** The presence of these added services, as well as their consolidation in one program, represented the biggest contrast between treatment and control conditions and so may be identified as a major reason for the study's finding of impacts on educational progress.
- ***HPOG programs improved outcomes more for those participants who entered with greater educational attainment and employment experience.*** If future realizations of HPOG or similar programs want to produce better outcomes for individuals who come to training with less advantageous backgrounds, including TANF recipients, then programs may need to consider enhancing developmental education services and may need to reassess expectations about program length and probability of individual success. A promising strategy for those who need more adult basic education to succeed in occupational training is the Integrated Basic Education and Skills Training Program (I-BEST). I-BEST delivers basic education instruction at the same time and in the same classes as occupational training. Current research on the impact of the I-BEST approach in the PACE Study will be important in determining whether integrating basic education and occupational training in the same classes is an effective strategy for serving individuals with relatively low basic academic skills.[55] Results in one program that provides integrated basic

[55] For recent research finding on a program using I-BEST in its design see Wachen et al. (2012).

skills and occupational training to participants with skill levels as low as the fourth grade level show the program increased the hours of occupational training and basic skills instruction received over the follow-up period. In addition, the treatment group earned more credentials than the control group, primarily from a licensing or certification organization (Martinson, et al., 2018).

- ***The HPOG program enhancements tested experimentally (i.e., emergency assistance, non-cash incentives, and facilitated peer support) did not improve impacts on key outcomes of educational progress or employment***; and the peer support enhancement appears to have decreased HPOG's impact, perhaps by drawing participants away from more central educational and training activities or by overwhelming busy participants with another time-consuming activity.

8.4 Implications for Policy

HPOG is an effective tool for achieving the short-term goal of training more individuals for careers in healthcare. The study demonstrated conclusively that funding HPOG grantees and providing flexibility for program design within broad guidelines produced individual occupational training programs that showed positive early signs toward fulfilling HPOG's two main policy goals: improving educational progress for low-income individuals and increasing the supply of workers for the healthcare sector. Even in relatively service-rich environments and with a population of well-motivated and relatively well-prepared individuals, HPOG increased the delivery of training, financial assistance, and support services that led to some better outcomes for the treatment group as a whole, as well as for major subgroups defined by age, race/ethnicity, or presence of dependent children.

Although HPOG was successful in increasing educational progress over the wide spectrum of training courses in which treatment group members enrolled, many participants left with credentials for entry-level jobs in the lower-wage healthcare occupations, such as CNAs or hospital aides or orderlies. It is too early to form judgments about how well those individuals will fare in the longer term, but moving up the career ladder in healthcare almost always involves further training and additional certifications or diplomas, rather than work experience alone. Future policy for career pathways programs in healthcare can help by including more provisions and resources for additional training of active program participants and for returns to training for employed program completers.

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