Pathways for Advancing Careers and Education

Cross-Program Implementation and Impact Study Findings

OPRE Report No. 2019-32

February 2019

PACE
Pathways for Advancing Careers and Education

Pathways for Advancing Careers and Education (PACE)

Cross-Program Implementation and Impact Study Findings

OPRE Report No. 2019-32

February 2019

Karen Gardiner, Abt Associates
Randall Juras, Abt Associates

Submitted to:
Nicole Constance
Federal Project Officer
Office of Planning, Research, and Evaluation
Administration for Children and Families
U.S. Department of Health and Human Services

Contract No. HHSP2332007913YC

Project Director: Karen Gardiner
Abt Associates
6130 Executive Boulevard
Rockville, MD 20852

Contents

List of Exhibits

Overview

This paper summarizes implementation and early impact findings for nine programs employing "career pathways" strategies for low-income and low-skilled adults. These programs were evaluated as part of the Pathways for Advancing Careers and Education (PACE) Evaluation. The paper describes program implementation, as well as effects of the programs on initial training and career steps, approximately 18 months after the random assignment of each program's participants into treatment and control groups.

This cross-program summary distills findings from program-specific evaluations of education and training and services implemented and describes where programs had impacts. It suggests areas for inquiry for the later follow-up studies of these programs.

Primary Research Questions

- What interventions were implemented? Did implementation go as planned?
- Could programs increase recruitment for purposes of recruiting a control group and a larger treatment group?
- What were the differences in services, including training, received by treatment and control group members in each program?
- What were the effects of the programs on educational attainment? Entry into career-track employment?

Purpose

Low-income workers with only a high school education or less face poor and declining employment prospects. Postsecondary training, often at community colleges, offers one strategy for improving this population's education and employment opportunities, especially if it is targeted to occupations where there is high and growing local demand for skilled workers. How to facilitate a better match between the nation's need for a skilled workforce and the needs of low-skilled adults for employment is a topic of great interest to policymakers, workforce development organizations, educators, and other key stakeholders.

Career pathways programs are designed to address these issues by providing well-articulated training and employment steps targeted to locally in-demand jobs, combined with a range of supports. Policymakers and practitioners have shown great interest in the career pathways approach. But, to date, limited rigorous research is available on its effects on participants' educational and economic outcomes. To assess the effectiveness of nine career pathways interventions, the PACE evaluation used an experimental design—that is, randomly assigning study participants in each program to a "treatment" group who could access the program or a "control" group who could not, then comparing their outcomes.

Key Findings & Highlights

- **Recruitment presented challenges for almost all programs**. Programs that succeeded in meeting their targets shared certain practices, including proactive and ongoing discussions with key referral partners, testing new recruitment methods, and carefully tracking referral sources and investing in methods that appeared to work.
- **Programs had the most flexibility to design and implement basic skills bridge programs using innovative instructional approaches**. These include contextualization, active learning techniques, flexible class times, and compressed schedules. In contrast, programs generally relied on existing college occupational training courses, thus had less ability to design their content or structure.
- **Programs provided advising but rarely mandated it.** All programs offered academic and non-academic advising. Most programs had a recommended number of advising sessions (e.g., once per week, three times per semester), but only two programs mandated attendance in advising sessions.
- **Financial support, when provided, largely focused on support for training.** Three programs provided training at no cost to participants; others provided Individual Training Account vouchers or scholarships, or funding to fill the gap between existing financial aid and the cost of the program. Other programs helped students apply for financial aid.
- **Services to connect program participants to employment generally consisted of topical workshops**. Few programs provided employment counseling or in-program employment opportunities.
- **Programs had high levels of enrollment in education and training**. Eight of the nine programs had positive and statistically significant impacts on enrollment in education and training.
- **Seven programs had a significant impact on their confirmatory outcome**. Thus, most PACE programs seem to be on track to achieving their long-term goals. For eight programs the confirmatory outcome was education related, and for one it was earnings related.

Methods

Each program in PACE was evaluated separately. The PACE evaluation's implementation studies examined the design and operation of each PACE program, and each impact study used an experimental design to measure effects on educational and early employment outcomes. The impacts are based on samples ranging in size from 500 to 2,400 study participants.

Implementation study findings are based on two rounds of site visits and a follow-up participant survey conducted approximately 18 months after random assignment. Impact study findings are based on the 18-month follow-up survey, college records, and quarterly wage data.

Executive Summary

Low-income workers with only a high school education or less face poor and declining employment prospects. Postsecondary training, often at community colleges, offers one strategy for improving this population's education and employment opportunities, especially if it is targeted to occupations where there is high and growing local demand for skilled workers. How to facilitate a better match between the nation's need for a skilled workforce and the needs of low-skilled adults for employment is a topic of great interest to policymakers, workforce development organizations, educators, and other key stakeholders.

"Career pathways" is a promising approach to connecting workers and employers. These programs are designed to address these issues by providing well-articulated training and employment steps targeted to locally in-demand jobs, combined with a range of supports to help participants persist and complete their programs. To date, limited rigorous research is available on its effects on participants' educational and economic outcomes.

This report summarizes the implementation and early impacts on education and career progress of nine career pathways interventions included in the **Pathways for Advancing Careers and Education (PACE)** Evaluation.

Pathways for Advancing Careers and Education (PACE) Evaluation

Funded by the Administration for Children and Families (ACF), U.S. Department of Health and Human Services, PACE is an evaluation of nine programs that include key features of a "career pathways" framework. This framework guides the development and operation of programs aiming to improve the occupational skills of low-income adults, many of whom are older and non-traditional students, by increasing their entry into, persistence in, and completion of postsecondary training. The framework describes strategies for overcoming barriers to education and training that these students can face.

Key features of programs within this framework include:

- a series of well-defined training steps;
- innovative basic skills and occupational training instructional approaches targeted to adult learners;
- services to address academic and non-academic barriers to program enrollment and completion; and
- connections to employment during or after the program.

Box ES-1 shows the programs evaluated in PACE. Each program-specific evaluation included an implementation study that examined the design and operation of the program and enrolled students' participation patterns, and an impact study that used an experimental design to measure differences in educational and employment outcomes between individuals randomly assigned to a group that could receive services from the PACE program (treatment group) and a group that could not but could participate in other services in the community (control group).[1] Program impacts were measured 18 to 24 months following random assignment, depending on the program.

- **Bridge to Employment in the Healthcare Industry**, San Diego Workforce Partnership, San Diego, CA*
- **Carreras en Salud,** Instituto del Progreso Latino, Chicago, IL
- **Health Careers for All**, Workforce Development Council of Seattle-King County, Seattle, WA*
- **Integrated Basic Education and Skills Training (I-BEST) program** at three colleges (Bellingham Technical College, Whatcom Community College and Everett Community College), Washington State
- **Pathways to Healthcare**, Pima Community College, Tucson, AZ*
- **Patient Care Pathway Program**, Madison College, Madison, WI
- **Valley Initiative for Development and Advancement (VIDA)**, Lower Rio Grande Valley, TX
- **Workforce Training Academy Connect**, Des Moines Area Community College, Des Moines, IA
- **Year Up** (Atlanta, Bay Area, Boston, Chicago, National Capital Region, New York City, Providence, Seattle)

* Funded by the Health Profession Opportunity Grants (HPOG) Program.

Key Findings

- ***Recruitment presented challenges for almost all programs.***

Most programs aimed to recruit and randomly assign 1,000 study participants equally between the treatment group and the control group. In order to do this, programs had to increase the volume of applicants. Programs that succeeded in meeting their targets shared certain practices, including proactive and ongoing discussions with key referral partners, testing new recruitment methods, and carefully tracking referral sources and investing in methods that appeared to work.

- ***Programs had the most flexibility to design and implement basic skills bridge programs.***

Programs that offered their own basic skills programs or integrated basic skills into occupational training could incorporate contextualization, active learning techniques (e.g., group projects), flexible class times, and compressed schedules. In contrast, there were fewer examples of innovative approaches to occupational training. Most often, programs used

[1] Random assignment ensures that the treatment and control groups will be alike in their observed and unobserved characteristics and that any systematic differences in their outcomes can be attributed to the treatment group having access to program services.

standing college courses for occupational training, which were heavily lecture-based and rarely contextualized.

- ***Programs offered but generally did not mandate advising.***

All programs offered academic and non-academic advising. Some programs used different staff to advise on academic and non-academic issues with the goal of specializing; in others the same advisor was the point person for all topics. Most programs had a recommended number of advising sessions (e.g., once per week, three times per semester), but only two programs mandated attendance in advising sessions. In these programs, failure to attend could lead to removal from the program.

- ***Financial support, when provided, largely focused on support for training.***

Three programs provided training at no cost to participants; others provided Individual Training Account vouchers or scholarships, or funding to fill the gap between existing financial aid and the cost of the program. Other programs helped students apply for financial aid. Less common was financial support for non-academic issues. Three programs funded by the ACF Health Profession Opportunity Grants Program could authorize a specified amount of funds for supports, such as assistance with transportation and childcare. One other provided a weekly stipend to participants. A few programs had funds for one-time emergencies. All programs made referrals to community social services partners as needed.

- ***Services to connect program participants to employment generally consisted of topical workshops.***

Most programs offered end-of-course job readiness classes to prepare participants for their job searches. Those that did not cited as the reason the expectation that participants would continue their education and not seek employment. Few programs provided employment counseling or job development. In-program experiential learning was generally limited to healthcare training courses. Only one program had a required six-month full-time internship.

- ***Programs had high levels of enrollment in education and training.***

Eight of the nine programs had positive and significant impacts on ***enrollment in education and training***, ranging from 12 percent (eight percentage points) to 43 percent (23 percentage points). The proportion of treatment group members who enrolled in education and training ranged from 50 percent to 80 percent.

- ***Programs increased receipt of other key career pathways services, yet fewer than half of treatment group members received many services.***

Seven programs had a statistically significant impact on receipt of ***career counseling***, ranging from 33 percent to doubling it. The proportion of treatment group members who engaged in career counseling was relatively low, ranging from 20 percent to 59 percent.

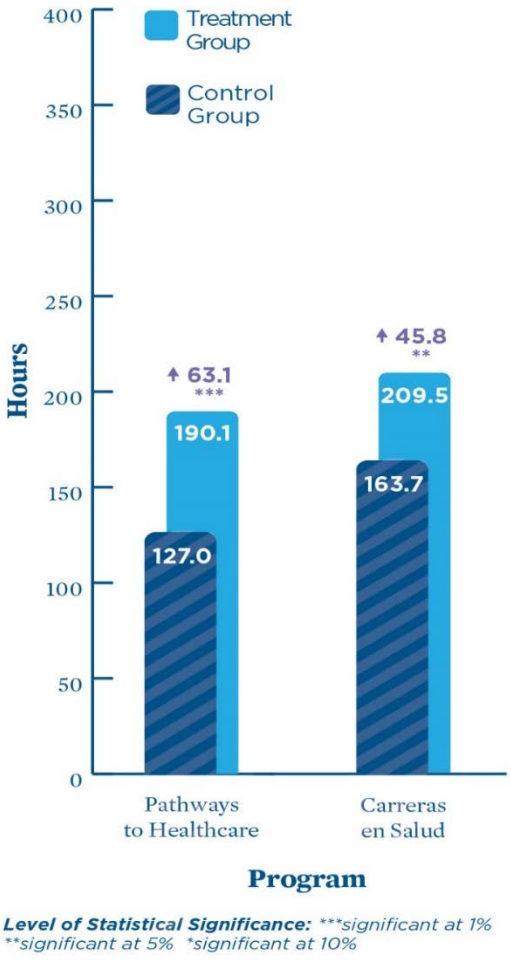
Seven programs had statistically significant impacts on ***assistance arranging supports*** for school, work, or family, ranging from 76 percent to almost tripling. The proportion of treatment group members who reported help arranging supports was low, ranging from 14 percent to 44 percent.

Finally, eight programs had statistically significant impacts on receipt of ***job placement or job search services***. For seven of these programs, the impact was positive, ranging from an increase of 23 percent to 236 percent. For one program the impact was negative; treatment group members were 50 percent less likely than those in the control group to receive job placement or job search services. Across the programs, the proportion of treatment group members engaging in this service ranged from a low of 15 percent to a high of 62 percent.

- ***Seven programs had a significant impact on their confirmatory outcome.***

Most programs in PACE seem to be on track to achieving their long-term goals. Each program's confirmatory outcome was based on its theory of change and was selected to gauge early success (18 to 24 months post random assignment) of the program.

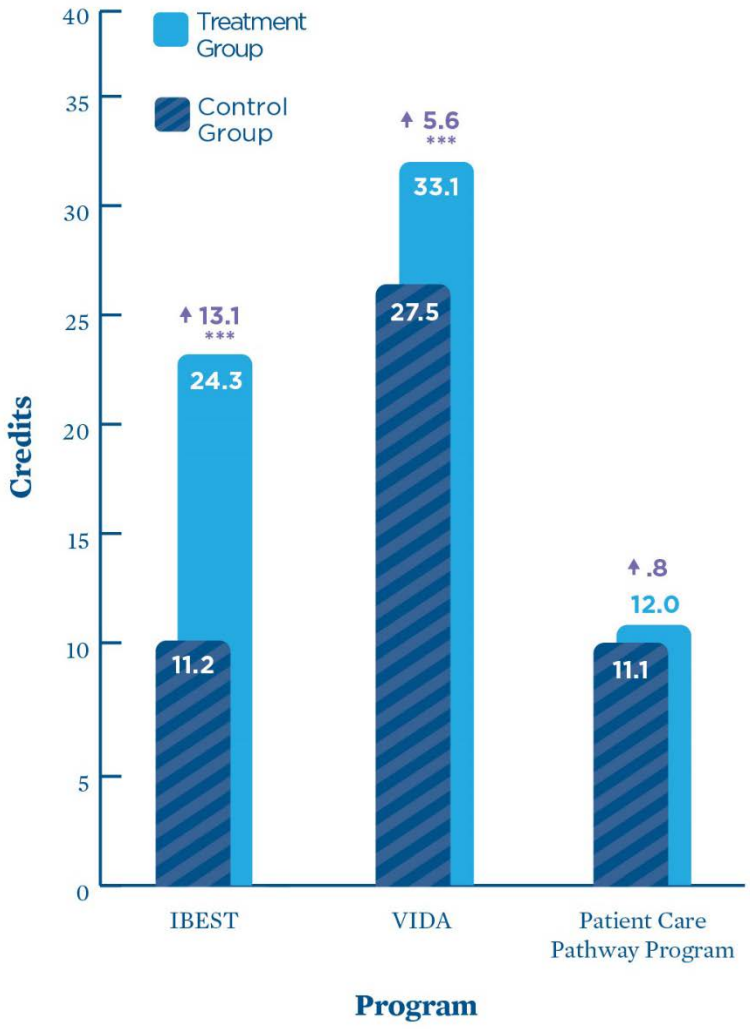
Exhibit ES-1: Impacts on Amount (Hours) of Education and Training



For eight programs, the confirmatory outcome was education-related. As Exhibit ES-1 shows, for two programs the confirmatory outcome was ***hours of education and training***. Both programs had positive, statistically significant impacts, ranging from 46 hours to 63 hours. These represent increases of 28 percent and 50 percent, respectively.

For three programs, the confirmatory outcome was ***credits earned***. As Exhibit ES-2 shows, two of these programs had positive, statistically significant impacts on credits earned, ranging from six credits to 13 credits. These represent increases of 20 percent and 117 percent, respectively.

Exhibit ES-2: Impacts on Credits Earned

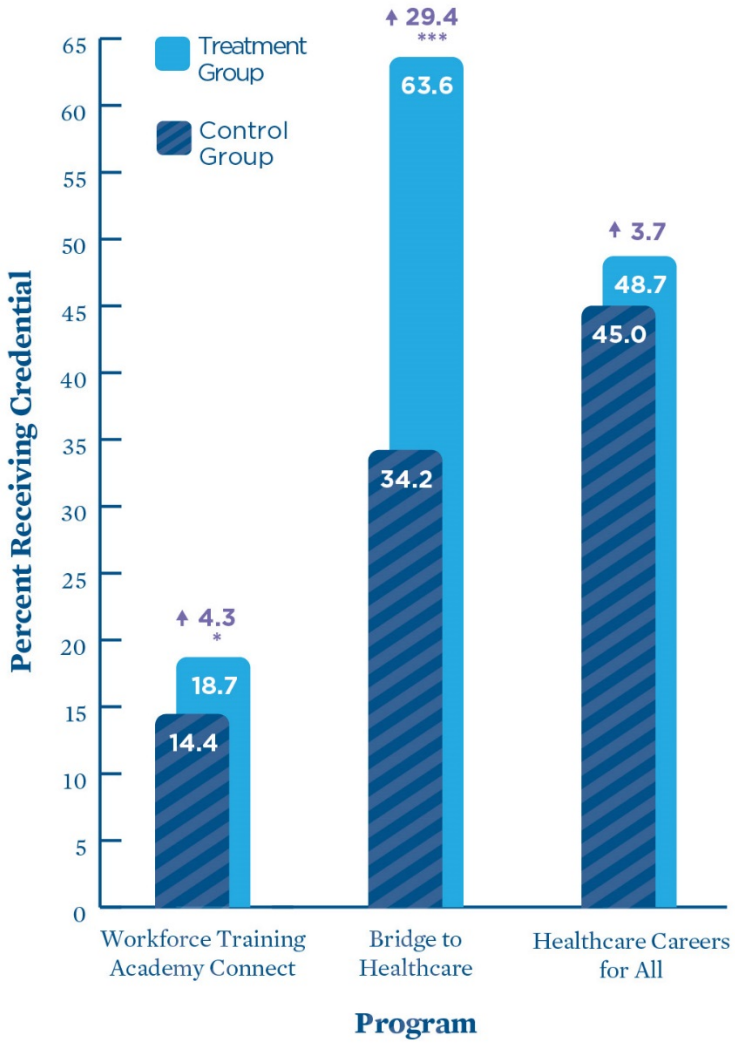


Level of Statistical Significance: ****significant at 1% **significant at 5% *significant at 10%*

For three programs, the confirmatory outcome was ***receipt of credentials***. As Exhibit ES-3 shows, two programs had positive, statistically significant impacts on credentials, ranging from

30 percent and 86 percent. These represent increases of four percentage points and 29 percentage points, respectively.

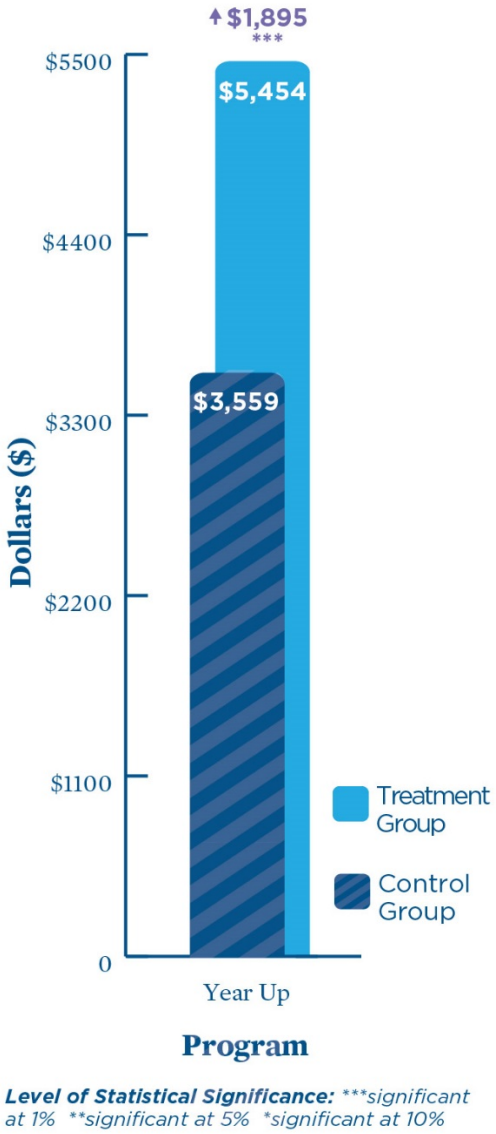
Exhibit ES-3: Impacts on Credentials Earned



Level of Statistical Significance: ****significant at 1% **significant at 5% *significant at 10%*

Finally, impact on ***earnings*** was the confirmatory outcome for one program. As Exhibit ES-4 shows, the program had a positive, statistically significant impact of about $1,900, or 55 percent.

Exhibit ES-4: Impacts on Earnings



Next Steps in the PACE Evaluation

Future PACE reports will cover an "intermediate" 36-month follow-up period. These reports will take a more systematic look at programs' effects on participants' economic outcomes, including employment outcomes (e.g., average rate of employment and average earnings) and job characteristics (e.g., receipt of benefits and career progress). Additional PACE reports will cover a 72-month follow-up period and will estimate "long-term" effects of the programs.

I. The PACE Evaluation

PACE evaluated the effectiveness of nine career pathways programs. Funded by the Office of Planning, Research, and Evaluation within the U.S. Department of Health and Human Services, Administration for Children and Families (ACF), PACE was the first large-scale, multi-site experimental evaluation of career pathways programs. This section describes the policy and research context and the PACE evaluation design.

A. Policy and Research Context

The share of jobs that requires at least some college continues to grow. By one estimate, 65 percent of all jobs in 2020 will require postsecondary education. Moreover, more than 90 percent of jobs in the occupations projected to grow the fastest, including healthcare professionals, technical positions, and science, technology, engineering, and mathematics (STEM)-related jobs, will require postsecondary education and training (Carnevale, Smith, and Strohl 2013). Yet millions of adults lack the postsecondary credentials needed to obtain these jobs and others that provide good wages and pathways to advancement. Many low-income adults face challenges to postsecondary education enrollment and completion, including limited basic academic skills, negative previous experiences with school and lack of college role models, work and family demands on time, difficulty affording school, and stress and other issues associated with poverty. At a broader level, many postsecondary education systems are not geared towards low-income adults and other non-traditional students.

Many policymakers, practitioners, and researchers are looking to career pathways as a framework to improve the education and earnings of these adults. Though definitions of career pathways programs vary, PACE defines them as programs that provide postsecondary education and training that is organized as a series of manageable steps leading to successively higher credentials and employment opportunities in growing occupations. Each step is designed to prepare individuals for the next level of employment and education and provide a credential with labor market value. To effectively engage and retain participants and to facilitate learning among a diverse population, career pathways programs integrate varying combinations of four components: academic and non-academic assessment; innovative approaches to basic skills and occupational training; academic and non-academic supports; and connections to employment during or after the program (Fein 2012).

There is some research evidence on selected components of career pathways programs, but prior to PACE there was no rigorous research on the overall effectiveness of this approach. PACE is a random assignment evaluation of nine programs that have elements of the career pathways framework. Box 1 shows the nine programs included in the study.

All programs included multiple components of the career pathways framework. Three of the programs were funded by the Health Profession Opportunity Grants (HPOG) Program (denoted in Box 1 with an asterisk).[2] The nine programs combined these career pathways strategies in different ways depending on the mid- and long-term goals of their program and target population.

Box 1. Programs in PACE

- **Bridge to Employment in the Healthcare Industry (BTH)**, San Diego Workforce Partnership, San Diego, CA*
- **Carreras en Salud (CES)**, Instituto del Progreso Latino, Chicago, IL
- **Health Careers for All (HCA)**, Workforce Development Council of Seattle-King County, Seattle, WA*
- **Integrated Basic Education and Skills Training (I-BEST) program** at three colleges (Bellingham Technical College, Whatcom Community College and Everett Community College), Washington State
- **Pathways to Healthcare (PTH)**, Pima Community College, Tucson, AZ*
- **Patient Care Pathway Program (PCPP)**, Madison College, Madison, WI
- **Valley Initiative for Development and Advancement (VIDA)**, Lower Rio Grande Valley, TX
- **Workforce Training Academy Connect (WTAC)**, Des Moines Area Community College, Des Moines, IA
- **Year Up** (Atlanta, Bay Area, Boston, Chicago, National Capital Region, New York City, Providence, Seattle)

* Funded by the Health Profession Opportunity Grants (HPOG) Program.

B. PACE Evaluation Design

PACE was designed to produce rigorous evidence about the effectiveness of career pathways approaches that could inform the efforts of federal, state, and local policymakers and practitioners. PACE used an experimental evaluation design: eligible applicants were randomly assigned to either a treatment group allowed to access the program or a control group that could not access the program but could access other available services in the community.[3]

The estimates of a PACE site's impact are best understood as a comparison between the program model and "business as usual" in the local community.

A theory of change based on the career pathways framework guided each program's implementation and impact study. In doing so, it

[2] Programs funded by the HPOG Program provided 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 were expected to either experience labor shortages or be in high demand. In Fiscal Year 2010, ACF made $67 million in grant awards to 32 entities. These demonstration projects were intended to address the shortfall in the supply of healthcare professionals in the face of expanding demand and the increasing requirement for a postsecondary education to secure a well-paying job. Grant funds could be used for training and education as well as supportive services such as case management, childcare, and transportation. For additional information on the HPOG Program, go to https://www.acf.hhs.gov/ofa/programs/hpog. The three HPOG-funded programs in PACE were also included in the HPOG Impact Study.

[3] See Abt Associates (2014) and Abt Associates (2015) for the *PACE Evaluation Design Report* and *PACE Impact Analysis Plan*, respectively.

identified which aspects of the program were expected to affect outcomes and the time horizons for the programs' expected effects, informing the identification of key intermediate and longer-term outcomes. See **Appendix A** for the PACE theory of change, which was tailored to each program.

The PACE implementation studies described and documented the design and operations of each of the nine PACE programs, including when operations departed from the plan. Implementation findings provide contextual information for understanding and interpreting the impact estimates. Moreover, lessons learned from sites' implementation experiences can guide future program design. Box 2 lists the implementation study research questions.

Box 2. Implementation Study Research Questions

- What is the intended program model? What is its institutional and community context?
- What intervention was actually implemented? Did it deviate from plans or expectations?
- Could programs increase recruitment for purposes of a control group and a larger treatment group?
- What were the treatment group's participation patterns and experiences with program services? Did programs engage them in services?
- What are the differences in services, including training, received by treatment and control group members?

The impact study used a randomized experiment to assess the education, training, and early employment effects of each program. The study team aimed to randomly assign at least 1,000 study participants per site, equally between the treatment and control groups.[4] For each program, the study team used the program's theory of change to identify a central "confirmatory" outcome. This measure is an indicator of whether programs at approximately 18 months after random assignment were on track towards longer-term goals. For eight programs, the confirmatory outcome was education-related; for one, it was employment-related. Additional impact study research questions, listed in Box 3, were common across all nine programs and were intended to generate secondary evidence on program effectiveness that could be used to guide future research. **Section III: Short-Term Impacts** provides more information on selection of outcomes.

Key data sources for the program-specific implementation and impact studies were multiple rounds of site visits to interview staff and observe programs; participant surveys conducted prior to random assignment and approximately 18 months after random assignment; program

[4] Two programs (PCPP and I-BEST) did not meet their random assignment targets. One program (CES) met its revised, lower (800) target. One program (HCA) had a lower target (650) because there were limited slots remaining for treatment group members once the program joined the study. One program (Year Up) had a larger sample (2,500) across eight program sites and a 2:1 treatment/control ratio.

administrative records, including college records when available; National Student Clearinghouse data; and for one program, National Directory of New Hires quarterly earnings data.

Box 3. Impact Study Research Questions

- What were the effects of the program on:
  - Educational attainment, including hours of occupational training and basic skills instruction received, receipt of credentials, and other educational outcomes?
  - Entry into career-track employment, higher-wage jobs, earnings, and perceptions of career progress?
  - Income and material hardship?
- To what degree did the program affect intermediate outcomes in the theory of change, such as:
  - Confidence in career knowledge and access to career supports?
  - Psycho-social skills such as grit, academic self-confidence, core self-evaluation, and social belonging at school?
  - Life stressors, such as financial hardship, life challenges, and perceived stress?

C. Overview of Programs in the PACE Evaluation

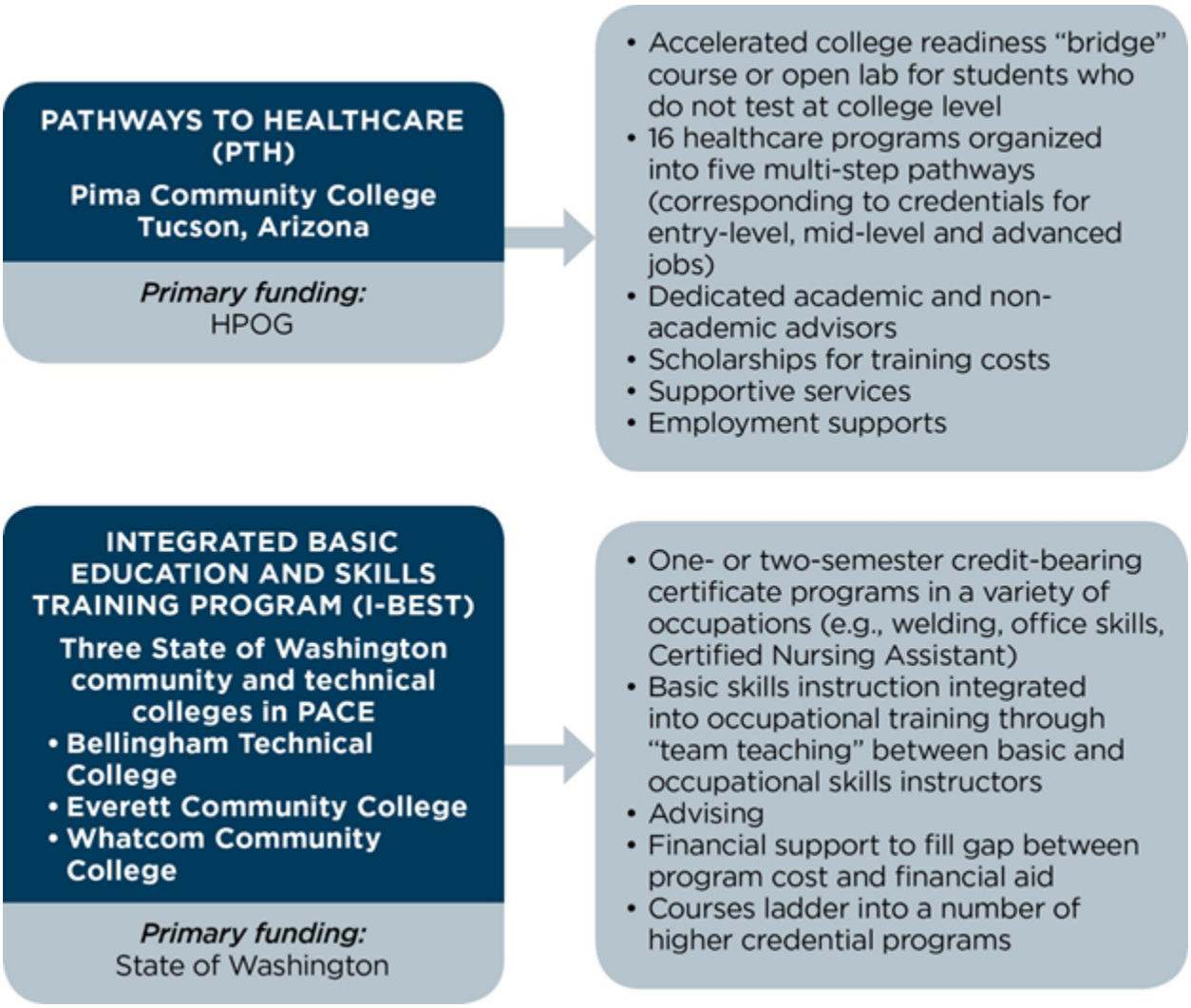
The PACE study team recruited nine programs providing postsecondary occupational training opportunities that incorporated key elements of the career pathways framework. To be considered for the evaluation, a program had to meet three criteria: (1) its program design was promising and included a number of career pathways framework elements; (2) it was able to recruit a sufficient sample for the treatment and control groups; and (3) it was able and willing to implement random assignment effectively. At ACF's request, three of the nine programs were to be HPOG grantees. The HPOG-funded programs were Bridge to Employment in the Healthcare Industry, Health Careers for All, and Pathways to Healthcare. As well, Carreras en Salud was a sub-grantee to an HPOG program grantee not included in PACE.

Although all programs met these criteria, they differed considerably in their design. The nine programs can be grouped into the following clusters:

Multi-step college-based programs that span basic skills remediation through multiple, stackable credentials

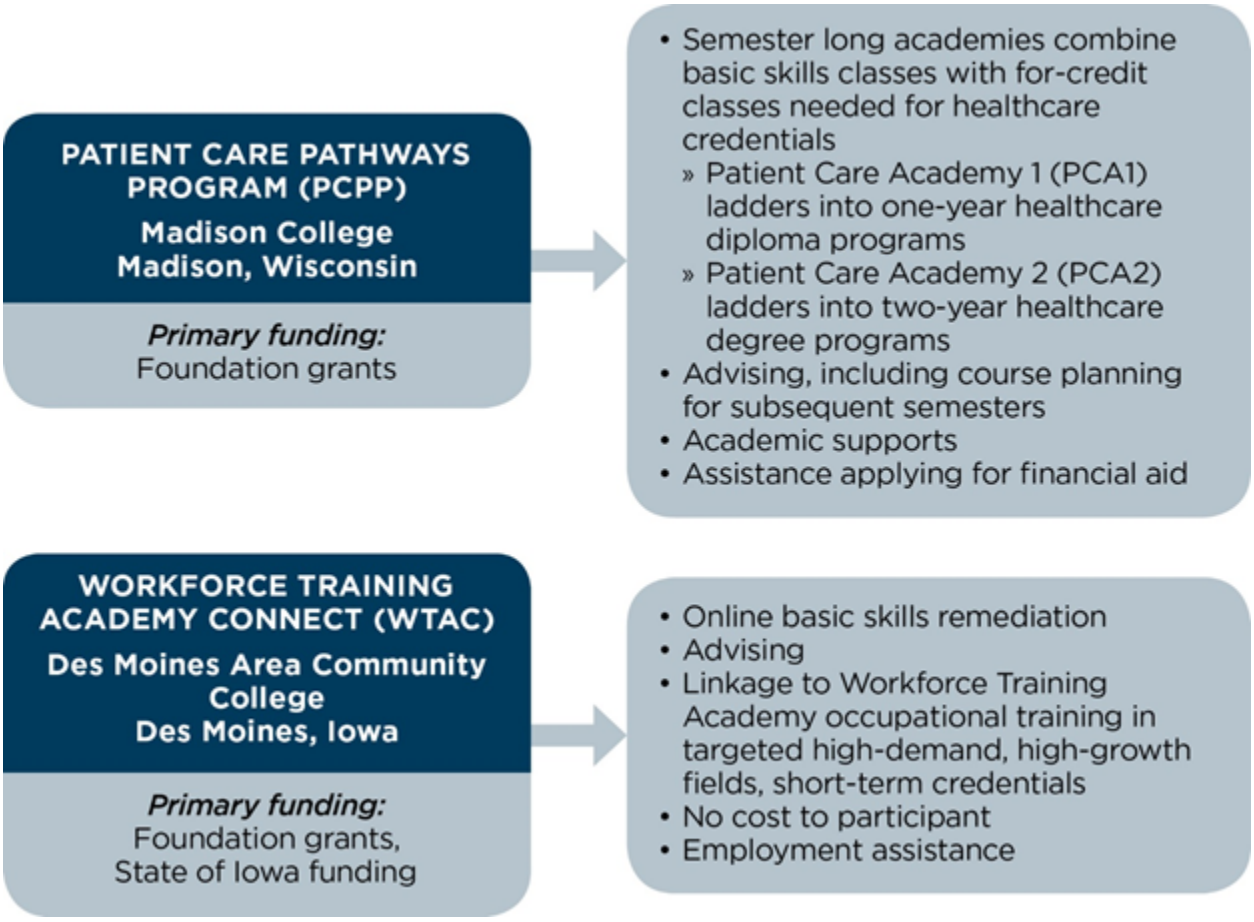
Pima Community College's Pathways to Healthcare (PTH) program and Washington State's Integrated Basic Education and Skills Training (I-BEST) program include multiple pathways that enable students to earn one or more stackable credentials. All PTH programs were healthcare related, whereas I-BEST programs involved pathways in many occupations, including healthcare, welding, and office services. PTH included accelerated basic skills remediation for those who did not test high enough to enter occupational training directly. I-BEST targeted students who tested too low to enter college courses; as such, basic skills remediation was part

of the first step on the pathway for all its students. Both programs provided academic and non-academic supports, including advising and financial assistance.



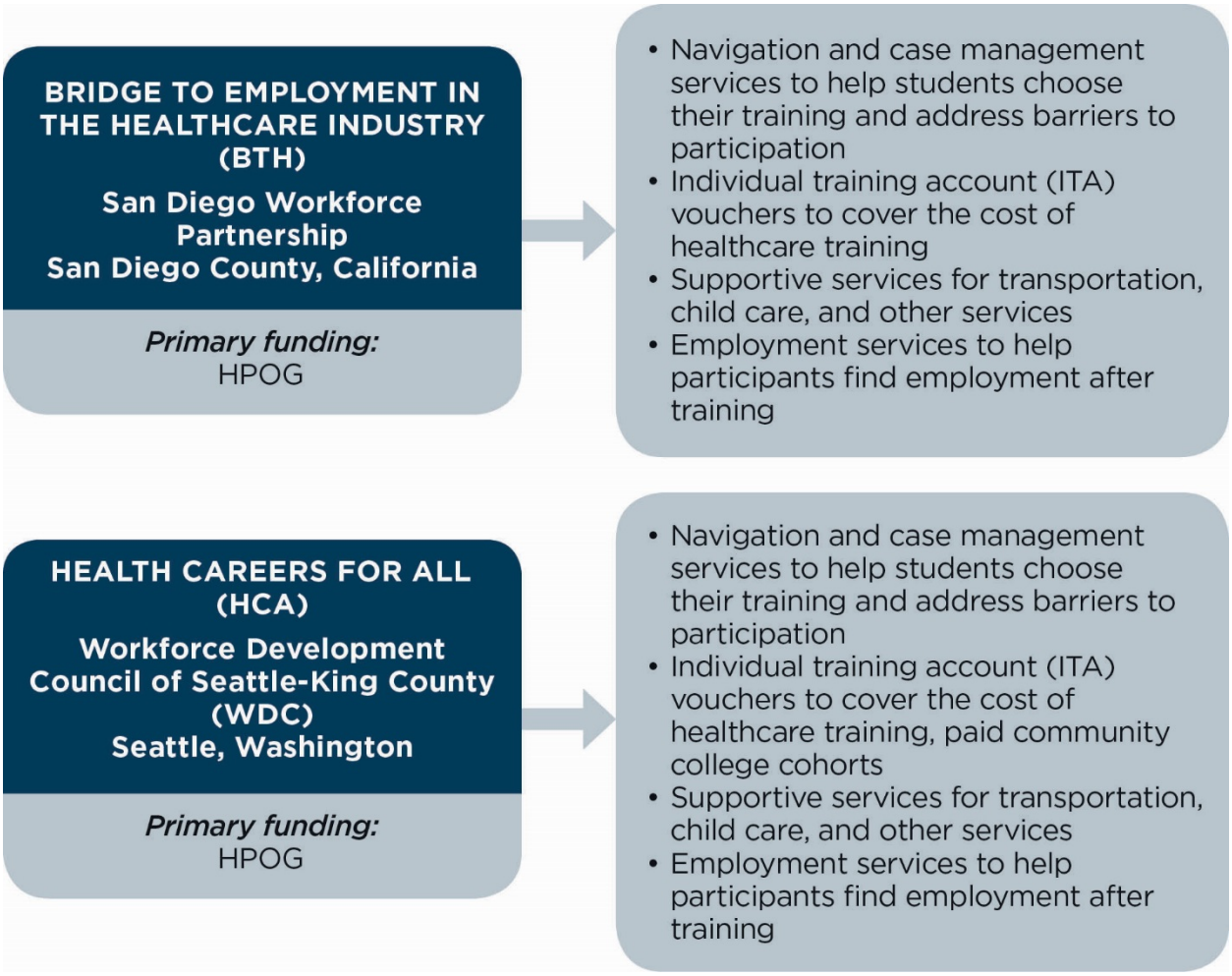
Short-term college-based programs focused on accelerated basic skills remediation to prepare for occupational training

The Patient Care Pathway Program (PCPP) at Madison College and Workforce Training Academy Connect (WTAC) at Des Moines Area Community College focused on remediating students' basic skills to prepare for occupational training. After improving their math and reading skills, WTAC participants enrolled in occupational certificate courses in high-growth, high-demand sectors at the Workforce Training Academy. PCPP's academies (Patient Care Academy 1, Patient Care Academy 2) aimed to help students improve their basic skills concurrently with enrollment in for-credit occupational training courses, with the goal of transitioning into a one-year diploma program (PCA1) or a two-year degree program (PCA2). In both programs, an advisor worked with students to identify potential barriers to success and coordinate academic and non-academic supports.



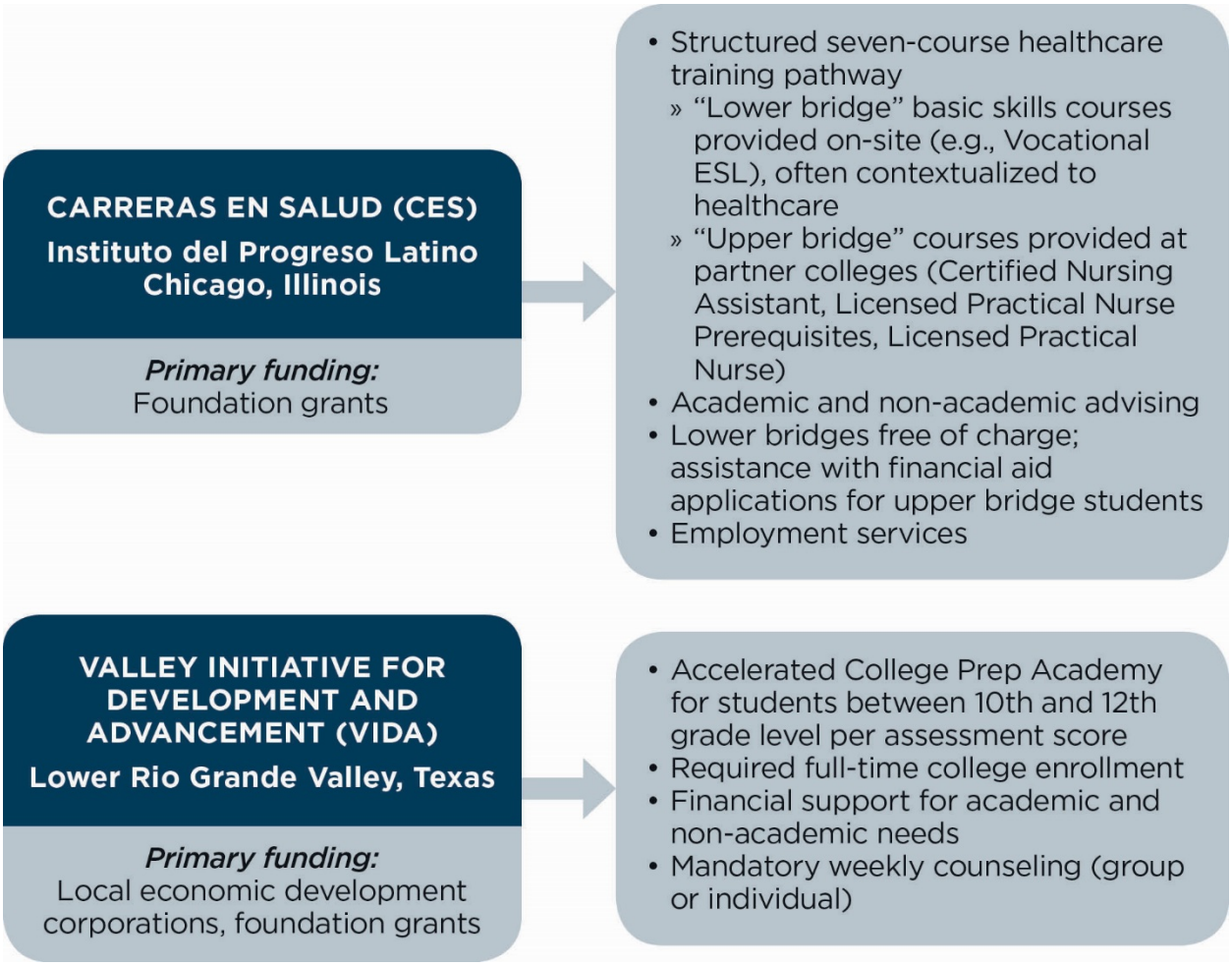
Workforce Investment Board (WIB)-based programs that provided Individual Training Accounts (ITAs) and supports

San Diego Workforce Partnership's Bridge to Employment in the Healthcare Industry (BTH) program and the Workforce Development Council of Seattle-King County's Health Careers for All (HCA) program provided assistance for training and related supports to enable participants to attend the healthcare program of their choice. Both programs supported multiple trainings in health occupations. For example, HCA participants could enter training at the foundation level (basic skills), entry level (e.g., Certified Nursing Assistant), or advanced level (e.g., Licensed Practical Nurse). BTH participants could seek a second training in one of three general occupational areas (patient care, technical or administrative). Participants received ITA vouchers to support training at an accredited private for-profit school or community college. HCA also purchased classes at local community colleges, which allowed its students to enroll in the program as a cohort. Both programs used community-based "navigators" to help guide participants in their selection of a training program and provider. Navigators also identified barriers to program participation and supports to address those barriers. Both programs provided job search assistance.



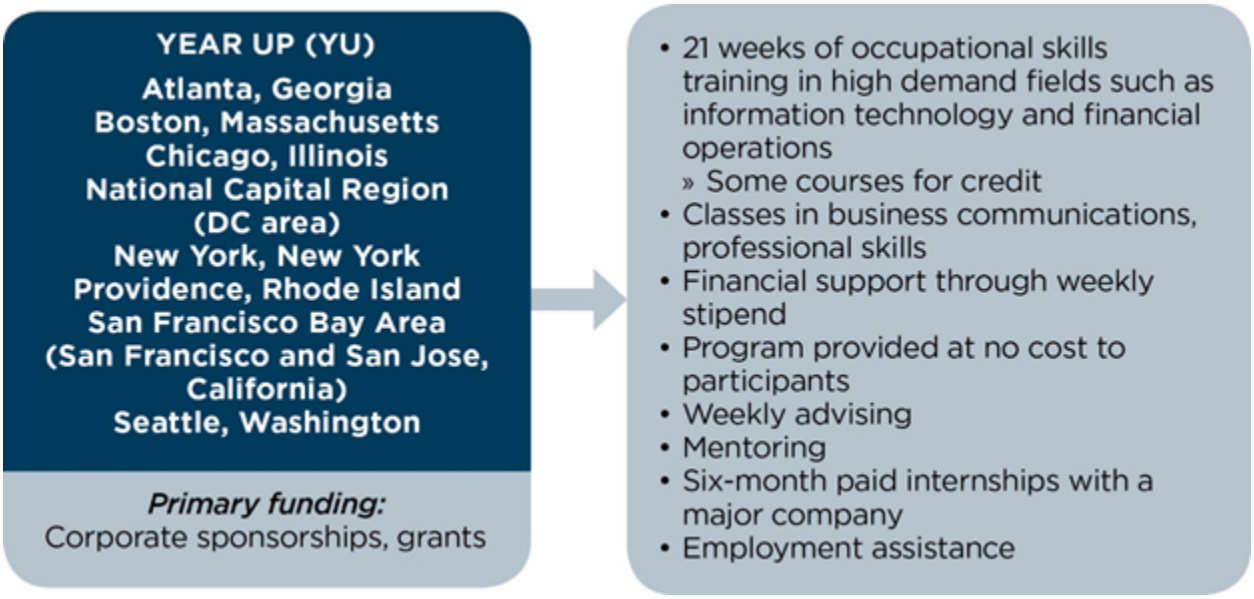
Community-based organizations that provided intensive academic and non-academic supports in addition to occupational training

Both Instituto del Progreso Latino's Carreras en Salud (CES) program and the Valley Initiative for Development and Advancement (VIDA) supported participants through high-level postsecondary credentials (Licensed Practical Nurse/LPN and associate degrees, respectively). Both also had pre-occupational program steps for participants whose assessment scores were too low to enroll in college programs. CES's on-site "lower bridge" programs included three English as a Second Language (ESL) courses, whereas VIDA operated the College Prep Academy at a partner college. CES and VIDA both provided extensive advising to participants and financial support for training.



Significant single-step workforce training program

Year Up, a one-year program, combined 21 weeks of occupational training for careers in growing industries with full-time, six-month internships. Students received a weekly stipend, advising, and connections to other resources and supports to aid in program persistence. Following the program, they received assistance obtaining employment in the occupational area for which they trained.



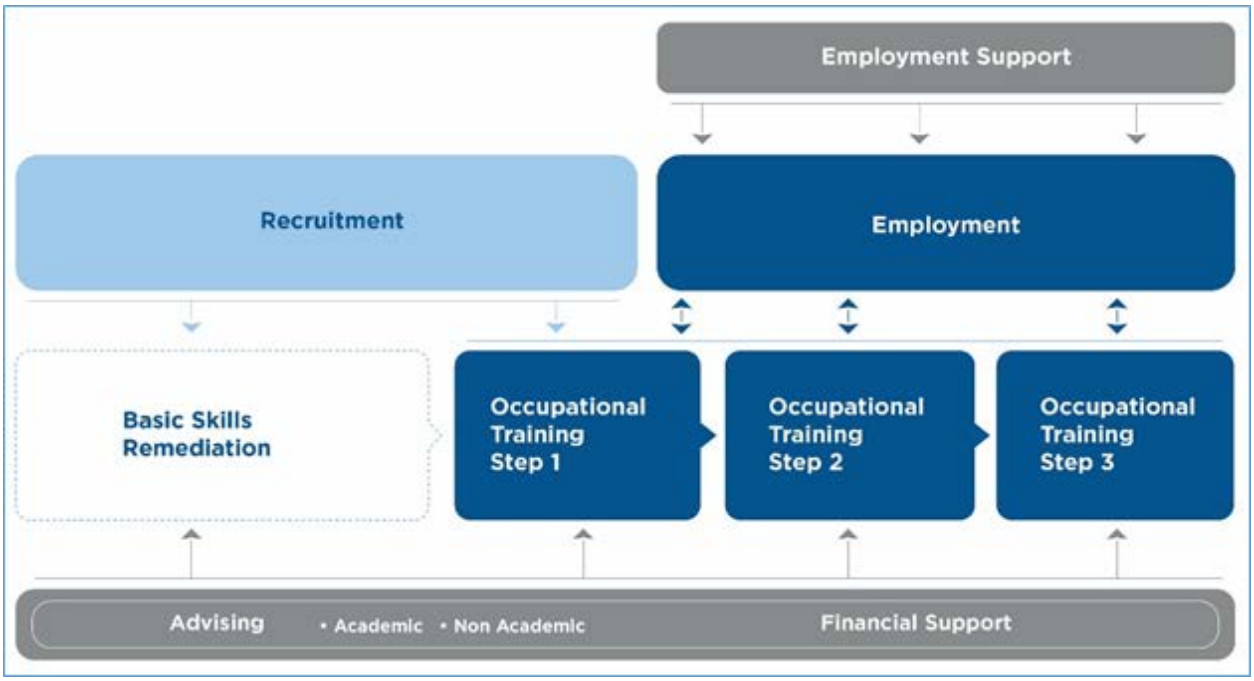
The program summaries demonstrate the variation in programmatic approaches. The WIB-based programs used a consumer choice model in which program staff helped guide students, but did not recommend particular training courses or institutions. Though these programs offered multi-step training opportunities, they generally focused on quick job placement after obtaining a credential.[5] The community college–based programs incorporated developmental education into their pathways, targeting a larger range of skill levels than did traditional skilled-occupations training. College-based programs varied in whether employment or further education was the intended step following a credential. Community colleges with strong workforce partnerships tended to focus on employment, whereas others focused on the next step of the pathway. Programs hosted by community-based organizations varied in their short-term goals.

[5] HCA entered the PACE Evaluation midway through its HPOG grant period. In addition to providing ITA vouchers to support training at an institution of choice, the program funded foundational (basic skills) and advanced (LPN) training cohorts at community colleges. During its time in the study, HCA offered two college cohorts: a foundational cohort "Introduction to Healthcare Careers" and a nursing cohort. The vast majority of treatment group members in PACE who attended training used an ITA voucher to attend a short-term training course such as CNA.

Regardless of the program model's short-term priority, completers of all programs could return for additional training on the next step of the pathway.

Exhibit I.1 further shows how the programs in PACE could vary. Programs targeted and recruited different populations. They varied as to the inclusion of basic skills remediation as part of the pathway and whether they were incorporated directly into occupational training. They differed in terms of the number of occupational steps on the pathway. And they varied with regard to services provided to participants, including academic and non-academic advising, financial assistance, and employment supports. Each area is discussed further below.

Exhibit I.1: Areas of Program Variance



Whom did PACE programs recruit?

- ***PACE career pathways programs recruited a variety of target populations consistent with their models. There is no "one size fits all" target participant, but programs generally sought to enroll low-income and low-skilled adults.***

By design, all of the programs targeted ***low-skilled*** individuals. CES focused on low-skilled bilingual Latinos with English reading levels as low as fourth grade. WTAC applicants also had low skill levels (seventh to eighth grade). The other programs primarily targeted those whose assessment test scores were too low for college entry, but above a certain threshold. VIDA and PTH did not target low-skilled individuals exclusively, but had accelerated remediation classes available for students who needed them.

Almost all programs targeted ***low-income*** individuals, and those that did not explicitly target applicants based on their income did in fact recruit them. This included all three HPOG-funded

programs (BTH, HCA, and PTH), which defined "low-income" in terms of Temporary Assistance for Needy Families (TANF) cash assistance receipt and/or a threshold of the federal poverty level. VIDA sought participants who were low income, unemployed, underemployed, or on public assistance. Year Up targeted low-income young adults. WTAC also targeted low-income students, as well as those who were not low-income but had other barriers to employment, such as skills deficiencies, criminal records, or inconsistent work histories. Although they did not specifically target low-income students, I-BEST and PCPP enrolled many in the study, according to data collected on the Basic Information Form (BIF) administered to study participants prior to random assignment.

The HPOG-funded programs, as well as CES and PCPP, sought applicants with an ***interest in healthcare***. Only Year Up targeted a specific ***age group*** (young adults ages 18 to 24). Others did not target a specific age group, but generally expected students would be non-traditional college age (i.e., 25 or older). Finally, one program targeted a specific ***demographic group***. CES focused on training bilingual English/Spanish healthcare workers. Other programs (PTH and VIDA) had a large proportion of Hispanic students by virtue of their location (southern Arizona and southern Texas, respectively).

Study data documented the variation in demographic characteristics and educational background at enrollment. (See **Appendix B: Study Participant Characteristics** for details.)

Across all programs, about half of study participants were non-traditional college age. The proportion ranged from less than one percent for Year Up to more than 75 percent for HCA and PTH. In eight of the nine programs, most study participants were female. The proportion ranged from a low of 41 percent (Year Up) to more than 80 percent at BTH, HCA, PCPP, and PTH, to a high of 93 percent at CES. The proportion of participants who had children at the time of study entry ranged from nine percent (Year Up) to 56 percent (PTH); the average across programs was 34 percent.

There was also considerable variation in participant race and ethnicity. Across all programs, 45 percent of study participants identified as Hispanic or Latino. In two programs (CES and VIDA) almost all participants identified as Hispanic or Latino (99 percent and 96 percent, respectively), whereas the proportion identifying as Hispanic was lowest at PCPP (nine percent) and HCA (13 percent). The proportion of participants identifying as non-Hispanic black ranged from less than one percent at CES to 54 percent at Year Up, whereas the proportion identifying as non-Hispanic white ranged from less than one percent (CES) to 67 percent (PCPP). The across-program averages were 28 percent and 21 percent, respectively, identifying as non-Hispanic black and non-Hispanic white.

Study participants also varied by educational background at the time of study entry. Across programs, about 10 percent reported their highest level of education completed was less than high school. This proportion varied from a low of less than one percent at VIDA and Year Up

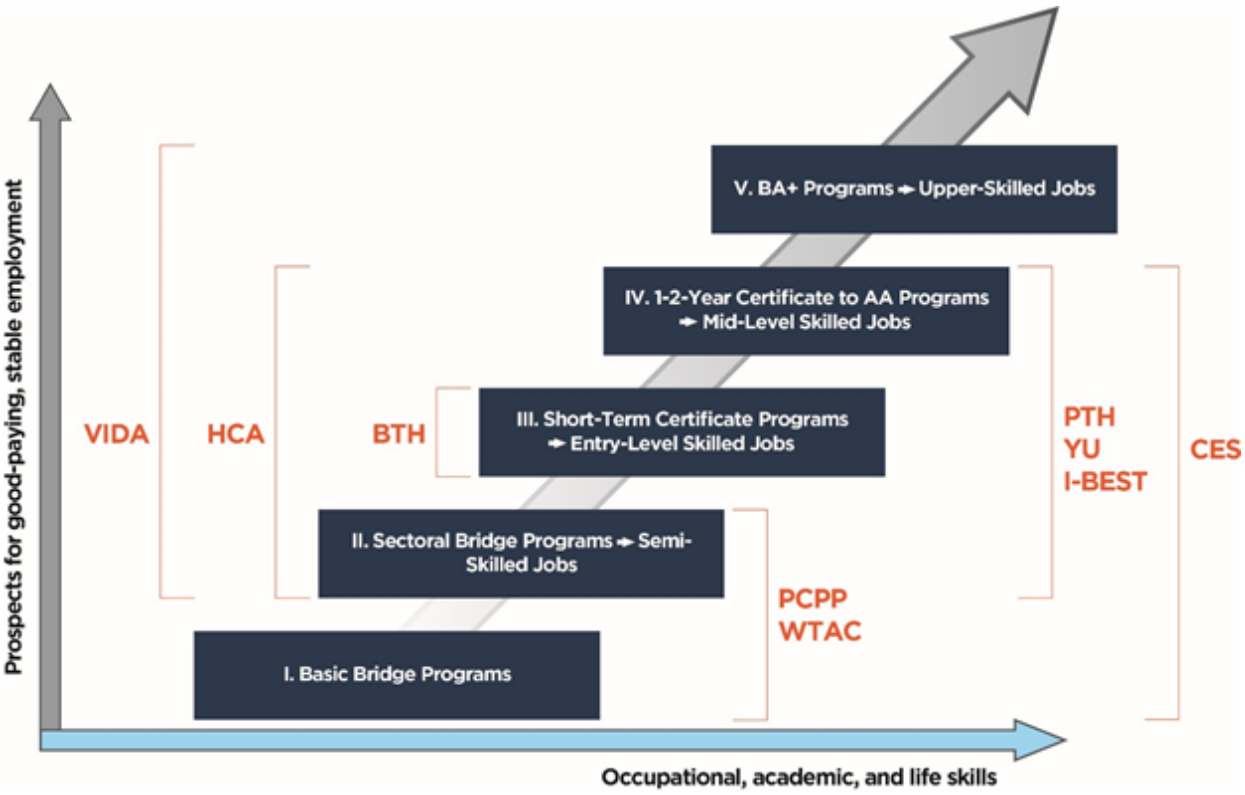
(both programs required applicants to have a high school diploma or equivalent) to a high of 40 percent (WTAC). The largest share of participants reported having a high school diploma or GED (41 percent across programs), whereas 17 percent reported having earned less than a year of college credit and 24 percent reported having earned more than a year of college credit.

How many and what types of basic skills and occupational trainings were available?

- ***CES had the longest pathway. College-based programs generally had multi-step pathways, whereas WIB-based programs generally focused on one step, possibly followed by further education at a later time.***

As **Exhibit I.2** below shows, PACE programs varied in terms of the number of training steps and credentials available. The bottom two steps (I and II in the exhibit) represent so-called "on ramp" and "bridge" programs, designed to prepare low-skilled participants for college-level training and lower-skilled jobs with a career focus. Basic skills levels differentiating these two steps vary across programs but generally correspond to the sixth-to-eighth-grade and ninth-to-11th-grade ranges, respectively. The next two steps (III and IV) provide college-level training for so-called "middle skills" employment—that is, jobs requiring some college but less than a bachelor's degree (e.g., an associate degree or shorter certificate). The final level (V) includes programs promoting completion of bachelors' degrees and more-advanced credentials.

Exhibit I.2: Career Pathways Steps, by Program



CES had the longest potential career path, with participants able to enter at the ESL level and advance to an LPN degree. CES includes "lower bridges" that were offered on site and prepare participants for occupational courses, and "upper bridges" that were held at partner colleges. The multi-step college programs (I-BEST and PTH) started at the sectoral bridge level (II) and included multiple steps through an associate degree (IV).

Participants in the WIB-based programs generally started at the short-term credential step. For example, BTH participants entered at level III. Participants could return at a later time to seek additional credentials, but most sought employment. During the PACE study, most HCA participants entered at level III; however, the program also included foundational training and LPN cohorts,[6] and provided support for participants to move into and complete college-level pre-requisite coursework for more advanced training, and thus had the longer pathway of the two programs. The college-based bridge programs (PCPP and WTAC) started at the basic bridge level (II). Both programs focused on a single step, but laddered into additional training; in the case of PCPP, a one-year healthcare diploma or two-year healthcare degree program was the next step, depending on which academy the participant completed. WTAC participants entered the Workforce Training Academy, where they could obtain short-term credentials. They could then enter additional training programs at Des Moines Area Community College or seek employment.

VIDA focused on longer-term, higher pathway steps with an associate degree as the primary credential, although it also supported one-year certificate programs. In addition, VIDA operated a 16-week accelerated academic bridge program for individuals testing at 10th grade or higher, but not yet qualified for college credit courses. Year Up participants could receive short-term credentials, but it was not a primary goal of the program.

Programs also varied in the types of training available. Several focused exclusively on healthcare-related occupations. This included the three HPOG-funded programs (BTH, HCA, and PTH), as well as CES (an HPOG sub-grantee) and PCPP. The other programs focused on several different occupational areas, including welding, electrical, healthcare, and administrative support (I-BEST and WTAC); healthcare, manufacturing, and technology (VIDA); and information technology and financial services (Year Up).

[6] As noted above, HCA funded foundational and advanced training cohorts at community colleges. Few of these cohorts, however, were included in the PACE Evaluation due to the timing of the cohorts relative to the entry of HCA into the study.

What services did programs include?

- ***Regardless of affiliation, programs most often incorporated promising instructional approaches and least often included connections to employment.***

Exhibit I.3 shows that programs varied in their use of instruction, supports, and connections to employment. A hollow circle indicates the program included the component. A filled-in circle indicates the program emphasized the component. As shown, programs were more likely to emphasize instruction and supports than employment connections.

Section II of this paper describes implementation in more detail.

Exhibit I.3: Overview of PACE Program Components

Component	Program								
	BTH	CES	HCA	I-BEST	PCPP	PTH	WTAC	VIDA	Year Up
Instruction									
Only for treatment group members									
Basic skills		●[a]	○	●	●	○	●	○	●
Occupational training		●[a]	○	●	●	○			●
Generally available occupational training									
Occupational training	●	●[b]	●	●		●	●	●	
Supports									
Academic supports	●	●	●	●	●	●	●	●	●
Non-academic supports	●	●	●	●	●	●		●	●
Financial assistance	●	●[a]	●	○		●	●	●	●
Connections to Employment									
Work experience during training[c]	○	○[b]	○	○		○		○	●
Employment services after training	○	○	○			○	○		○

KEY: ○=component included. ●=major emphasis.
NOTE: Circles indicate importance in each program's theory of change. They do not indicate relative intensity across programs. CES has provided lower bridge training in-house and upper bridge training through its college partners.
[a] Lower bridges.
[b] Upper bridges.
[c] Programs with a hollow circle are generally those in which healthcare trainings include a clinical component.
SOURCE: Implementation research

As shown, most programs incorporated basic skills education, generally as a primary focus (that is, most participants received the service). All programs provided occupational training, but differed as to whether the courses were available only to treatment group members (e.g., VIDA's basic skills college prep academy) or whether treatment group members attended courses open to students outside of the program (e.g., VIDA participants' enrollment in occupational training courses at partner colleges). All programs provided academic supports (e.g., tutoring), and most offered non-academic supports (e.g., referrals to services). One program emphasized employment connections.

II. Program Implementation: Largely as Planned, But With Challenges

This section focuses on programs' implementation of their services, noting where programs operated as planned and where they made changes during the study. The study team documented program implementation with regard to recruitment, innovative approaches to providing basic skills and occupational skills instruction, academic and non-academic advising, and connections to employment. This section also describes the extent to which the nature and levels of services received by the treatment groups across programs differed from those received by the control groups.

- ***Recruitment was challenging for almost all programs.***

As noted earlier, programs generally sought to enroll 1,000 study participants who would be randomly assigned equally between the treatment and control groups. All programs needed to increase marketing and recruitment efforts in order to create a control group. Some also needed to increase the size of their program, in order to serve 500 treatment group members during the approximately two-year study enrollment period. CES, for example, had to increase its applicant pool by two thirds in order to meet the study targets.

The study provided financial support to programs to boost recruitment for the study. Some programs used these funds for dedicated recruitment staff (e.g., PCPP and WTAC). In one instance the study team procured a recruitment technical assistance provider to help the program rethink branding to increase interest in its services (see Box 4 below on WTAC). Other programs used this funding to develop and pilot test recruitment materials (Year Up) and to assess recruitment channels to date and design new recruitment focal points (PCPP). Funds supported radio, television, and print advertisements across the sites. Some focused on Spanish language media (CES and VIDA), whereas others placed advertisements on social media and online job boards (Year Up). Foundation funding secured through PACE enabled programs to reach new target populations. VIDA, for example, previously served residents only in towns and cities in the Lower Rio Grande Valley of Texas that provided the program funding through their Economic Development Corporations or other entities. With PACE-linked foundation funds, VIDA could enroll residents of previously unserved parts of the Valley.

Despite the availability of funds to support new recruitment efforts, the most common sources of program applicants were word of mouth, "internal" referrals from within the organization, and referrals from community partners. CES, PTH, VIDA, and Year Up staff noted that their reputation in the community and previous program participants were the biggest referral sources. The I-BEST colleges received referrals from on-campus Adult Basic Education and ESL programs. As well, the program targeted applicants to occupational programs such as welding who did not attain the necessary basic skills assessment scores to enter training directly. Other

college-based programs similarly reported that on-campus referrals were a key source of program applicants.

Box 4. What's in a Name? Workforce Training Academy Connect's Rebranding Efforts

Des Moines Area Community College initially struggled to attract applicants to its Prepared Learner Program, a new program that mirrored the college's Workforce Training Academy (WTA) for students whose assessment scores were too low to enter the Academy directly.

Working with a PACE technical assistance provider, the program rebranded its name and logo. "Prepared Learner" evoked images of remedial education, rather than the first step towards a career, whereas the new name, "WTA Connect" drew an explicit link between the program and the Academy. The technical assistance provider and college also reworked the orientation materials to make explicit the connection between the program and Academy and to lay out the sequence and timeline of program steps.

All programs marketed their services to community partners, ranging from community-based organizations to schools, workforce centers, and employers. As a result of its strong partnership with local TANF offices, HCA received a steady stream of referrals, such that more than 40 percent of study participants were TANF cash assistance recipients.

Still, some programs struggled with recruitment and three ultimately did not meet study targets. The reasons included difficulty "converting" information session attendees to applicants; declining college enrollment; and difficulty selling a new program to students.

Programs that met or exceeded their targets tried new approaches. As one program staff person noted, "We had to think outside the box from traditional ways." This included billboards, advertisements on buses, placement of ads, and stories in free local newspapers. Programs that relied on referrals from community partners, including TANF offices, one-stop career centers, and non-profits, noted the importance of clearly communicating with referral partners about the study and its importance. The programs worked to regularly to remind staff about the project and answer questions from new staff. Finally, staff flagged the importance of tracking the effectiveness of various strategies and continuing only those that appeared to work. Box 5 below provides examples of recruitment challenges and facilitators.

Box 5. Recruitment Challenges…

Initial interest but no follow-through. CES staff found that recruitment efforts generated a great deal of interest in the program, but that few people who attended the first step in the application process, the orientation, continued to the next step. Staff hypothesized that some potential applicants realized they could not commit the necessary time to the program (five days a week, four hours per night) because of work, family, or other commitments. Others were not eligible, for example, because they did not meet the definition of low income or they could not legally work in the country. In the end, CES reached a lowered target of 800 study participants.

Overall decline in college enrollment. I-BEST fell short of its target across the three colleges in the study. Staff attributed recruitment difficulties to lower than expected enrollment in the colleges generally. Between 2011 and 2013, when the three participating colleges were enrolling study participants, enrollment at two-year institutions in Washington State declined by about six percent (WSAC 2015). Program staff expanded recruitment to other, non-college sources, including local TANF offices. Ultimately, the program recruited 632 study participants across the three participating colleges.

Difficulty selling a new program. PCPP staff underestimated the level of effort required to recruit for a new program. Versions of each academy—Patient Care Academies 1 and 2—existed prior to the study, but neither had been marketed as a one-semester opportunity to improve basic skills while obtaining college credit and getting on a fast track into a healthcare diploma or degree program. Low-intensity recruitment efforts, such as emails and mailings to existing students, did not yield sufficient referrals. Instead, program staff had to actively recruit in person in a variety of settings, which required much more time and effort than originally anticipated or budgeted for. The program also struggled to set up a system of internal referrals from other departments at Madison College. To increase its study enrollment numbers, PCPP added a third academy—Patient Care CNA. This was billed as a CNA program with supports and links to either employment or college healthcare programs. Demand proved to be very low for this academy, and it did not add much to the study sample. Ultimately, PCPP recruited just 500 participants, or 50 percent of its target study sample.

…and Facilitators

Proactive and ongoing discussions with referral partners. HCA relied on referrals from community partners such as TANF offices. Staff noted that they reached out early to TANF leadership and line staff to inform them of the evaluation and explain the random assignment design because their buy-in was important to ensure the offices continued to make referrals and would explain the study to potential program applicants.

Testing new methods. PTH staff tried new methods, such as billboards, the local weekly newspaper, “Michelangelo” ads on the ceilings of buses, and ads in bus stops.

Tracking referral sources. A number of programs, including PTH, VIDA, and Year Up, tracked how program orientation attendees or applicants heard about their programs. They used this information to refine recruitment plans, focusing attention and resources on sources that generated considerable interest, and discontinuing those that did not.

- ***Programs had the most flexibility to design and implement innovative instructional approaches in basic skills bridge programs.***

A hallmark of career pathways programs is innovative instructional approaches. As Box 6 shows, these approaches include contextualization, acceleration, flexible delivery, and active learning. Innovative instructional methods are hypothesized to encourage non-traditional students to persist in and complete training.

Box 6. Innovative Basic and Occupational Skills Instruction

Contextualization. Courses incorporate basic academic skills in the context of an occupation or "real-life" situation. This includes integrating content from occupational training classes into basic skills instruction (such as using occupation-specific materials and examples) and incorporating basic skills instruction in occupational training classes. Contextualization aims to improve basic skills by increasing the relevance of the material.

Acceleration. Programs reorganize curricula to enable completion in a shorter (calendar) time period. Compressing total course or program hours into a shorter timeframe intends to improve information retention between classes and reduce the time for outside issues to interfere with school.

Flexible delivery. Programs offer training at convenient times and places and in formats that facilitate participation by working and parenting adults, such as evening and weekend scheduling, self-paced instruction, easily accessible locations for training (e.g., in the community and not a central campus), and technology-supported distance learning.

Active learning. Instructional approaches avoid traditional lecture formats and instead emphasize project-based learning and problem-solving tasks. This strategy also could involve more group work and encourage more classroom interaction.

SOURCE: Fein (2012)

A key factor in the ability of programs to design and implement innovative instructional practices was whether the program directly provided instruction or relied on a partner to provide the service. The study found that basic skills remediation programs were most likely to incorporate innovative instructional practices, whereas occupational training programs generally relied on standard college classes. Take the example of VIDA. The program's ability to influence the timing of classes and delivery of occupational content was restricted because the program enrolled students in existing courses at its five partner colleges as opposed to providing training directly. The area where VIDA could influence instructional practices was its accelerated basic skills remediation course, the College Prep Academy. VIDA designed the academy and implemented it for VIDA participants in partnership with a local college and thus had control over the curriculum and the scheduling of classes. The semester-long (16-week) accelerated, full-time bridge program was available for participants not college ready, but who had 10th-grade skill levels or better. The course met daily to prepare individuals to pass college entrance exams. The College Prep Academy used a variety of learning techniques, including individual work (e.g., reading and completing a comprehension grid) and then reporting out the answers to the instructor. However, it was not contextualized because students were preparing for courses in a variety of occupational areas. Nine percent of treatment group members started in the College Prep Academy; of them, 85 percent continued to occupational training.

PTH also implemented a basic skills remediation "bridge" for students who did not score high enough on an assessment test to enroll directly in an occupational training program. Students could complete these accelerated bridges in one semester or less and quickly retake assessment tests, rather than having to remediate through standard college English and math classes, which could add multiple semesters to their timeline. Like VIDA, PTH used active

learning methods. The PTH College Readiness bridge, for example, was offered in two formats: a 10-week course that met close to full-time (four days per week for six hours each day) and a self-paced lab in which students developed personalized plans and used computer-assisted instruction. The course incorporated healthcare concepts into material (e.g., reading comprehension tasks used a chapter from a Nursing Assistant textbook). Both formats used active learning techniques (see Box 7 below). Twenty-six (26) percent of treatment group members started in one of the College Readiness courses; all of them completed the courses, and 50 percent continued on to occupational training.

Box 7. Active Learning Techniques in PTH Bridges

Writing instruction. "E-journaling" helped familiarize students with computers and professional writing. Each week students responded to a question from the instructor in writing, which the instructor reviewed and edited. Students started with an entry about goals.

Reading comprehension and speaking. Students participated in a book club to hone their reading and speaking skills. The instructor addressed conventions such as bold and italics and what they meant, and asked questions to gauge understanding. Students read aloud from the book, and the instructor corrected their pronunciation as needed. Each reading assignment incorporated a healthcare theme. For example, the group read Christy Brown's memoir *My Left Foot* and discussed resources available to individuals with cerebral palsy in 1930s Ireland and how it would be different today.

Note taking to prepare for occupational training courses. The instructor demonstrated how to use flash cards, marginal notes, underlining and starring text, drawing pictures, and abbreviating to help students understand medical terminology.

The CES pathway included bridges to prepare participants to enroll in occupational training courses. Three ESL bridges provided basic skills instruction: ESL with Career Exploration (fourth-to-fifth-grade skills level), ESL (sixth-to-seventh-grade skills level), and Vocational ESL (eighth-to-ninth-grade skills level). Participants were expected to gain one or two grade levels in each ESL course. The bridges were expected to be contextualized for healthcare occupations, but staff struggled to do so because some basic skills topics were not conducive to contextualization, and most instructors did not have experience with the contextualizing technique. In response to these challenges, the program hired a curriculum specialist who was tasked with identifying healthcare-related material to integrate into specified segments of the basic skills courses, meeting with instructors to help them integrate healthcare-related content, and standardizing curricula and instruction across the basic skills courses. Staff reported that the specialist helped standardize the curricula. Thirty-five percent of treatment group members started in one of these three ESL bridges; two-thirds of them attended a second course.

WTAC and PCPP specifically targeted students in need of remediation; as a result, basic skills remediation was the central component of the programs. Both aimed to fast-track students into occupational training. WTAC provided self-paced math and reading instruction to help students improve their skills to the ninth-grade level needed for entry into occupational courses

in the Workforce Training Academy. Initially, basic skills remediation combined structured in-classroom instruction and an online curriculum. To give students more flexibility, a year into the study WTAC implemented education2020® (e2020®), a self-paced, internet-based, modularized curriculum that used video lessons followed by practice and short quizzes. Participants completed the modules either in an instructor-staffed computer lab or from any location with internet access. The original program design called for contextualized basic skills remediation. Staff were unable to do so, however, because e2020 did not lend itself to contextualization and program participants intended to enroll in training for a variety of occupational areas once they improved their basic skills. Students did participate in "contextualized math"—two weekday evening sessions with industry-specific presentations in which employers or practitioners discussed how math is used in their profession. Fifty (50) percent of treatment group members started the basic skills program; of them, 78 percent completed basic skills training, and 95 percent of those went on to enroll in occupational training.

The one-semester PCPP academies (Patient Care Academy 1 and Patient Care Academy 2) were designed to help students remediate quickly so they could enter either a one-year diploma or a two-year degree program. The academies included a mix of basic skills classes as well as prerequisites for healthcare training programs (e.g., a PCA2-specific chemistry class). Some basic skills courses were contextualized; for example, a PCA1 reading course used a medical terminology textbook and a math course used examples from healthcare (e.g., dosages and conversions). Some courses included active learning techniques (e.g., skits using medical terms, writing assignments that mimicked American Medical Association incident forms), but most courses, particularly science-focused ones such as chemistry and anatomy and physiology, were lecture-based. Ninety-four (94) percent of treatment group members participated in any training; 77 percent completed at least one academy.[7]

- ***There were fewer examples of innovative approaches to occupational training.***

Most often, programs used standing college courses for occupational training. For example, the 16 PTH programs included PTH and other Pima Community College students.[8] VIDA

[7] Only seven percent of academy completers enrolled in a healthcare "destination program"—that is, a one-year diploma program or two-year degree program—within the time period covered by the evaluation. The program was designed to accelerate entry into healthcare diploma and degree programs by condensing the time needed for remediation, but it did not address college policies that delayed students' entry into healthcare diploma and degree programs. There were numerous barriers: Madison College implemented a new assessment (Test of Essential Academic Skills) partway through the study period; according to staff, a large share of students failed to achieve the required scores. An annual application window for two-year healthcare programs meant that students might have to wait up to a year before applying to a program. Some healthcare programs required that students apply one year in advance of the program start date. There were also long waitlists for healthcare programs.

[8] The exception was one nighttime CNA course. The instructional format was the same as daytime "mixed" classes.

participants, as noted above, enrolled in standard occupational training at one of the five partner colleges. Similarly, the CES upper bridge trainings (CNA and LPN) were held at Chicago City Colleges. The two WIB-operated programs, BTH and HCA, had the least influence over occupational training content and delivery. Most of their students received ITA vouchers to attend a training provider of their choice. Generally, students selected private, for-profit schools.[9] According to staff, students liked the flexible schedules and accelerated nature of such programs (e.g., start dates were not tied to semesters). Thus, though the courses did not provide innovative instructional content, they included other features of innovative instruction.

I-BEST and Year Up were exceptions. I-BEST integrated basic skills training into occupational training. Students enrolled in the I-BEST program took basic skills and occupational training courses concurrently. Courses were "team taught," meaning the basic skills instructors were present and participating for at least 50 percent of occupational course class time. Basic skills instructors used concepts from students' occupational coursework as a vehicle for building basic academic skills; that is, customizing the content and instructional delivery to draw on examples from occupational content. The basic skills instructors had flexibility in how they approached their teaching. The study team identified three approaches: basic skills instructor acted as an active participant (e.g., asks questions of the occupational instructor on behalf of the students to clarify concepts); basic skills instructor delivered part of the content during a designated part of the occupational classes; and basic skills and occupational instructors jointly delivered class content (co-teaching). I-BEST instructors thus had more control over the curriculum and the delivery of content.

Year Up paired its own curriculum with local program-selected occupational training curricula. The 21-week "learning and development" phase of the program prepared participants for six-month internships. During the learning and development phase, students learned technical skills in one of the occupational areas the local program supported (IT, financial operations, customer service, project management, and quality assurance). Each of the eight Year Up sites selected curricula that met the needs of local employer partners. In addition to occupational skills courses, participants took professional skills and business communications courses on site in order to prepare participants for their corporate internships. Business communications, for example, aimed to help participants become fluent in the language of corporate America through exercises such as replying to emails and public speaking. All Year Up classes included active learning principles, including group work and individual assignments (see Box 8).

[9] The exception was a limited number of WDC-purchased cohorts at local community colleges.

Box 8. Active Learning at Year Up

Group projects often formed the foundation of the curriculum, particularly in technical training courses such as IT and financial operations. One example is a "Finopoly" project (based on the board game Monopoly) that one local office used in a seven-week Financial Management course. The game simulated accounting processes over a corporation's financial cycle. Students split into small groups, acting the part of companies in different industries. Based on the group's cash holdings and financial transactions, represented by rolls of the dice, students recorded changes and created financial statements. At the conclusion of the "fiscal year," each group prepared an annual report, pitched "investors" to take the corporation public, and purchased shares in other corporations.

- ***All programs implemented advising but varied in the focus of advising and its frequency.***

The career pathways framework theorizes that supports such as advising can foster persistence in and completion of training. Academic and non-academic advising aimed to help students identify and address challenges to program success. In some programs, staff specialized as academic or non-academic advisors. In others, a single advisor played multiple roles. In the majority of programs, a specific number of advising sessions was recommended but not mandated.

CES and PTH implemented a ***multi-advisor model***. Program staff noted that this model took a holistic approach in which specialized staff addressed the range of issues that could affect a participant's success in the program. Academic-specific advisors focused on helping participants develop academic goals and plans, monitored progress, and arranged academic supports such as tutoring as needed. PTH also divided academic advising responsibilities across two different advisors: one who worked with students prior to their starting occupational training (e.g., if they were in a college readiness bridge class or were completing pre-program paperwork), and one who worked with students once they enrolled in training. CES academic advisors worked with students attending classes on site (lower bridges), as well as with students enrolled in occupational training programs at college partners (upper bridges).

CES advisors noted that although it is important to work with both groups of students, it was challenging to maintain contact with students once they left on-site classes and enrolled in college courses. Neither program mandated a number of meetings; instead, advisors and students would meet at the start of the program and as needed thereafter.

PTH and CES (lower bridges) also had dedicated case managers who focused on non-academic issues. Staff in each program documented potential challenges and service needs in a written plan. A non-academic PTH advisor housed at the partner one stop career center met with new program participants shortly after random assignment to develop an Individual Employment Plan, which documented students' barriers to program participation and service needs. As needed, staff made referrals for other services, including Supplemental Nutrition Assistance Program (SNAP) benefits and health insurance navigators. CES case managers developed a

service plan for each lower bridge participant and made referrals for services and public benefits as needed.

The other programs used a ***single-advisor model***. These advisors wore multiple hats, addressing academic and non-academic issues. VIDA and Year Up advisors met weekly with participants to monitor program progress and identify any issues that could affect program retention. VIDA participants, for example, met with counselors in a group setting three times a month and one-on-one once a month. Many group-counseling topics focused on college success skills, such as time management, study skills, and test preparation strategies. Group sessions also focused on non-academic issues, including financial literacy, health and wellness, and overcoming challenges. The one-on-one sessions were an opportunity for counselors to "dig deep" and inquire about non-academic issues that could be affecting a student's performance. Counselors inquired about finances (e.g., changes in a spouse's income, issues paying household bills) and personal circumstances (e.g., changes in living situations, family challenges).

PCPP and WTAC advisors expected to meet a set number of times during the program (three and four times, respectively) to discuss academic planning and students' supplemental instructional needs. The WTAC advisors, for example, assessed barriers to participation during an initial meeting with students and made referrals as needed, as well as provided transportation assistance such as bus passes. Program staff also facilitated a required workshop, called Tools, to help participants better understand the challenges they might face in training, identify solutions, and set goals.

In the two WIB-operated programs, BTH and HCA, community-based navigators advised primarily on occupational training program selection. All participants had to research an occupation and multiple training providers before selecting a course of study. Navigators also assessed needs for supportive services. Once participants began their training programs, contact with the navigator was on an as-needed basis; as with CES upper bridges, advisors had difficulty maintaining contact with students once they enrolled in their training program.

Finally, the I-BEST model did not include a specified advisor—basic skills and occupational instructors often played this role informally (see Box 9 below). However, each of the three colleges in the PACE study used evaluation-linked foundation funds to hire a dedicated advisor to assist participants with all phases of the program, including enrollment and career planning.[10] There were no expectations as to the number of meetings with students, but the advisor was expected to be a regular presence in the classroom. In practice, the role varied by college; for example, one advisor focused on course progression and met with students

[10] According to the Washington State Board of Community and Technical Colleges, advising is now part of the standard I-BEST model.

primarily at the start and end of the quarter. At each college, the advisor also helped with recruiting, and this consumed considerable time.

Box 9. Advising by Basic Skills Instructors

I-BEST basic skills instructors at each of the three colleges in the PACE study developed relationships with students and provided ongoing support, particularly around academic issues. Though each of the three colleges offered tutoring to all students, college administrators reported that I-BEST students often were hesitant to engage with these services and were more inclined to seek the assistance of the basic skills instructors, whom they already knew. Though this support most often occurred in the classroom or in a lab session, the basic skills instructors made themselves available to students outside of class if students required additional academic assistance.

Some of the basic skills instructors reported providing tutoring and one-on-one academic support, especially in the beginning of the quarter, for those students who appeared to be struggling with course material. These instructors also provided more informal ongoing supports to students, such as regularly reminding students about upcoming assignments, discussing time management habits, or providing examples of approaches to studying for upcoming tests or quizzes.

Regardless of the model, ***in most programs advising was voluntary***, and this may have affected receipt of this service. As noted, programs such as PCPP and WTAC designed a set number of sessions that covered a variety of academic and non-academic topics. Follow-up survey data suggest that program participants attended some, but not all sessions.[11] Only VIDA and Year Up mandated advising. In exchange for a high degree of personal and financial support (see below), VIDA participants agreed to attend weekly counseling sessions. Failure to do so resulted initially in withholding of tuition assistance and discontinuing other forms of training-related financial assistance, such as childcare and transportation. Ultimately, students who did not meet with advisors were removed from the program. At Year Up, participants were required to meet weekly with advisors. The program specified this and other participant responsibilities in a student contract. Failure to adhere to the contract provisions triggered reductions in financial support and ultimately could result in the student's removal from the program.

- ***Programs varied in their provision of academic, non-academic, and financial supports.***

Academic, non-academic, and financial supports can help students persist in and complete training. ***Academic supports*** included supplemental instruction and tutoring**.** Some programs built supports into their original model. For example, two of the three I-BEST colleges included in the study operated support classes that focused on math and reading skills to supplement occupational courses. These non-credit classes complemented the basic skills instruction

[11] Among those treatment group members who attended any education or training, the proportion who reported receiving three or more academic advising sessions was 18 percent (WTAC) and 45 percent (PCPP). SOURCE: Abt calculations from PACE 18-month follow-up survey data.

covered by the teaching teams in occupational courses. Other programs added supports once staff identified a need.

PTH and PCPP modified their programs during the study period to address instructional support needs of students. PTH staff learned that students in some courses had difficulty persisting. Staff implemented weekly instructor-led study groups for two of the 16 training programs with identified needs (Pharmacy Tech and Certified Nursing Assistant/Patient Care Technician). These groups were team-taught by the occupational training instructor and a college readiness basic skills instructor. In addition to seeking to bolster basic and occupational skills, both groups included a focus on college success skills such as test taking and time management. Program staff also implemented groups to prepare students to achieve the required assessment score for the LPN program (the Pre-LPN Reading Group) and to prepare for the CNA program by teaching college success skills (the Nursing Assistant Readiness Class). For PCPP, during the first year of the study Madison College added a supplemental instructor for the Patient Care Academy 2 chemistry class, who attended class and facilitated optional weekly review sessions.

These programs also attempted to make tutoring more accessible—both when it was available and by linking to class content—through the program instructors. Participants in most programs could access general tutoring from the training provider, but tutors were often generalists and worked with many students. Instead, PCPP implemented group tutoring for Patient Care Academy 1 students who needed additional instructional support. PTH college readiness basic skills instructors provided tutoring services upon referral from occupational instructors in the 16 training programs.

Non-academic supports included provision of, or support obtaining, services to help participants balance school and family obligations, such as childcare or transportation. In a few instances, programs had services on-site. CES, for example, provided on-site childcare for lower bridge students. WTAC was housed at a Center for Working Families[12] where students could receive screening for public benefits and referrals to community partners for social and other services. More often, program staff helped students access supports. VIDA staff helped participants who needed childcare first apply for assistance through a state program; if the request was approved, VIDA covered the required co-payment. If the request was denied, participants were instructed to seek childcare through another provider and VIDA helped with the cost.

Some programs provided ***direct financial support*** for training and/or to remove non-academic barriers. For training costs, on one end of the spectrum, CES lower bridge, WTAC, and Year Up

[12] Anne E. Casey Foundation Centers for Working Families provide a coordinated set of services to help low-income individuals and families get jobs, strengthen their finances, and move up the economic ladder.

programs were provided at no cost to the student.[13] On the other end, CES upper bridge and PCPP helped students fill out financial aid forms. The other five programs provided direct financial support, either in the form of an ITA voucher or scholarship or to "fill the gap" between financial aid received and the cost of the training program. BTH, for example, provided ITA funding up to $7,000 for training at a local accredited provider and up to $10,000 for training in high-demand fields. PTH participants received a training scholarship of up to $3,500 (or $6,500 for more expensive programs such as LPN). I-BEST and VIDA provided "fill the gap" funding between the amount students received in financial aid and the cost of the program. VIDA, for example, funded the difference between financial aid received and the cost of the program up to $5,500 per 12-month period, as well as provided funding for books, tools, uniforms, and transportation to school, as needed.[14]

Programs varied in their provision of non-academic financial supports. The three HPOG programs (BTH, HCA, and PTH) allocated funds to help participants overcome obstacles to their enrollment and persistence, including childcare and transportation. BTH staff could authorize up to $1,000, HCA up to $600, and PTH up to $1,400 in supports per student. (These funds could also support academic needs such as school supplies, certification fees, and uniforms.) As well, PCPP and VIDA had funds for short-term emergency assistance, such as car repairs.

Year Up was unique in that participants received a weekly stipend during the program. The "earn while you learn" element was designed to help students meet needs that might prevent their engagement and persistence. In most sites, the weekly stipend was $150 during the learning and development phase and $220 during the internship phase. The stipend also supported compliance with program expectations that were spelled out in a student contract. Contract "infractions" such as tardiness could lead to stipend reductions.

- ***Employment connections generally included workshops and clinical placements related to healthcare courses.***

In the career pathways framework, employment is not simply the desired outcome of training—it is an integral feature of the intervention model and underlying theory of change. Career pathways programs target training in fields and occupations based on labor market studies of future need. In addition to training participants for in-demand jobs, programs help prepare students by providing experiential learning opportunities during their training programs. They also provide workshops or other supports to help program completers find work and dedicate staff to job developing and one-on-one employment search assistance.

---

[13] Year Up students received assistance filling out financial aid forms in order to get college credit for some of their classes.

[14] VIDA generally paid a provider directly for a service, rather than providing funds to the student. However, when it was not possible to reimburse the provider, VIDA required that the student get documentation of costs before providing funds.

A number of programs incorporated ***experiential learning*** in the form of clinical placements and internships. Clinical placements were required elements of some healthcare-related programs, such as CNA and LPN, at CES, I-BEST, PTH, and VIDA. An I-BEST office skills course included a mandatory internship. BTH planned to provide work experience opportunities to participants because program staff believed participants needed this experience in addition to a credential to be marketable to local employers. That program contracted with the University of California, San Diego's student-run Free Clinic Project to offer volunteer opportunities at four medical clinics to BTH participants who completed their training programs, where they could gain experience applying skills hands on in a worksite under supervision. The contract was cancelled after three years due to low participation, and the funds were transferred to job developers (see ***dedicated staff*** below).

A core Year Up component was experiential learning opportunities. Participants spent the second six months of the year-long program in an internship with a corporate partner. Students spent 4.5 days per week at the employer site and a half-day at Year Up with staff and peers discussing their work experiences. Supervisors at host employers provided formal feedback twice during the internship and filed weekly attendance reports.

PACE programs also offered a variety of ***employment-oriented workshops*** to completers and near-completers. BTH, CES, HCA, WTAC, and Year Up offered end-of-course job readiness classes to prepare participants for their job searches. CES participants, for example, were encouraged to attend a job readiness workshop as they prepared to complete their course. The 10-hour workshop, offered monthly and held over five days, focused on job applications, resumes, mock interviews, researching labor market openings, and dressing for success. WTAC participants enrolled in the 24-hour Career Readiness Lab at the end of their certificate courses, where they assessed personal skills, learned job search methods, and worked with an employment coach as needed. Some Year Up sites held a week-long "career boot camp," which included lists of pertinent job openings, job fairs, and one-on-one support with resume development and job search.

PTH staff initially planned to provide employment services to program completers through the program's one-stop career center partner, which provided services to job seekers generally. However, program staff observed that many students had difficulty transitioning from training to employment. In response, staff created and implemented new workshops—a six-hour "employment transition workshop" designed to make students more competitive job candidates, and a three-week, full-time intensive job search academy customized to healthcare careers for those who had been unsuccessful in their job searches. Staff also launched the Student and Alumni Network, which offered a study skills workshop, as well as employment workshops on resume building, cover letters, interviewing, and job search strategies, and a LinkedIn professional networking group.

Some programs that did not provide employment-related workshops cited as the reason the expectation that participants would continue their education and not seek employment. This was true for I-BEST and PCPP, although staff in both programs noted that on-campus resources as well as instructors often provided guidance to students who were interested in working. VIDA counselors covered some employment-related topics during group sessions and referred students to campus resources as needed. However, staff noted that VIDA inherently addressed employment by funding only training programs that lead to high-demand jobs. Staff worked with local Economic Development Corporations to track employment trends and regularly refreshed the list of training programs VIDA supported.

Finally, some programs had ***dedicated staff*** who served as job developers and/or as resources for participants who needed extra support. On one end of the spectrum, PTH funded an employment specialist to work with employers and advise the program on hiring trends, but not to work with students. On the other, CES had two staff employment specialists who taught job readiness workshops, worked one-on-one with participants on resumes and job applications, facilitated job placements (e.g., recommended specific students to employers), and located potential jobs for completers. Year Up staff assisted participants in their job search for up to four months post completion.[15]

BTH and HCA both added job developers in response to identified needs. For example, after cancelling its contract with the University of California, San Diego's free clinics, BTH gave each of the navigator organizations funds to hire staff who would work as job developers and provide one-on-one assistance to participants. At HCA, navigators initially provided all employment services. HCA added a job developer position in response to increasing navigator caseloads and a concern that navigators could not adequately support participants in training if they were helping completers find and retain jobs.

- ***Across all programs, study participants assigned to the treatment group received more services than those assigned to the control group.***

Many factors affected program impacts on the educational and employment outcomes described in the next section. Key among them is the extent to which treatment group members received services available to them and the degree to which comparable educational opportunities and supports were available to the control group. Programs have the greatest potential to produce impacts when they engage treatment group members and offer services distinguishable from those already available in a community. The PACE program-specific impact

[15] In 2014, Year Up launched an affiliated employment services firm—Year Up Professional Resources (YUPRO)—dedicated to Year Up alumni. YUPRO provides career supports to alumni and fee-based recruitment services to employers. Though launched around the time the treatment group members were finishing the program, YUPRO was in place for much of the post-program period covered in the Year Up early impact report and may have benefited some members of the study's treatment group.

studies compared all participants in a treatment group with all participants in a control group, regardless of whether or not group members actually enrolled in any services (what researchers refer to as an "intent-to-treat" analysis). The exhibits below show the degree to which treatment and control group members received education (e.g., basic skills) and occupational training, career advising, assistance arranging supports, and employment services.

The primary data source is the PACE follow-up survey, administered to study participants an average of 18 months after their random assignment date. For some programs, the study team used college records to assess impacts on receipt of education and training when they were available for both the treatment and control group members.

Box 10. Note on 18-Month Follow-Up Survey

Because the PACE follow-up survey was implemented across a range of programs, its questions used generic names for supports. Specifically, the survey asked all study participants, regardless of whether they received any education or training since random assignment, whether they received:

- Career counseling
- Help arranging supports for school/work/family
- Job search or placement assistance

It is possible that participants received a support but not as a stand-alone service (e.g., career counseling provided as part of advising or an employment workshop). In addition, some programs—notably BTH, HCA, and VIDA—provided these services directly (VIDA) or through contracts with community-based navigator partners (BTH and HCA), rather than through a college partner. Because the survey asked first about education and training at an institution attended, and then about receipt of services from any organization, the study team believes that some respondents answered service questions only in relation to their education and training institution, not from other sources. VIDA records, for example, indicate that virtually all treatment group members had an initial assessment, received various forms of financial assistance, and participated in weekly counseling sessions—but this is not reflected in the survey data.

Exhibit II.1 shows the programs' impacts on ***enrollment in education and training.*** Most programs generated an increase in enrollment: as the exhibit shows, seven programs had a statistically significant impact at the one percent level, one program had an impact at the 10 percent level, and one had no statistically significant impact, meaning the evaluation could detect no differences in the proportion of treatment and control group members who enrolled in education and training. The magnitude of the impacts varied considerably, ranging from a statistically insignificant six percent increase (4.4 percentage points) for PCPP to a 43 percent increase (23 percentage points) for I-BEST. Three programs had impacts in excess of 20 percentage points (CES, I-BEST, and Year Up). Four had impacts between 10 and 20 percentage points.

Box 11. Interpreting Graphics in This Report

Results from impact analyses are presented in this report using bar charts that show the impact for each program separately. For each of the nine programs that were evaluated, there are two bars: The light-shaded bar shows **treatment group outcomes**, and the dark-shaded bar shows **control group outcomes**. The numbers just below the top of the bars indicate the **outcomes** in the treatment and control groups. The **estimated impact** (the regression-adjusted difference between the treatment and control groups) is shown above the bars, with an arrow indicating **impact direction**: positive (an arrow pointing up) or negative (an arrow pointing down). Stars indicating whether the impact was **statistically significant**. In all graphics in this report, three stars (***) indicate statistical significance at one percent, two stars (**) indicate significance at five percent, and one star (*) indicates significance at 10 percent.

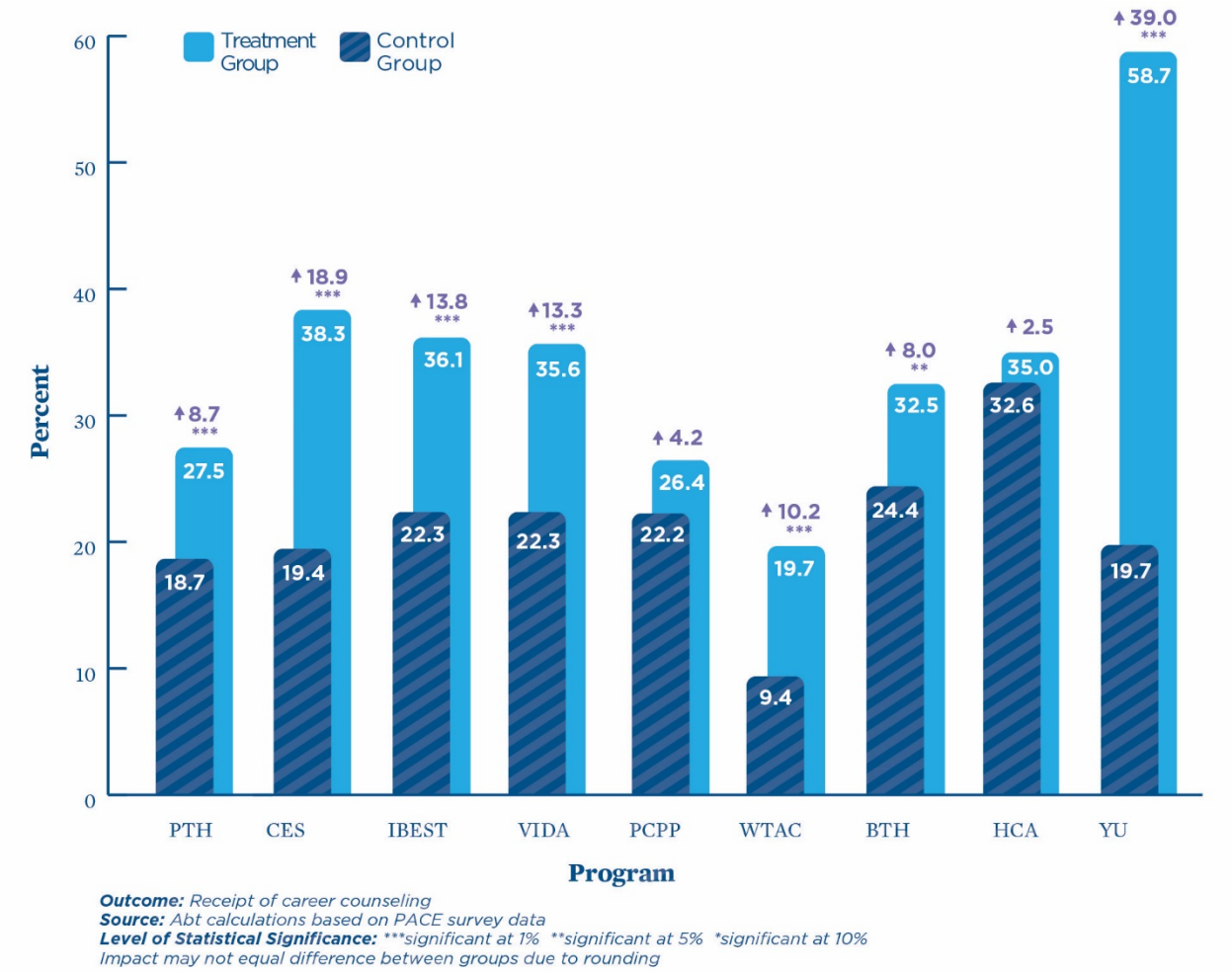
Exhibit II.1: Impact on Enrollment in Education and Training

Two aspects of this exhibit are notable. First, with the exception of two programs, more than 70 percent of treatment group members enrolled in basic skills education or occupational training. As noted above, evaluations are more likely to detect impacts when the treatment group is actually treated—that is, when they actually engage in key services. However, the exhibit also

demonstrates that in all but two programs, the majority of control group members also enrolled in education and training. In one site (Madison College), 77 percent of control group members enrolled, nearly as high as the treatment group's enrollment (in PCPP); this was the one program that did not have an impact on enrollment. Control group members were embargoed from receiving services through the PACE programs, but they could access other, similar services in their community, and many did so. This also has implications for detecting impacts: the smaller the differential in education and training receipt between the treatment and control groups, the harder it is to detect impacts.

The next two exhibits show receipt of two types of supports. **Exhibit II.2** shows impacts on ***receipt of career counseling***. As the exhibit shows, the majority of programs—seven—had a statistically significant impact on receipt of career counseling. In five programs, the impact was statistically significant at the one percent level, and in two it was significant at the five percent level. Impacts ranges from a statistically insignificant increase of eight percent (three percentage points) for HCA to almost tripling (39 percentage points) for Year Up.

Exhibit II.2: Impact on Receipt of Career Counseling

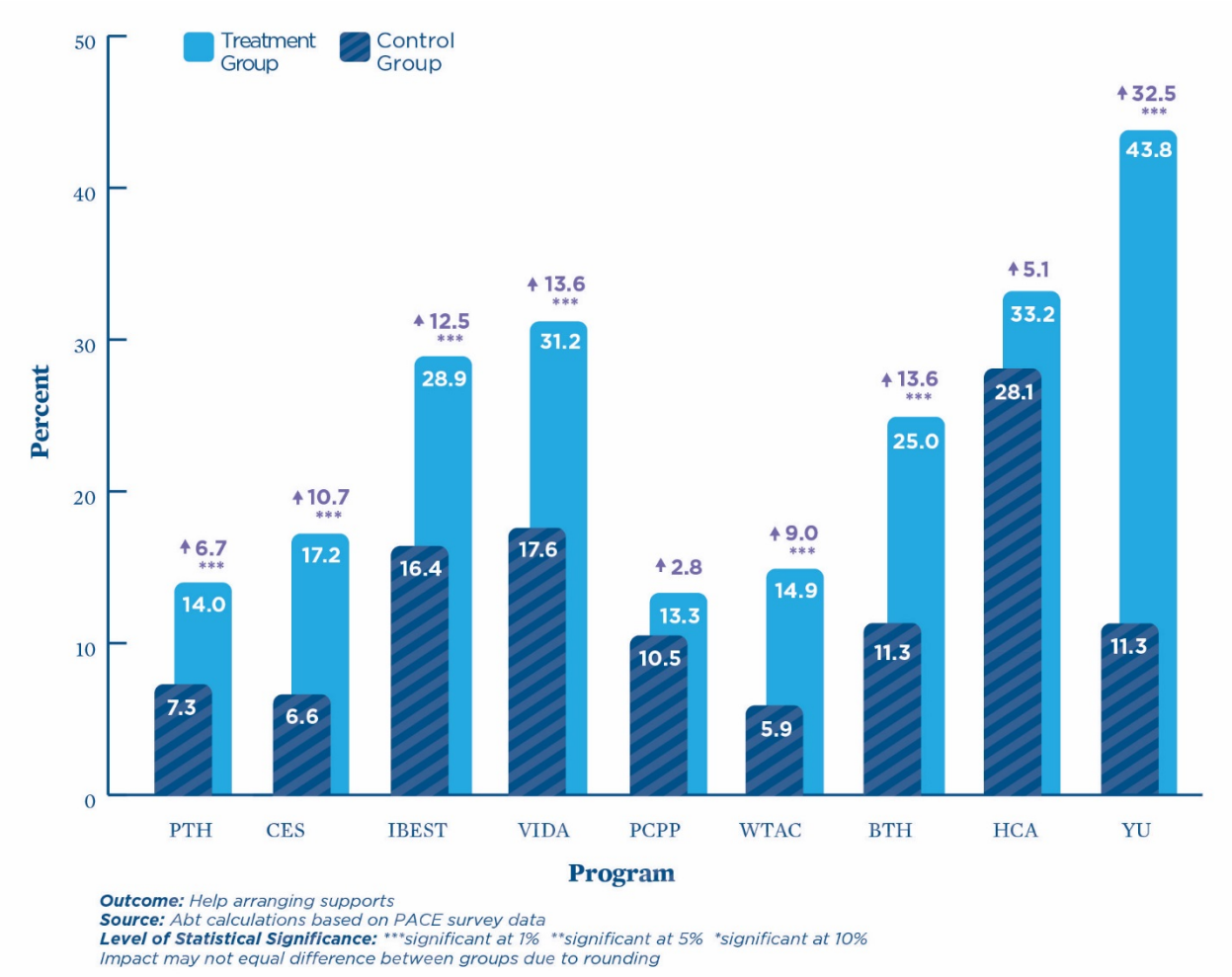


Outcome: *Receipt of career counseling*
Source: *Abt calculations based on PACE survey data*
Level of Statistical Significance: ****significant at 1% **significant at 5% *significant at 10%*
Impact may not equal difference between groups due to rounding

Thinking again about the proportion of treatment group members who got treated, **Exhibit II.2** above demonstrates that though treatment group members were significantly more likely to receive career counseling, in many programs fewer than half did so. The share of treatment group members receiving career counseling ranged from 20 percent (WTAC) to 59 percent (Year Up). In five programs, the share receiving this type of counseling was roughly one third (from 32 percent to 38 percent). Thus, while seven of the PACE evaluations detected impacts, only in one program, Year Up, did the majority of treatment group members receive this service. Roughly 20 to 25 percent of control group members received this service, ranging from low of nine percent (WTAC) to a high of 33 percent (HCA).

Exhibit II.3 shows receipt of the second type of support. Seven programs had statistically significant impacts on ***assistance arranging supports*** for school, work, or family. For all seven the impact was statistically significant at the one percent level. The magnitude of the impacts varied from a statistically insignificant 18 percent (five percentage points) for HCA to almost tripling (33 percentage points) for Year Up.

Exhibit II.3: Impact on Help Arranging Supports for School/Work/Family



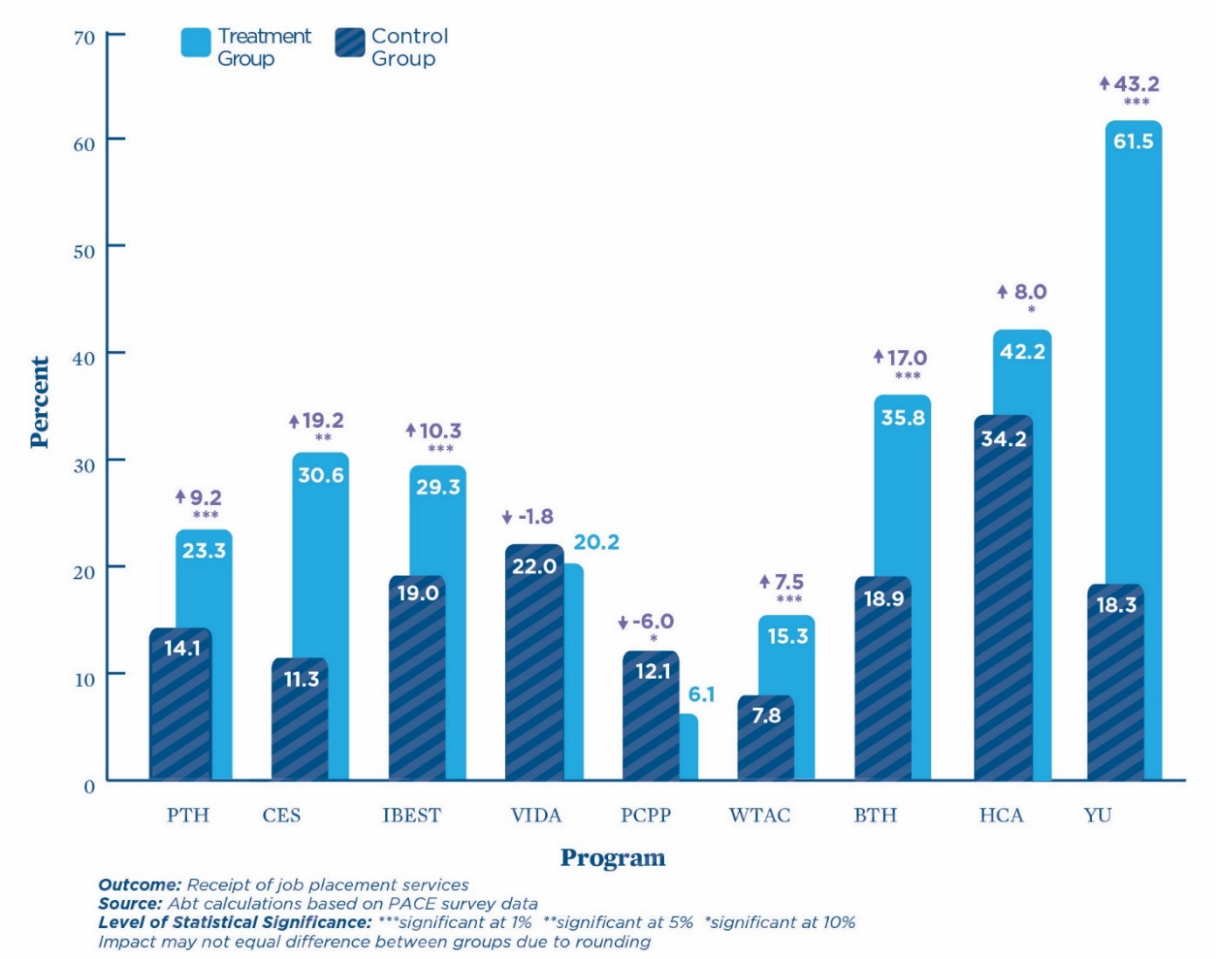
Outcome: *Help arranging supports*
Source: *Abt calculations based on PACE survey data*
Level of Statistical Significance: ****significant at 1% **significant at 5% *significant at 10%*
Impact may not equal difference between groups due to rounding

As with career counseling, although seven programs had positive and statistically significant impacts on receipt of assistance arranging supports, fewer than half of treatment group members received this service. The share reporting receipt of this support ranged from 13 percent (PCPP) to 44 percent (Year Up), with several clustered around 30 percent (HCA, I-BEST, and VIDA). The share of control group members receiving the support ranged from six percent (WTAC) to 28 percent (HCA).

Finally, **Exhibit II.4** shows ***receipt of job placement or job search services***. As it shows, eight programs had statistically significant impacts on receipt of job placement or job search services. For seven programs, the impact was positive, ranging from 23 percent (eight percentage points) for HCA to more than doubling (43 percentage points) for Year Up. PCPP had a statistically significant negative impact of 50 percent (six percentage points) on receipt of these services, reflecting the nature of the program, which prepared students for a healthcare occupational training program. VIDA's impact on receipt of job services was not statistically significant.

The share of treatment group members receiving this service ranged from six percent (PCPP) to 62 percent (Year Up). Again, it is noteworthy that though most programs increased receipt of job placement or job search services, the share of treatment group members receiving the service was less than 50 percent in all but one program, and less than 30 percent in five programs. As noted earlier, only one program (Year Up) emphasized this component. Among control group members, the percent receiving job placement or job search assistance ranged from eight percent (WTAC) to 34 percent (HCA).

Exhibit II.4: Impact on Receipt of Job Services



What do these findings mean for the main short-term impacts on education and employment outcomes 18 months following random assignment? An implication of the career pathways framework is that any improvements in the main education and employer outcomes described in the next section will result primarily from impacts on the treatment group's experiences and services tied to education and training. Thus, programs that had statistically significant impacts on enrollment in education and training and other career pathways services would be expected to have impacts on hours of occupational training, credits earned, credentials received, and career pathways employment. The next section describes program impacts on these education- and employment-related outcomes.

III. Short-Term Impacts: Most Programs Showed Promising Progress Towards Goals

The previous sections described the design and implementation of the nine programs in PACE, as well as differences in service receipt between treatment and control group members. This section focuses on short-term impacts on education and employment-related outcomes, measured 18 to 24 months after participants' random assignment into their program. These early impacts constitute an assessment of whether the programs are making progress towards their long-term goals. The study team estimated short-term impacts on key outcomes for each of the nine programs, with specific outcomes differing by program. The selection of outcomes was guided by each program's theory of change, which identified outcomes that the program was expected to affect at varying points in time.

This section begins with an explanation of how key outcomes were selected for each program and a few words on how to make comparisons across sites. This is followed by a brief summary of findings, and then outcome-specific findings for education and training progress (hours, credits, and credentials) and earnings.

Box 12. Comparing Short-Term Impact Findings Across Studies

Short-term findings from the nine PACE studies were not designed to be directly comparable to one another. In the long term, each of the programs being evaluated in PACE was intended to increase participants' employment and earnings. However, the programs took various routes to that long-term goal. The nine programs served different kinds of participants, provided different types of training and education, and took various lengths of time to complete. For that reason, each study was tailored to address a set of research questions that corresponded to that program's particular theory of change.

For statistical reasons (explained below), the study team selected a single "confirmatory" outcome for each program as the best indicator of whether that program was making early progress towards achieving its long-term goals. Confirmatory outcomes differed across programs: they represented different concepts, were measured differently using different kinds of data, and were described using different units/scales. For that reason, it is difficult (if not impossible) to directly compare the magnitude of confirmatory impacts across programs.

In contrast, the nine studies were designed to have comparable statistical power; that is, to have a similar chance of detecting meaningful impacts if they existed. For each outcome, the study team conducted a statistical hypothesis test (essentially an "up or down vote") to determine whether the program affected the outcome. To provide a fuller picture, the results of these tests were reported with three levels of confidence that roughly correspond to the probability that the conclusion was wrong: one percent, five percent, and 10 percent. Because the results of the statistical tests essentially mean the same thing across studies (i.e., they represent an up or down vote), this report focuses on the statistical significance of the confirmatory findings as the best measure of program success.

- ***To minimize the chance of finding spurious results, the study team identified one "confirmatory" outcome for each PACE program as the best indicator of whether the program seemed to be on track towards achieving its long-term goals.***

Because the nine PACE programs had different theories of change, participants' progress was assessed using different outcomes. For each of the nine programs, the study team specified a single ***confirmatory outcome*** that was well aligned with that program's theory of change. Prior to estimating program-specific impacts, the team published an analysis plan specifying key hypotheses and outcome measures, and registered the plan.[16] The confirmatory outcome was chosen by the study team as the best indicator of whether the program was making early progress towards achieving its long-term goals. Specifying a single confirmatory outcome was necessary because, like most social policy evaluations, the nine PACE studies targeted an array of different outcomes. If the evaluation did not adjust in some way for multiple hypothesis tests, a potentially large number of the tests would reach conventional levels of statistical significance by chance, even if there was no actual effect on any outcome. This is known as the problem of "multiple comparisons." To address this problem, the team established three categories of hypotheses—confirmatory, secondary, and exploratory:

- **Confirmatory tests** involved outcomes most critical to judging whether the program seemed to be on track—that is, producing the results expected at a given follow-up duration, as stated by the program's theory of change. Given the sample sizes in the PACE studies, the PACE study design limited confirmatory tests to one per program in the early impact report and, generally, two per program (one test each for educational attainment and for employment) in each subsequent report (at 36 and at 72 months after randomization).[17]
- **Secondary hypotheses** involved a set of additional indicators consistent with expected effects within the period covered by the study report. Each confirmatory and secondary hypothesis had a hypothesized direction of change, an increase or decrease in the outcome. Therefore, the study team tested each confirmatory and secondary

[16] The team registered the analysis plan on the What Works Clearinghouse online registry of randomized controlled trials on May 20, 2016. The registry was subsequently transferred to the Society for Research on Educational Effectiveness. The team also registered the analysis plan on the Open Science Framework (OSF) website. The purpose of the analysis plan and its registration was to guide the work on the research team and publicly commit to particular hypotheses and an estimation approach, in alignment with ACF's commitment to promote rigor, relevance, transparency, independence, and ethics in the conduct of evaluation. After assessing data quality for each program, the team refined the analysis plan and registered each program-specific plan on the OSF website.

[17] Confirmatory outcomes for the intermediate analyses are specified in an analysis plan, available at: https://www.acf.hhs.gov/sites/default/files/opre/pace_three_yearanalysisplan_mainreport_508.pdf. The study team will specify confirmatory outcomes for the longer-term analyses in a later analysis plan.

hypothesis for significance only in the expected direction, ignoring possible effects in the other direction, by applying one-tailed tests of statistical significance.

- **Exploratory hypotheses** covered an additional set of possible effects whose direction and timing were less certain.

Because the confirmatory tests are the best indicator to date of whether each program was on track to meet its long-term goals, this paper highlights the findings from those tests. Secondary findings are also discussed; however, this paper generally does not discuss the findings from exploratory hypotheses, which are best considered in the context of a program's individual reports.

- ***Each study's confirmatory outcome fell within one of three broad categories, which reflected the various short-term goals of the programs.***

Many factors affected the specific categorization of outcomes within this hypothesis testing framework. Predominant among these factors were those that influenced the typical length of the program experience. Although the long-term goal of all nine programs was to improve employment and earnings for treatment group members, most programs could not reasonably expect to produce significant effects on such outcomes within the short-term follow-up timeframe of 18 months after randomization. For these programs, the study team focused on more proximal outcomes of educational progress as a gauge of improvement.

As noted earlier, programs also targeted and recruited different populations. They varied as to the inclusion of basic skills remediation. They differed in terms of the number of occupational steps on the pathway, and whether participants were expected or encouraged to work following the completion of a step or continue their education and training. And they varied with regard to services provided to participants, including academic and non-academic advising, financial assistance, and employment supports. The study team considered all of these factors when categorizing outcomes.

For programs that emphasized short-term training (e.g., BTH, HCA, and WTAC), the study team tended to select as confirmatory those outcomes relatively far along in the theory of change, such as credential receipt. In contrast, some programs (e.g., CES and VIDA) offered training that could take a long time to complete, such as higher-level postsecondary credentials like LPN. Because it was not realistic to expect participants to earn such a credential within the short-term follow-up period, the study team selected outcomes earlier in the theory of change, like the amount of education completed (e.g., number of hours or credits). Another factor that guided the selection of outcomes and follow-up timeframes was the availability of data. When administrative college records were available, the team could estimate impacts for up to 24 months. When college records were not available, the team used data from the 18-month follow-up survey for impact estimates.

Confirmatory outcomes in the nine PACE evaluations fell into three broad categories:

- **Credentials earned**. Three programs emphasized short-term training: BTH, HCA, and WTAC. Although the study team did not anticipate that these programs would affect employment and earnings within the short-term follow-up period, it seemed reasonable that many treatment group members could earn credentials in that timeframe. Therefore, the study team specified a confirmatory outcome of *credentials earned* for these programs.
- **Amount of education or training completed**. As noted earlier, a defining feature of career pathways programs is education. Most programs either were education providers or they partnered with colleges. For the five programs that were not expected to affect treatment group members' earnings or credential receipt in the short term, the study team therefore specified a confirmatory outcome related to the amount of education or training completed. For programs that enrolled participants in credit-bearing college courses (I-BEST, PCPP, and VIDA), the team specified *credits earned* as the confirmatory outcome. For programs that provided training in non-credit courses (CES and PTH), the team specified *training hours* as the confirmatory outcome.
- **Earnings**. One program (Year Up) expected participants to complete training within one year (six months of full-time customized training followed by six-month internships). The one-year timeframe, which was followed by four months of job search assistance, implies that impacts on earnings should be visible 18 months after random assignment. As a result, the study team directly measured the short-term impact on *average quarterly earnings* as the confirmatory outcome for Year Up.

That the study team's hypothesis-testing procedure highlighted different outcomes for each program, and may not have measured comparable outcomes to begin with, obviously makes it impossible to directly compare short-term impacts on key outcomes across programs. For that reason, this report does not identify which programs are performing better or worse than others (i.e., pick winners and losers). Nonetheless, viewing results side-by-side can inform areas for inquiry in the longer-term follow-up studies of these programs.

When making cross-program comparisons for any given outcome, it is critical to be aware of the many reasons impacts might vary across programs that are *not* related to the program model being evaluated. Factors that influence impact magnitude include the demographics and skills of the target population, contextual factors such as the local unemployment rate and the control group service environment, and the use of administrative data whose particulars might

vary across program sites.[18] Key among these is the treatment/control contrast in service receipt; i.e., the degree to which comparable educational opportunities and supports were available to the control group, and the extent to which the treatment and control group used such services, as indicated in the previous section. As noted above, programs have the greatest potential to produce impacts when they offer services distinguishable from those already available in the community.

A. Impacts on Confirmatory Outcomes

This section describes impacts on the confirmatory outcome for each program. These impacts are the best indicator of whether each program was making early progress towards achieving its long-term goals.

- ***Most programs (seven of nine) had a significant impact on their confirmatory outcome, and many of those impacts were large. This means that most programs appear to be on track to achieving their longer-term goals.***

In particular, each of the programs that successfully increased service receipt also significantly improved their confirmatory short-term outcome, meaning that study participants who could access the PACE program services (i.e., the treatment group) were more likely to achieve program milestones than those who could not access the services (the control group). The two programs for which there was no evidence of an early impact, HCA and PCPP, had the smallest impacts on most measures of service receipt: neither of these programs substantially increased enrollment in education and training of the treatment group compared with enrollment of the control group in the services available to them (see **Exhibit II.1**), and neither program substantially or significantly increased receipt of career counseling or arranging school/work/family supports (see **Exhibits II.2-II.3**). One of these two programs (PCPP) actually *decreased* the treatment group's receipt of job placement or job search services relative to the control group's (see **Exhibit II.4**).

[18] Many outcomes were measured using the PACE short-term follow-up survey of participants, which was identical across sites, but other outcomes such as college credits relied on idiosyncratic sources of administrative data.

Box 13. How Big Are Impacts?

As noted earlier, this report focuses on statistical significance when making comparisons across sites. Readers may also want to know what a statistically significant difference means in more practical terms—for example, is it large, moderate, or small? There is no precise way to categorize the outcomes in terms of size. However, this report attempts to provide subjective interpretations of the magnitudes based on the study team's knowledge of the programs' intended mechanisms.

To aid in interpretation, this report describes impacts both in their original units (e.g., dollars or percentage points) and as relative amounts (i.e., as a percentage increase or decrease). Relative impacts are always to be understood as increases or decreases *relative to the control group*. For example, an increase from $100 in the control group to $150 in the treatment group would be described as a "50 percent increase."

- ***Four of the five programs that aimed to increase the amount of education or training received (i.e., hours or credits) achieved that goal.***

The study team selected education/training receipt as the confirmatory outcome for five programs. In two evaluations (CES and PTH), "hours of occupational training" was the confirmatory outcome. In three of the five (I-BEST, PCPP, and VIDA), the team specified "number of credits earned."[19] By and large, these evaluations did not focus on education or training *completion* (e.g., credential receipt) because the five programs emphasized higher levels of educational attainment as their long-term goal, and it was unrealistic to expect impacts on credentials during the 18- to 24-month follow-up period.

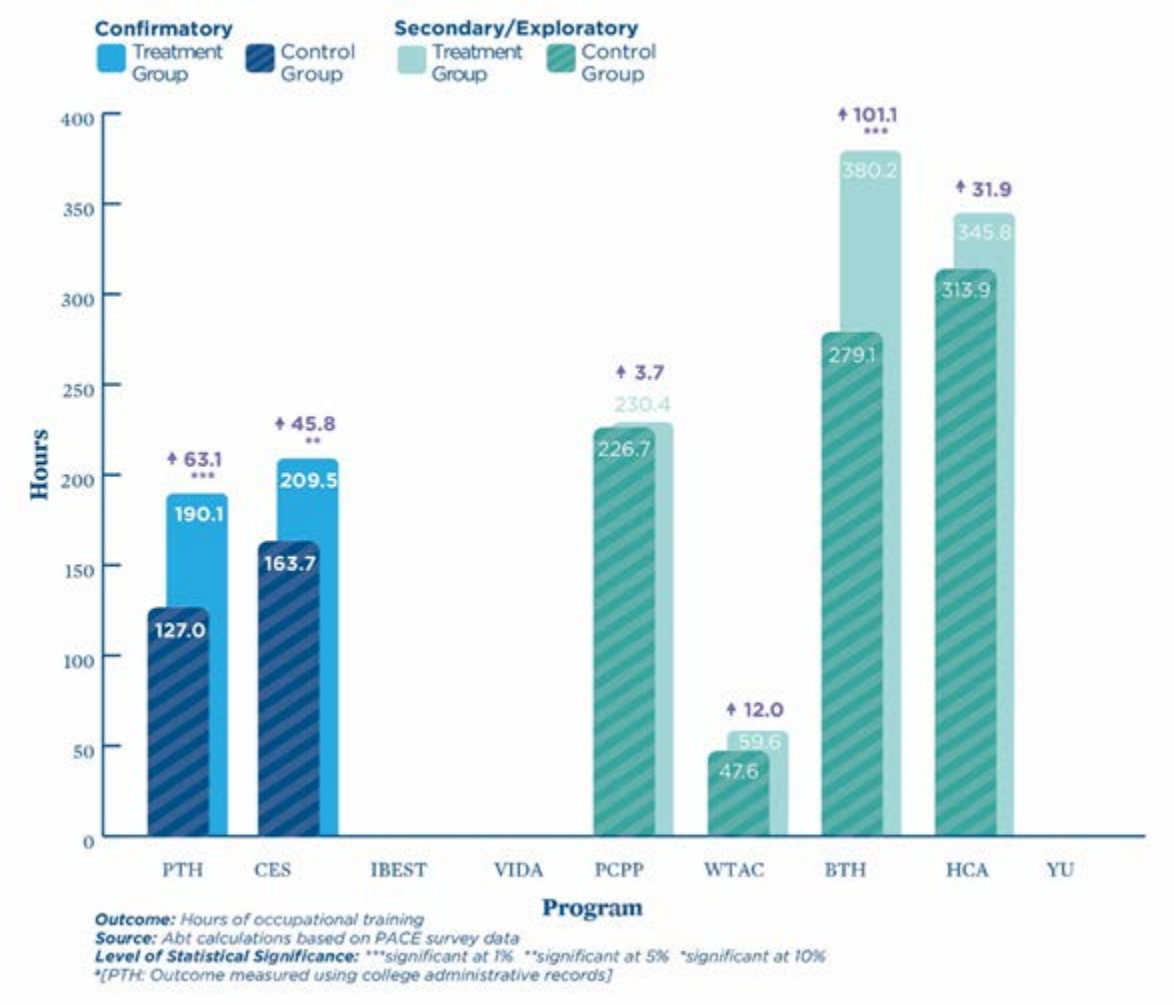
CES and PTH had basic skills remediation bridges and offered multi-step pathways with increasingly higher credentials that took longer to obtain (e.g., LPN). For these programs, the number of ***hours of occupational training*** completed appeared to be the most unambiguous single indicator of whether early impacts were on the right track.[20] **Exhibit III.1** presents

[19] The study team defined credits earned in various ways that corresponded to the specific program models: The confirmatory outcome in the PCPP and VIDA early analyses was the number of college credits earned. The confirmatory outcome in the I-BEST early analysis was the total number of academic and workforce credits earned. For I-BEST, academic credits were attached to courses that were suitable for academic transfer to another college, such as English Composition I and Introduction to Statistics. Workforce credits were attached to training courses that were categorized as occupational in nature; these included I-BEST courses such as Spreadsheets I and Applied Mechanics.

[20] The study team measured the total slightly differently in the two programs: In PTH, administrative data from college records were used to count the number of hours of college occupational training. Because treatment and control group members primarily attended Pima Community College, these records were available for both groups. In CES, data from the 18-month follow-up survey were used to count the total number of hours of occupational training including occupational training in the nursing field or other fields. Treatment and control group members attended a wider range of Chicago colleges and other institutions of higher education, making it challenging for the study team to collect administrative records. At the time of the study, Chicago City Colleges, where CES "upper bridge" students took occupational training courses, did not have procedures in place to review and approve research data requests.

impacts for this outcome. The two programs for which it was a confirmatory (CES and PTH) are shown in blue. An additional four programs for which the study team specified hours of occupational training as a secondary outcome (BTH, HCA, PCPP, and WTAC) are shown in green.

Exhibit III.1: Impact on Hours of Occupational Training

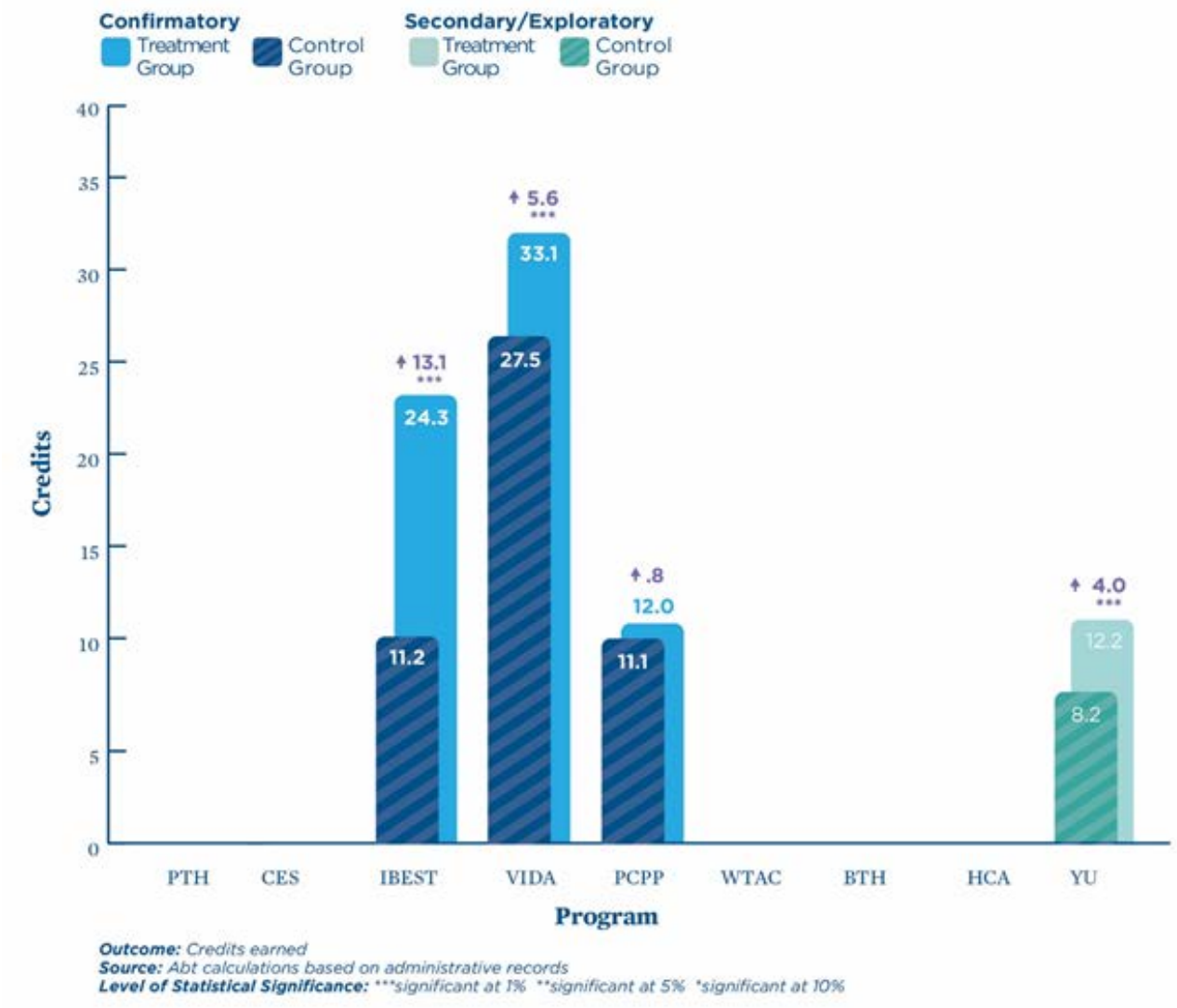


As the exhibit shows, both PTH and CES produced statistically significant impacts: an estimated 50 percent increase (from 127 hours to 190 hours) in PTH and a 28 percent increase (from 164 hours to 210 hours) in CES.

For an additional four sites (PCPP, WTAC, BTH, and HCA), the study team specified "hours of occupational training" as a secondary outcome. In these sites, shown in light green, the study team did not consider hours of training to be the best indicator of early progress. For example, a program such as WTAC that offers a quick path to credentialing for very low-skilled participants might not produce a large effect on hours of occupational training even if it is a successful program. Only BTH had a significant impact on hours of occupational training.

Exhibit III.2 presents impacts on the ***number of credits earned***. The study team specified this as a confirmatory outcome for three programs (I-BEST, PCPP, and VIDA), again highlighted in blue. While credential attainment and career-track employment were again the longer-term goals of these three programs, all three emphasized completion of longer-term trainings and it therefore seemed likely that impacts on credential attainment would not emerge within 18 to 24 months. In part, this was a result of the combination of basic skills training plus college-based credentials that take from one to two years to complete, meaning that many participants could still be in training at the time of the follow up. For example, VIDA focused largely on higher pathway steps with an associate's degree as the primary credential. Likewise, PCPP's semester-long academies prepared students for entry into either a one-year healthcare diploma program or a two-year healthcare associate's degree program.

Exhibit III.2: Impact on Credits Earned



Outcome: *Credits earned*
Source: *Abt calculations based on administrative records*
Level of Statistical Significance: ****significant at 1% **significant at 5% *significant at 10%*

As the exhibit shows, the PACE evaluation found statistically significant impacts in two of the three programs: a 117 percent increase (13 credits) for I-BEST, and a 20 percent increase (six credits), for VIDA.[21] The estimated impact of less than one credit for PCPP was not statistically significant.

The study team estimated the impact on credits earned in the evaluation of Year Up, but did not designate the outcome as confirmatory. The estimated increase of about 50 percent was statistically significant.

The study team selected ***credential receipt*** as the confirmatory outcome for three programs (WTAC, BTH, and HCA),[22] all of which emphasized short-term training for low-skilled students. For these programs, it seemed reasonable to anticipate that many treatment group members could have earned credentials within the 18-month follow-up period even if they later opted to continue on to additional certifications and degrees. For example, the WTAC program aimed to fast-track students into occupational training at the Workforce Training Academy, which awards credentials that take at most 16 weeks to earn.

One of the three programs (BTH) increased credential receipt by 86 percent (29 percentage points); this impact was statistically significant (**Exhibit III.3**). A second program, WTAC,

---

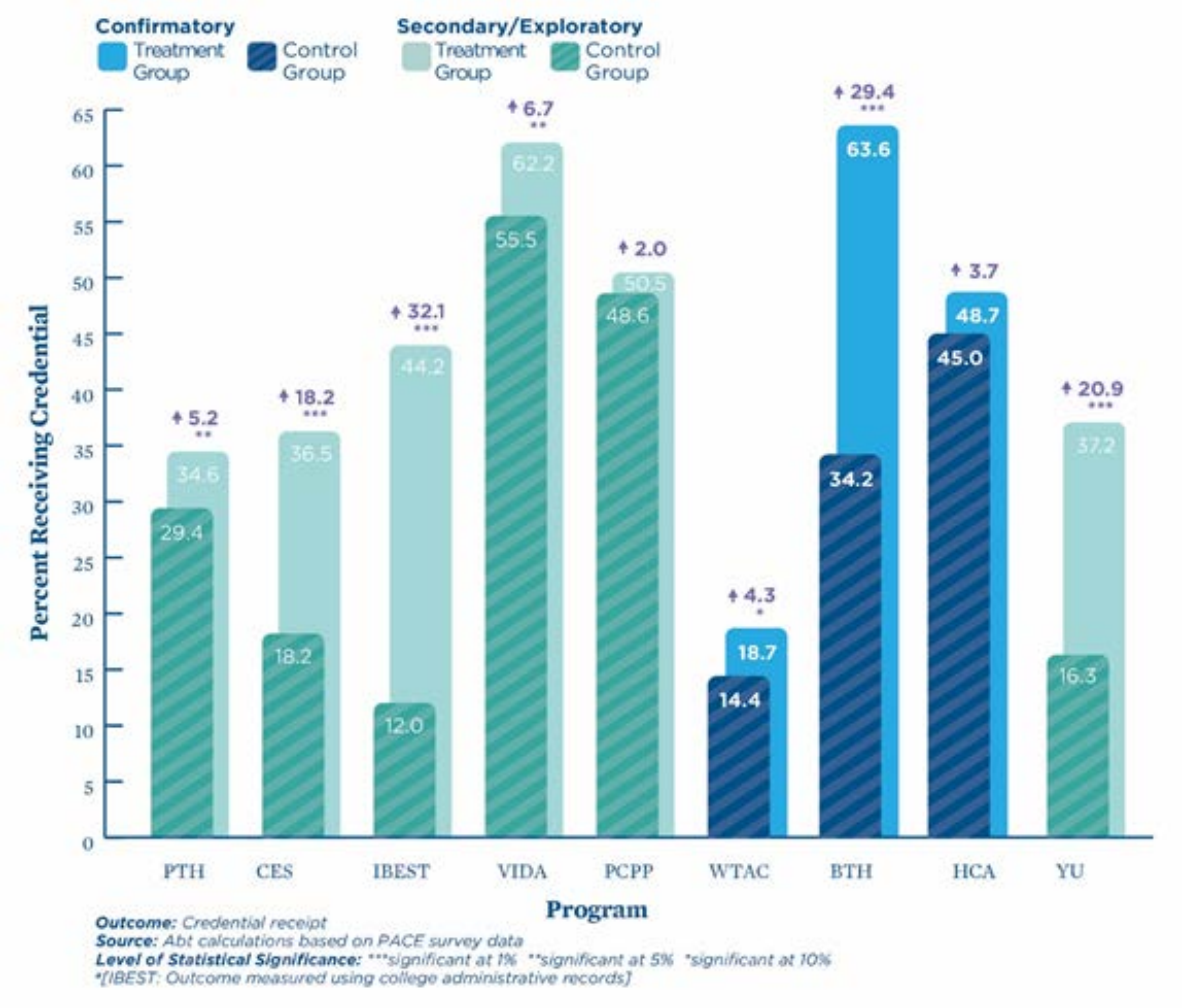
[21] A direct comparison of the magnitudes of the VIDA and I-BEST impact on credits, and their potential to affect downstream outcomes, may be misleading. I-BEST participants uniformly started at the same college entry level, as did their control group counterparts. By contrast, VIDA participants and their control group counterparts started at a variety of levels with different implications for their ability to earn credits. All I-BEST participants started at a step that combined basic skills and occupational training. Thus they could potentially begin accumulating credits as soon as they began the program, and accumulated the same number of credits when they completed their programs (with the number varying by I-BEST program). I-BEST control group members, however, tested too low to enter occupational training, so their most likely educational step was enrollment in developmental education to remediate basic skills. According to program staff, basic skills remediation could take upward of three quarters, during which time control group members could not earn college credits. By contrast, VIDA participants who started at the College Prep Academy level (about 10 percent of those who enrolled in any education or training) could not start accumulating credits until they enrolled in a college occupational training course. More commonly, however, given that VIDA recruited heavily at its partner colleges, a majority of both treatment and control group members were already enrolled in college-level programs. Thus, the great majority of control group members, like their treatment group counterparts, could potentially accumulate college credits also. Finally, VIDA participants who entered the study well into their college coursework, e.g., in the final year of their associate's degree, might have needed to accumulate only a relatively few more credits to graduate, thus capping their ability to outperform their control group counterparts. How the two programs impacts on credits will play out with respect to longer-term effects on credentials, as well as on employment and earnings will only become clear in later reports when PACE directly measures them.

[22] Credentials included certificates, diplomas, and degrees from colleges and other postsecondary schools, as well as professional, state or industry certifications, licenses, or other credentials issued by government regulatory agencies, unions, other professional and trade associations, and businesses. For healthcare programs, the evaluations included non-healthcare credentials because those could also lead to long-term employment success.

improved credential receipt by a smaller amount (30 percent, or four percentage points), which was significant at the 10 percent level. The study team found no evidence that the third program, HCA, had an impact on this outcome: the estimated eight percent (four percentage points) increase shown in **Exhibit III.3** was not statistically significant. As noted earlier, there was no statistically significant difference in enrollment in education and training between treatment and control groups at HCA. It is possible that the control group enrolled in similar programs as the treatment group, and thus received the same types of credentials. As with PCPP, the insignificant impact in HCA may be a result of the small treatment-control service differential.

There was a significant increase in credential receipt for all but one (PCPP) of the six programs that had specified credential receipt as a secondary or exploratory outcome. This mirrors the findings for the confirmatory outcomes across the nine programs; i.e., all of the programs that had confirmatory impacts also improved credential receipt.

Exhibit III.3: Impact on Credential Receipt

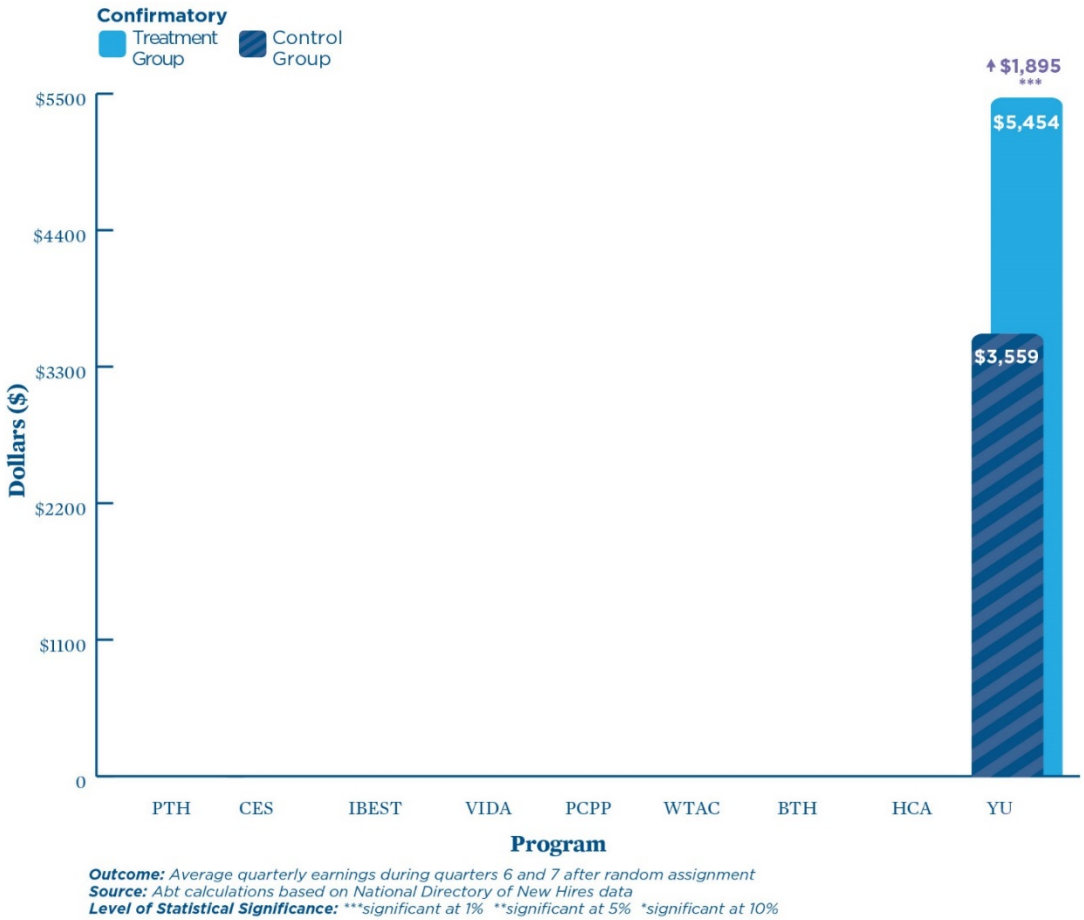


- ***Only one program, Year Up, aimed to improve earnings in the short term. The program succeeded, increasing earnings by a large and statistically significant amount.***

Year Up targeted young adults with a high school diploma or equivalent who were motivated and who, with assistance, were likely to overcome challenges and successfully enter careers in fast-growing technical occupations. Unlike the other PACE programs, Year Up did not utilize existing college courses for occupational training and therefore had more control over its timeline to completion. The program provided six months of full-time customized training in the IT and financial service sectors followed by six-month internships. Afterwards, active efforts to support job search and placement continued for up to four months. As a result, the study team felt confident that Year Up could, if successful, produce impacts on quarterly earnings during the sixth and seventh quarters after random assignment (roughly 18 months after random assignment).

Exhibit III.4 presents the impact on ***average quarterly earnings*** during the sixth and seventh quarters after random assignment. The impact was large and statistically significant, with an estimated 53 percent increase in earnings ($1,895) over the two quarters.

Exhibit III.4: Impact on Earnings



Outcome: *Average quarterly earnings during quarters 6 and 7 after random assignment*
Source: *Abt calculations based on National Directory of New Hires data*
Level of Statistical Significance: ****significant at 1% **significant at 5% *significant at 10%*

B. Impacts on Early Career Progress (Secondary and Exploratory Outcomes)

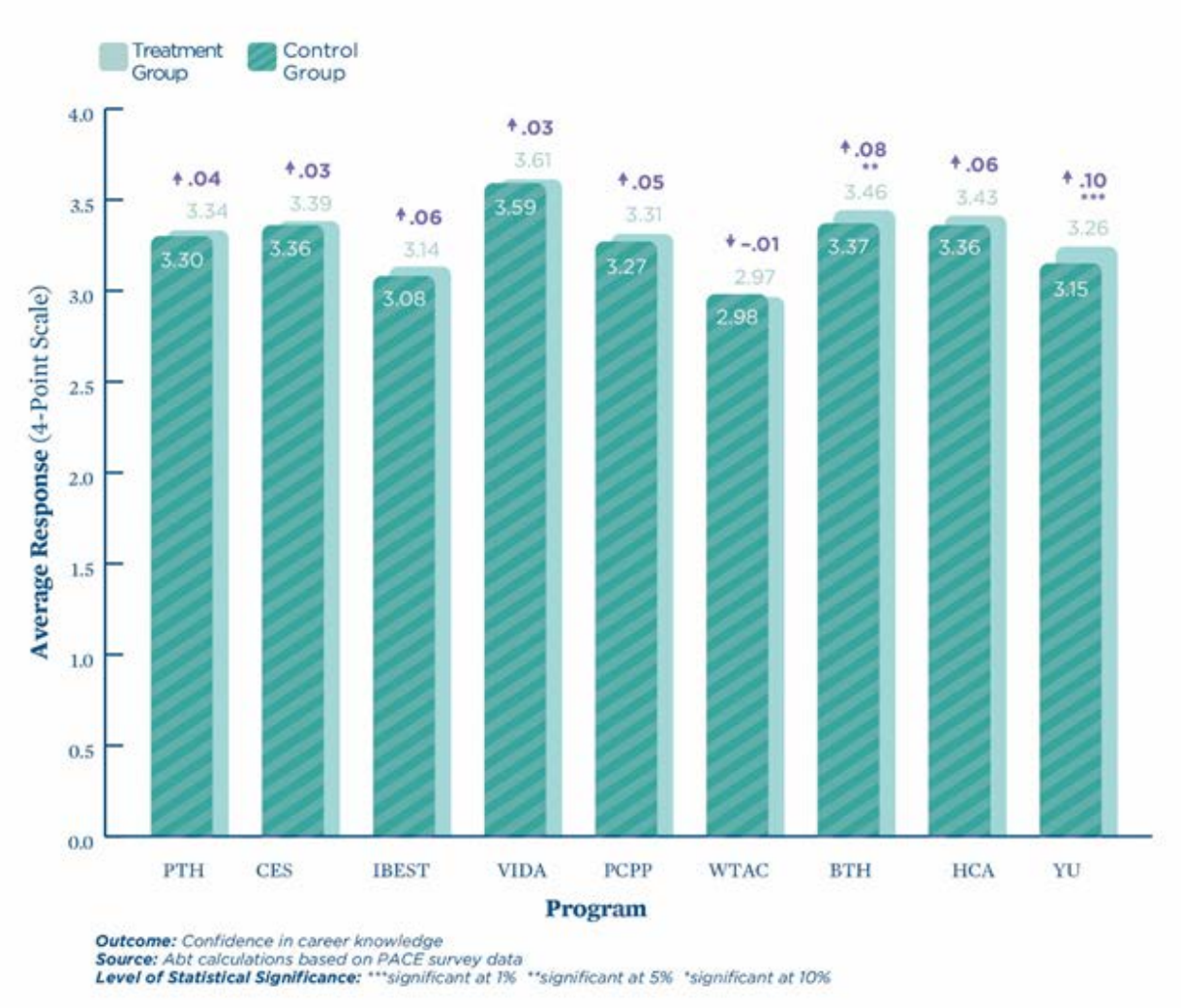
Asking participants about their career progress may provide early hints about whether they are on track to achieve long-term career goals. Because target populations often needed basic skills education before proceeding to occupational training or credit-bearing courses, participants may still have been making their way through the PACE programs at the time 18 to 24 month outcomes were being assessed. For that reason, the short-term reports did not focus on employment or earnings outcomes (with the exception of Year Up), which will be assessed using administrative data at the longer-term follow up points. However, the short-term reports did include impact estimates for two other measures of early career progress: confidence in career knowledge and self-assessed career progress. Each outcome was reported in all of the program evaluations, and findings may provide some early hints about whether participants are on track to achieve good long-term career outcomes.

- ***PACE programs did not substantially improve participants' confidence in their career knowledge. High levels of confidence in the control groups may have meant that there was not much room for improvement.***

Most programs aimed to improve career knowledge as a step towards improving employment outcomes, and for all nine programs the study team selected self-assessed confidence in career knowledge as a secondary outcome. It was measured using a seven-item, four-point scale of self-assessed confidence, with response categories ranging from "strongly disagree" to "strongly agree."[23] The results are presented in **Exhibit III.5**. There were significant increases in only two programs (BTH and Year Up), but even these increases were small. Notably, however, confidence was high in both the treatment and control groups, with self-reported confidence averaging above three on a four-point scale in all but one site (WTAC). With such high confidence in the control group, programs had little room to move the needle.

[23] The seven items are: (1) You know how to accurately assess your abilities and challenges? (2) You know how to make a plan that will help achieve your goals for the next five years? (3) You know how to get help from staff and teachers with any issues that might arise at school? (4) You know the type of job that is best for you? (5) You know the type of organization you want to work for? (6) You know the occupation you want to enter? (7) You know the kind of education and training program that is best for you?

Exhibit III.5: Impact on Confidence in Career Knowledge

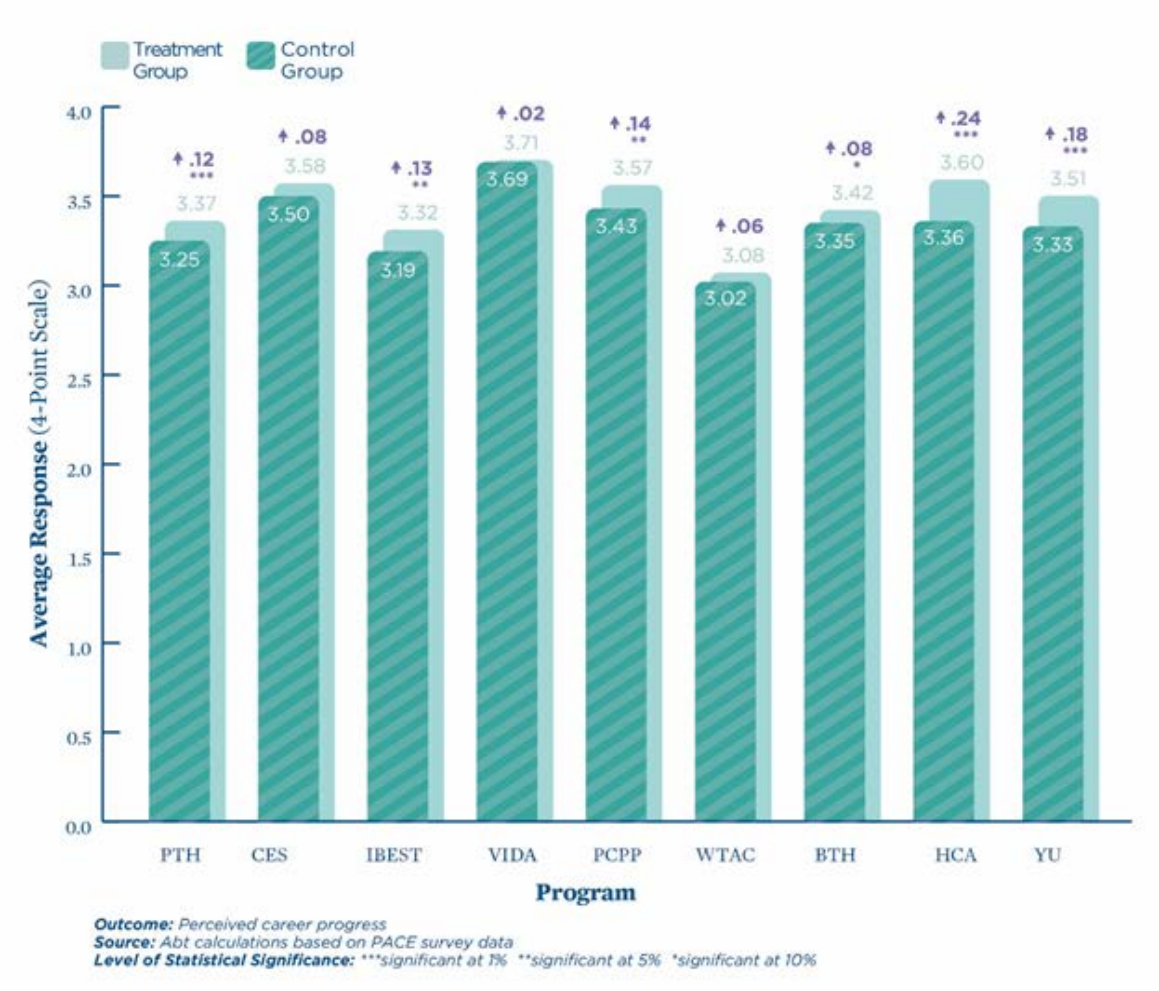


- ***A majority of programs were able to improve participants' perceptions of their career progress. Again, highly positive perceptions in the control group may have limited the programs' room for improvement.***

Another way of assessing whether participants are on track to improve their employment and earnings prospects is to ask them whether they think they are making progress in their careers. Correspondingly, all nine evaluations examined participants' self-assessed career progress on a three-item, four-point scale where response categories ranged from "strongly disagree" to

"strongly agree."[24] **Exhibit III.6** presents the results, which were mostly positive. The study team found statistically significant increases for six of the nine programs. The magnitude of the impact was not large in any program, perhaps again because both treatment and control group members had high scores.

Exhibit III.6: Impact on Perceived Career Progress



[24] This new scale created for PACE was designed to measure an individual's sense of progress in a career pathways program as described in Fein (2012).The three items were: (1) I am making progress towards my long range educational goals, (2) I am making progress towards my long-range employment goals, and (3) I see myself on a career path.

IV. Key Findings

This paper summarizes implementation and early impact findings across the nine programs that participated in the PACE evaluation. The paper highlights the degree to which programs varied in their design and implementation of key career pathways framework components, and how program design influenced the selection of outcomes.

- ***PACE evaluated a diverse range of programs, incorporating the broad umbrella that the career pathways framework encompasses.***

Comparison of models is difficult because of differences in populations served, program steps, program goals, and the array of services programs provide. The PACE study team categorized the programs roughly as follows:

- Multi-step college-based programs that span basic skills remediation through multiple, stackable credentials (I-BEST and PTH).
- College-based programs focused on accelerated basic skills remediation to prepare for occupational training (PCPP and WTAC).
- Workforce Investment Board-based programs that provided ITA vouchers and supports (BTH, HCA).
- Community-based organization programs that provided intensive academic and non-academic supports to assist with training enrollment and completion (CES and VIDA).
- Significant single step workforce program (Year Up).

Within these clusters, programs varied in terms of the types and levels of support; for example, academic versus non-academic advising, instructional supports such as tutoring, financial support for tuition and other school-related expenses, and provision of non-academic supports such as childcare or transportation subsidies. Some programs were semester-long bridge programs while others included multiple steps that could span years. Some focused on helping participants obtain a credential followed by employment, while others focused on preparing them for the next training step.

As a result, it is helpful to think about career pathways as an integrative framework for promising approaches to postsecondary education and training for low-income and low-skill adults, rather than as a program model.

- ***Recruitment was a challenge for almost all programs.***

Most programs aimed to recruit and randomly assign 1,000 study participants equally between the treatment group and the control group. In order to do this, programs had to increase the volume of applicants, not only to cover the control group but often to accommodate a 500-

person treatment group. Programs that operated at a smaller scale (that is, less than 500 participants over two years) had additional challenges.

Despite the availability of evaluation funds to support new recruitment efforts, the most common sources of program applicants were word of mouth, "internal" referrals from within the organization, and referrals from community partners, such as TANF programs. Programs that succeeded in increasing applicant volume reported they "thought outside the box," purchasing billboards, placing advertisements on buses, and purchasing ads and placing stories in local free newspapers. As well, staff noted the importance of having early and frequent conversations with program partners in the community to ensure a continued stream of referrals. Programs that failed to meet recruitment targets generally cited overall decline in the target population (e.g., fewer students going to college), failure to convert initially interested prospective students into program applicants (e.g., not determining the cause(s) of drop off and how to address it), and difficulty relaying the value of a new program to the target population. While in part driven by the need for a control group, the inability to fill courses indicates potential challenges in scaling up some of these programs.

- ***Programs had the most flexibility to design and implement basic skills bridge programs.***

A key consideration in the ability to design and implement innovative instructional practices, such as contextualization and active learning methods, was whether the program directly provided instruction or relied on a partner to provide the service. Programs that offered their own basic skills bridge programs (e.g., PTH, VIDA, CES), or integrated basic skills into occupational training (e.g., I-BEST) had flexibility in the timing of the programs, content, and learning methods. There were fewer examples of innovative approaches to occupational training. Most often, programs utilized standing college courses for occupational training, which were heavily lecture-based and rarely contextualized. Programs that provided students with Individual Training Accounts to attend any accredited postsecondary training institution had the least ability to affect the timing and content of training courses; however, private, for-profit schools had other aspects of innovative instruction, notably flexible schedules and accelerated courses.

- ***Programs generally offered but did not mandate advising.***

All PACE programs offered academic and non-academic advising. In some instances (e.g., CES lower bridges, PTH) different staff advised on academic and non-academic issues with the goal of specializing. In others (e.g., BTH, HCA, PCPP) the same advisor was the point person for all issues. With few exceptions, advising was encouraged but not mandatory. Some programs required an initial meeting to discuss academic planning (e.g., BTH, HCA, and PTH) but further advising, while recommended, was not required. Program staff reported that they encouraged regular meetings, but there was little advisors could do to compel participation (e.g., there were "carrots" but no "sticks"). The two exceptions were VIDA and Year Up, which required

weekly advising as a condition of participation. Failure to attend VIDA's group session or one-on-one meeting could lead to suspension of tuition and other support and removal from the program. Year Up participants could also be penalized or removed from the program if they did not participate in weekly advising.

- ***Financial support, when provided, largely focused on support for training.***

Three programs provided training at no cost to participants (CES lower bridges, WTAC, Year Up), while others provided ITAs or scholarships (BTH, HCA, PTH), or funding to fill the gap between existing financial aid and the cost of the program (I-BEST, VIDA). Other programs helped students apply for financial aid. Less common was financial support for non-academic issues. The three HPOG programs (BTH, PTH, and HCA) could authorize a specified amount of funds for necessary supports, such as transportation and childcare, as did VIDA. Year Up provided a weekly stipend to participants. Other programs had funds for one-time emergencies (PCPP, VIDA). All programs made referrals to community social services partners as needed.

- ***Employment supports largely focused on topical workshops.***

BTH, CES, HCA, and WTAC offered end-of-course job readiness classes to prepare participants for their job searches. Two programs that did not provide employment related workshops (I-BEST, PCPP) cited the expectation that participants would continue their education and not seek employment as the reason. One program (PTH) continued to refine its employment workshops as it noticed program completers struggle to transition to jobs. Dedicated job developers were less common; CES included two job developers and two programs (BTH and HCA) added these positions in response to identified student needs.

- ***With few exceptions, experiential learning was limited to healthcare training courses.***

Clinical placements were required elements of some healthcare-related programs, such as Certified Nursing Assistant and Licensed Vocational Nurse, at programs that offered these courses. One I-BEST training program included a mandatory internship. As noted earlier, BTH tried to implement post-training experiential learning in partnership with a local university's clinics, but was unable to do so. Year Up was the exception, with a six-month full-time internship a required core component.

- ***Programs had high levels of enrollment in education and training.***

Eight of the nine programs had positive and statistically significant impacts, ranging from 12 percent to 43 percent. Enrollment in education and training ranged from a high of over 80 percent to a low of 50 percent. Thus, in most programs, the treatment group was significantly more likely to engage in employment and training than the control group.

- ***PACE programs increased receipt of other key career pathways services, but few treatment group members received the services.***

Seven programs had a statistically significant impact on receipt of career counseling; among these programs, impacts ranged from 33 percent to almost doubling. The proportion of treatment group members who engaged in career counseling was lower than for education and training, ranging from 20 percent to 59 percent.

Seven programs had a statistically significant impact on assistance arranging supports for school, work, or family. Among these, impacts ranged from 76 percent to almost tripling. The proportion of the treatment group that reported help arranging supports was lower still, ranging from 13 percent to 44 percent.

Finally, eight programs had a statistically significant impact on receipt of job placement or job search services. For seven of these programs, the impact was positive, ranging from 23 percent to more than doubling. Among all programs, the proportion of treatment group members engaging in this service ranged from a low of six percent to a high of 62 percent.

- ***Seven programs had a significant impact on their confirmatory outcome.***

Thus, most PACE programs seem to be on track to achieving their long-term goals. Notably, the two programs for which there was no evidence of an early impact, PCPP and HCA, were also the programs that had the smallest impacts on most measures of service receipt. In other words, the programs that successfully generated a service receipt differential all had impacts on their key (confirmatory) short-term outcomes.

- ***At this point it is too soon to have a full picture of post-program steps.***

Depending on the program, the next step includes progression to the next training step on the pathway or to employment. Longer-follow-up is underway to determine whether training translates into employment outcomes and if participants continue on their training pathways (and if so, whether they work before returning).

Future PACE reports will cover a 36-month follow-up period and will continue to examine educational outcomes, as well as employment outcomes, such as average rate of employment and average earnings over successive follow-up quarters, and job characteristics, such as occupation, hourly wage, receipt of benefits, and career progress. Some reports will also include a cost-benefit analysis. Later, an analysis at 72 months after random assignment will estimate long-term effects of the programs in PACE.

References

Abt Associates. 2014. *Pathways for Advancing Careers and Education Evaluation Design Report*. OPRE Report #2014-76. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. https://www.acf.hhs.gov/opre/resource/pathways-for-advancing-careers-and-education-evaluation-design-report

Abt Associates. 2015. *Pathways for Advancing Careers and Education (PACE). Technical Supplement to the Evaluation Design Report: Impact Analysis Plan.* OPRE Report #2015-100. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. https://www.acf.hhs.gov/opre/resource/pathways-for-advancing-careers-and-education-supplement-evaluation-design-impact-analysis-plan

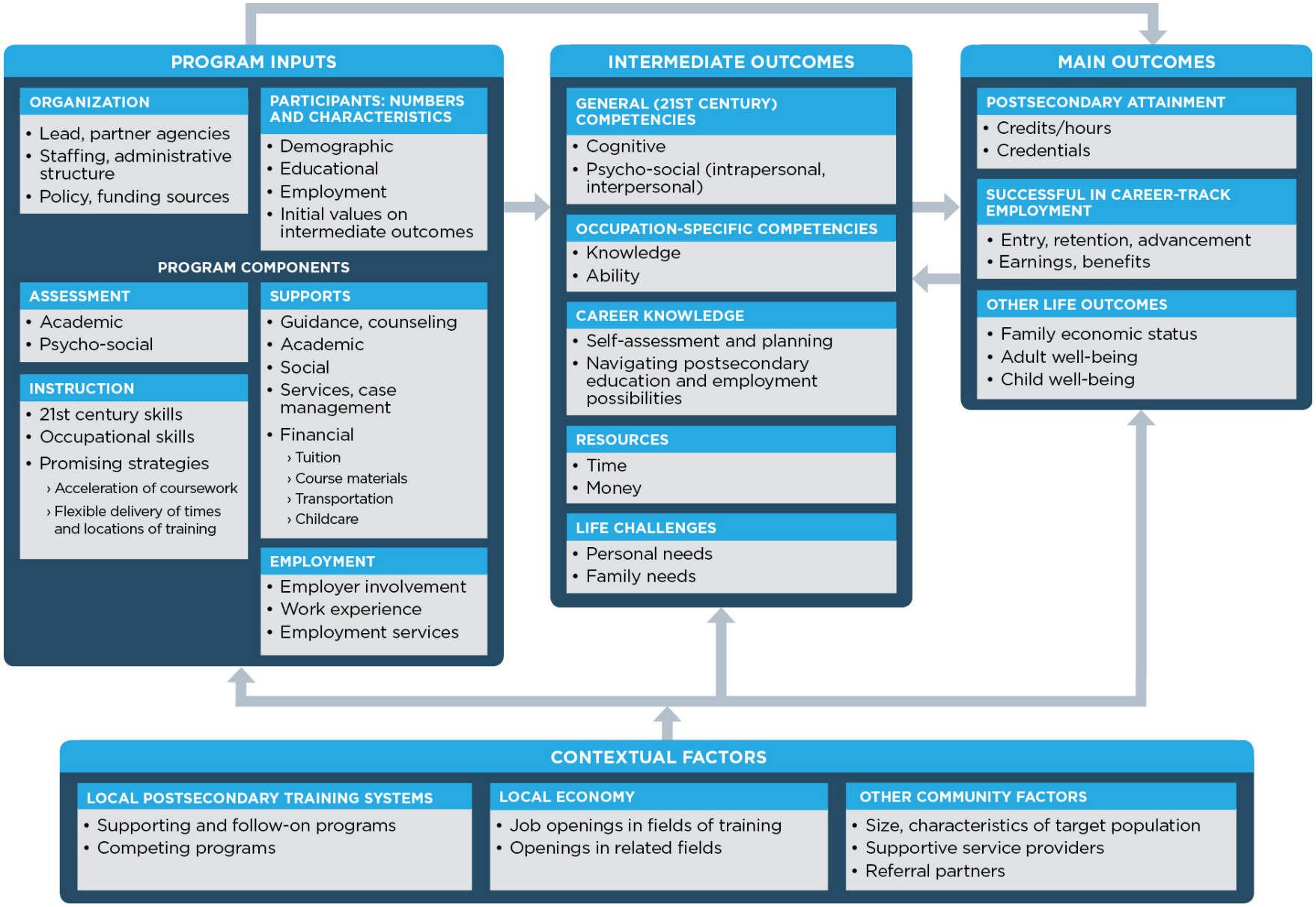
Betz, N.E. and Taylor, K.M. 2001. *Manual for the Career Decision Self-efficacy Scale and CDMSE—Short form*. Columbus: The Ohio State University.

Carnevale, A., N. Smith, and J. Strohl. 2013. *Recovery: Job Growth and Education Requirements Through 2020.* Washington, DC: Georgetown University Center on Education and the Workforce. https://cew-7632.kxcdn.com/wp-content/uploads/2014/11/Recovery2020.FR_.Web_.pdf

Fein, David J. 2012. *Career Pathways as a Framework for Program Design and Evaluation*. OPRE Report #2012-30. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. https://www.acf.hhs.gov/opre/resource/career-pathways-as-a-framework-for-program-design-and-evaluation-a-working

Washington Student Achievement Council (WSAC). 2015. *2015 Roadmap Report: Measuring Our Progress.* Olympia, WA: Author. http://www.wsac.wa.gov/sites/default/files/2015.Roadmap.Report.pdf

Appendix A: PACE Career Pathways Theory of Change


PROGRAM INPUTS
ORGANIZATION
• Lead, partner agencies
• Staffing, administrative structure
• Policy, funding sources
PARTICIPANTS: NUMBERS AND CHARACTERISTICS
• Demographic
• Educational
• Employment
• Initial values on intermediate outcomes
PROGRAM COMPONENTS
ASSESSMENT
• Academic
• Psycho-social
INSTRUCTION
• 21st century skills
• Occupational skills
• Promising strategies
› Acceleration of coursework
› Flexible delivery of times and locations of training
SUPPORTS
• Guidance, counseling
• Academic
• Social
• Services, case management
• Financial
› Tuition
› Course materials
› Transportation
› Childcare
EMPLOYMENT
• Employer involvement
• Work experience
• Employment services
INTERMEDIATE OUTCOMES
GENERAL (21ST CENTURY) COMPETENCIES
• Cognitive
• Psycho-social (intrapersonal, interpersonal)
OCCUPATION-SPECIFIC COMPETENCIES
• Knowledge
• Ability
CAREER KNOWLEDGE
• Self-assessment and planning
• Navigating postsecondary education and employment possibilities
RESOURCES
• Time
• Money
LIFE CHALLENGES
• Personal needs
• Family needs
MAIN OUTCOMES
POSTSECONDARY ATTAINMENT
• Credits/hours
• Credentials
SUCCESSFUL IN CAREER-TRACK EMPLOYMENT
• Entry, retention, advancement
• Earnings, benefits
OTHER LIFE OUTCOMES
• Family economic status
• Adult well-being
• Child well-being
CONTEXTUAL FACTORS
LOCAL POSTSECONDARY TRAINING SYSTEMS
• Supporting and follow-on programs
• Competing programs
LOCAL ECONOMY
• Job openings in fields of training
• Openings in related fields
OTHER COMMUNITY FACTORS
• Size, characteristics of target population
• Supportive service providers
• Referral partners

Appendix B: PACE Study Participant Characteristics

Characteristic	*Bridge to Employment in the Healthcare Industry*	*Carreras en Salud*	*Health Careers for All*	*I-BEST*	*Patient Care Pathway Program*	*Pathways to Healthcare*	*Workforce Training Academy-Connect*	*VIDA*	*Year Up*	*All Programs*
Age (%)										
Under 21	12.3	17.9	6.3	22.2	23.4	8.4	14.3	14.1	42.8	21.9
21-24	20.0	26.6	16.1	14.9	21.2	13.0	16.4	22.9	56.4	29.0
25-34	32.3	34.1	43.7	29.8	30.0	31.7	27.7	40.6	0.8	24.6
35+	35.5	21.4	33.9	33.2	25.4	46.9	41.6	22.4	0.0	24.5
Female (%)	83.7	92.9	85.2	57.5	84.3	82.7	62.6	70.9	41.0	67.5
Race/ethnicity (%)										
Hispanic	46.5	99.4	12.8	26.0	8.8	55.8	15.3	95.8	31.4	45.0
Black, non-Hispanic	21.6	0.0	51.4	7.6	20.8	11.5	47.4	0.9	54.0	28.2
White, non-Hispanic	19.5	0.6	28.9	54.9	67.3	26.6	33.8	3.0	8.5	21.2
Other, non-Hispanic	15.0	0.0	14.6	14.1	6.4	8.0	7.1	0.1	11.4	8.8
Family structure (%)										
Not living with spouse/partner and not living with children	46.4	43.0	37.3	47.2	43.5	36.5	49.5	42.2	86.6	55.1
Not living with spouse/partner but living with children	28.2	24.1	36.4	16.6	18.3	38.9	20.1	28.2	6.5	21.7
Living with spouse/partner and not living with children	12.0	11.7	11.4	17.3	19.7	7.7	19.9	15.8	4.5	11.3
Living with spouse/partner and children	13.4	21.3	14.9	18.9	18.5	17.0	10.5	13.8	2.4	12.0
Living with parents (%)	28.7	36.1	15.1	28.6	26.5	24.1	16.9	33.2	68.4	38.0
One parent has at least some college (%)	44.4	17.8	44.7	45.3	51.8	43.6	30.2	26.3	55.4	42.4
Usual high school grades (%)										
Mostly got A's	19.9	16.4	23.2	6.9	6.1	19.4	8.3	19.3	10.4	14.3
Mostly got B's	54.4	51.6	48.5	33.2	43.1	50.3	36.9	65.7	49.4	49.5
Mostly got C's or below	25.7	32.0	28.4	59.9	50.8	30.3	54.8	15.0	40.3	36.2
Highest level of education completed (%)										
Less than a high school degree	3.6	9.7	13.4	30.7	3.0	8.4	40.1	0.7	0.6	9.8
High school or equivalent	36.7	49.2	29.8	40.0	44.4	34.5	36.8	26.1	51.8	40.7
Less than 1 year of college	19.4	13.7	14.4	11.1	24.8	16.4	10.8	15.8	22.1	17.4
1 or more years of college	23.3	17.4	24.0	9.5	21.6	26.3	8.2	52.7	22.5	23.5
Associates Degree or higher	17.0	10.0	18.4	8.8	6.3	14.5	4.2	4.7	3.1	8.6
Received vocational or technical certificate or diploma (%)	44.6	32.7	39.8	19.3	39.5	44.6	20.9	31.4	18.4	30.3

Characteristic	*Bridge to Employment in the Healthcare Industry*	*Carreras en Salud*	*Health Careers for All*	*I-BEST*	*Patient Care Pathway Program*	*Pathways to Healthcare*	*Workforce Training Academy-Connect*	*VIDA*	*Year Up*	*All Programs*
Family income last year (%)										
Less than $15,000	53.1	34.4	64.1	47.3	25.6	48.9	56.0	50.9	37.1	45.4
$15,000 to $29,999	29.2	41.5	24.2	23.9	29.9	36.2	26.1	36.5	25.7	30.1
$30,000+	17.7	24.1	11.7	28.8	44.6	14.9	18.0	12.6	37.2	24.5
Average ($)	17,319	21,051	13,534	22,110	33,165	17,236	16,364	16,376	27,021	21,025
Received WIC or SNAP in past 12 months (%)	47.6	42.4	80.3	58.6	35.6	68.3	65.8	67.6	32.8	52.3
Received public assistance or TANF in past 12 months (%)	19.9	4.7	41.1	21.3	4.4	7.7	14.4	5.5	6.6	11.9
Reported financial hardship in past 12 months (%)	53.8	36.8	61.2	48.5	34.3	59.4	62.7	67.2	29.7	47.8
Current work hours (%)										
0	61.9	48.9	69.9	66.6	27.9	65.6	62.2	64.9	47.6	56.7
1 to 19	10.4	5.8	9.6	8.5	11.5	6.8	5.1	11.8	10.5	9.0
20 to 34	16.1	20.7	14.3	11.7	32.6	15.6	13.3	14.8	26.7	19.4
35+	11.6	24.6	6.3	13.2	27.9	12.0	19.5	8.5	15.2	14.9
Expected work hours next few months (%)										
0	24.4	22.7	24.2	41.1	18.3	30.4	22.4	55.3	36.3	32.2
1 to 19	9.2	6.3	11.3	9.9	15.1	5.8	4.7	12.6	23.0	12.8
20 to 34	29.7	40.0	34.8	32.0	47.4	37.4	27.9	21.0	31.1	32.4
35+	36.7	30.9	29.7	17.0	19.2	26.5	45.1	11.2	9.6	22.6
Expect to attend school part-time (%)	27.3	29.3	23.3	32.4	40.3	17.2	50.0	5.4	11.6	22.5
Total sample	1,004	799	652	631	499	1,217	943	958	2,539	9,242