



# **Madison Area Technical College Patient Care Pathway Program: Implementation and Early Impact Report**



## **Executive Summary**

## **Pathways for Advancing Careers and Education**

OPRE Report No. 2018-48



September 2018



**PACE**  
Pathways for Advancing  
Careers and Education

# Madison Area Technical College Patient Care Pathway Program: Implementation and Early Impact Report

## Pathways for Advancing Careers and Education (PACE)

OPRE Report No. 2018-48

September 2018

Rachel Cook, Jill Hamadyk, Matthew Zeidenberg, Howard Rolston, and Karen Gardiner, 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 Inc.

6130 Executive Boulevard

Rockville, MD 20852

This report is in the public domain. Permission to reproduce is not necessary. Suggested citation: Cook, R., Hamadyk, J., Zeidenberg, M., Rolston, H., and K. Gardiner. (2018). *Madison Area Technical College Patient Care Pathway: Implementation and Early Impact Report*, OPRE Report # 2018-48, Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Disclaimer

The views expressed in this publication do not necessarily reflect the views or policies of the Office of Planning, Research, and Evaluation, the Administration for Children and Families, or the U.S. Department of Health and Human Services.

This report and other reports sponsored by the Office of Planning, Research, and Evaluation are available at <http://www.acf.hhs.gov/programs/opre/index.html>.



Sign-up for the  
[ACF OPRE News E-  
Newsletter](#)



Like OPRE on Facebook  
[facebook.com/OPRE.ACF](https://facebook.com/OPRE.ACF)



Follow OPRE on  
Twitter [@OPRE\\_ACF](https://twitter.com/OPRE_ACF)



## Executive Summary

Over the next 10 years, the federal government projects that demand for workers in healthcare jobs will grow quickly as the population grows and ages.<sup>1</sup> Successfully meeting the need for more healthcare workers is important both to the national economy and to the quality of healthcare available to the population. This demand also creates opportunities for low-income adults' entry-level employment and advancement to higher-skilled jobs. Almost all jobs in healthcare require some level of training after high school. Policymakers, workforce development organizations, educators, and other key stakeholders are very interested in how to enable the match between the nation's need for a skilled workforce and low-income adults' need for employment.

### Patient Care Pathway Program

This report provides early evidence on the implementation and impacts of the **Patient Care Pathway** program, operated between 2011 and 2014 by **Madison Area Technical College** (hereafter referred to as Madison College), a community college in the Madison, Wisconsin, area. The program aimed to help low-skilled students access occupational training in the growing healthcare sector. Through the Patient Care Pathway program, Madison College combined occupational courses, contextualized basic skills courses, and advising into semester-long "academies." The goal was to promote persistence toward and completion of college-level healthcare diploma and degree programs.

The Patient Care Pathway program adapted and connected existing one-semester programs to create three Patient Care Pathway academies. The purpose of the academies was to give students with low test scores (ACT Compass™) an accelerated pathway into the healthcare training program of their choice. Patient Care Academy 1 (PCA1) targeted students interested in a one-year healthcare diploma; Patient Care Academy 2 (PCA2) targeted students interested in pursuing a two-year associate's degree in healthcare. PCA1 was also the starting point for students interested in a two-year degree

#### Quick Evaluation Findings

- The program implemented most components as planned, with some modifications. The exception was the advising component, which was less intensive than planned.
- Healthcare program admission policies at Madison College created barriers for admission to and timely completion of diploma and degree programs.
- Over an 18-month follow-up period, compared with control group members, treatment group members (those with access to the Patient Care Pathway program):
  - did not earn more college credits;
  - did not earn more credentials;
  - were seven percentage points more likely to be enrolled in occupational training; and
  - did not participate in more hours of occupational training.

<sup>1</sup> Bureau of Labor Statistics, U.S. Department of Labor. 2015. "Employment Projections: 2014-24 Summary." Press Release. Accessed September 1, 2016, <http://www.bls.gov/news.release/ecopro.nr0.htm>.

program, but who did not have the required basic skills to be eligible for PCA2. After completing PCA1, students who successfully met the required test scores could enroll in a one-year healthcare diploma program or continue to PCA2. At the outset of the study, students who completed PCA2 were qualified to enroll in one of the college's two-year healthcare degree programs without retesting, though that later changed. The Patient Care Pathway program added a third academy, Patient Care Nursing Assistant (PCNA), in 2013, after the study had started. Students who successfully completed PCNA could transition to PCA1 or (if they had the required basic skills) PCA2, or seek employment.

**Patient Care Pathway academies.** The Patient Care Pathway academies had the following characteristics:

- **Sectoral bridge program.** Programs that package occupational training and remediation of basic skills to prepare students for a specific occupational field are described as *sectoral bridge programs*. Each academy provided such a set of basic and occupational skills courses delivered over a semester.
- **Sequenced training steps.** By packaging specific sets of courses in each academy, the Patient Care Pathway program created a clear pathway to enrollment in healthcare diploma or degree programs.
- **Acceleration.** The goal of the academies was to accelerate students' entry into the college's healthcare programs by shortening the time spent on remediation for students whose reading, writing, and math skills were too low to gain admission directly. In the absence of the academies, students would have to improve their basic skills first by completing up to three semesters of coursework in the college's developmental education sequence. In comparison, the academies paired basic skills and occupational coursework in one semester.
- **Contextualization.** The academies contextualized specific basic skills courses by integrating occupational content into their curricula.

**Advising.** The Patient Care Pathway program advisors aimed to meet with assigned students at least three times during a semester. Their role was to work with students to navigate the college system and program admission process, develop an academic plan, and identify and address academic and non-academic barriers. The advisors could do this by helping students access services available at Madison College and in the community and by using an emergency fund to assist them with small, short-term financial needs.

## Pathways for Advancing Careers and Education (PACE) Evaluation

Abt Associates and its partners are evaluating the Patient Care Pathway program as part of the **Pathways for Advancing Careers and Education (PACE)** evaluation. Funded by the Administration for Children and Families (ACF) within the U.S. Department of Health and

Human Services, PACE is an evaluation of nine programs that include key features of a “career pathways framework.”

The **career pathways framework** guides the development and operation of programs aiming to improve the occupational skills of low-income adults by increasing their entry into, persistence in, and completion of postsecondary training. These students are primarily older and nontraditional. The framework describes strategies for overcoming barriers to education and training that these students can face. Key features of this framework include:

- a series of well-defined training steps;
- promising instructional approaches targeted to adult learners;
- services to address academic and non-academic barriers to program enrollment and completion; and
- connections to employment.

The Patient Care Pathway program evaluation comprises two components: An **implementation study** examined the design and operation of the program and enrolled students’ participation patterns. An **impact study** used an experimental design to measure differences in educational and employment outcomes between students randomly assigned to a group that could access the Patient Care Pathway program (treatment group) and a group that could not (control group). Using data from baseline surveys, a follow-up survey, Madison College records, and site visits, this report provides the results from the implementation study and describes the early impacts of the program (18 months after random assignment) on education and training.<sup>2</sup>

## Key Findings

This summary documents findings from the implementation study and early findings (18 months after random assignment) from the impact study, including the number of college credits students earned—the confirmatory outcome used to assess the early effects of the Patient Care Pathway program.

### Implementation Study

The implementation study examined how planned Patient Care Pathway program instruction and supportive services were implemented, patterns of engagement in the program by its

---

<sup>2</sup> The analysis plan is on the ACF website: <http://www.acf.hhs.gov/opre/resource/pathways-for-advancing-careers-and-education-supplement-evaluation-design-impact-analysis-plan>. Outcomes were also registered on the What Works Clearinghouse (WWC) and Open Science Framework (OSF) sites. The analysis plan was posted to the WWC online registry of randomized control trials (RCT) on May 20, 2016. In September 2016, under the terms of a grant from the Institute of Education Sciences, the RCT registry information was removed from the WWC website and transferred to the Society for Research on Educational Effectiveness (SREE). SREE plans to re-launch the registry in late 2018, at which time the analysis plan will be available in a searchable online database. Registration on the OSF website can be found at <https://osf.io/q5weg/>.

students, and receipt of education and training and services by the treatment group members relative to the control group. Key findings from the implementation study are summarized in Exhibit ES-1 and described in detail below.

**Exhibit ES-1. Summary of Key Findings from the Patient Care Pathway Program Implementation Study**

Evaluation Question	Conclusion
Was the program implemented with fidelity to the design?	The Patient Care Pathway program implemented most components as planned, including the training and instructional approaches, with some small modifications.
How did the program deviate from the design?	<p>The program had recruitment challenges and enrolled just half of the planned study sample. Thus, the program operated at a smaller scale than planned, resulting in a small study sample and larger sampling errors, which makes it harder to detect moderate-sized impacts. The program added two instructional supports (a supplemental instructor and group tutoring sessions) intended to increase students' academic success. The advising component was less intensive than planned.</p> <p>Control group members received more guidance on course selection and registration than planned—a deviation from the study protocol that lessened the service contrast. The program manager provided this additional guidance in one-on-one intake sessions for an estimated 50 percent of control group members. However, the study team found low levels of enrollment in recommended courses in the semester after random assignment, suggesting that any effects of this additional guidance would likely be small.</p>
Were there gaps or omissions in the program design?	<p>The program aimed to move students into healthcare diploma and degree programs quickly by shortening the time required to raise basic skills levels, but it did not address other barriers at Madison College that delayed admission to and completion of healthcare programs.</p> <p>Specific college policies that created barriers to timely program admission included short and infrequent application windows, lags of up to a year between an application window and program admission and start dates, and the adoption of the Test of Essential Academic Skills (TEAS) assessment as an admission requirement partway through the random assignment period. Even after successfully gaining admission to a healthcare program, students often faced long waitlists that delayed them enrolling in core courses, which slowed their progress toward diploma or degree completion.</p>
What were students' participation patterns and experiences with program services?	<p>The majority of treatment group members (91 percent) participated in at least one of the Patient Care Pathway academies. Completion rates for the academies were high: 50 percent for PCNA, 81 percent for PCA1, and 78 percent for PCA2. However, less than a quarter of treatment group members earned a credential within the 18-month follow-up period. During the same follow-up period, only seven percent of all treatment group members gained admission to one of the healthcare programs targeted by PCA1 or PCA2. The majority of treatment group members were still enrolled in courses at the end of the follow-up period.</p> <p>The Patient Care Pathway program did not have a statistically significant impact on receipt of any education or training.</p>

- *Recruitment challenges led the Patient Care Pathway program to operate at a smaller scale than expected.*

Throughout the study period, program staff struggled to recruit enough students to meet the evaluation's sample goals. Staff implemented strategies to increase enrollment in the program, including adding a full-time recruiter, working with a technical assistance provider, and adding PCNA to the pathway. However, at the end of the random assignment period, the program had recruited just 500 study participants—half of the target sample of 1,000.

- *The Patient Care Pathway program delivered training largely as designed.*

The program contextualized specific basic skills courses in PCA1 and PCA2 for the healthcare field as planned. In its instructional approaches, the program aimed to emphasize active learning (e.g., group work and problem-solving tasks) and use technology to supplement in-class instruction. The program implemented these instructional approaches when possible, but instructors reported that some courses necessitated a traditional, lecture-based format.

During the first year of the study, the program added two instructional supports intended to increase students' academic success. In response to PCA2 students' difficulties with the Chemistry class, staff added a supplemental instructor who attended the class, took notes to share with students with learning disabilities who needed academic accommodations, and facilitated an optional review session each week. The program advisor also organized group tutoring for PCA1 students who needed or wanted additional instructional support. Finally, after Madison College implemented the Test of Essential Academic Skills (TEAS) assessment for those two-year healthcare program applicants, program staff added a TEAS workshop to help students prepare for it.

- *The Patient Care Pathway program's advising was less intensive than planned, though most treatment group members received advising at least once.*

The program advisors aimed to meet one-on-one with the students assigned to them at least three times over the semester to monitor progress and address any needs. The program had a blueprint for each advising session. The initial session covered financial aid, academic and non-academic barriers to school, and course requirements. The mid-semester session focused on academic plan development. The end-of-semester session focused on academic plans and registration for the next semester's courses.

According to the participant follow-up survey, the majority of students who enrolled in training stated they received academic advising at least once (70 percent). Fewer than half (45 percent) reported receiving academic advising three or more times (i.e., the recommended minimum number of advising sessions). Students who enrolled earlier were more likely to report receiving three sessions of academic advising than were students who enrolled later (51 percent versus 32 percent). Many program participants reported receiving other types of

services, such as financial aid advising and help arranging supports for work or school. While advising was less intensive than planned, Patient Care Pathway students who received any education or training were more likely to receive advising. For the subset of treatment and control group members who reported enrolling in education or training, significantly more treatment group members ever received academic advising supports (70 percent compared with 55 percent of control group members) and received academic advising three or more times (45 percent compared with 35 percent of control group members).

- ***Control group members received more assistance with course selection and registration than planned.***

After the study period concluded, the evaluation team learned of a deviation from study procedures. Specifically, during one-on-one intake sessions the program manager provided potential study participants with specific course recommendations before random assignment. The program manager reported providing this guidance because potential study participants had detailed questions prior to random assignment about the control group pathway and how it compared to the Patient Care Pathway program available to the treatment group. She also saw this as a helpful way of marketing the program. In addition, the program manager provided some control group members assistance with registering for classes after random assignment.

The additional guidance and assistance enrolling in courses was provided to an estimated 50 percent of those ultimately assigned the control group, thus lessening the service contrast between the treatment and control groups. However, the study team examined enrollment data for the semester after random assignment and found that less than 15 percent of control group members enrolled in any of the recommended courses. This low rate suggests that the provision of guidance prior to random assignment and assistance registering control group members following random assignment is likely to have at most a small negative effect on impact estimates of educational outcomes. Given that the study population was largely recruited within the college, some proportion would have enrolled in courses even without the additional support.

- ***Healthcare program admission policies at Madison College created barriers for Patient Care Pathway academy completers to transition to and complete destination programs.***

The academies aimed to facilitate quick admission to and enrollment in “destination” healthcare diploma and degree programs by shortening the time necessary to raise students’ basic skills and meet admission requirements. However, during the study period, four factors not addressed in the design created barriers for students’ enrollment in the destination programs. First, starting in Spring 2013, Madison College required all students applying to two-year healthcare degree programs (destination programs) to take and achieve required TEAS assessment score. According to School of Health Education staff, the TEAS was a barrier to

program admission because a large share of students at Madison College, including PCA2 graduates, failed to achieve the required TEAS scores even after multiple attempts.

Second, many two-year healthcare programs had short annual application windows. Depending on when students completed a Patient Care Pathway academy, they may have had to wait up to an academic year before applying to a program (e.g., a student completing PCA2 in a fall semester (ending in December) might have to wait until the following fall (September – October) to apply). Third, some healthcare programs required that students apply one year in advance of the program start date. Even after successfully applying for and being notified of admission, a student's actual admission date would not occur until the remainder of the year had passed (e.g., the student applied for the program in September, was notified of their admission in November, but could not begin the program until the following September). A final factor—long program waitlists—delayed students' enrollment and completion of core courses once they were admitted to their destination programs. The one- to two-year waitlists for most of the healthcare programs were a barrier to steady program progress and completion because students could not enroll in core program courses and may have had little or no coursework to complete while waiting.

- *More than 90 percent of treatment group members participated in some type of education and training, and many progressed from the Patient Care Pathway academies to credit courses outside the academies. However, only seven percent gained admission to a destination healthcare program during the 18 months following random assignment.*

Overall, 94 percent of treatment group members participated in education and training courses, including those in PCA1, PCA2, and PCNA or in other courses bearing college credit. Six percent did not enroll in any courses. Of all treatment group members, 91 percent attended one of the academies: eight percent began with PCNA, 26 percent began with PCA1, and 57 percent began with PCA2. Another four percent began with other credit or occupational courses and did not attend an academy. Eighteen percent of treatment group members enrolled in both PCA1 and PCA2 (i.e., two-thirds of PCA1 enrollees continued to PCA2); altogether, 75 percent of all treatment group members attended PCA2. Completion rates for PCA1 and PCA2 enrollees were high (81 and 78 percent, respectively); however, the completion rate for PCNA enrollees was much lower (50 percent).

While 77 percent of all treatment group members enrolled in other courses at Madison College, most commonly after completing PCA2, only seven percent of all treatment group members had gained admission to one of the healthcare diploma or degree programs targeted by PCA1 or PCA2 18 months after random assignment. Factors that could have influenced the low admission rates, as noted above, include short and infrequent application windows, lags of up to a year between application and program admission and start dates, and the adoption of the TEAS assessment as an admission requirement.

- *The Patient Care Pathway program did not have a statistically significant impact on the proportion of program participants receiving any education or training.*

Similar majorities of students in the treatment (81 percent) and control (77 percent) groups reported enrolling in education and training in any subject after random assignment.<sup>3</sup> Majorities of students in both groups also reported enrolling in education and training in a healthcare occupation (67 percent of treatment members and 60 percent of control members). Thus, the program did not produce statistically significant impacts on training receipt. This lack of impact may be partially due to recruitment strategies (i.e., the program recruited heavily from within the college, so a large share of both groups were already enrolled in courses or seeking to do so).

### Impact Study

The impact study reports estimates of the Patient Care Pathway program's early impacts on educational attainment, career progress, and a small number of non-economic outcomes. The main estimates cover impacts over an 18-month period after random assignment for the full sample of treatment and control group members. Key findings from the impact study are summarized in Exhibit ES-2 and described in more detail below.

#### Exhibit ES-2. Summary of Key Findings from the Patient Care Pathway Program Impact Study

Evaluation Question	Conclusion	Findings
What were the effects of the program on average total number of college credits earned (confirmatory)?	The Patient Care Pathway program did not increase the number of college credits earned 18 months after random assignment, the confirmatory outcome of interest.	Total number of college credits earned (average): <ul style="list-style-type: none"> <li>• Treatment: 12.0</li> <li>• Control: 11.1</li> <li>• (Difference is not statistically significant)</li> </ul>
What were the effects of the program on receipt of occupational training (secondary)?	There were increases in the percentages receiving college occupational training at successive follow-up intervals. Treatment group members were seven to 10 percentage points more likely than control group members to be enrolled in occupational training at successive six-month follow-up durations and seven points more likely to have any such enrollment over the entire follow-up period.	Enrolled in college occupational training in any month after random assignment (average): <ul style="list-style-type: none"> <li>• Treatment: 88.1%</li> <li>• Control: 81.5%</li> <li>• (Difference is statistically significant at the five-percent level)</li> </ul>
What were the effects of the program on hours of occupational training (secondary)?	There were no statistically significant impacts on hours of occupational training.	Total hours of occupational training at any institution (average): <ul style="list-style-type: none"> <li>• Treatment: 230.4</li> <li>• Control: 226.7</li> <li>• (Difference is not statistically significant)</li> </ul>

<sup>3</sup> These proportions represent the percentages of treatment and control group members who reported in the follow-up survey that they participated in an education or training program at Madison College or elsewhere. These values differ from the proportions calculated from administrative data, accounting for the difference between the 94 percent and 81 percent education and training participation rates for the treatment group reported here.

Evaluation Question	Conclusion	Findings
What were the effects of the program on credential receipt (secondary)?	There were no statistically significant impacts on credential receipt.	Received a credential from any source: <ul style="list-style-type: none"> <li>• Treatment: 50.5%</li> <li>• Control: 48.6%</li> <li>• (Difference is not statistically significant)</li> </ul>
What were the effects of the program on admission to the healthcare programs targeted by the academies (destination program) (exploratory)?	At 18 months after random assignment, there was no statistically significant effect on admission to a healthcare program. However, by 35 months, there was a statistically significant impact: 27 percent of the treatment group had enrolled in a destination program as compared with 17 percent of the control group.	Admission to any academy destination program at 18 months: <ul style="list-style-type: none"> <li>• Treatment: 6.8%</li> <li>• Control: 7.2%</li> <li>• (Difference is not statistically significant)</li> </ul> Admission at 35 months: <ul style="list-style-type: none"> <li>• Treatment: 27.0%</li> <li>• Control: 17.3%</li> <li>• (Difference is statistically significant at the one-percent level)</li> </ul>
What were the effects of the program on indicators of career progress (secondary)?	<p>Measures of perceived career progress, confidence in career knowledge, and access to career supports were used to assess a student's progress toward career goals. Of these, there was a statistically significant impact on only perceived career progress.</p> <p>The program had positive, statistically significant impacts on a measure of academic self-confidence; the treatment group members had a significantly higher score than control group members.</p> <p>The program had a positive impact on whether life challenges affected school, work, or other responsibilities. Here, the treatment group had a lower average score (i.e., fewer life challenges) than the control group.</p>	<p>Perceived career progress (average on three-item four-point scale tapping self-assessed career progress):</p> <ul style="list-style-type: none"> <li>• Treatment: 3.57</li> <li>• Control: 3.43</li> <li>• (Difference is statistically significant at the five-percent level)</li> </ul> <p>Academic self-confidence (average on 12-item four-point scale capturing academic self-confidence):</p> <ul style="list-style-type: none"> <li>• Treatment: 4.53</li> <li>• Control: 4.39</li> <li>• (Difference is statistically significant at the 10-percent level)</li> </ul> <p>Life challenges (average on seven-item four-point scale capturing life challenges that interfere with school, work, or family responsibilities):</p> <ul style="list-style-type: none"> <li>• Treatment: 1.48</li> <li>• Control: 1.59</li> <li>• (Difference is statistically significant at the five-percent level)</li> </ul>

In summary, the Patient Care Pathway program did not have a statistically significant affect the confirmatory outcome for this analysis period: total number of college credits earned over an initial 18-month follow-up period. Similarly, it did not increase the likelihood of earning a certificate or other college credential. The program did increase enrollment in credit-bearing courses over the 18-month period. The latter finding, and initial indications of positive longer-term impacts on transitions to targeted destination programs, leaves some room for optimism about longer-term impacts.

- *The Patient Care Pathway program had no impact on average total number of college credits earned, the confirmatory outcome for the early (18-month) analysis of this program.*

As Exhibit ES-3 shows, the program did not increase the number of college credits<sup>4</sup> earned 18 months after random assignment, the confirmatory outcome of interest. On average, the treatment group earned 12.0 credits in the 18-month follow-up period and the control group earned 11.1 credits.

**Exhibit ES-3. Early Impacts on Educational Outcomes (18 Months after Random Assignment)**

Outcome	Treatment Group	Control Group	Difference	Standard Error	p-Value
<b>Confirmatory Outcome</b>					
Total number of college credits earned (average)	12.0	11.1	+0.8	0.9	.176
<b>Secondary Outcomes</b>					
Enrolled in college occupational training in successive months after random assignment (%)					
Months 1-6	84.4	76.7	+7.7 **	3.4	.013
Months 7-12	70.6	63.5	+7.2 **	4.1	.042
Months 13-18	65.3	55.8	+9.5 **	4.2	.013
Any month	88.1	81.5	+6.5 **	3.2	.020
Total number of college credits earned in successive months after random assignment (average)					
Months 1-6	4.0	3.7	+0.3	0.3	.166
Months 7-12	4.4	4.1	+0.4	0.4	.186
Months 13-18	3.5	3.4	+0.1	0.4	.361
All months	12.0	11.1	+0.8	0.9	.176
Total hours of occupational training at (average)					
A college	205.0	195.1	+9.8	15.8	.268
Another place	10.8	3.7	+7.1	8.1	.191
Any place	230.4	226.7	+3.7	20.8	.430
Received a credential from (%)					
A college	16.4	15.7	+0.8	3.3	.410
Another education and training institution	0.7	3.5	-2.8	1.5	.967
A licensing/certification body	47.8	41.6	+6.2	5.3	.122
Any source	50.5	48.6	+2.0	5.2	.354
Sample size <sup>a</sup>	250	249			

SOURCE: Abt Associates calculations based on data from Madison College records and the PACE short-term follow-up survey.

NOTES: Statistical significance levels, based on one-tailed *t*-tests tests of differences between research groups, are summarized as follows: \*\*\* statistically significant at the one-percent level; \*\* at the five-percent level; \* at the 10-percent level.

<sup>a</sup> Sample sizes in this row apply to estimates based on college records for the full sample. In the last two panels (total hours of occupational training and credentials by place), estimates for activity at a college are based on college records for the full sample, whereas all other estimates (including those for activity at any source) are based on the subsample who responded to the PACE follow-up survey (181 program and 173 control group members).

<sup>4</sup> The number of college credits does not include developmental education courses, as Madison College did not award credit for such courses.

- ***The Patient Care Pathway program produced impacts on enrollment in occupational training.***

Treatment group members were seven to 10 percentage points more likely than control group members to be enrolled in occupational training at successive six-month follow-up durations. They were seven percentage points more likely to have any such enrollment over the entire follow-up period. This higher enrollment was insufficient to generate statistically significant credit gains.<sup>5</sup> Nor did the analysis show statistically significant impacts on hours of occupational training or credential receipt.

- ***There was no impact on admission to the healthcare diploma and degree programs targeted by the Patient Care Pathway academies (“destination programs”) at 18 months, but there were positive impacts on program admission rates later.***

Admission to a healthcare program is a main intermediate goal of the academies and a major milestone along a student’s pathway to completion of such a program.<sup>6</sup> At 18 months, there was no statistically significant effect on admission rates. However, by 30 months, treatment group members were more likely to gain admission to a destination program. By 35 months, 27 percent of the treatment group had enrolled in a destination program, compared with 17 percent of the control group. This difference is statistically significant at the one-percent level. This 10 percentage point impact results entirely from an effect on admission to PCA2 destination programs. It is notable that even with this positive impact, of students who successfully completed PCA2 by 18 months (59 percent), only about one-third gained admission to PCA2 destination program by 35 months (20 percent of the treatment group). This indicates that some effect on program admission occurred, but substantially later than the theory of change implied and the research team expected.

- ***There were few signs of positive effects of the Patient Care Pathway program on early career progress or other exploratory outcomes over the 18-month follow-up period.***

The research team investigated the impact of program participation on several indicators of career progress. Measures of perceived career progress, confidence in career knowledge, and access to career supports were used to assess a student’s progress toward career goals. Of these, there was a statistically significant impact on only perceived career progress. The research team also examined exploratory outcomes in four additional domains: employment, psycho-social skills, life stressors, and family structure. Among these domains, the program had positive, statistically significant impacts on only two outcomes. On a measure of academic self-

---

<sup>5</sup> Though the percentage difference in credits earned and in enrollment in occupational training in any month is similar, the difference relative to the standard error (effect size) is smaller in the case of credits. This accounts for the effect on enrollment being statistically significant and the effect on credits not being significant.

<sup>6</sup> The research team learned of the availability of the admission data after the analysis plan was made public. As a result, this analysis is exploratory.

confidence, treatment group members had a significantly higher score than did control group members. There also was evidence of a positive impact on whether life challenges affected school, work, or other responsibilities, in that the treatment group had a lower average score (i.e., fewer life challenges) than did the control group. The increase in short-term educational outcomes such as academic self-confidence and the decrease in life challenges could possibly lead to improved academic achievement in the longer term.

### Next Steps in the Patient Care Pathway Evaluation

This report on the Patient Care Pathway program focuses on its implementation and early effects on participating students' education and training. The emphasis on educational outcomes reflects an expectation that in the first 18 months, students' major focus would be on coursework and credits, without enough time for positive employment impacts flowing from those educational outcomes to emerge.

The next PACE report on the Patient Care Pathway program will analyze longer-term educational outcomes at approximately **36 months after random assignment**. In addition, it will include a more systematic look at impacts on employment and earnings. The most critical question that the next, and possibly subsequent, analyses will address is whether the Patient Care Pathway program's positive effects on admission to two-year degree programs will translate into effects on treatment group members' earning of credits and credentials.