

Customized Employment: Translating Policy Into Practice Through SourceAmerica Pathways to Careers

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The Pathways to Careers program

Background

The SourceAmerica Pathways to Careers® (Pathways) program provides people with intellectual or developmental disabilities (I/DD) and people with autism spectrum disorder (ASD) with an informed choice about competitive integrated employment (CIE) opportunities that are aligned with their skills, interests, strengths, and abilities. Pathways uses a customized employment (CE) service model that connects people with significant disabilities to meaningful paid jobs in the community, with the goal of increasing CIE outcomes among this population.

SourceAmerica launched the Pathways demonstration in 2012, starting with the pilot site implemented by the Pioneer Adult Rehabilitation Center (PARC), a community rehabilitation provider in Clearfield, Utah.¹ People were eligible for Pathways at the Utah site if

they were age 18 or older, had a primary diagnosis of I/DD or ASD, and resided in Davis County, Utah. Participation in Pathways is based on a zero exclusion philosophy that presumes all people can achieve employment. Between 2012 and 2016, when enrollment ended, the Utah site recruited Pathways participants from three sources: (1) PARC's facility-based employment program, (2) the Davis School District special education transition programs, and (3) the Utah Division of Services for People with Disabilities waiting list for Medicaid waiver-funded services provided under the Community Supports Waiver for those with an intellectual disability or related conditions.² Applicants invited to enroll in Pathways were randomly selected from among all eligible applicants to avoid the temptation for Pathways staff to select only those who were most likely to succeed in internships and employment and ensure that participants were representative of all those who expressed interest in receiving services. Before recruitment ended in September 2016, the Utah site enrolled 91 participants.

About this brief

Although customized employment is gaining recognition at the federal policy level as a service delivery option to help people with disabilities secure employment, little rigorous evidence exists to support its widespread adoption. This brief highlights the SourceAmerica Pathways to Careers® (Pathways) program, a customized employment service model that helps people with significant disabilities access competitive integrated employment. To examine the effects of Pathways, we analyzed the employment and earnings outcomes of Pathways participants and compared them with the outcomes of people with similar disabilities and demographic characteristics served by state vocational rehabilitation (VR) agencies. While the populations targeted by both programs differ in important ways, the outcomes of VR clients offer a benchmark against which to assess Pathways outcomes. Overall, we found that Pathways participants and the matched VR clients in our sample had similar rates of employment that lasted 90 days or longer. Pathways participants, however, worked more hours each week and had higher earnings than matched VR clients. A larger share of employed Pathways participants (42 percent) had monthly earnings greater than the Social Security Administration's 2018 threshold for substantial gainful activity (\$1,180 per month in 2018 for people who are not blind), compared to VR clients in our sample (13 percent). These findings suggest that Pathways' customized employment approach successfully translates policy to practice by helping some people with significant disabilities secure competitive integrated employment in the community.

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In 2015, Pathways launched three other sites with new implementation partners: WORK, Inc., in Boston, Massachusetts; ServiceSource in Fairfax and Alexandria, Virginia; and JVS in Detroit, Michigan.

In the sections that follow, we describe the Pathways service model and service receipt through June 2018. Next, we provide a brief history of CE and summarize the literature on CE, documenting encouraging employment outcomes from CE approaches. Then, we describe the vocational rehabilitation (VR) model and service receipt among a similar group of people served by state VR agencies and compare the employment, wage, and earnings outcomes of Utah Pathways participants with similar VR clients. We conclude by discussing the findings and the policy and program implications.

Pathways service model



Discovery and a career plan: Discovery is conducted to understand the strengths of a Pathways participant and to reveal each person's job-related interests, skills, and conditions for employment success. To identify a participant's ideal work conditions, Pathways staff members talk with the person and with people who know him or her best. Staff also observe the participant in familiar and new settings, including in his or her home and community, over 10 to 15 Discovery sessions. Discovery culminates in a career planning meeting to identify the criteria for the ideal paid internship or customized job match to guide customized internship or customized job development. Pathways staff also coordinate access to benefits counseling so that participants can understand how an internship or job will affect their benefits and eligibility.



Employer engagement, customized internship, and job development: Participants can opt for a paid internship or move directly into customized employment. Some participants, particularly those with a work history, prefer to directly enter employment

following Discovery. Pathways staff identify, research, and conduct outreach to employers in the community, covering a diverse array of business lines, locations, and company sizes, to offer customized internship and employment opportunities to participants. Staff also conduct direct internship and job development for participants if their career plan does not match with any employer partners.



Expanded Discovery and paid internships: Participants can opt for one or more 8- to 12-week paid internships. If a participant chooses an internship as part of their career planning process, it enables staff to affirm or expand on what they learned about the participants during Discovery to further identify each participant's job-related interests and ideal conditions for success. The internships also enable participants to try different job responsibilities, determine whether a job is suitable for them, and develop a greater experience base from which to make decisions about employment. During the internship, Pathways—rather than the employer—provides the salary and fringe benefits. At the end of the internship, if a participant receives a job offer, he or she can take the job or consider another internship or employment option.



Integrated and naturally referenced employment supports and a career support plan: During an internship or in employment, employers and participants can receive training facilitation, job coaching, and other supports from Pathways staff to enhance the natural training and supports that employers provide in the workplace. These services are meant to increase employers' participation and reduce the need for outside employment supports. Staff develop a career support plan for each participant based on the employment supports the participant will need, as identified through Discovery and expanded Discovery and during work experiences.



The employer payroll tax adjustment (EPTA): The EPTA is a unique research component of the Pathways service model

that begins when the participant accepts a job offer. The EPTA is designed to be a mechanism by which some of the savings to the federal government derived from the employment of people with significant disabilities (through their reduced participation in public health insurance and federal disability programs) can be shared with the employers who hire them. The EPTA is being tested and evaluated as part of the Utah Pathways program.



Post-employment career support: Pathways staff provide additional career support after a participant accepts a job offer. Staff help address concerns that the participant or employer may have about the participant’s success in the job. If funding is available, staff work with participants and employers to identify training, professional development, educational opportunities, and mentors who will support the participant’s career development.

Pathways services are funded by a combination of sources. SourceAmerica has funded critical program development and start-up activities for the Pathways demonstration sites, such as hiring, initial training, and certification of Pathways staff. SourceAmerica also funds participants’ internship wages during expanded Discovery. At the PARC site, they also fund the EPTA. Funding from SourceAmerica is supplemented with funds from outside entities, which offset the cost of service delivery. Pathways sites receive funds from foundations and government entities, such as state VR

agencies and Medicaid waiver programs. Most often, the reimbursements are in the form of milestone payments (such as payments once a participant reaches 30, 60, or 90 days of employment) or hourly payments for specific services provided by Pathways staff.

Service receipt among Pathways participants

All Pathways participants in our sample took part in Discovery; on average, participants each completed 15 Discovery activities (Table 1). After completing a career planning meeting, participants moved into expanded Discovery, during which as interns, they develop job skills, establish connections with coworkers, and showcase their abilities and talents to the employer. Participants completed a total of 174 internships in a range of community-based settings in the private, public, and nonprofit sectors. Nearly 90 percent of participants completed internships, and those that did had an average of two internships each.

A brief history of CE

In recent years, there has been growing recognition of CE’s potential to help those with even the most significant disabilities secure paid jobs and participate more fully in community life. Since its inception in 2001, the Office of Disability Employment Policy within the U.S. Department of Labor has helped shape federal employment

Table 1. Service receipt of Pathways participants through June 30, 2018

Pathways services	Pathways participants
 Discovery (percentage) Number of Discovery activities (mean among those that took part in Discovery)	100
	15.3
 Internship (percentage) Number of internships (expanded Discovery) (mean among those that had an internship)	89.9
	2.2

Source: Pioneer Adult Rehabilitation Center administrative data.
 Note: The sample includes 89 Utah Pathways participants who were matched to 8,537 vocational rehabilitation clients.

policy to promote better use of the skills and talents of people with disabilities in the workforce. CE emerged from the Office of Disability Employment Policy's early work identifying strategies to help job seekers who encounter barriers when securing employment (Riesen et al. 2015). Through CE, the relationship between the job seeker and employer is personalized so that the needs of both are met through negotiation of the worker's job duties and flexible work arrangements. Building flexibility into job descriptions and work settings removes barriers to employment that often prevent people with disabilities from obtaining and thriving in paid jobs (Callahan 2002).

In 2014, the Workforce Innovation and Opportunity Act (WIOA) amended the Rehabilitation Act to strengthen the public workforce development system. WIOA placed greater emphasis on CIE through CE, supported employment, and individualized services. For example, WIOA encouraged VR service providers to strengthen their internal capacity to provide individualized services and supports that help people with disabilities achieve CIE. WIOA also modified the definition of supported employment to include CE, defined by the statute as "competitive integrated employment for an individual with a significant disability, that is based on an individualized determination of the strengths, needs, and interests of the individual with a significant disability, is designed to meet the specific abilities of the individual with a significant disability and the business needs of the employer."³ In addition to defining CE, WIOA imposed new restrictions on the use of subminimum wages by limiting employers' ability to pay workers with disabilities subminimum wages and requiring people with disabilities to obtain career counseling services by the dedicated state unit, typically the state VR agency, before they begin working in a job paying less than minimum wage (Department of Labor 2019).

CE's fundamental tenet is that all those who wish to be employed can obtain employment. CE starts with Discovery, a holistic assessment of the person's life experiences, interests, and the ideal conditions in which the individual can work. Rehabilitation

providers use the insights gained through Discovery to implement flexible strategies that help match an individual to a job that is a good fit and enables the person to thrive in his or her role. Flexible strategies include job exploration and working with an employer to facilitate job placement by customizing the job requirements to suit the strengths and abilities of the worker; negotiating the person's job duties, rate of pay, and work schedule with the employer; and providing service and supports on the job site (WINTAC 2017).

The innovation of the Pathways service model lies in the combination of Discovery, customized employer relationships, paid internships, and EPTA payments to employers that hire participants to help offset the cost of supports provided on the job. During job development and the expanded Discovery phase of service delivery, Pathways staff negotiate job duties with employers so the jobs are customized to suit both the Pathways participant and the business needs of the employer (WINTAC 2017). By providing Pathways participants with services that tailor the relationship to meet the employer's and participant's needs before employment, both parties avoid barriers to employment because the job function is customized to suit the specific competencies and needs of the individual participant while adding value to the employer's business (WINTAC 2017).

Need for evidence on CE approaches

Despite the interest and growth in CE, there have not yet been any rigorous studies estimating the causal impacts of a CE program on employment outcomes (Riesen et al. 2015). Although a number of studies, described here, have documented positive employment outcomes for people receiving CE services, the studies cannot definitively attribute these outcomes to the services. To do so requires a credible counterfactual of what employment outcomes of participants would have been had they not received CE services. Because VR and other employment services are rarely delivered with random assignment, establishing a counterfactual through use of a comparison group has remained elusive.

Nonetheless, a number of studies have found encouraging employment outcomes from CE approaches. For example, an evaluation funded by the U.S. Department of Labor of a large CE demonstration at 31 Workforce Investment Act One-Stop Centers found that 45 percent of program participants (2,936 out of 6,554 participants) with disabilities achieved competitive integrated employment using CE (Elinson et al. 2008). In another study, a seven-year systems change effort emphasizing CE resulted in an employment rate of 71 percent (141 out of 198 participants); for 52 percent of those employed, negotiation of job duties was a critical part of the placement (Citron et al. 2008).

CE approaches appear to be promising for some subpopulations, including transition-age youth and adults with ASD. A five-year demonstration emphasizing CE for transition-age youth found employment rates of 62 percent among students and 72 percent among nonstudents (Rogers et al. 2008). A retrospective review of VR caseload data in Virginia suggested that of the 64 adults with ASD that the agency referred to supported employment from 2009 to 2014, the majority that secured CIE did so through CE approaches (Wehman et al. 2016).

Existing studies have not yet developed or shared fidelity measures to help implement or replicate promising CE models (Riesen et al. 2015). Without systematic replication, it is impossible to validate CE models and build the evidence base to support widespread adoption of CE interventions. A series of replicated, well-documented programs would help inform service providers, VR counselors, transition teachers, and others about how to effectively implement CE models in different program contexts (Riesen et al. 2015).

To build the evidence base for CE, SourceAmerica is replicating Pathways in other locations to test the service models in different contexts and to evaluate outcomes. SourceAmerica is also developing a set of quality standards to guide sites in consistently implementing Pathways so that services can be delivered with fidelity across each of the sites. The standards are intended for program leaders, so they can

monitor service delivery at key intervals of program development, and SourceAmerica, so it can evaluate ongoing service delivery and program outcomes.

In addition to building evidence of CE's effectiveness, CE services also requires more evidence on its specific components. A recent study involving focus groups of 28 recognized leaders in CE generated a list of promising practices that they recommend be tested in experimental studies of CE (Inge et al. 2018). These practices include mindfully listening to job seekers' work goals; building rapport between counselors and job seekers; meeting in community locations rather than in counselors' offices; interviewing job seekers' family and friends in depth; allowing clients to observe multiple local businesses; conducting informational interviews with employers to understand their needs; observing clients in job-related tasks; using work experiences to identify and refine interests; and negotiating a customized job description (Inge et al. 2018). The Pathways service model embodies all of these promising practices: Discovery, customized internship and job development, and expanded Discovery, during which staff identify participants' employment-related skills, strengths, and interests and collaborate with prospective employers to customize the job duties in a way that meets the needs of both participants and employers.

VR service model

State VR agencies provide time-limited services and supports designed to help eligible people with disabilities gain employment.⁴ Those eligible to receive VR services are assigned a VR counselor who develops an individualized plan for employment, which documents the person's work goal and the services and supports that might be required to achieve that goal. The work goal could include competitive employment, part-time employment, self-employment, or supported employment. The VR counselor and job seeker work together to assemble a combination of services and supports to help the job seeker progress toward achieving their specified work goals. VR services might include

pre-employment transition services for students with disabilities, such as job exploration counseling, as well as workplace readiness and other skills-based trainings. VR services might also include CE, supported employment services, and job search and placement assistance to help a job seeker identify and secure a position. VR clients can also receive short-term on-the-job employment supports for up to 90 days after obtaining a job. Clients receive VR services from VR counselors or outside community rehabilitation providers that have contracted with the state VR agency to deliver services.

Service receipt of matched VR clients

In this analysis, we examined the types of VR services that the sample of matched VR clients received to understand patterns of CE use now that CE exists as a distinct service category in the statute. We found that 36 percent of the matched sample received customized or supported employment services (Table 2, Column 1). Matched VR clients also received a mix of other employment services, with 21 percent receiving short-term

on-the-job supports to help them retain their job and 59 percent receiving other employment services, such as job search assistance, job placement assistance, benefits counseling, and information and referral services. Nearly a third (29 percent) received training to improve their job readiness or develop their work-related skills. In addition to employment and training services, a majority of VR clients (89 percent) received a range of other services, including diagnosis, assessments, equipment and rehabilitation technology, and assistance with transportation. That these broad types of services experienced high use suggests that VR clients have diverse needs for services and supports when striving to achieve their work goals.

To see whether the service mix among successful VR clients differed from the full universe of matched VR clients in the sample, we examined the services received by a similarly matched subset whose VR cases were closed at 90 days with a CIE outcome (Table 2, Column 2). We found that compared with all matched VR clients, those that closed with employment had higher rates of receiving customized

Table 2. Service receipt of matched sample of VR clients

VR services	VR clients	
	(1) All	(2) Closed with a CIE outcome
 Number of VR clients receiving services	8,537	1,923
Customized or supported employment	35.5%	47.7%
 Short-term on-the-job supports	20.9%	29.7%
Other employment services	58.5%	73.3%
Training	29.4%	28.7%
Other services	88.5%	91.2%

Sources: RSA-911 case service record data from 2014, 2015, and 2016.

Notes: Sample includes (1) 8,537 VR clients served by general or combined VR agencies with cases closed in 2014, 2015, or 2016 and (2) the subset of 1,923 VR clients who closed with a competitive integrated employment outcome.

CIE = Competitive integrated employment
VR = vocational rehabilitation.

or supported employment services (48 percent compared with 36 percent). The higher rate compared with all matched VR clients is consistent with the hypothesis that receiving customized or supported employment services is associated with securing CIE. But, part of the difference might also reflect individual differences between the groups. We found that those clients who closed with employment had higher rates of short-term on-the-job supports and other employment services when compared with all matched VR clients in the sample.

Findings on employment and earnings outcomes

We compared the employment outcomes of the matched Pathways participants and VR clients, focusing on CIE outcomes that lasted 90 days or longer. We examined the employment rate, weekly hours worked, hourly wages, weekly earnings, and the share with substantial gainful activity (SGA)-level earnings.



58 percent of matched VR clients became employed in jobs that lasted 90 days or longer

We found that the employment rate of Pathways participants approached the employment rate of VR participants, although employed Pathways participants worked more and earned more. Nearly half of Pathways participants became employed in jobs that lasted 90 days or longer (Table 3). This rate was not different statistically than the 58 percent rate among matched VR clients. However, when we did a robustness analysis of a larger group of matched VR clients that included those that applied to VR in earlier years, we found that the employment rate among VR clients was statistically higher than that of Pathways participants. The Technical Appendix provides additional detail on the robustness test.

Among those employed for 90 days or longer, Pathways participants worked more hours and earned more than VR clients with similar disabilities and demographic characteristics. On average, employed Pathways participants worked 28 hours per week compared with the 21 hours per week of matched VR clients. Pathways participants also had higher average hourly wages (\$10.00 versus \$8.80). Average wages in Utah are slightly lower than average wages nationally—\$17.14 versus \$18.12 in 2017 (Bureau of Labor Statistics 2018)—so the higher average Pathways wage is not driven by regional differences in wages. Working more hours at higher wages, Pathways participants had greater average weekly earnings than the similar VR clients (\$274 versus \$175) and were considerably more likely to have monthly earnings greater than the Social Security Administration’s 2018 threshold for SGA (\$1,180 per month in 2018 for people who are not blind). Roughly 42 percent of Pathways participants had monthly earnings that were greater than the monthly SGA level, 29 percentage points more than similar VR clients (13 percent). For Pathways participants who are beneficiaries of Supplemental Security Income (SSI) or Social Security Disability Insurance (SSDI), sustained earnings at this level could eventually reduce their disability benefits to zero.⁵



42 percent of Pathways participants had monthly earnings greater than the SGA level (\$1,180 per month in 2018 for non-blind people)

Although overlap exists between the populations that could benefit from participation in Pathways and VR, the comparison of the programs’ data on service receipt and earnings outcomes has limitations for a number of reasons. The programs are distinct, and the service models have different priorities. They also differ in how they administer services and collect program data. For example,

Table 3. Employment and earnings outcomes for a matched sample of Pathways participants and VR clients

VR services 	Pathways participants (N = 89)	VR clients (N = 8,537)	Difference
Percentage with a CIE outcome of 90 or more days duration	49.4	58.0	-8.6
Job characteristics of those with a CIE outcome of 90 or more days duration			
Sample size	44	5,290	
Weekly hours worked	27.7	21.3	6.4**
Hourly wage	\$10.0	\$8.8	\$1.2**
Weekly earnings	\$274.0	\$175.0	\$99.0**
Percentage with monthly SGA-level earnings	42.1	13.3	33.4**

Sources: Pioneer Adult Rehabilitation Center administrative data and RSA-911 case service record data from 2014, 2015, and 2016.

Notes: The sample includes 89 Utah Pathways participants and 8,537 matched VR clients served by general or combined VR agencies with cases closed in 2014, 2015, or 2016. Wages and earnings are in 2018 dollars.

** Significantly different from zero at the .05 and .10 level.

CIE = Competitive integrated employment

SGA = substantial gainful activity; VR = vocational rehabilitation.

participation in Pathways is based on a zero exclusion philosophy that presumes all people can achieve employment, and participants themselves make decisions about internships and employment. In contrast, Pathways staff have anecdotally reported that some participants were deemed ineligible for VR services before enrolling in Pathways because they faced significant barriers to achieving competitive employment. In addition, VR agencies that are under order of selection are not able to serve all people who are eligible for VR services because not enough resources are available. Because of these fundamental differences in service delivery and resource allocation, the service and outcome data are not entirely comparable across programs.

Implications of the findings

Pathways’ customized approach matches adults with significant disabilities to meaningful paid jobs in the community—a key objective of the

system change efforts under WIOA, which placed greater emphasis on CIE through CE, supported employment, and individualized services. Both WIOA and Employment First encourage the full inclusion of people with the most significant disabilities in the workplace and community.⁶ Pathways’ approach offers a replicable alternative to facility-based employment, enabling community rehabilitation providers to translate federal policies designed to increase CIE among people with significant disabilities into practice.

This study examined CE service use in the context of Pathways and traditional VR agencies to help build the evidence base for CE. We examined the outcomes of clients served by Pathways and compared them to outcomes of VR clients with similar characteristics. Although Pathways and traditional VR agencies serve overlapping populations, the populations are different in key ways. For example, Pathways’ zero exclusion

philosophy presumes that all people can secure competitive employment, and participants receive a comprehensive package of customized supports to help them achieve that goal. Furthermore, many Pathways participants entered the program from PARC's facility-based employment program. The VR service offerings might have been insufficient to help them achieve competitive employment.

Our analysis of employment rates suggests that Pathways and VR both succeed in helping similar shares of clients achieve employment, but Pathways participants who worked did so with more hours and higher earnings than similar VR clients. Pathways participants were also much more likely to have monthly earnings greater than the Social Security Administration's threshold for substantial work, which is important for a population of which more than half received SSI benefits. These findings suggest that Pathways is helping people with significant disabilities secure employment. Among participants who are SSI or SSDI beneficiaries, higher earnings exceeding SGA could potentially generate significant savings to the federal government if earnings at this level are sustained over the long term. Because Pathways did not randomize an eligible group of enrollees to a control group, the study cannot provide causal evidence of the impact of CE. But, our descriptive findings suggest that Pathways is contributing to CIE outcomes among people with significant disabilities, many of whom previously worked in facility-based employment settings.

Our analysis has several limitations. Although we draw on VR as a comparison, program differences and available data limit the comparability of the two groups. First, we could not include the many VR clients that applied for services in the same time period as Pathways participants whose cases are still open. As a result, the VR clients in the sample could have unobserved characteristics that make their cases easier to close. If so, VR outcomes estimated in our sample might be stronger than they would have been if we observed cases that were open for a longer time period. In a robustness analysis that included VR applicants who applied in

prior years, our results were similar in magnitude but found that the higher employment rate among VR clients was significantly higher than that among Pathways participants. However, the analysis using this sample is limited by the fact that the VR clients applied earlier on average than the Pathways participants and are thus observed for a much longer time period. Second, our analysis of VR client earnings was further limited to those whose cases closed in 2014 because the more recent closure files did not include earnings. Although our matching approach ensures that this subset is comparable to Pathways, and we adjust earnings to 2018 levels, macroeconomic differences could confound some of the observed earnings differences. Finally, we can currently examine only short-term employment outcomes; future studies of CE programs should track outcomes over a longer period. CE programs might be more resource-intensive to implement in the short-term, partly because of the degree of customization that's involved when matching participants to internship and employment opportunities. Identification of suitable internship and employment options for participants, particularly those with high support needs, takes time. A longer-term analysis could examine whether CE program costs and investments in participants' training and skills save money for public programs, such as Medicare, Medicaid, and federal disability programs, particularly if they are targeted to younger workers, who could depend on public income and other support programs for many years.

The systematic design of the Pathways CE model and the increased availability of funding created by the passage of WIOA make Pathways a replicable approach for helping people with I/DD and ASD gain the work experiences and opportunities needed to make informed choices about employment. Pathways offers community rehabilitation providers a framework to implement CE strategies in different program contexts to help people with significant disabilities secure employment. But, faithful implementation of the Pathways CE approach and continued monitoring and evaluation of the service model is critical to ensure evidence-

based practices are implemented so that outcomes can be attributed to service delivery. Replication of Pathways in additional sites will help strengthen the evidence base for Pathways and CE more broadly. Looking ahead, enrollment growth in the Pathways sites launched in 2015 in Massachusetts, Virginia, and Michigan, as well as future evaluation of outcomes among these participant populations, will deepen the field's understanding of the impacts of CE approaches on participant, organizational, and systems levels in future years.

Endnotes

- ¹ Evaluation findings from the PARC site are available at <https://www.mathematica-mpr.com/our-publications-and-findings/projects/pathways-to-careers-program-evaluation>.
- ² The Davis School District special education transition programs include the Students Transitioning for Educational and Personal Success and the Students Transitioning to Adult Responsibilities programs.
- ³ Workforce Innovation and Opportunity Act, 2014 Amendments to the Rehab Act (H.R. 803 Section 7 (7) (29 U.S.C. 705)).
- ⁴ According to section 102(a) of the Rehabilitation Act, to be eligible for VR services, a person must (1) have a physical or mental impairment that is a substantial barrier to employment and (2) be able to benefit from VR.
- ⁵ SSDI beneficiaries can work and earn any amount during a nine-month trial work period. If they continue to work above SGA after completing a trial work period, their benefits are suspended during a 36-month extended period of eligibility. During this extended period, beneficiaries can resume benefits in any month they are not earning above SGA. When the beneficiary completes 36 extended period of eligibility months, SSDI cash benefits end if he or she is working above SGA. In the SSI program, monthly benefits are reduced \$1 for every \$2 of earnings after \$65 of earnings and a \$20 per month general income exclusion is applied. When earnings are sufficient to reduce cash SSI benefits to zero, the beneficiaries enter into section 1619b status with continued Medicaid health coverage, in which they may remain indefinitely if they continue to work at levels that preclude eligibility for SSI cash benefits.
- ⁶ Employment First is a movement that aims to facilitate the full inclusion of people with significant disabilities in integrated job settings in the community. Under the Employment First approach, community-based integrated employment is the first option for employment services for youth and adults with significant disabilities (Department of Labor n.d.).

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Technical appendix

Data

We combined two data sources for the analysis. The first data source is Pathways administrative data provided by the Pioneer Adult Rehabilitation Center (PARC). These data included information collected at baseline, when the participant applied for Pathways, and monthly information on services and employment experiences after their enrollment. We used the data through June 2018 (the most recent data available). The second data source is RSA-911 case service record reports from 2014, 2015, and 2016, obtained from RSA, for vocational rehabilitation (VR) clients that we used as matched comparisons.

These two data sources share some common measures enabling us to combine the data sources for our analysis, but they differ in a number of ways. Both data sources record demographic information, including age, race, gender, and whether the individual received Supplemental Security Income at application. Although they both report the type of disability, they do so in different ways. Pathways administrative data include up to four types of disabilities for each participant. The RSA-911 data include up to two primary impairments and the cause for each of these impairments. We collapse the measures in each dataset to categories to be as comparable as possible. The major difference between the two data sources is the timing at which data are recorded. The Pathways data contain information on each participant enrolled in the program from 2012 to 2016. The RSA-911 data contain information on cases that were closed in 2014, 2015, and 2016; information is not available for people who are still receiving services. In addition, employment information is not available for people who did not exit from VR services with employment but became employed through other means.

Analytic approach

Our analysis provides descriptive statistics on the service receipt and employment experiences of

Utah Pathways participants. Because people were not randomized into a Pathways treatment or control group, it is not possible to estimate the causal impact of Pathways. Instead, we take a descriptive approach that compares outcomes of Pathways participants with those who received services from state VR agencies and had characteristics similar to Pathways participants. This comparison suggests what the outcomes of Pathways participants might have been had they been served by state VR agencies rather than Pathways.

VR clients are a reasonable comparison population for Pathways participants. Both groups seek employment services and supports, and many state VR clients have disabilities and other characteristics that are similar to Pathways participants, but they differ in important ways. Our analysis of the 2014, 2015, and 2016 VR case closures shows that relative to the general population of VR clients, both in Utah and nationally, Pathways clients are younger and are more likely to be male, be white, have lower levels of educational attainment, have autism or intellectual disabilities, and receive Supplemental Security Income (Table A.1). Despite these differences between Pathways and VR clients, it is possible to identify a subset of VR clients with characteristics similar to those of Pathways clients.

To identify a comparison group of VR clients who were similar on observed characteristics with Utah Pathways participants, we applied statistical tools to the RSA-911 data on VR cases that closed in fiscal years 2014, 2015, and 2016. We used an approach called Coarsened Exact Matching to identify this subset of VR clients. This approach uses algorithms to search for “twins” for each Pathways participant based on specified characteristics. We matched Pathways participants to VR clients by age, gender, race, cause of disability, and education level.

We placed a number of restrictions on the sample. We drew from all general and combined state VR agencies rather than limiting the sample to clients

in Utah because of the smaller number of people whose cases were closed from the Utah VR agency during this period and the fact that the agency used order of selection. We did not include VR agencies for blind people because the Pathways population does not include participants who have a primary impairment of blindness. We limited the VR comparison group to clients who stayed engaged with VR long enough to have an individualized plan for employment; we excluded those who dropped out of VR before their eligibility was determined or before they had such a plan. Whenever possible, we matched more than one VR client to each Pathways client to reduce the weight that any unobservable characteristics of a single client or the state VR agency that served them would have in the services and employment outcomes we examined. For those Pathways cases with more than one VR client match, we weighted the VR clients to sum to the number of Pathways cases to which they were matched.

Using this approach, we identified VR comparison matches for 89 of the 91 Pathways clients. The matched VR sample has 8,537 VR clients whose baseline characteristics are almost indistinguishable from those of Utah Pathways participants (Table A.2). To examine the types of services received by successful VR clients, we also matched employed Pathways participants to the smaller subset of VR clients whose VR cases were closed with a successful employment outcome ($n = 1,923$).

Measuring services and employment

We use the administrative data from PARC combined with the RSA-911 data on matched VR clients to examine service receipt and employment. We describe the services received by each group, but we cannot conduct statistical tests to compare them because the services offered by each and the data documenting them differ substantially. For employment, we are able to report outcomes and conduct statistical tests of the differences between each group.

Services. For Pathways, we calculated the share that completed three key services: Discovery, profile reviews, and internships. For each of these three services, we also calculated the mean number of services among those that received the service. For VR clients, we grouped and reported individual services in five categories: customized or supported employment, short-term on-the-job supports, other employment services (job search assistance or job placement assistance), training (college, occupational training, on-the-job training, apprenticeship training, job readiness training, disability-related skills training, or miscellaneous training), and other services (assessment, diagnosis, vocational rehabilitation counseling and guidance, transportation, maintenance, rehabilitation technology, personal assistance services, interpreter services, personal attendant services, technical assistance, information and referral, benefits counseling, or other services).

Employment. We examined five measures of employment and earnings that we constructed to be as consistent as possible from the two data sources: (1) employment, (2) weekly hours worked, (3) weekly earnings, (4) the hourly wage, and (5) whether gross earnings were above the 2018 SGA level for people who are not blind of \$1,180.

Because the RSA-911 data provide information at a single point in time (when the case is closed), these data do not have as much information on employment as the PARC data. Cases are closed either when a client has been rehabilitated, which is defined as being employed for at least 90 days, or when the client stops receiving services for a variety of reasons, such as no longer being interested in VR or having moved. As a result, we defined employment as competitive integrated employment with a 90-day duration or longer. Among Pathways participants and VR clients employed according to this definition, we examined weekly hours worked, weekly earnings, and the hourly wage. The RSA-911 data do not directly report the hourly wage, so we calculated the hourly wage as the weekly earnings divided by weekly hours. The fiscal year 2015 and 2016 RSA-911 data that RSA provided did not

include weekly earnings values, so we estimated earnings and wages only among matched VR cases with 2014 closures. We used the Consumer Price Index to adjust wages and earnings to 2018 levels and multiplied adjusted weekly earnings by 4.3 to compare it with the SGA level. We conducted tests for the five employment and earnings outcomes to assess whether differences between Pathways and VR clients were statistically significant and identify differences at the 5 percent and 10 percent levels.

Limitations. Our analysis has several limitations. Although we draw on VR as a comparison, program differences and available data limit the comparability of the two groups. First, we could not include the many VR clients that applied for services in the same time period as Pathways participants whose cases are still open. As a result, the VR clients in the sample could have unobserved characteristics that make their cases easier to close. If that is the case, VR outcomes estimated in our sample might be stronger than they would have been if we observed cases that were open for a longer time period. To assess the extent to which this biased our estimates, we conducted a robustness test in which we did not require that matched VR clients applied for services in the same year as Pathways participants. This allowed for the inclusion of clients with cases of longer duration. In the robustness test we found outcomes of similar magnitude but observed the employment rate among VR clients

was significantly higher than that among Pathways participants. This could have been driven by the fact that the VR clients in the robustness test applied for services in earlier years, on average, than the Pathways participants.

Second, our analysis of VR client earnings was limited to those whose cases closed in 2014, because the more recent closure files did not include earnings. Although our matching approach ensures that this subset is comparable to Pathways, and we adjust earnings to 2018 levels, macroeconomic differences could conflate some of the observed earnings differences. Finally, we can currently examine only short-term employment outcomes; future studies of CE programs should track outcomes over a longer period. CE programs might be more resource-intensive to implement in the short-term, partly because of the degree of customization that's involved when matching participants to internship and employment opportunities. Identification of suitable internship and employment options for participants, particularly those with high support needs, takes time. A longer-term analysis could examine whether CE program costs and investments in participants' training and skills save money for public programs, such as Medicare, Medicaid, and federal disability programs, particularly if they are targeted to younger workers, who could depend on public income and other support programs for many years.

Table A.1. Comparison of Pathways, Utah VR, and U.S. VR populations

	Pathways participants	Utah VR clients (2014–2016 closures)	U.S. VR clients in combined or general agencies (2014–2016 closures)
Age			
Younger than 18	0.00	4.05	9.37
18 to 24	50.55	24.70	25.76
25 to 34	31.87	26.54	17.18
35 to 44	10.99	20.47	15.68
45 to 54	5.49	16.31	18.35
55 to 64	1.10	7.09	10.40
65 and older	0.00	0.82	2.18
Missing	0.00	0.02	1.08
Sex			
Male	61.54	55.43	55.38
Female	38.46	44.56	43.51
Missing	0.00	0.01	1.11
Race			
White	94.51	92.67	70.85
Other	5.49	7.33	29.15
Education at application			
Less than high school	26.37	12.22	24.32
High school or GED	64.84	50.96	44.41
More than high school	4.40	27.90	30.01
Missing/other	4.40	8.92	1.26
Cause of disability			
Autism and intellectual disability	9.89	0.17	0.34
Autism but no IDD	35.16	3.11	3.62
IDD but not autism	40.66	2.87	8.39
No autism or IDD			
TBI	4.40	1.83	1.77
Emotional	1.10	2.88	3.89
Learning disability	4.40	7.50	13.40
Other genetic	6.59	4.87	4.80
Other	0.00	61.05	59.02
Missing	0.00	16.07	5.17

	Pathways participants	Utah VR clients (2014–2016 closures)	U.S. VR clients in combined or general agencies (2014–2016 closures)
Receipt of SSI at application	65.93	8.71	17.51
Year of application			
2011 or earlier	0.00	21.98	16.65
2012	20.88	16.05	11.69
2013	20.88	25.39	22.80
2014	34.07	24.34	24.62
2015	23.08	9.99	18.72
2016	1.10	2.25	5.52
2011 or earlier	0.00	21.98	16.65

Sources: Pioneer Adult Rehabilitation Center administrative data and RSA-911 case service record data from 2014, 2015, and 2016.

Notes: The sample includes 91 Utah Pathways participants; 11,503 Utah VR clients with cases closed in 2014, 2015, or 2016; and 1,599,268 clients served by general or combined VR agencies with cases closed in 2014, 2015, or 2016.

IDD = intellectual or developmental disability; SSI = Supplemental Security Income; TBI = traumatic brain injury; VR = vocational rehabilitation.

Table A.2. Characteristics of matched sample of Pathways participants and VR clients

	Pathways participants	VR clients	Difference
Age			
Younger than 18	0.0	0.0	0.0
18 to 24	49.4	50.7	-1.3
25 to 34	32.6	31.9	0.7
35 to 44	11.2	11.7	-0.5
45 to 54	5.6	4.5	1.1
55 to 64	1.1	1.1	0.0
65 and older	0.0	0.0	0.0
Sex			
Male	61.8	61.8	0.0
Female	38.2	38.2	0.0
Race			
White	94.4	94.4	0.0
Other	5.6	5.6	0.0
Education at application			
Less than high school	25.8	25.8	0.0
High school or GED	69.7	69.7	0.0
Post high school	4.5	4.5	0.0
Cause of disability			
Autism and intellectual disability	10.1	10.1	0.0
Autism but no IDD	36.0	36.0	0.0
IDD but not autism	41.6	41.6	0.0
No autism or IDD			
TBI	4.5	4.5	0.0
Emotional	0.0	0.0	0.0
Learning disability	2.2	2.2	0.0
Other genetic	5.6	5.6	0.0
Receipt of SSI at application	65.2	65.2	0.0
Year of application			
2012	21.3	21.3	0.0
2013	20.2	20.2	0.0
2014	34.8	34.8	0.0

	Pathways participants	VR clients	Difference
2015	23.6	23.6	0.0
2016	1.1	1.1	0.0

Sources: Pioneer Adult Rehabilitation Center administrative data and RSA-911 case service record data from 2014, 2015, and 2016.

Notes: The sample includes 89 Utah Pathways participants and 8,537 matched VR clients served by general or combined VR agencies with cases closed in 2014, 2015, or 2016. None of the statistics shown are statistically significant at the 10-percent level.

IDD = intellectual or developmental disability; SSI = Supplemental Security Income; TBI = traumatic brain injury; VR = vocational rehabilitation.

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