

SSI YOUTH EMPLOYMENT EVIDENCE

FINAL REPORT

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Table of Contents

0	Executive Summary	1
1	Introduction	10
2	Methodology	12
2.1	Identify Relevant Research	15
2.2	Review Legislation and Regulations	15
3	Data Sources	17
4	Describe Pathways to Employment	20
5	Research Question 1: What services and supports lead to employment for youth ages 14 to 25, including evidence among youth receiving SSI?	23
5.1	Global Description of the Body of Evidence	23
5.1.1	Results from Programs or Demonstrations	24
5.1.1.1	Youth Transition Demonstration	27
5.1.1.2	Ticket to Work and Work Incentives Planning and Assistance	28
5.1.1.3	PROMISE	29
5.1.1.4	Accelerated Benefits (AB) Demonstration	29
5.1.1.5	SourceAmerica Pathways to Career	30
5.1.1.6	Project SEARCH and Autism Spectrum Disorder Supports	30
5.1.1.7	Demonstration to Maintain Independence and Employment	31
5.1.1.8	Job Corps	31
5.1.1.9	Return-to-Work Demonstrations in Wisconsin	32
5.1.1.10	Bridges from School to Work	32
5.1.1.11	Maryland Seamless Transition Collaborative	33
5.1.2	Results for Individual Service Components	33
5.1.2.1	Vocational Rehabilitation Services	34
5.1.2.2	Work Benefits Counseling	38
5.1.2.3	Postsecondary Education (PSE) Support	39
5.1.2.4	School-to-Work	39
5.1.2.5	Self-determination Interventions in Secondary School	39
5.1.2.6	Academic Inclusion	40
5.1.2.7	Career and Technical Education	40
5.1.2.8	Work Study	40
5.1.3	Summary	40
5.2	Barriers and Challenges in Accessing Services and Supports	55
5.2.1	Barriers with Employers	55
5.2.2	Barriers to Success Emerging from Variations at the State Level	57
6	Research Question 2: What does research show to indicate work activity in adolescence leads to future employment among youth on SSI or eligible to receive SSI?	58
6.1	Description of the Body of Evidence	58
6.2	Evidence of the Relationship between Work Activity in Adolescence and Future Employment Outcomes	64
6.3	Evidence of Relationships between Other Indicators and Future Employment Outcomes	69
6.4	Gaps in the Evidence Base	73
7	Research Question 3: Within the context of existing federal legislation and regulations available to youth ages 14 to 25, how does SSA fit in?	74

7.1	Identify How SSA Fits in Within the Context of Existing Federal Legislation and Regulations Available to Youth Ages 14 to 25.....	74
7.1.1	IDEA	74
7.1.1.1	How IDEA Serves SSI Youth in Transition	74
7.1.1.2	SSA Policy Fit with IDEA	75
7.1.2	WIOA Title I	76
7.1.2.1	How WIOA Serves SSI Youth in Transition	76
7.1.2.2	SSA Policy Fit with WIOA	78
7.1.3	Rehabilitation Act of 1973.....	79
7.1.3.1	How Vocational Rehabilitation Serves SSI Youth in Transition	79
7.1.3.2	Cost Reimbursement.....	81
7.1.3.3	SSA Policy Fit with the Rehabilitation Act of 1973.....	82
7.2	Describe the Gaps in Lack of Services and Lack of Access to National, State, and Local Supports.....	85
8	Conclusions Based on the Environmental Scan	86
9	Recommendations for SSA’s Consideration	89
9.1	Modify the Student Earned Income Exclusion	89
9.2	Modify Ticket to Work	90
9.3	Engagement with Employers.....	91
9.4	Collaboration and Coordination Across All Levels	92
9.5	Future Research under Section 234 and 1110 Authorities	94
9.6	Incentivize Providers: Cost Reimbursement	96
10	Bibliography.....	98
Appendix A — Resource Libraries and Project Tools.....		A-1
Appendix B — Objectives.....		B-1
Appendix C — Services and Supports Studied.....		C-1
Appendix D — Detailed RQ1 Analysis of Selected Studies		D-1
D.1	Description of the body of evidence on services and supports	D-1
D.2	Evidence of the relationship between transition services and paid employment by service type D-4	
D.3	Evidence of the relationship between transition services and earnings	D-6
D.4	Evidence of the relationship between transition services and employment outcomes by SSI/DI status D-6	

List of Figures

Figure 1: Illustration of our data exploration process	13
Figure 2: Diagram for review process of data sources	18
Figure 3: Publication dates for the reviewed studies	18
Figure 4: Study design of reviewed studies	19
Figure 5: Pathways to employment	22

List of Tables

Table ES-1: List of barriers/challenges and insights for SSA	6
Table 1: Search terms used in the literature search	14
Table 2: Databases used in the literature search	15
Table 3: Bundled services and supports studied by the studies reviewed.....	23
Table 4: Summary of results from programs or demonstrations.....	24
Table 5: Summary of results for individual service components	34
Table 6: Effective programs, service characteristics, and evaluation method	42
Table 7: Summary of research into programs and demonstrations	43
Table 8: Studies examining the associations between services received and employment and schooling outcomes Part 1.....	48
Table 9: Studies examining the associations between services received and employment and schooling outcomes Part 2.....	51
Table 10: Characteristics of studies providing evidence on the relationship between work activity in adolescence and future employment outcomes	60
Table 11: Evidence on the relationship between work activity in adolescence and future employment outcomes.....	66
Table 12: Other factors influencing future employment outcomes	71
Table 13: SSA fit table key.....	76
Table 14: Federal legislation and regulations summary and SSA fit analysis: IDEA	76
Table 15: Federal legislation and regulations summary and SSA fit analysis: WIOA Title I.....	79
Table 16: Federal legislation and regulations summary and SSA fit analysis: Rehabilitation Act of 1973	83
Table 17: List of barriers/challenges and brief insights for SSA	87
Table 18: Reports and studies to be included in literature review	A-1
Table 19: Resources for targeted search	A-2
Table 20: Screening Tool.....	A-2
Table 21: Data Extraction Tool	A-3
Table 22: Objectives	B-1
Table 23: Description of studies providing evidence on what services and supports lead to employment.....	D-7
Table 24 Evidence of impact of specific transition services ¹ on employment outcomes.....	D-11
Table 25 Evidence of impact of bundled transition services on employment outcomes in recent studies.....	D-13

List of Acronyms

ASD	autism spectrum disorder
BFW	benefits foregone for work
CIE	competitive integrated employment
CR	Cost Reimbursement
CART	classification and regression tree
CTE	career and technical education
DMIE	Demonstration to Maintain Independence and Employment
EIDP	Employment Intervention Demonstration Program
EN	employment network
FAPE	free appropriate public education
GAO	U.S. Government Accountability Office
ID	intellectual disabilities
IDD	intellectual and developmental disabilities
IDEA	Individuals with Disabilities Education Act
IEP	Individualized Education Program
ILP	Individualized Learning Plan
IPE	Individualized Plan for Employment
IRWE	impairment-related work expense
ISY	in-school youth
IWP	Individual Work Plan
MHC	mental health conditions
NASET	National Alliance for Secondary Education and Transition
NTID	National Technical Institute for the Deaf
NLTS2	second National Longitudinal Transition Study
NSTW	nonpayment status following suspension or termination for work
OoS	order of selection
OSY	out-of-school youth
PASS	Plan to Achieve Self-Support
PCP	Person-Centered Planning
PERT	Postsecondary Education and Rehabilitation Transition
PROMISE	Promoting Readiness of Minors in Supplemental Security Income
PSE	postsecondary education
RSA	Rehabilitation Services Administration
QED	Quasi-experimental design
SEIE	Student Earned Income Exclusion
SGA	Substantial Gainful Activity
SSA	Social Security Administration
SSDI	Social Security Disability Insurance
SVRA	State Vocational Rehabilitation Agency
TBI	traumatic brain injury
TRF	Ticket Research File
TTW	Ticket to Work
VR	Vocational Rehabilitation
WIOA	Workforce Innovation and Opportunity Act
WIPA	Work Incentives Planning and Assistance
YTD	Youth Transition Demonstration

0 Executive Summary

While many children experience difficulties transitioning to adulthood, children receiving Supplemental Security Income (SSI) confront additional challenges due to poor health and poverty. These challenges complicate their opportunities for future education and employment, often leading to poor educational and employment outcomes. Studies of SSI youth suggest significant gaps in the awareness and use of services currently available to them. For example, less than one quarter of 17-year-old SSI recipients received vocational training, and 27 percent of 14- to 17-year-olds on SSI have never had an Individualized Education Program (IEP). For this youth population, educational attainment, work, and earnings are at low levels throughout their transition years into adulthood.

Several programs and services exist to facilitate the transition to employment. The Workforce Innovation and Opportunity Act (WIOA) signed into law in 2014 improves the quality of the workforce and earnings of workers, with special emphasis on out-of-school youth and youth with disabilities. WIOA amends the Rehabilitation Act of 1973 to allow vocational rehabilitation (VR) agencies to use federal funds—as well as state, local, or private contributions—to coordinate pre-employment transition services with local education agencies. SSA also sponsored the Youth Transition Demonstration (YTD) to provide comprehensive information about the potential for services to influence outcomes of transition-age youth with disabilities based on key components of the Guideposts of Success model. A second major federal demonstration, Promoting Readiness of Minors in Supplemental Security Income (PROMISE), is currently under way and will eventually provide new evidence on the effects of comprehensive transition services for SSI youth. Like YTD, PROMISE focuses on providing youth with paid work experience and a rigorous random assignment evaluation design.

The purpose of this project is to gather key information from researchers to identify the evidence and recommendations to design regulatory and policy changes to support employment for youth with disabilities. Specifically, we conducted a comprehensive literature review of the literature, service provider practices, and published studies related to youth with disabilities.

After reviewing and screening almost 500 research studies, we identified 145 studies that met the criteria addressing the three research questions. This report summarizes the literature regarding Research Question 1, 2, and 3 and provides and recommendations for SSA's consideration.

RESEARCH QUESTION 1. What services and supports lead to employment for youth ages 14 to 25, including evidence among youth receiving SSI?

FINDINGS. Our environmental scan showed a wide variety in the types of services and supports provided. A review of the literature identified 11 programs or demonstrations of interventions as listed below. Of these programs, five have shown positive employment outcomes (**bolded**). There was insufficient evidence to make a determination regarding employment outcomes for the remaining programs.

- **Youth Transition Demonstration projects**
- Ticket to Work (TTW)
- Promoting Readiness of Minors in Supplemental Security Income (PROMISE)
- Accelerated Benefits Demonstration (AB)
- SourceAmerica Pathways to Career
- Project SEARCH + Autism Spectrum Disorder Supports
- Demonstration to Maintain Independence and Employment (DMIE)

- **Job Corps**
- **Return-to-Work Demonstrations in Wisconsin**
- **Bridges from School to Work**
- **Maryland Seamless Transition Collaborative (MSTC)**

Most employment programs for youth with disabilities generally include multiple services targeting the wide variation in employment-related needs and goals. While most literature does show a positive association between program participation and employment outcomes, only a handful of studies generate evidence on the causal impact of various services on labor market outcomes. The national programs that had positive effects on labor market outcomes include YTD, Job Corps, and Bridges from School to Work (Table 4). Effective statewide programs include two return to work demonstrations: Return-to-Work Demonstration in Wisconsin, including the Wisconsin Pathways to Independence (WI SPI) and the Wisconsin SSDI Employment Pilot (SSDI-EP), as well as Bridges from School to Work, and MSTC.

Our literature review also examined eight individual service components. Five service components have shown positive employment outcomes (**bolded**).

- **Vocational rehabilitation services**
- **Work benefits counseling**
- **Postsecondary education (PSE) support**
- School-to-work
- **Academic inclusion**
- Self-determination interventions in secondary school
- **Career and technical education**
- Work study

Key findings from the literature include (Table 9):

- Among individual VR services, the evidence is strongest for job support/training or vocational training, while more evidence is needed to disentangle the effects of other services. VR services may lead to higher employment rates for individuals with certain kinds of disabilities (autism spectrum disorder and traumatic brain injury).
- Participants in work benefits counseling were more likely to be employed than nonparticipants.
- PSE support was positively associated with being employed upon exit from VR.
- Academic inclusion was associated with higher rates of postsecondary enrollment.
- Among all students with disabilities, CTE participants were more likely to be employed one year after graduation than nonparticipants.

Discussion of Barriers. We identified two main sources of barriers: employers and states. While most efforts of services and programs are geared toward the *employee* side—that is, preparing youth with disabilities for employment—there has been relatively lesser focus on the *employer* side. Employers hold reservations about hiring individuals with disabilities. Employer interviews and surveys indicated they are often concerned about that people with disabilities lack the necessary skills, may be unable to perform certain tasks, may increase costs to the employer in terms of costly accommodations, healthcare, litigations, and worker’s compensation. While the U.S. Department of Labor’s Office of Disability Employment Policy (ODEP) has created an employer engagement strategy that identified the

strategies to help employers overcome these barriers, many employers continue to be reluctant to hire workers with disabilities (ODEP, 2015).

A recent study (IEL, 2019) showed a wide variation in state graduation rates, dropout rates, enrollment in postsecondary education, and employment between youth with disabilities compared to their non-disabled peers. The variations observed are not just due to natural differences among the states, they are also impacted by variations in state priorities. These data suggest that Social Security's policies for supporting SSI youth recipients in the transition to adulthood must address profound challenges. These policies must have the capacity to respond to a wide variety of local conditions, including labor market conditions, which create wide disparities in access to education and employment for transition-age youth with disabilities and differences in state priorities toward addressing challenges for youth with disabilities.

RESEARCH QUESTION 2. What does research show to indicate work activity in adolescence leads to future employment among youth on SSI or eligible to receive SSI?

FINDINGS. We reviewed nine longitudinal studies examining the relationship between work activity during adolescence and future employment outcomes among youth with disabilities. These studies investigated this question among a variety of subsamples from the NLTS2 (six studies), statewide administrative databases for applicants of VR services and supports (Maryland and a large Great Lakes state), and a sample of transitioning youth from the YTD evaluation databases. We investigated the representativeness of the sample populations, the rigor of the study designs, and the appropriateness of the analytic methods.

- **Representativeness:** All nine studies focused on transition age youth and were geographically representative of youth with disabilities receiving VR services in the nation, a state, or other geographic locality. However, only two of the studies included youth with a broad range of disabilities, only one included youth in school at the time employment was assessed, and none included youth who had neither received special education nor applied for VR services. In addition, inadequate attention was given to the representation of youth eligible or receiving SSI/DI and residing in rural and inner-city areas where job opportunities are scarce.
- **Design:** All of the studies measured the correlation between work activity during adolescence and whether the youth was employed. None of the studies measured the causal relationship or examined the relationship between work activity during adolescence and future earnings or income. Furthermore, the studies had relatively small sample sizes and assessed employment in the short run (i.e., first few years following high school graduation). They also ignore the choice in these early years of further education, an option that could lower employment and earnings in the short-run but lead to higher employment and earnings and greater self-sufficiency in the long-run.
- **Methods:** All studies omitted one or more known confounding factors but only one study (Mamun et al. 2018) used statistical procedures to correct for the potential systematic bias due to unobserved left-out variables. In addition, Mamun et al. (2018) was the only study to adjust for the endogeneity of work activity during adolescence which can also bias the estimated correlation with future employment.

These study features have an impact on the soundness and strength of the study findings, limits the policy questions that the findings inform, and suggest a direction for future research under the Section 234 and 1110 authorities of the Social Security Act.

- **Paid community work during adolescence:** All nine studies found a significant positive relationship between paid community work during adolescence and paid community work in the short-term future among a sample of youth with disabilities. Thus, the evidence is strong that there is a significant positive relationship, but the magnitude of the relationship, and hence the policy relevance, varies widely among the studies.
 - Among the seven smaller correlational studies, youth with disabilities who had paid community jobs during school were 2.4 to 5.7 times as likely to have a paid community job in the first few years out of school compared to youth who had not worked for pay in school, but these estimates are biased upwards due to omitted variables and failure to adjust for the endogenous independent variable.
 - In the two largest studies that included a sample of youth with a broader set of disabilities and controlled for a variety of confounding factors, the estimated likelihood was a much smaller 36% to 40% higher (Mamun et al, 2018, naïve model; Wehman et al., 2014).
 - After correcting for the simultaneity and omitted unobservable variables, Mamun et al. (2018) found that this likelihood dropped to 17.1%.
- **School-sponsored work:** The evidence for a positive impact of school-based work study on future employment is less strong. We looked at only three studies: two showed no significant relationship between school-sponsored work and future paid community work whereas one study found a large, significant positive relationship. However, this estimate is likely biased upwards due to other factors influencing future employment that were left out of the final model.
- **Other indicators:** The reviewed studies also provide evidence suggesting that other factors such as high school and postsecondary program completion, economic conditions in the community, access to transportation, social and life skills, and family preferences and expectations may be equally or more important than work activity in adolescence in promoting future employment and therefore should be considered in concert with any future policy initiatives promoting employment.

Gaps in evidence. The evidence for a significant, positive relationship between work activity in adolescence and short-term future employment is strong, having been found in multiple longitudinal studies. However, only one well conducted study provides a reliable estimate of the size of this effect. Additional analyses to confirm the finding may be warranted.

Also missing from the literature are longitudinal studies that investigate the relationship of work activity during adolescence on long-run employment, earnings, and self-sufficiency. Studies that are large enough to examine how the relationship may vary by disability type and severity and residence in rural and inner-city areas with fewer job opportunities, and that explicitly incorporate the multiple decision points between further education and work for the disabled population eligible for or receiving SSI or SSDI could further inform policy.

Furthermore, these same studies suggested that educational, economic, logistical, and family support may influence the probability of future employment equally as well or better than early work activity and should be considered in concert with any future policy initiatives promoting work activities in adolescence. Specific recommendations on how to address these gaps may be found in **Section 9.5**.

RESEARCH QUESTION 3. Within the context of existing federal legislation and regulations available to youth ages 14 to 25, how does SSA fit in?

FINDINGS. Three different federal pieces of legislations and their corresponding regulations were analyzed to determine SSA's fit, that is, how youth ages 14 to 25 receiving SSI benefits might take advantage of both the legislation and SSI benefits to promote the best possible employment outcomes. Legislation includes: Workforce Innovation and Opportunity Act (WIOA) Title I, the Rehabilitation Act of 1973, and Individuals with Disabilities Education Act (IDEA).

Under **IDEA**, SSI beneficiaries will likely meet one of the 13 disability categories that are necessary for eligibility for an IEP. The best fit, within IDEA, regarding (SSI) work incentives is SEIE if the student is working while in school. However, schooling and training programs may take longer to complete for individuals with disabilities.

WIOA transition activities may fill service gaps left unfilled by IDEA (which is only for in-school students) or VR wait lists. SSI beneficiaries who are no longer in school or who are in an older transition group (age 22 to 24) and even SSI child beneficiaries who no longer meet the adult definition of disability following the age 18 redetermination, are especially likely to benefit from access to these services.

The **Rehabilitation Act of 1973** fits in with a variety of different SSA programs: Student Earned Income Exclusion (SEIE), Impairment-Related Work Expenses (IRWE), Plan to Achieve Self-Support (PASS), Work Incentives Planning and Assistance (WIPA), Ticket to Work (TTW), and VR Cost Reimbursement. Each to varying degrees and for different segments of the transition-age youth population.

Gaps in Services. There are several gaps in services, which if addressed, could make a significant impact and increase the supports needed to increase earnings and ultimately decrease the need for SSI benefits. For example:

- **WIPA** services are limited to SSI recipients 18 years of age and older, denying young SSI beneficiaries and their families need significant support to understand the complexities of the Social Security and public health care system and build a bridge to self-sufficiency when appropriate.
- **Ticket to Work.** Currently, Ticket to Work cannot be accessed by beneficiaries under the age of 18. The supports available through Employment Networks and the long-term planning implicit in the Individual Work Plan process would create an employment plan including training and education into adulthood. In addition, Ticket to Work services do not provide sufficient funding for Employment Networks to provide educational and vocational supports to successfully break the cycle of dependency on federal benefits for young SSI recipients.
- The **SSI Earned Income Allowance** of \$65.00 was established very early in the program's history and never increased. It often provides too little incentive for young SSI recipients and their families to consider work as a profitable option.
- The SSI SEIE ends at age 21 and needs to be extended up through age 25 for beneficiaries to complete their education or training while using this work incentive.

CONCLUSIONS. In general, the literature shows there are limited studies with meaningful research showing direct causation between services and supports and employment. Some literature shows that youth with disabilities who receive services, especially more than one service, have higher employment outcomes. Significant gaps remain, however, between youth with and without disabilities in education and the workforce, despite federal and state legislation and systemic efforts to improve opportunities. Barriers to promote higher employment among youth with disabilities fall into three categories:

1. Restrictive eligibility requirements of program participation
2. Inadequate outreach for families, schools, and employers to promote employment
3. Poor services and support delivery and coordination

The following table provides an overview of the barriers and challenges identified by the environmental scan, brief insights for SSA to address these challenges, and the corresponding section of this report for more detailed information. Section 9 details these barriers and insights.

Table ES-1: List of barriers/challenges and insights for SSA

Barriers and Challenges	Recommendations for SSA (Evidence)	Potential Benefit or Outcome
1. Restrictive eligibility requirements		
Age limit currently at 21; does not consider need for more time to complete schooling and training programs (location: pages 75,85)	1. Extend age limit for the SEIE up through age 25	May incentivize more youth to continue or to begin their education as they reach a greater level of maturity. Costs to the program are likely to be relatively modest (See Section 9.1)
High administrative burden to complete documentation (location: pages, 76,85)	2. Remove the requirement that students submit school enrollment documentation or require the U.S. Department of Education to report students' enrollment status	Would reduce burden to families, youth, and SSA staff and strengthen incentive for youth to work (See Section 9.1)
TTW employment-based services are only available for adults age 18-64, (location: pages 87,85)	3. Change TTW available for SSI beneficiaries from 18 to 16 years old	Would better connect beneficiaries to the vocational supports at an earlier age and may increase the rate of successful transitions to employment and adulthood. (See Section 9.2)
2. Inadequate outreach and funding		
Employer knowledge about hiring people with disabilities is not widespread. Employers reluctant to hire without guidance and roadmap of information (location: pages 55-57)	1. Educate employers about federal tax credits for hiring people with disabilities through workshops or webinars	Would raise awareness of incentives, tax credits, and deductions that are available for employers who hire and retain employees with disabilities (See Section 9.3)
The Cost Reimbursement program does not cover SSI youth age under 18, (location: pages 56,85)	2. Lower the age at which VR agencies can receive cost reimbursements from age 18 to 14	Exploring a VR cost reimbursement program for SSI youth ages 14-16 to get an understanding if such an option would be viable for VR agencies to participate. SSA could convene a Technical Expert Panel (TEP) that would ask the question. A TEP in which RSA VR staff and experts would be invited to participate. (Section 9.6)
The Cost Reimbursement program does not act as a financial incentive for VR agencies to service younger youth (location: page 56)	3. Incentivize providers by expanding the Cost Reimbursement program to individuals less than 18 years old	
3. Poor services and support delivery and coordination		
Wide disparities in state access to education and employment opportunities (location: page 57)	1. Establish clear channels of communication among all relevant agencies that	Giving greater role of VR staff helping youth plan for transition services, and to collaborate with local school personnel

Barriers and Challenges	Recommendations for SSA (Evidence)	Potential Benefit or Outcome
<p>SSA cannot directly refer transition-age youth to VR (due to privacy concerns) (location: page 80)</p>	<p>provide services, supports, and training</p> <p>2. Promote greater collaboration between social service agencies and their partners, including the referrals to VR</p>	<p>such as IPE meeting <i>would increase the number of youth receiving rehabilitation services and ultimately improve employment</i> (See Section 9.4) Customized individual supports have been shown to stronger employment effects than less customized approaches (See Section 9.4)</p>
<p>4. Lack of adequate rigorous research and Support Section 234 and 1110 Authorities</p>		
<p>Research studies do not focus on program implementation, such as delivery of program, quality of implementation, and attrition of program participants (location: page 38)</p>	<p>1. Support research documenting challenges to program participation</p>	<p>Promotes rigor of research studies by better understanding challenges of implementing program for future studies (See Sections 9.5)</p>
<p>Small number of studies examined long-term effects of programs and services, making it difficult to assess any lasting impact (location: page 32)</p>	<p>2. Establish longitudinal studies over 3 to 5 years</p>	<p>Helps to determine whether there are long-term effects of programs and services or whether additional program and services need to continue (See Sections 9.5)</p>
<p>Research studies often do not include a wide range and severity of disabilities, making it challenging to align outcome measures with the type or severity of disability (location: pages 48-54)</p>	<p>3. Include a range of disabilities and confounding variables to serve as controls</p>	<p>Better understanding of outcomes measures based on effects of disabilities and severity of disability in research studies (See Section 9.5)</p>
<p>Different research studies measure different employment outcomes making outcome measures across studies hard to compare (location: pages 40-47, 60-63, 66-68)</p>	<p>4. Evaluation studies should include well-defined education and a variety of employment outcomes</p>	<p>Establishes consistent outcome measures, such as employment rates, length of employment, income/ earnings, number of hours working, etc. (See Section 9.5)</p>

RECOMMENDATIONS. Based on comprehensive evidence included in this review, three evidence-based suggestions emerge, and we recommend SSA includes or expands them on future demonstrations or programs:

- *Individualized work-based training and support* is shown through evidence to be the most effective method to assist transition-age disadvantaged youth and youth with disabilities.
- Incorporating elements of *academic training* into the program would likely help.
- *Work incentives benefits counseling* would likely be an effective service. However, these suggestions should be taken with caution. Effectiveness of the programs likely depends on both service content and service intensity. Since existing studies rarely quantify the effect of the intensity of specific services, we are constrained to making recommendations based solely on evidence from service content but not service intensity. Please see Section 5.1.3 for further evidence to support this recommendation.

Our discussion of the barriers and challenges and brief insights for SSA allow us to provide SSA with the **six actionable recommendations** across all of types of barriers and challenges. We discuss them as:

- **Modify the Student Earned Income Exclusion (SEIE)**
SSA may consider extending the age limit on the SEIE to make it available to SSI recipients through age 25. Additionally, SSA should consider reducing the administrative barriers to the utilization of the SEIE by assuming that SSI youth ages 14-17 are students.
- **Modify Ticket to Work (TTW) Program**
The age parameters for Ticket to Work are currently from age 18 to age 64. We recommend making it available for SSI beneficiaries at age 16 rather than 18.
- **Engage with Employers**
Social Security may find it useful to raise awareness of the incentive provided by the Workforce Opportunity Tax Credit (WOTC) among small and midsize entities through a variety of means, including routine communications with employers. SSA could make workshops and webinars on the benefits of hiring SSI recipients to use the WOTC available directly or through national, state, or local organizations that serve the interests of various types of employer groups.
- **Collaboration and Coordination Across All Levels**
Recommendations include: (1) exploring data sharing programs; (2) making attendance at IEP meeting mandatory for VR staff; (3) evaluate whether direct referral to state VR agencies of SSI youth ages 14 to 17 would increase the numbers receiving vocational rehabilitation services and ultimately improve their employment outcomes; and (4) encourage states to use targeted case management services.

- Future Research Studies Part 1—Under Section 234 and 1110 Authorities: To ensure that demonstrations and research studies under the Section 234 and 1110 authorities of the Social Security Act can provide unbiased evidence for the policy questions that need to be addressed, the following general research criteria should be required:
 - The study must be representative of the populations for which the policies will be applied, including geographically (e.g., urban and rural sites), different primary disability type and severity, SSI recipients and youth eligible but not receiving SSI.
 - The study must be adequately sized to conduct analyses of subsets of the youth with disabilities population and allow for inclusion of adequate control variables in the empirical equations.
 - The proposed analyses must accurately reflect the different trajectories youth in transition may take, specifically identifying the contribution of education to employment outcomes along the trajectories.
 - The employment outcomes examined should include other dimensions beyond just whether the youth obtain paid employment, such as employment earnings, total income, and job satisfaction.
 - Study timelines should be assessed both in the short-run and long-run (e.g., 6 to 8 years following school exit).
 - The analytic methods need to address the endogeneity of the use of transition services and supports and work activity during adolescence; control for known, observable confounding factors; and adjust for unobservable confounding factors.

- Future Research Studies Part 2—Verification of Findings from YTD Data on Work Activity during Adolescence: The magnitude of the relationship between work activity in adolescence and future work activity found in the Mamun et al. (2018) results should be verified. Some examples on how this could be done include the following:
 - Collecting long-run follow-up information on employment and earnings for the YTD sample and analyzing the impact of work activity in adolescence on these outcomes
 - Conducting similar analyses on data from the PROMISE demonstrations
 - Creating a longitudinal database from state and federal administrative data that follows the employment, earnings, and SSI/DI benefits of an independent, representative sample from a cohort of youth with disabilities over an 8- to 10-year period for analyses of long-term outcomes.

- Incentivizing Providers: Cost Reimbursement
 - Exploring a VR cost reimbursement program for SSI youth ages 14-16 to get an understanding if such an option would be viable for VR agencies to participate. SSA could convene a Technical Expert Panel (TEP) that would ask the question. A TEP in which RSA VR staff and experts would be invited to participate.

1 Introduction

The Social Security Administration (SSA) pays Supplemental Security Income (SSI) to about 1.3 million children each year. SSI is the only source of federal income support targeted to families caring for children with disabilities. It reaches only the lowest-income and most severely impaired children. Of those who qualify for SSI, the benefits help families meet their children's needs, including keeping a stable home environment. SSI benefit receipts lift nearly 200,000 children with disabilities above 50% of the poverty line (Romig, 2017). This has a particular impact on already vulnerable families who face increased costs, more insecurity, and more time demands to care for a child with a disability.

Beyond the income and savings requirement, to receive SSI benefits a child must also have a sufficiently disabling condition. In the United States, the most common disability among youth and young adults is a cognitive difficulty according to the 2017 U.S. Census. Almost 70% of youth with disabilities fall under this disability category, including autism, Down Syndrome, traumatic brain injury, dementia, attention deficit disorder, specific learning disability, and mental, emotional or other challenges (IEL, 2019). The next most prevalent type of disability is independent living difficulty, which accounts for about 34% of youth (IEL, 2019). Other most common disabilities include vision difficulty, ambulatory difficulty, self-care difficulty, and hearing difficulty. It is important to note that many youths may also have more than one type of disability.

Youth receiving SSI benefits face difficulties due to one or more disabling conditions and additional challenges due to functional limitations and poverty. Health problems, lack of services, and lack of access to national, state, and local supports complicate preparation and plans for future education, work, and adult life. Several studies of transition-age (ages 14 to 25) SSI youth suggest significant gaps in the awareness and use of services available to youth. The fact that less than one-quarter of 17-year-old SSI recipients receive vocational training shows the barriers that youth with disabilities face in using supports and services for employment. This is particularly impactful as this youth population's educational attainment, work, and earnings are at low levels throughout their transition years and into adulthood. A 2019 report (IEL) confirmed that significant gaps remain between youth with and without disabilities in education and the workforce despite legislation and other efforts.

The Social Security Act in 1935 established the Title V programs to support state efforts to extend health and welfare services for mothers and children including children and youth on SSI. Beginning in the mid-1980s, an earnest federal policy focused on the transition from school-to-work highlights ongoing efforts to demonstrate, refine, and evaluate transition methodology. Beyond school-based transition programs and services, many programs and services exist to facilitate the transition to employment. The Workforce Innovation and Opportunity Act (WIOA) intends to improve the quality of the workforce and earnings of workers; with special emphasis on out-of-school youth and youth with disabilities. Signed into law in 2014, WIOA works to help job seekers access employment, education, training, and support services for success in the labor market and to match employers with skilled workers. Transition planning involves youth on SSI setting health and career goals as well as accessing the resources about health insurance coverage and health care transition from pediatrics to adult healthcare providers. The SSA has also supported or sponsored several studies and demonstrations, including the Youth Transition Demonstration (YTD) and Promoting Readiness of Minors in Supplemental Security Income (PROMISE).

YTD provides comprehensive information about the potential for services to influence outcomes of transition-age youth with disabilities. YTD service strategies, combined with SSA waivers of certain program rules to enhance work incentives, intends to help youth with disabilities maximize their

economic self-sufficiency as they transition to adulthood. PROMISE intends to build on YTD to eventually provide new evidence on the effects of comprehensive transition services for SSI youth. Like YTD, PROMISE includes a focus on providing youth with paid work experience, services provided to the family of SSI youth and a rigorous random assignment evaluation design. To improve adult outcomes (such as employment and schooling for transition-age youth who receive or may receive SSI), state and federal programs implement other various demonstration projects and interventions, both individually and bundled.

A goal of transition programs, such as YTD and PROMISE, improves adult outcomes for youth who receive or may receive SSI and increase self-sufficiency into adulthood. The goal of this report is to perform an environmental scan of the available literature on transition-age youth with disabilities to identify programs and policies that are most successful. The results of the environmental scan then lead to actionable steps that SSA can take to improve adult outcomes for youth who receive or may receive SSI.

There are four major research questions that this environmental scan report aims to answer:

- What services and supports lead to employment for youth ages 14 to 25, including evidence among youth who receive or may receive SSI?
- What does research show that indicates work activity in adolescence leads to future employment among youth who receive or may receive SSI?
- Within the context of existing federal legislation and regulations applicable to youth ages 14 to 25, how does SSA fit in?
- What are recommendations for SSA's consideration?

The report will do this in the following sections: a discussion of the methods and data collection process for the environmental scan, presenting a conceptual framework that describes pathways to employment, a summarization of the literature regarding Research Question 1, 2, and 3, and ending with a conclusion and recommendations for SSA's consideration.

2 Methodology

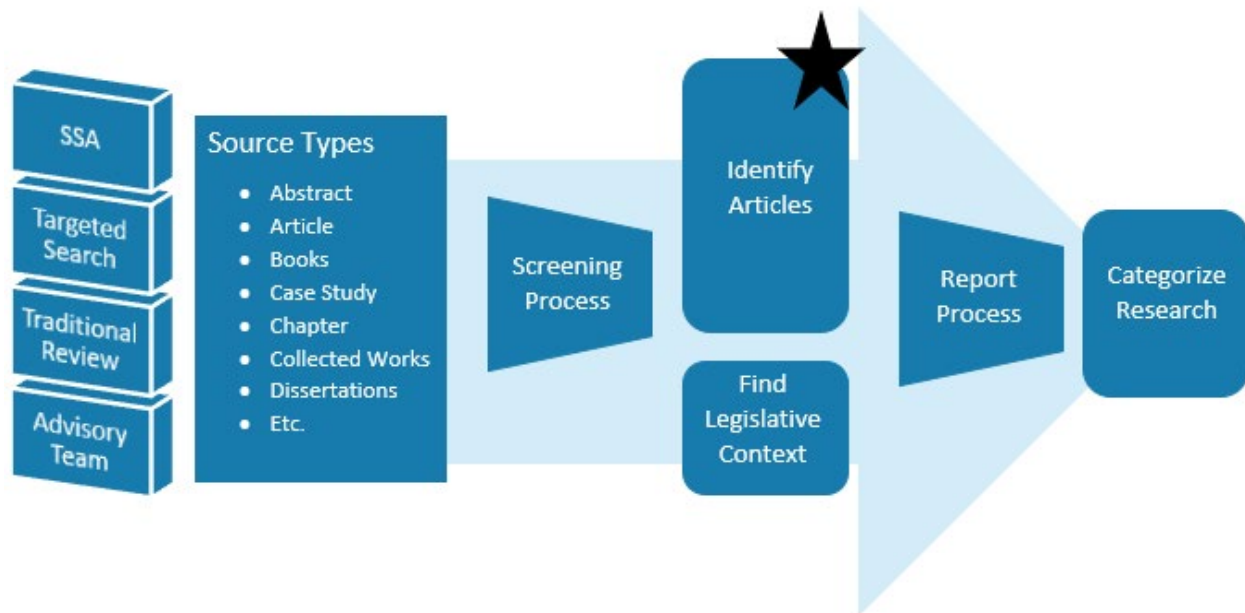
To answer Research Questions 1 and 2, we conducted a four-pronged literature review. The results of this literature review later contributed to our conclusions and recommendations in addition to our analysis of relevant legislation. First, we included the original 24 sources provided by the SSA in the scope of work and after kickoff. Second, we performed targeted searches to identify federally funded websites focused on youth with disabilities or youth who receive SSI. Third, we conducted a traditional literature review using a review protocol designed for the purpose of this report. Finally, we added research identified by our team of advisors.

Concurrently with the review of literature, we reviewed federal legislation and regulations of interest to determine SSA's current fit. This process allowed us to answer Research Question 3 later. The results of the review of relevant legislation contributed to our conclusions and recommendations for Research Question 4 in addition to results gathered from our review of literature. The process for the review of literature can be seen in Figure 1.

The literature search consisted of the following steps (Figure 1):

- **Step 1—Explore data sources.** Studies were gathered through a comprehensive search of published and unpublished publicly available research literature. The search used electronic databases and online search engines.
- **Step 2—Screen studies.** Studies were screened for study eligibility based on the research questions and the population under study. All qualifying studies were screened.
- **Step 3—Identify Research.** Eligible studies were classified by source type then compiled into one master database.
- **Step 4—Find Legislative Context.** Studies were also analyzed to see how SSA fits into existing legislation and regulations on youth ages 14 to 25.
- **Step 5—Report Process.** Studies were reviewed to extract information of value from them. Information that can be later used for analysis.
- **Step 6—Research Categorization.** The details of the review and its findings were summarized by combining findings from individual studies into summary measures of effectiveness. These measures included the quality of analysis, magnitude of findings, and the extent of evidence.

Figure 1: Illustration of our data exploration process



SSA-provided studies. The studies mentioned in the task order solicitation and the feedback received from SSI are shown in Appendix Table 18.

Targeted searches. Targeted searches were conducted within the federally funded research on youth with disabilities or youth who receive SSI listed in Appendix Table 19.

Literature search. For the review of published research, a literature review protocol describing the parameters that guided the collection, screening, review, and reporting of literature was created. The literature review included the search terms specified in Table 1. Using this table, team members identified potentially relevant literature using search databases.

Advisory Team. The project’s advisory team assembled a collection of articles that they believed may be pertinent to the project’s objectives.

Table 1: Search terms used in the literature search

Category	Search Terms	
Demonstrations	<ul style="list-style-type: none"> • PROMISE • YTD • Ticket to work • SSI • Service • Support • SSI 	<ul style="list-style-type: none"> • Work experience • Disability • Marriott Bridges • Project Search • Work-Based Learning • Career Access • Pathways to careers • Job Corps • Think College
Disability type	<ul style="list-style-type: none"> • Mental illness • Mental health • Intellectual disability • Developmental disability • Intellectual and developmental disabilities (IDD) 	<ul style="list-style-type: none"> • Physical disabilities • Brain injury or head injury • Learning disabilities • Autism spectrum disorder
Services and supports	<ul style="list-style-type: none"> • Mentoring • Employment supports • Supported employment • A person-centered business plan • An apprenticeship • Job shadowing • Career mentorship • Career-related competition • Employment training • Work study • Youth Transition Services 	<ul style="list-style-type: none"> • Volunteering or community service • Workplace tours/field trips • Internship • Academic remediation • Guest speakers • Career association • Guidance counseling • Vocational services and supports • Work supports
Population	<ul style="list-style-type: none"> • Youth age between 14 and 25 • Young adults 	
Outcomes	<ul style="list-style-type: none"> • Employment • Earnings • Labor market • Health • Health insurance • Medicaid • Dropout • Graduation • Highest grade completed • School persistence • Suspension • Non-cognitive 	<ul style="list-style-type: none"> • College enroll* • Attendance • Expulsion • Social-emotional • SSI work incentives • High school graduation

Table 2: Databases used in the literature search

Database	Description
Academic Search Premier	The multidisciplinary full text database has peer-reviewed full text journals for more than 4,600 journals, including nearly 3,900 peer-reviewed titles and indexing and abstracts for more than 8,500 journals.
EconLit	The American Economic Association’s electronic database is the world’s foremost source of references to economic literature. There are more than 1.1 million records available.
Education Research Complete	The world’s largest and most complete collection of full text education journals, ERC provides indexing and abstracts for more than 2,300 journals and full text for approximately 1,400 journals and 550 books and monographs.
Education Resource Information Center (ERIC)	Funded by the U.S. Department of Education, the ERIC provides access to education literature and resources, including information from journals indexed in the Current Index of Journals in Education and Resources in Education Index. ERIC provides ready access to education literature to support the use of educational research and information to improve practice in learning, teaching, educational decision making, and research.
PsycINFO	PsycINFO has more than 1.8 million citations and summaries of journal articles, book chapters, books, dissertations, and technical reports, all in the field of psychology. Journal coverage includes international material selected from more than 1,700 periodicals in more than 30 languages. More than 60,000 records are added each year.
SAGE Journals Online	Provides access to the full text of articles in more than 500 leading journals published by SAGE on topics relating to psychology, early childhood, education, labor, statistics, and survey methodology.
SocINDEX	The world’s most comprehensive and highest quality sociology research database features more than 2 million records and includes extensive indexing for books/monographs, conference papers, and other non-periodical content sources, in addition to informative abstracts for more than 1,300 “core” coverage journals.

2.1 Identify Relevant Research

The studies gathered from all identified sources were screened out based on whether they could contribute to answering a research question, whether they were a duplicate to another study already assessed, and their ability to meet the criteria of the screening tools (see Table 20). These three criteria served as quality control measures for the database. Team members were trained on how to use eligibility criteria to identify and assess potentially relevant literature from all literature sources.

The following criteria were used for eligibility screening:

- **Eligible populations.** To be eligible for review, the study must examine the relationship between services and support administered to youth ages 14 to 25.
- **Eligible research.** All qualitative and quantitative research were eligible for review. The following parameters defined the scope of research studies to be included: timeframe, language, and location.
- **Eligible outcomes.** Youth outcomes (shown in Table 1) were considered eligible outcomes for reviews.

2.2 Review Legislation and Regulations

The review of legislations and regulations concerning youth with disabilities started with the reports and materials provided by SSA as well as other relevant articles and studies regarding youth ages 14 to 25

transitioning to adulthood and work. With that information as background, our approach for describing how SSA fits within the context of existing federal legislation and regulations was to focus specifically on children receiving SSI on the basis of disability as well as those children with disabilities who may become SSI recipients as they reach adulthood.

We reviewed statutory and regulatory provisions, studies, and policy analyses. We present findings that summarize relevant regulations and the fit of SSA policies within that landscape. In addition, we identify the gaps and conflicts that may exist in the current evidence base.

Our review of transition provisions applicable to youth with disabilities ages 14 to 25 identifies definitions and requirements (e.g., eligibility, funding, providers, and pre-employment transition and transition services) related to major federal legislation and regulations. This includes IDEA, the Rehabilitation Act of 1973 and WIOA as they interact with (as they fit, or not) Title V of the SS Act, the Ticket to Work Program and the VR Cost Reimbursement Program. We also examine how SSA work incentives apply within the context of youth transition for individuals with disabilities.

We developed a taxonomy that summarizes how various policies intersect with (support or conflict) the impacts of SSA policies as an SSI child beneficiary ages through the transition period. We also examined how those policies may affect youth who may become eligible for SSI after reaching adulthood (age 18). This can be seen in **Section 7**.

3 Data Sources

As described earlier, there are four main sources for the products used for this analysis:

- **Resources provided by SSA.** At the beginning of this project, SSA provided us with a list of resources to be included in the review.
- **Targeted search.** A list of seven government and research center websites were compiled for their relevance in research and policies on youth with disabilities between ages 14 to 25. No targeted references to legislations were found.
- **Traditional literature review.** A broader array of resources found from a variety of sources included online websites and journals beyond the seven government websites of the targeted search.
- **Advisory Team.** The advisory team recommended their own list of resources which they believed had relevance to the research questions listed above.

After compiling resources from these four sources, we ended up with 483 studies. We then conducted a screening process to remove duplicates, remove studies that upon a closer look did not answer relevant research questions, and remove studies that did not pass the screening tool.¹ This screening dropped the number of studies to 334.

Each of these 334 studies underwent the data extraction process. The data extraction process was completed by reading each of the studies and pulling out relevant information. Studies that could not provide key information or that included incomplete information were discarded. During the extraction process, a total of 189 studies were dropped, mostly because they did not include information on the outcomes of interest: employment. Therefore, for the purpose of this project, the total number of studies that went through full review was 145 (**Figure 2**). Four reviewers extracted information using the data extraction tool developed for this project (See Table 21 in **Appendix A**).

¹ The main qualifications for the screening tool were if the study focused on the right population, timeframe, language, and location.

Figure 2: Diagram for review process of data sources

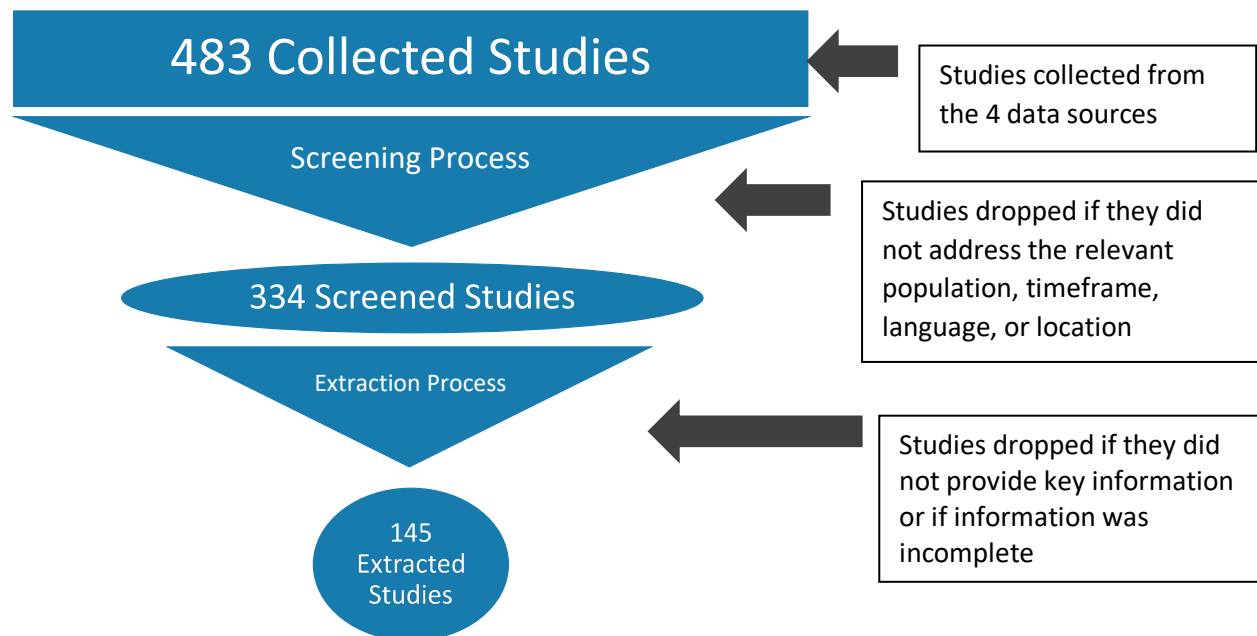


Figure 3 displays the publication dates for the reviewed studies. Most of the studies were published post-2008, with many published in 2018. Figure 4 shows that the majority of studies were non-rigorous articles. Additionally, most of the sample analyzed came from national datasets such as YTD, Case Service Report (RSA 911), National Longitudinal Transition Study-2 (NLTS-2). Comparatively, 32% of the studies were at the state level and 17% were at a district level. Demographically, the selected studies had samples of majority male and majority white youth. Of the selected studies, 95% claimed majority male samples and 88% majority white, with only 10% claiming a black majority and 2% Hispanic.

Characteristics of research studies

- 51% of selected studies use a national dataset
- 93% of studies referenced employment as an outcome while only 7% focused on work activity

Figure 3: Publication dates for the reviewed studies

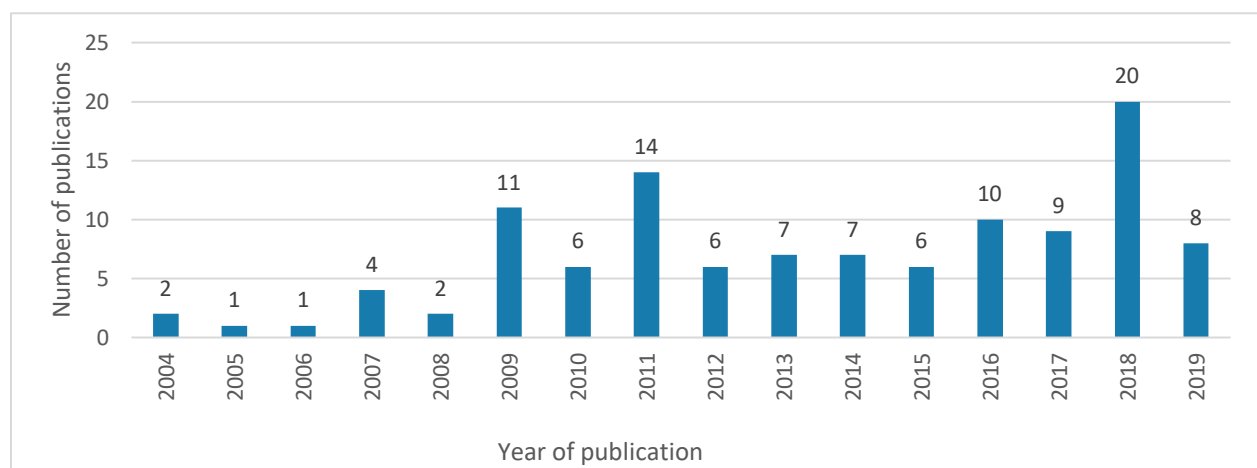
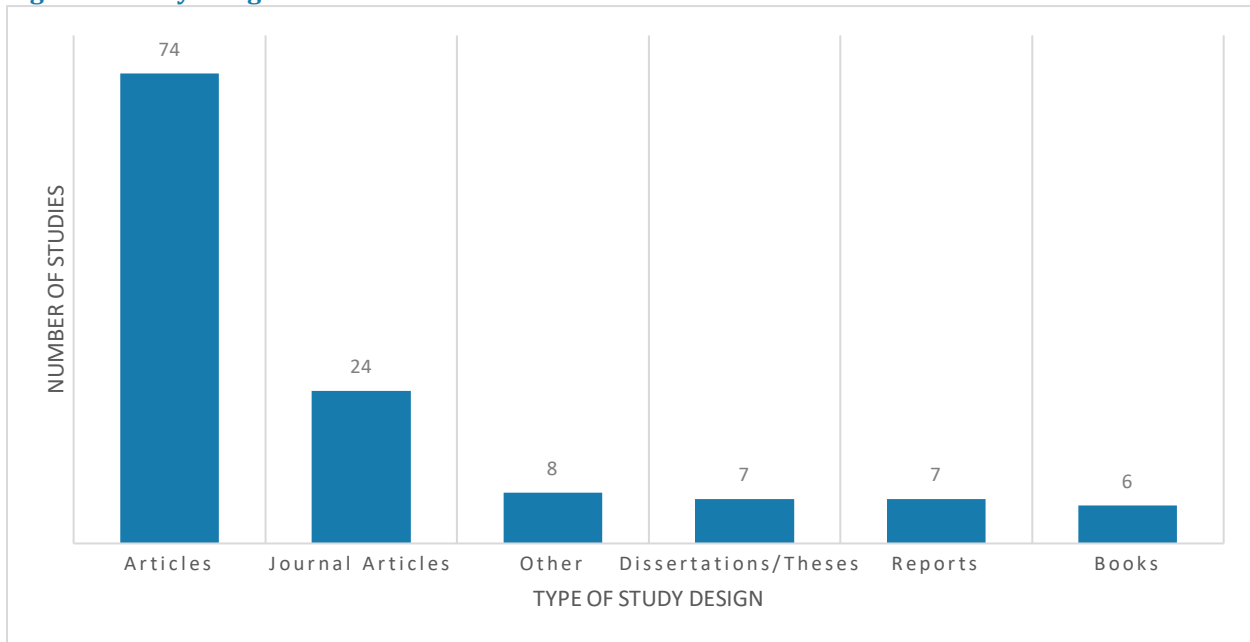


Figure 4: Study design of reviewed studies



With relevance to this study, it is important to note that a very small number of studies focused on work activities. The studies were heavily biased toward employment outcomes.

4 Describe Pathways to Employment

The environmental scan is comprehensive with respect to agents, interventions, and policies to support and incentivize employment for youth with disabilities. Based on our literature and policy review, we identified many references to specific interventions, environmental influences, and outcomes relevant to the employment of youth with disabilities. These interventions and environments are captured in the conceptual framework in Figure 4. The interventions and environments included in this figure were chosen for their potential correlation or causality to use of services and, ultimately, to employment and other social outcomes. We discuss them briefly in this section.

Conceptual framework. There are specific elements of interventions, environmental influences, and outcomes that deserve special attention. Broadly, these fall into the following categories:

- **Environmental Influences**
 - Personal and Family
 - Providers: Education, VR agencies
 - Local, State, and Federal Government
 - Community
- **Interventions**
 - Models and strategies
 - Services, supports, and program factors
 - Policy levers
- **Outcomes**
 - **Outputs:** Use of services
 - **Impacts:** Employment, educational and other outcomes
- **Overall Goal**

This conceptual framework is presented as a global perspective to relevant findings from the environmental scan as can be seen in Figure 5. This framework represents the pathways to employment for both research questions (services, supports, and work study) as well as the role of policies and regulations on youth attaining employment. The framework includes a wide selection of interventions that could possibly lead to the outcomes of interest. We approach the framework in a global manner, in contrast to other frameworks used by SSA-sponsored programs that are focused on certain interventions (bundles), like PROMISE and YTD. However, our review is an exhaustive investigation into all potential factors associated with our outcome of interest for the target population, preventing us from drawing direct causal relationships from program-specific interventions.

The framework in Figure 5 is made up of overlapping circles, visualizing the overlapping and encompassing nature of the environment and the interventions on outcomes. The transition environment sets the stage for the interventions, the outcomes, and the overall goal.

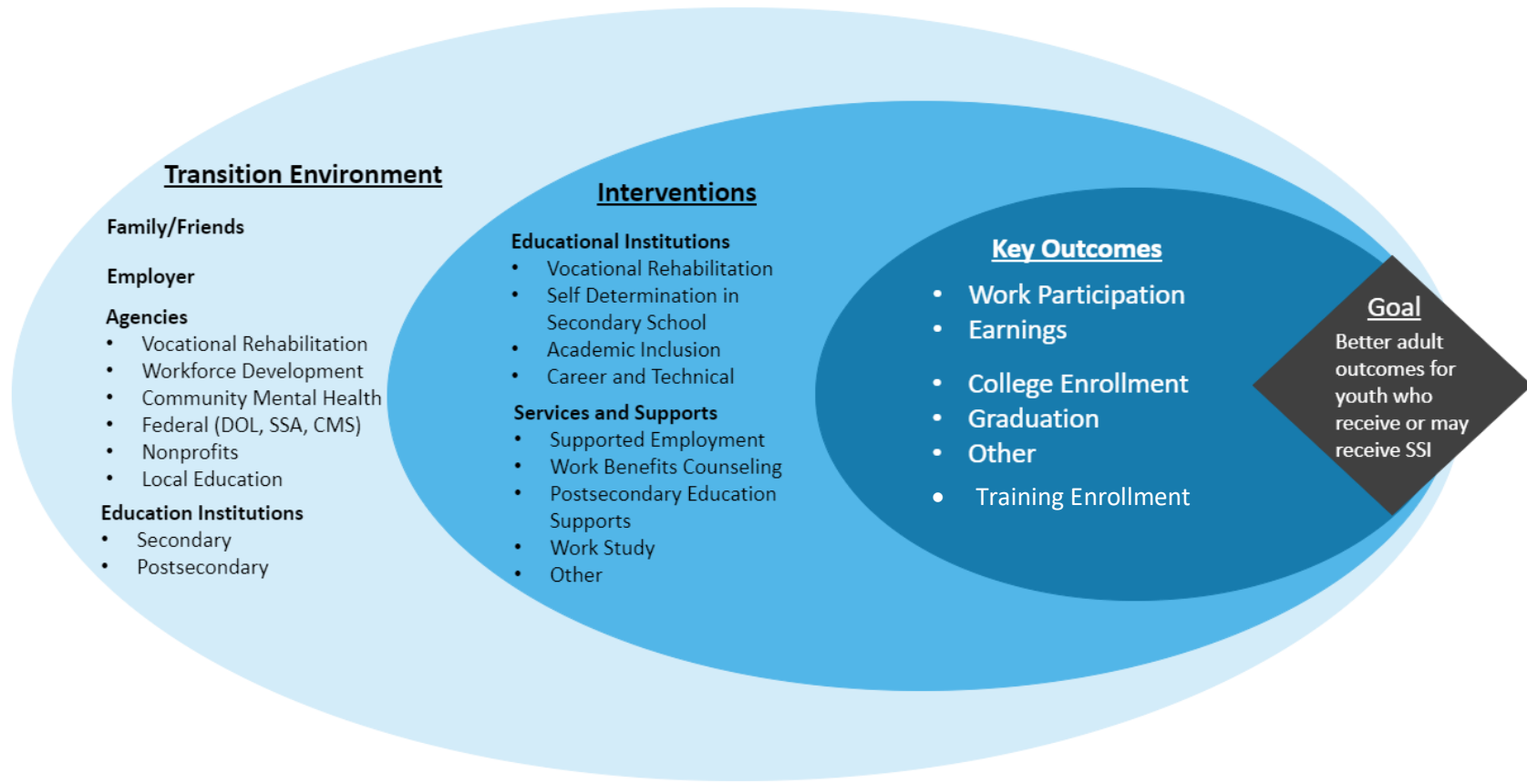
It is important to note an additional factor that encompasses the transition-age youth, in part, the environment that the youth are transitioning in, as well as the context for the creation of the interventions. It is important to keep in mind the legislative and regulatory context when viewing the conceptual framework in Figure 5.

The legislation, regulations, and programs that are relevant for this context include:

- IDEA
- The Rehabilitation Act of 1973
- WIOA
- Title V of the SS Act
- Ticket to Work Program
- VR Cost Reimbursement Program

The following sections will show the strength of evidence in the relationship between the interventions and youth employment.

Figure 5: Pathways to employment



5 Research Question 1: What services and supports lead to employment for youth ages 14 to 25, including evidence among youth receiving SSI?

5.1 Global Description of the Body of Evidence

Promising evidence on services and supports for youth with disabilities can be broadly classified into the following two groups:

1. Evidence on programs or interventions that together represent a bundle of different service components
2. Evidence on specific services and supports that may or may not be bundled together in one package or program

Our environmental scan showed a wide variety in the types of services and supports studied in the literature. However, most of the studies consisted of services that were bundled together (Table 3).

Table 3: Bundled services and supports studied by the studies reviewed

Service	Frequency	Service	Frequency	Service	Frequency
VR	11	Job placement	4	Job shadowing	3
Vocational training	8	Mentoring	4	Job skills	3
Assessment	7	Special education	4	Maintenance	3
Job readiness	6	Vocational classes	4	PSE	3
Job search	6	YTD	4	Remedial training	3
Supported employment	6	Augmentative skills	3	Self-determination	3
College training	5	Diagnosis and evaluation	3	Transportation	3
Counseling	5	IEP	3	Work study	3
Job training	5	Internship	3		

The following services and supports were examined separately:

- Supported employment
- ILP
- Apprenticeship
- Customized employment
- Employment
- Functional curriculum
- Learning plan
- Mentoring
- NTID
- Project search
- PSE
- School-to-work collaborative
- Self-determination
- Special education
- START
- Universal design

We first summarize the results from literature on the effectiveness of programs, demonstrations, and interventions on employment and schooling outcomes of transition-age youth who received or may receive SSI. Then, we summarize the results for individual service components from studies examining the relationship between receipt of such services or supports and employment or schooling outcomes of transition-age youth with disabilities on a global level. This is presented in Table 7, Table 8, and Table 9.



5.1.1 Results from Programs or Demonstrations

Table 4 summarizes the findings of each individual service component. Full descriptions can be found after the table.

Table 4: Summary of results from programs or demonstrations

Program	Sample Characteristics	Increase Employment Rate				Higher Income/Earnings			Higher Health Care Utilization	Comments
		YR 1	YR 2	YR 3	YR 4	YR 1	YR 2	YR 3		
Youth Transition Demonstration (YTD)	2006-2012, RCT, n=5,103, 5 sites	Yes, in 3 sites	N/A	Yes, in 3 sites	N/A	N/A	N/A	Yes, earnings at 2 sites; total income at 5 sites	Yes, but magnitude was small	Arrest and charge rates decreased at 2 sites
Ticket to Work (TTW)	1999-2000 Quasi-Experimental. N=250,000,	No	No	No	No	No	No	No (No, year 4)	N/A	Program participation correlated with employment and annual earnings, but small
	WIPA 2009-2010 N=12,000	Yes, but magnitude was small	N/A	N/A	N/A	Yes, but magnitude was small	N/A	N/A	N/A	No effect on meeting work-related goals
PROMISE	2014-5 states, 2000 each	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Ongoing, in 5 states
Accelerated Benefits (AB)	2007-2011 RCT, n=2,000, 53 MSAs	No	No	No	No	N/A	N/A	N/A	<ul style="list-style-type: none"> • Increased health care usage; • Decreased self-reported delayed care; • Lower out of pocket expenditures 	

Program	Sample Characteristics	Increase Employment Rate				Higher Income/Earnings			Higher Health Care Utilization	Comments
		YR 1	YR 2	YR 3	YR 4	YR 1	YR 2	YR 3		
SourceAmerica Pathways to Career Program	2017 Half over 25 years old	Yes, tripled	Yes, doubled	N/A	N/A	N/A	N/A	N/A	N/A	Half matched to employment after one internship; half of the jobs led to earning exceeding SGA level
	2012-2016 Utah N=91	Participants and the matched VR clients had similar rates of employment that lasted 90 days or longer				N/A	N/A	N/A	N/A	No control group
Project SEARCH + Autism Spectrum Disorder Supports	2019 RCT 4 hospital in Virginia	Participants in treatment group more likely to achieve employment at 1-year follow-up. No significant difference in average hourly wages				No	No	No	N/A	More likely to achieve high school graduation
Demonstration to Maintain Independence and Employment (DMIE)	2019 RCT 4 states	No	No	No	No	No	No	No	N/A	
Job Corps	1994-1996 RCT n=15,000 Year 1	N/A				In year 4, treatment group individuals had higher enrollment rate and GED/vocational degree attainment, higher earnings and hourly wages.			N/A	Higher enrollment and GED/ vocational degree attainment
	Year 20	Positive effects persisted, but did not grow No effect for younger participants.				Positive effects persisted but did not grow. No effect for younger participants.			N/A	
Return-to-Work Demonstrations in Wisconsin; WI SPI & SSDI-EP	2012	Positive association between receiving work incentives benefits counseling and employment outcomes				N/A	N/A	N/A	N/A	

Program	Sample Characteristics	Increase Employment Rate				Higher Income/Earnings			Higher Health Care Utilization	Comments
		YR 1	YR 2	YR 3	YR 4	YR 1	YR 2	YR 3		
Bridges from School to Work	1991-2010 N=18,000 9 cities	N/A	N/A	N/A	N/A	Yes, Bridges youth had higher annual earnings than SSI comparison group for all ages, 18-30,			N/A	Lower cumulative SSI payments and SSDI benefits, 19-30
Maryland Seamless Transition Collaborative (MSTC)	2007-2013 N=377 11 districts	MSTC participants (42%) more likely to be employed at closure than non-MSTC participants (24%).				Conditional on employment, MSTC participants earn lower wages/work fewer hours per week than non-MSTC participants (\$182.86 vs \$218.92 weekly earnings).			N/A	

5.1.1.1 Youth Transition Demonstration

The YTD project aims to improve employment outcomes for transition-age youths who were SSA beneficiaries. The main services for enrollees included individualized work-based experiences and supports, career planning, and encouragement of family involvement.

A randomized control trial was conducted from 2006 to 2012 on a sample of 5,103 youths from six sites, with each site having more than 800 observations. The program enrolled SSI and SSDI recipients aged 14 to 25 at five sites (Colorado, New York Bronx County, New York Erie County, Florida, West Virginia) or high school juniors or seniors with severe emotional disturbances in Maryland.

Multiple studies have evaluated the effectiveness of the program, focusing on service usage, employment, annual earnings and criminal activity 1 year or 3 years after program enrollment (Honeycutt et al. 2016; Fraker et al. 2014, 2018). Key findings are threefold for youths enrolled in YTD:

1. Youth received more services at four sites.
2. By year 1, employment rate increased at three sites.
3. Most importantly, by year 3, employment rate increased at three sites; earnings increased at two sites; disability benefits increased at four sites; total income increased at five sites; arrest and charge rates decreased at two sites.

However, among the six YTD sites, the West Virginia (WV) site was separately analyzed (Cobb, Wittenburg, Stepanczuk, 2018). The WV RCT included 852 participants from 19 counties. Participants in the program reported increases in the use of employment services, employment, and income in the year after random assignment into the treatment group. However, the size of the effects had diminished in the third year after random assignment, by which time project supports were no longer in place.

There are two differences in sample selection criteria across sites. First, the MD site identified eligible individuals from high school juniors or seniors with “severe emotional disturbances;” all five other sites identified eligible individuals from state administrative disability rolls. This results in difference in observables for the final sample: 21.2% of the MD sample were on SSI whereas 100% of the samples from other sites were on SSI. Second, for the five sites that identified eligible individuals from disability rolls, the age cutoffs were not uniform. The specific age cutoffs for CO, NY Bronx, NY Erie, FL, and WV were 14 to 25, 15 to 19, 16 to 25, 16 to 22, and 15 to 25, respectively. As a result, the average age of the resulting samples varies significantly by site, from a low of 16.2 years in NY Bronx to a high of 20.5 years

YTD Sample Characteristics

- Mean ages: 16.2 to 20.5 years
- White majority in Colorado, New York Erie County, West Virginia; black majority in Florida; Hispanic majority in New York Bronx County; 40% white and 40% black in Maryland
- Percent male: 57.1% to 67.8%
- Greater than 40% cognitive or developmental impairments except in Maryland where about 50% have mental illness

YTD Sample Characteristics West Virginia

- 55% white
- Percent male: 80%
- Cognitive and developmental disabilities were the most prevalent at 42%



in WV. It is possible that this might have contributed to differences in enrollment rates by site, ranging from a low of 36.7% in WV to a high of 93.6% in NY Bronx.

The generalizability of results from these sites to the target population for YTD were not empirically tested. Given that the researchers have access to the state-level administrative disability rolls, it would be helpful to (1) compare observables of the final analysis sample to those of the target population at state/national level, and (2) discuss whether results can be generalized to the target population if difference in observables exists.

5.1.1.2 *Ticket to Work and Work Incentives Planning and Assistance*

The TTW program aims to improve employment outcomes for transition-age youths and young adults who are Social Security Disability Insurance (SSDI) or SSI recipients. The SSA mails each eligible disability program beneficiary a “Ticket” that he or she can assign to either a State Vocational Rehabilitation Agency (SVRA) or to a prequalified local rehabilitation service provider, in exchange for employment placement, job training, and other services.

We report findings from two analyses of the impact of the TTW program. Note that both studies focus on older samples, so findings may not be directly applicable to transition-age youths.

The first set of findings come from a quasi-experimental study using a national sample of individuals who enrolled in TTW between July 1999 and October 2003, with close to 250,000 observations (Stapleton, Mamun, & Page, 2013). The authors find increased service usage among program participants, but no consistent evidence of effect on employment-related outcomes during the 48-month window following the program.

The second analysis focuses on the Work Incentives Planning and Assistance (WIPA) program (Livermore, Prenovitz, & Schimmel, 2011). The Ticket to Work and Work Improvement Incentives Act of 1999 authorized Social Security to award grants, contracts or cooperative agreements to provide community-based work incentives expertise to beneficiaries of Social Security or SSI benefits based on disability. The WIPA program provides SSI and SSDI recipients with work incentives planning and education, and assistance with the use of SSA work supports.

A descriptive analysis using a sample of WIPA enrollees from October 2009 to March 2010, with more than 12,000 observations showed that program participation positively correlated with employment and annual earnings in the following year, but the magnitude is very small (Livermore, Prenovitz, & Schimmel, 2011). This is a descriptive study, and hence evidence presented does not have causal interpretations.

In July 2008, regulation changes to the TTW program were implemented to increase the financial incentives for service providers to actively participate in the program. Livermore et al. (2012) studied the changes in participant characteristics and outcomes post the 2008 regulation. They found that with the post-regulation change:

TTW Sample Characteristics

- New SSDI-only beneficiaries
- Ages 18 to 39 (Mean = 33)
- 52% male
- 65% white, 20% black
- 45% have physical disabilities, 25% have psychiatric disorders

WIPA Sample Characteristics

- 25% had SSI only; additional 25% concurrent with DI
- Mean age: 42.2 years
- 51.2% male



- A higher number of participants fell in the 18 to 24 range, compared with pre-regulation change, and were more likely to have completed high school.
- Significantly fewer post-regulation change participants had work-related goals and expectations compared with their pre-regulation counterparts.

After controlling for other characteristics, there was no significant differences in the likelihood of meeting work-related goals, although the likelihood of reporting overall satisfaction with TTW was 12 percentage points higher among post-regulation change clients (but insignificant).

5.1.1.3 PROMISE

The Promoting Readiness of Minors in Supplemental Security Income (PROMISE) Projects are currently ongoing in five states: Maryland (MD), Wisconsin (WI), Arkansas (AR), New York (NY), and California (CA). At each site, around 2000 (3200 for CA) SSI youth were selected with about half randomly assigned to the treatment group.

Compared with YTD, the age selection criteria were more uniform, resulting in comparable age ranges in the analysis samples across sites. Moreover, all states identified eligible youth from SSA lists. One limitation of the data is that the race variable is unknown for most of the sample, as a result of the SSA discouraging the use of this variable. This renders comparison of racial distribution of the analysis sample and the target population difficult. Similar to YTD, the generalizability of the results from the sites, when they are ready, to the target population at state level or national level can be empirically tested by comparing the observables of the study sample to target population.

Marketing and outreach method varied across states, and specific methods included mailing enrollment material, telephone calls, community-based events, and hiring local staff who mirrored the cultures and languages of the communities to conduct outreach. The difference in outreach methods may contribute to differences in both observable and unobservable characteristics of the analysis sample compared with the target population.

An example of the unobservable characteristic would be whether the participant had a stable address, and mailing requires a stable address whereas other outreach methods may not. Again, it would be helpful to compare observables of the final analysis sample to those of the target population at the state/nation.

See connected
recommendation
in Section 9.1

5.1.1.4 Accelerated Benefits (AB) Demonstration

New SSDI beneficiaries must wait for two years before they are eligible for Medicare. The AB Demonstration program provides healthcare benefits to uninsured new SSDI recipients aged 18 to 54. The primary goal is to meet healthcare needs of new SSDI beneficiaries, and a secondary goal is to encourage employment through telephone services.

A randomized control trial was conducted on a sample of about 2000 new SSDI recipients from 53 Metropolitan

AB Demonstration Sample Characteristics

- Mean age: 46.8 years
- 50% male
- 58.4% white
- 18.4% reported good or better than good health; 44.6% obese
- 22% mental disorder; 19.4% musculoskeletal system and connective tissue disability; 16.8% nervous system and sense organs disability



Statistical Areas nationwide between 2007 and 2011 (Michalopoulos, et al., 2011).

The study found that, within the first 12 months of enrollment, AB Demonstration increased healthcare usage, decreased self-reported delayed care, lowered out-of-pocket expenditure, and improved self-reported health for new SSDI recipients. However, there was no effect on employment outcomes.

5.1.1.5 *SourceAmerica Pathways to Career*

The SourceAmerica Pathways program follows a customized employment service approach for people with intellectual/developmental disabilities or autism spectrum disorder to help them gain competitive integrated employment. Under the program, participants spend an average of 17 weeks in “Discovery”—a strengths-based assessment of participants’ skills and competencies to align them with potential job skills and employers. After completing the assessment, participants participate in one or more paid internships.

SourceAmerica Sample Characteristics

Almost half the study sample were individuals over the age of 25.

In 2017, an evaluation of the Pathways program that only reported outcomes for the Pathways participants (without comparing them against a control group), revealed that 44% of employed participants were matched to employment after one internship; and almost half of the jobs led to monthly earnings exceeding the SGA level (Mathematica Policy Research, 2017). Compared to before program participation, by one year after intake, average monthly earnings had nearly tripled and by two years after intake, earnings had more than doubled, indicating a sustained increase.

Sevak, Denny-Brown, and Shenk (2019) examined the employment effect of enrollment into the Pathways program from 2012 to 2016 in Clearfield, Utah. The program aimed to provide competitive integrated employment (CIE) opportunities that were aligned with individual's skills, interests, strengths, and abilities for individuals with intellectual or developmental disabilities or autism spectrum disorder, with a total of 91 participants enrolled in the program. Given the small number of observations and lack of control group, a matching method (Coarsened Exact Matching) was used to create an observationally comparable control group from VR clients. Result show that Pathways participants and the matched VR clients had similar rates of employment that lasted 90 days or longer. Among those employed, Pathway participants work 6.4 hours more per week, earn 1.2 dollars more per hour, totaling 99 dollars more per week.

5.1.1.6 *Project SEARCH and Autism Spectrum Disorder Supports*

Project SEARCH is a transition-to-work internship program that uses a supported employment approach to assist youth with developmental disabilities acquire vocational skills. To meet the needs of youth with autism spectrum disorder (ASD), Project SEARCH plus ASD Supports (PS + ASD) provide specific techniques that include social communication training, provision of visual cues, and behavior support and self-regulation strategies. A 2019 study reported results from a randomized clinical trial of the PS+ASD program across four hospitals in Virginia (Wehman, et al., 2012). The PS+ASD program was offered as a nine-month service where students with ASD spent their last year of high school in a combination of classroom instruction and an unpaid internship program in a large community business. The program

Pathways Program - Utah Sample Characteristics

- 62% male
- 95% white
- 56% aged 18 to 24, although did not target youth
- 32% aged 25 to 34



was jointly supported by educational and adult services agencies. Specifically, during the internship, participants received direct instruction from a team including a licensed special education teacher and a special education paraprofessional funded by their public-school systems as well as from job coaches funded by the state VR agency. Students in the control group attended their assigned high school and received services included under their IEP.

Findings from the randomized clinical trial showed that at graduation, students in the treatment group were significantly more likely to be employed—by almost six times more than the control group, and the difference persisted at the one-year follow-up. While there were very few control group students who were employed by the one-year follow-up, there was no significant difference in the average hourly wages of the two groups among those who were employed.

5.1.1.7 *Demonstration to Maintain Independence and Employment*

The Demonstration to Maintain Independence and Employment (DMIE) was implemented as part of the 1999 Ticket to Work and Work Incentives Improvement Act (“Ticket Act”). The DMIE was an early intervention program that provided enhanced access to health care services and other supports for workers with potentially disabling conditions who were not yet receiving SSA disability benefits. Funding for the demonstration was provided by the Centers for Medicare & Medicaid Services (CMS) to Medicaid agencies in Texas, Minnesota, Kansas, and Hawaii, and each state implemented their own intervention approach. The DMIE programs in the four states were implemented and evaluated through randomized trial designs, where the treatment group received early intervention services in addition to their existing menu of services.

DMIE Participants

At the time of enrollment:

- Between ages 18 to 62
- Work at least 40 hours per month
- Not currently receiving or applying for federal disability benefits

Average participant age:

- Minnesota: 38 years
- Texas: 47 years
- Kansas: 51 years
- Hawaii: 48 years

Results from the randomized controlled trial showed that in each of the states, there was no statistically significant effect of the DMIE on employment rates (Whalen, Gimm, Ireys, Gilman, & Croake, 2012). Even though a past evaluation had found higher impact on employment in short term, there was no impact on employment retention. On the other hand, Hawaii saw a negative effect of DMIE participation on number of working hours. While the exact cause for the unexpected result was not ascertained, Hawaii program staff suggested that some treatment group participants may have instead sought to improve “work-life balance,” leading to decrease in hours worked. It should be noted that the average age of participants across states are higher than the range of transition age youth, suggesting that proportion of transition age youth participating in the demonstrations were low.

5.1.1.8 *Job Corps*

Job Corps targets transition-age youths who were receiving welfare or food stamps or residing in a household with income less than 70% of the “lower living standards income level,” as defined by the

See connected recommendation in Section 9.1

Job Corps Sample Characteristics

- 27% ages 20 to 24
- 59% male
- 27% white; 48% black; 18% Hispanic
- No information available on disability type



Department of Labor. The program includes multiple services including vocational training, academic education, counseling, social skills training, health education and placement services. A unique feature of this program is that it provides residence for participants during the program. Furthermore, this program includes youth without disabilities and services vary from location to location.

**Job Corps Selected YMLs
Sample Characteristics**

At baseline: 29% asthma, allergies, or respiratory conditions; 17% mental disorders; 15% upper and lower extremity conditions or arthritis; 14% back problems

A randomized control trial was implemented on a nationwide sample of more than 15,000 individuals between 1994 and 1996. Two studies followed up with participants four years and 20 years after program participation (Schochet et al. 2008; Schochet 2018). By year 4, the author finds that treatment group individuals had higher enrollment rate and GED/vocational degree attainment, higher earnings and hourly wages. The effects are larger for older participants (age 21 to 24) than the younger ones (age 16 to 20). By year 20, the positive program effects on employment and earnings persisted, but did not grow. The effect by year 20 concentrated on older participants and no effect was found for younger participants.

Among the RCT study sample, 472 youth with medical limitations (YMLs) were identified and separately studied (Hock, Luca, Kautz, & Stapleton, 2017). By year 4, the estimated program effects on education, self-reported employment, and earnings were larger for YMLs than other youths. The program also reduced their dependence on long-term disability benefits.

5.1.1.9 *Return-to-Work Demonstrations in Wisconsin*

The Wisconsin Pathways to Independence (WI SPI) and the Wisconsin SSDI-EP were similar programs that mainly offered work incentives benefits counseling to SSI or SSDI recipients, with both programs starting in 1999. Delin et al. (2012) employed linear regressions to show positive association between receiving work incentives benefits counseling and employment outcomes, including employment rate, quarterly earnings and quarterly income, over a two-year period from service enrollment. Moreover, dose-response models suggest that the associations increase with longer service time.

**Return-to-Work Demonstrations (WI)
Sample Characteristics**

Mean age 38.2 for WI SPI; 45.2 for SSDI-EP
62.6% male for WI SPI; 55.4% male for SSDI-EP
77.7% white for WI SPI; 87.2% white for SSDI-EP
Approximately 50% physical disabilities (including sensory disabilities and HIV)

Both programs target SSI or SSDI recipients of all ages, instead of focusing on transition-age youth. However, transition age youth is eligible for the program and the evidence shown in these studies for older age groups might apply for transition age youth.

5.1.1.10 *Bridges from School to Work*

The Bridges from School to Work program operated in nine cities (Atlanta, Baltimore, Chicago, Dallas, Los Angeles, Oakland, Philadelphia, San Francisco, and the Washington, DC area) from 1991 to 2010 to provide job placement and supports for youth with disabilities. Over 18,000 youth with a documented disability enrolled in the program. Hemmeter et al. (2014) compared employment

**Bridges from School to Work
Sample Characteristics**

- >80% aged 17 to 19 at enrollment
- 61.3% male
- 90% racial or ethnic minority
- Approximately 90% intellectual, developmental, or mental disabilities; 10% physical disabilities

outcomes for enrollees with youth on SSI at 17 who lived in the same zip-code as Bridges-served youth but did not receive the Bridges service. Results show that Bridges youth have higher annual earnings than the SSI comparison group for all ages between 18 and 30, and lower cumulative SSI payments and SSDI benefits from age 18 to age 30. A limitation is that the program is voluntary, and the study does not account for selection into the program.

5.1.1.11 *Maryland Seamless Transition Collaborative*

The MSTC was implemented across 11 school districts from 2007 to 2013. It offered a series of services to participants, including Discovery (development of Positive Personal Profile), individualized work experiences, individualized paid integrated employment, family supports, early VR case, systems linkages and collaboration, coordination with teachers and instructional staff, for a total of 377 program participants. Luecking et al. (2017) employed propensity score matching to create an observationally equivalent control group from 6111 VR youth. Results show that MSTC participants (42%) were more likely to be employed at closure than non-MSTC (24%) participants. Conditional on employment at closure, MSTC participants earn lower wages and work fewer hours/week than non-MSTC participants, resulting in lower weekly earnings (\$182.86 vs. \$218.92). The results should be interpreted with caution: if participation selection involved unobservable characteristics, then propensity score matching results could still be biased.

MSTC Sample Characteristics

- Mean age 17.6
- 29.4% female
- 60.7% white; 36.1% black
- 14.3% intellectual disabilities; 14.3% psychiatric/serious emotional disturbance; 19.9% specific learning disabilities; 17.5% autism

5.1.2 *Results for Individual Service Components*

Below in Table 5, the findings of each individual service component summarized into bullet points. Full descriptions can be found after the table.

Table 5: Summary of results for individual service components

Service Component	Findings
Vocational Rehabilitation services	<ul style="list-style-type: none"> • Shown to be positively related to employment outcomes for youth with disabilities
Work benefits counseling	<ul style="list-style-type: none"> • Participants in work benefits counseling are more likely to be employed • Results may be skewed based on self-selection
Postsecondary education support	<ul style="list-style-type: none"> • Positively associated with being employed upon exit from VR
School-to-work	<ul style="list-style-type: none"> • Found to increase both short- and long- term employment propensity
Self-determination interventions in secondary school	<ul style="list-style-type: none"> • Students with interventions that promote self-determination scored higher in employment and community involvement
Academic inclusion	<ul style="list-style-type: none"> • Associated with higher rates of postsecondary enrollment
Career and technical education	<ul style="list-style-type: none"> • No significant relationship with likelihood of full-time employment for students with intellectual disabilities • Among all students with disabilities, participants are more likely to be employed one year after graduation than nonparticipants
Work study	<ul style="list-style-type: none"> • Not a significant predictor of full-time employment for students with intellectual disabilities • Among students with any kind of disability, participants are more likely to work full time than nonparticipants

5.1.2.1 Vocational Rehabilitation Services

VR services as a whole have been shown to be positively related to employment outcomes for youth with disabilities, although some services show stronger correlations than others. Evidence exists for job support/training and vocational training, and more evidence is needed for other services. In terms of rigor, most studies examined associations between different services and outcomes in a regression framework without accounting for sample selection. The exceptions were the studies by Dean et al. (2015), (2017), (2018) that used more rigorous methodology.

Below, we describe existing evidence for different groups of services and supports within VR.

Vocational/job/career training. One evaluation of the VR service package as a whole studied the Targeted Secondary Transition Program (START), including enhanced transition services in integrated school and community-based training/work sites during and after high school. Service components of START included classroom instruction on career exploration and job readiness development, job shadowing, training in independent living skills, on-the-job evaluation and training, fully employer-funded work experience, and job coaching. The study showed that participation in the program is associated with significantly better employment outcomes when compared to nonparticipants who were matched with the treated individuals based on observable characteristics (Langi, Oberoi, Balcazar, & Aswumb, 2017).

See connected recommendation in Section 9.1

Another program that offered a combination of vocational rehabilitation services including vocational training or job training as well as special education has also shown positive associations with employment after age 18 among current and former SSI recipients. Those who participated in vocational training were estimated to be 19 percentage points more likely to be working after age 18 compared to those who did not participate in vocational training. There was no consistent evidence that the

employment outcomes were associated with participation in special education, specific job training, or vocational rehabilitation (Loprest & Wittenburg, 2007).

A part of the literature has also evaluated the impact of VR services on individuals with specific disability types. One study reported that after receiving VR services, as many as 50% of youth with ASD obtained competitive employment (Kaya, Chan, Rumrill, Hartman, & Wehman, 2016). Services such as on-the-job support, job placement, rehabilitation technology, occupational/vocational training, job search assistance services, vocational rehabilitation counseling and guidance, job readiness training, were all significantly associated with employment of VR clients with ASD. In a follow-up study, Kaya et al. (2018) found that the number of competitively employed youth with ASD increased to 55.4% in 2018 and these youth received an average of 4.94 services compared to the 3.85 services that those who were not competitively employed received. When looking at the odds ratios, clients who received job placement services (OR=3.75), on-the-job support services (OR=3.20), on-the-job training services (OR=1.74), maintenance services (OR=1.55), and other services (OR=1.49) were more likely to receive competitive employment than those who did not (Smith & Lugas, 2010).

Another study found that youth with a traumatic brain injury (TBI) were more likely to obtain competitive employment after receiving VR services (Rumrill, et al., 2016). After receiving an average of 4.74 services, 49.7% were employed. The odds for having the clients' cases closed in successful competitive employment status after receiving job placement services (2.55 times), on-the-job-support services (2.25 times), maintenance services (1.59 times), job search services (1.45 times), occupational/vocational training services (1.39 times), and information/referral services (1.38 times) were greater than those who did not receive such services.

In a series of rigorous studies, Dean and colleagues (Dean D. , 2015) (Dean D. , Pepper, Schmidt, & Stern, 2017) (Dean D. , Pepper, Schmidt, & Stern, 2018) tried to isolate the impact by VR service type using administrative data from Virginia. The Virginia VR services are provided to all applicants who are deemed eligible by VR counselors. Services include six broad categories: diagnosis and evaluation, job training, education, restoration, maintenance and other services. The authors built a discrete choice model with instrumental variables to evaluate the causal effect of different types of services on employment and quarterly earnings. The authors then estimated the model for individuals with three broad types of disabilities: cognitive impairments, mental illness, and physical disabilities.

For individuals with cognitive impairments, the authors used data from 1988 and 2000, with sample sizes of 1,907 and 1,009 (Dean D. , 2015). The mean age of the analysis sample was slightly more than 25, with more than 50% of the sample male and about 56% white. They found positive effects on employment and earnings for diagnostics and evaluation, job training, education and other services, but negative effects on employment and earnings for restoration and maintenance. Many VR clients receive more than one service, and the authors estimated the mean long-run benefits of VR services to be over \$21,000, exceeding the mean costs by four to six times.

For individuals with mental illness, the authors used data from 2000 with a sample size of 1,555 (Dean D. , Pepper, Schmidt, & Stern, 2017). The mean age is 35.7, with 40% male and 71% white. They found that training and other services increased employment propensity while diagnosis & evaluation, education, and restoration decreased employment propensity. When combining the employment and earnings effects together, all service types had positive long-run effects except for diagnosis and evaluation.

For individuals with physical disabilities, the authors used data from 2000 with a sample size of 2,421 (Dean D. , Pepper, Schmidt, & Stern, 2018). They found that all services except maintenance increased employment propensity and earnings in both the short and long run. They estimated the median long-run rate of return of VR services for clients with physical disabilities to be 174%, notably larger than those found for clients with other impairments.

Note that the estimates on the effects of VR services in Virginia focused on the entire population of VR applicants. Hence, results may not be directly applicable to transition-age youth.

Internship/career and technical education. Other evidence on a bundle of services offered to secondary school students found that youth with vocational goals written in their IEPs were six times more likely to hold a paid job compared to those who did not have vocational goals in IPE's. In addition, participation in internship, tech-prep, or entrepreneurship programs had the strongest association with paid work (Carter, Austin, & Trainor, 2011). Other evidence on career and technical education as well as work study showed no significant relationship with likelihood of full-time employment for students with intellectual disabilities (ID), although there was some evidence of positive effects when controlling for other factors and including students with all kinds of disabilities (Baer, et al., 2003).

Diagnosis/evaluation/assessment. Dean and colleagues (Dean D. , 2015), (Dean D. , Pepper, Schmidt, & Stern, 2017), (Dean D. , Pepper, Schmidt, & Stern, 2018) as described earlier, tried to isolate the impact of different services, including diagnosis and evaluation, on employment and quarterly earnings for individuals with three broad types of disabilities: cognitive impairments, mental illness, and physical disabilities. The results showed that diagnosis and evaluation had positive effects on employment and earnings for individuals with cognitive impairments (Dean D. , 2015), but negative impact for individuals with mental illness (Dean D. , Pepper, Schmidt, & Stern, 2017). For earnings, diagnosis, and evaluation decreased earnings in the short run but increased them in the long run. For individuals with physical illness, they found that diagnosis and evaluation increased employment propensity and earnings in both the short and long run (Dean D. , Pepper, Schmidt, & Stern, 2018). However, these studies focused on the entire population of VR applicants in Virginia, therefore the results may not be directly applicable to transition-age youth.

Maintenance and restoration. The relationship between maintenance and restoration services and employment outcomes were also studied as part of the bundle of services provided to youth with disabilities. Kaya et al., (2016; 2018) found that maintenance services was significantly associated with employment of VR clients with ASD. In terms of odds of employment, maintenance services (OR = 1.55) had lower odds than job placement services (OR = 3.75), on-the-job support services (OR = 3.20), and on-the-job training services (OR = 1.74) (Smith et al., 2010). The odds of employment after receiving maintenance services (OR=1.59) were similar for transition-age youth with a TBI (Rumrill, et al., 2016).

In more rigorous studies, Dean et al (2015) (2017) (2018) found that effects of maintenance and restoration services differed for individuals with different disabilities. For individuals with cognitive impairments, restoration and maintenance decreased employment propensity and earnings. For individuals with mental illness, maintenance increased employment propensity in the short run but decreased it in the long run. For earnings, restoration, maintenance, and other services increased them in both the short run and long run. On the other hand, for individuals with physical disabilities, maintenance decreased employment propensity and earnings in both the short and long run. However, these studies focused on the entire population of VR applicants in Virginia, therefore the results may not be directly applicable to transition-age youth

Academic services. Joshi and Bouck (2012) examined the relationship between functional curriculum consisting of services such as functional skills and applications of core subject areas in high school (academics), vocational education, community access, daily living, financial, independent living, transportation, social/relationships, and self-determination on employment outcomes of youth with intellectual disabilities. Average age of participants was 17 years with 66% male. The racial composition was 62% white and 31% African American. The results showed that functional curriculum was associated with higher employment outcomes: 72% of those who received functional curriculum were ever employed immediately post school, compared to 62% of those who received non-functional curriculum. Moreover, 50% of those who received functional curriculum were employed more than 2 years of leaving school compared to 54% of those who did not receive functional curriculum.

Dean and colleagues (Dean D. , 2015), (Dean D. , Pepper, Schmidt, & Stern, 2017), (Dean D. , Pepper, Schmidt, & Stern, 2018) also examined the impact of education services on employment outcomes using administrative data from Virginia. The results showed that education along with for diagnostics and evaluation and job training, had positive effects on employment and earnings for individuals with cognitive impairments and physical disabilities in the short and long run. However, for individuals with mental illness, education decreased employment propensity and the earnings in the short and long run. Note that the estimates on the effects of VR services in Virginia focus on the entire population of VR applicants. Hence, results may not be directly applicable to transition-age youth.

Supported employment. Supported employment is a VR service recommended to help youth with disabilities acclimate to the work environment (Williams, Lo, Hill, Ezike, & Huddleston, 2019)(Williams et al., 2019). It includes job placement, job readiness training, in-person meetings with service providers, among others. In a study by Williams et al., 91 male and female youth, ages 16 to 20 (inclusive) who receive SSI, were surveyed to identify any relationship between supported employment services and employment outcomes. Through univariate regression analyses and calculations of odds ratios, they found that in-person, initial meetings with service providers by case managers (odds ratio of 2.84), attendance at work readiness trainings (odds ratio of 2.45), and the clients' perception that a job placement was related to their interests and preferences (odds ratio of 1.82), significantly and positively predicted employment outcomes. Mann et al. examined the distribution of employment outcomes across general and combined SVRAs in 49 states and Washington, DC, and found that SVRAs that were classified as 'other paid employment,' which included supported employment, had an average of 77% of persons who upon receiving services, exited with employment. This population included 21% of youth that were 14 to 24 years old, 78% of the participants were white only, and a majority of them attained high school (40%) and some postsecondary goal (37%) (Mann & Croake, 2018). Another study based on propensity score matching through a CART model (non-linear model) found much higher rates of employment outcomes among transition-age youth who were Social Security beneficiaries and who received special education in secondary school (Wehman, et al., 2014). Wehman, Chan, Ditchman, and Kang (2014) used a combination of propensity matching, classification, and regression tree methods to examine the relationship between receiving supported employment services from VR programs and competitive employment. The results suggested that employment rates were higher across all those who received supported employment than those who did not.

Two studies examined the Individual Placement and Support (IPS) model of supported employment (Ellison, et al., 2015) and (Ferguson, Xie, & Glynn, 2012), and how one can adapt the model to suit various youth with mental health conditions. Ellison et al. studied the feasibility of the model and how it met the needs of youth undergoing psychiatric treatment, and how they can successfully transition to employment and education outcomes. Out of the 35 students that enrolled in the study, 20 students

elected to receive both employment and education services. Of those who were on the employment track (n=33), eight found at least one job, and three maintained employment after the study period. Of those who were on the education track (n=22), 15 enrolled in an educational program. Ferguson et al. found that the model can be an adapted intervention for homeless youth with multiple mental illness. The quasi-experimental study looked at 30 homeless youth who had a desire to work. Eighty-five percent (17/20) of the intervention group and 37.5% (6/16) of the comparison group worked at some point during the study. At $p = 0.10$ level, the IPS group had significantly greater odds of working at the 10-month follow-up than the control group (OR=7.83, 66.7% IPS, 25% comparison).

Another stream of evidence on supported employment services comes from the evaluations of the Employment Intervention Demonstration Program (EIDP). The EIDP provides supported employment services to unemployed individuals aged 18 or older with mental illness. Specialists on multidisciplinary teams met frequently to coordinate employment and clinical services for enrolled individuals. The program was implemented between 1996 and 1998.

A RCT was conducted on a sample of 449 participants from eight sites in four U.S. geographic regions: Northeast, Mid-Atlantic, Southeast, Southwest (Cook et al., 2016). A concern of the study was high attrition, resulting in difference in observables of the analysis compared with the original sample. Just 24 months after program participation, treatment group individuals were found to be more likely to be employed, more likely to attain the SSA nonbeneficiary status through suspension or termination of disability cash payments due to work (NSTW) and had higher monthly earnings.

**VR Services
Sample Characteristics**

- 70% SSI recipients
- Mean age: 38.4 years
- 52.1% male
- 51.9% white; 30.1% black; 18% Hispanic

While these results applied to a much older population, another study based on this randomized control trial did not find any significant impact of supported employment on the likelihood of competitive employment among youth with disabilities ages 18 to 24 (Burke-Miller et al., 2012). Since the RCT study examined at the impact of being offered EIDP services (intent-to-treat), it is likely that not all program participants had received supported employment.

5.1.2.2 *Work Benefits Counseling*

Under the Promoting Readiness of Minors in Supplemental Security Income (PROMISE) program—a federally funded demonstration grant—youth with disabilities who were VR clients under the program were referred to Work Incentive Benefit Counseling. Clients and their families received help understanding the benefits that they receive from the federal and local governments and how their improving financial progress will impact these benefits. Work benefits counseling were provided by a specifically trained PROMISE Division of Vocational Rehabilitation (DVR) counselor in their area. A study based on the randomized controlled trial of the PROMISE program showed that among PROMISE participants, 78% of individuals who met with a benefits counselor to go over their work benefits consultation had at least one job since enrollment, compared with 55% of youth who did not receive this service (Shlegelmilch et al., 2019). However, individuals could have self-selected into meeting with their counselor, suggesting that the entire difference in employment outcomes may not be attributed to one service only.

5.1.2.3 Postsecondary Education (PSE) Support

A few studies have examined postsecondary education (PSE) support, which includes college and vocational training supports, and its associations with competitive employment. Most studies used descriptive methods, regression analyses, and factor analyses to explain how PSE support relates to employment outcomes, particularly for students with mental health impairments, learning disabilities, intellectual and developmental disabilities (IDD), among others.

PSE Support Sample Characteristics

- 53% male
- 29% black; 19% Hispanic
- 83% with cognitive disability, 82% learning disability
- 69% received special education

When looking at first-time VR applicants between ages 16 to 24, receipt of PSE support was positively associated with being employed at the time of VR exit, for both individuals with disabilities who did and did not have mental health conditions (MHC). However, regression models showed that VR youth clients with MHC were significantly less likely to have received VR services, such as PSE support, and those with MHC were significantly less likely to be employed at exit relative to youth without MHC (Anand & Honeycutt, 2019). Transition-age youth with autism were also found to be more likely to exit vocational rehabilitation with a job if it includes postsecondary education training (Rast et al., 2019).

5.1.2.4 School-to-Work

Enayati and Karpur (2019) evaluated the effect of participating in school-to-work transition program in college attendance, employment, and wage. The results showed that youths with disabilities, beneficiary status, and participated in school-to-work programs had higher likelihood of employment than those without disability or beneficiary status. However, they were also less likely to attend college than the same reference group.

School-to-Work Sample Characteristics

- Mean age: 16.8 years
- 60% male
- 65% white
- 40% learning disability

In a separate study using Virginia administrative data on VR services, Dean et al. (2019) focus on transition-age youth and estimate the effects of VR services as well as the effect of Virginia's Postsecondary Education and Rehabilitation Transition (PERT) program, a state-level school-to-work transitioning program for youth with disabilities. The authors included 3073 transition-age youths who applied for VR services in Virginia in 2000, of whom 394 participated in PERT.

Results show that PERT and all VR services increased both short-run and long-run employment propensity except restoration and maintenance. PERT and all VR services also increased both short-run and long-run earnings except restoration, which only increased long-run earnings, and restoration, which had no effect. Overall, the estimated median quarterly rate of return for PERT is nearly 30%.

5.1.2.5 Self-determination Interventions in Secondary School

Shogren et al. (2015) examined the impact of self-determination intervention in an RCT. High school

Self-Determination Interventions in Secondary School Sample Characteristics

- Ages 14 to 22
- 61% male
- 57% white; 18% African American; 19% Hispanic
- 37% learning disability; 30% intellectual disability; 11% other health impairment; 9% emotional disability; 6% autism



campuses in the treatment condition selected from several research-based interventions to promote self-determination: ChoiceMaker, NEXT S.T.E.P. (Student transition and educational planning), Self-Advocacy Strategy, Self-Determined Learning Model of Instruction, Steps to Self-Determination, and Whose Future Is It Anyway? Results showed that students in the treatment group scored higher in community access and employment, although not in life satisfaction. However, differences for community access and employment were significantly reduced two years post-school.

5.1.2.6 *Academic Inclusion*

Inclusion in regular classes, as defined as being in regular classes at least 80% of the time, has also been tested for use with students with disabilities. The study sample consisted of 1,650 high school students, representing 177 school districts, who have learning disabilities, mental retardation, emotional disabilities, orthopedic disabilities, among others. Of those, 409 students with ID were selected, which resulted in a fairly high proportion of females (48%) and African Americans (36.8%). Analyses include a logistic regression that was used to test whether the relation between academic inclusion and postsecondary education still holds after controlling for those two factors. Results show that although students with ID were less likely to be included in regular classes than students with other disabilities (21% vs. 74%), inclusion of students with ID increased the chances of postsecondary education almost two-fold. Academic inclusion was associated with postsecondary enrollment at more than two to four times the rate of students who are not in academic inclusion classes (Baer, et al., 2003).

5.1.2.7 *Career and Technical Education*

(Baer, et al., 2003) examined the relationship between career and technical education and postsecondary outcomes. Participation in service was defined as receiving three or more semesters or career and technical classes. Results showed that career and technical education had no significant relationship with likelihood of full-time employment for students with intellectual disabilities. Among all students with disabilities, those who participated in career and technical education were 1.5 times as likely to be employed one year after graduation as nonparticipants.

Career and Technical Education Sample Characteristics

- Ages 14 to 21
- 63% male
- Learning disabilities, mental retardation, emotional disabilities, orthopedic disabilities

5.1.2.8 *Work Study*

(Baer, et al., 2003) also examined the relationship between work-study and postsecondary outcomes. Participation in service was defined as ever participating in work-study programs during school. For students with intellectual disabilities, work study was not a significant predictor of full-time employment. Among students with any kind of disability, work-study participants were at least 5% more likely to work full time than nonparticipants.

5.1.3 *Summary*

Youth with disabilities face multiple barriers to employment, ranging from lower education levels and job-related or social skills, to employer reservations about hiring individuals with disabilities. As a result, most employment programs for youth with disabilities generally include multiple services targeting the wide variation in employment-related needs and goals. While most literature does show a positive association between program participation and employment outcomes, only a handful of studies generate evidence on the causal impact of various services on labor market outcomes.

- Specific lessons learned from studies with rigorous evidence indicate that: YTD, which provided individualized work-based experiences and supports, career planning, and encouragement of family involvement, increased both employment and income. However, the size of the effects had diminished in the third year after random assignment, by which time project supports were no longer in place (Cobb, Wittenburg, Stepanczuk, 2018; Fraker et al. 2014, 2018; Honeycutt et al. 2016).
- Job Corps, which provided vocational training, academic education, counseling, social skills training, health education and placement services, led to higher GED/vocational degree attainment, higher earnings, and higher hourly wages. The effects were larger for older participants (age 21 to 24) than the younger ones (age 16 to 20) (Hock, Luca, Kautz, & Stapleton, 2017; Schochet et al. 2008).
- Project SEARCH, which provided supported employment approach to assist youth and young adults with developmental disabilities acquire vocational skills, increased employment—by almost six times, and the difference persisted one-year post-program participation (Wehman, et al., 2012).
- SourceAmerica Pathways to Career, which provided customized employment, led to 6.4 more hours worked per week, and 1.2 more dollars earned per hour, totaling 99 dollars more per week (Mathematica Policy Research, 2017; Sevak, Denny-Brown & Shenk; 2019).
- Bridges from School to Work, which provided job placement and supports for youth with disabilities, increased earnings for, and lowered cumulative SSI payments and SSDI benefits to individuals of all ages between 18 and 30 (Hemmeter et al., 2014).
- Maryland Seamless Transition Collaborative, which provided individualized work experiences, individualized paid integrated employment, family supports, early VR case, systems linkages and collaboration, coordination with teachers and instructional staff, increased employment but with lower wage and work few hours/weeks (Luecking et al., 2017).

In terms of the impact of individual services, we found the following:

- Virginia’s PERT program, a state-level school-to-work transitioning program for youth with disabilities, increased both short-run and long-run employment propensity and earnings (Dean D. , 2019).
- Supported Employment, increased employment rate, monthly earnings, and attainment of SSA nonbeneficiary status through suspension or termination of disability cash payments due to work (NSTW) (Cook et al., 2016) (Burke-Miller et al., 2012).
- For individuals with cognitive impairments, they found positive effects on employment and earnings for diagnostics and evaluation, job training, education and other services, but negative effects on employment and earnings for restoration and maintenance (Dean D. , 2015).
- For individuals with mental illness, they found that training and other services increased employment propensity while diagnosis and evaluation, education, and restoration decreased employment propensity. When combining the employment and earnings effects together, all service types had positive long-run effects except for diagnosis and evaluation (Dean D. , Pepper, Schmidt, & Stern, 2017).
- For individuals with physical disabilities, they found that all services except maintenance increased employment propensity and earnings in both the short and long run. They estimated the median long-run rate of return of VR services for clients with physical disabilities to be 174%, notably larger than those found for clients with other impairments (Dean D. , Pepper, Schmidt, & Stern, 2018).

The past or existing programs that have been rigorously evaluated are listed in Table 6. The national programs that had positive effects on labor market outcomes include Job Corps, YTD, Bridges from School to Work (Bridges). Effective statewide programs include two return to work demonstrations in Wisconsin (Pathways to Independence and the Wisconsin SSDI-EP), the Maryland Seamless Transition Collaborative (MSTC), and Virginia’s PERT program. Project SEARCH, which was designed specifically to assist youth with developmental disabilities, was also effective. State-level VR services, with most evidence from Virginia, were also shown to be effective.

There are several similarities in the service content of these programs. First, various types of individualized work-based training and support, including *vocational training, job placement and support* and *supported employment*, were the most common service feature among these effective programs. Second, three effective programs (Job Corps and Virginia’s PERT and VR services) also included *education services*. Third, *work incentives benefits counseling* was included Job Corps and was the main service element in the two Wisconsin programs.

Table 6: Effective programs, service characteristics, and evaluation method

Effective Program	Service Content	Strength of Evidence
Job Corps	Vocational training, academic education, counseling, social skills training, health education, provides residence during program participation, placement services.	High-RCT
Youth Transition Demonstration	Individualized work-based experiences and supports, career planning, encourage family involvement	High-RCT
Bridges from School to Work	Job placement and support	Medium-QED
Pathways to Independence and the Wisconsin SSDI-EP (Wisconsin)	Work incentives benefits counseling	Medium-QED
Maryland Seamless Transition Collaborative	Discovery (development of Positive Personal Profile), individualized work experiences, individualized paid integrated employment, family supports, early VR case, systems linkages and collaboration, coordination with teachers and instructional staff	Medium-QED
Virginia’s Postsecondary Education and Rehabilitation Transition	Assessments in career vocational areas as well as independent living and social skills, individualized education/work plan, vocational training	Medium-Instrumental Variables
Project SEARCH	Supported employment	High-RCT
Virginia's Vocational Rehabilitation Services	Diagnosis & evaluation, job training, education, restoration, maintenance, other service	Medium-Instrumental Variables

Table 7: Summary of research into programs and demonstrations

Program	Service description	Participant eligibility	Disability type	Outcomes	Key Findings
Accelerated Benefits (AB) Demonstration (Michalopoulos, et al., 2011)	Healthcare benefits, a subset received additional telephone-based benefits services.	Uninsured new SSDI recipients age 18 and 54. Implemented 2007–2011.	22% mental disorder, 19.4% musculoskeletal system and connective tissue, 16.8% nervous system and sense organs.	Healthcare usage, out-of-pocket healthcare expenditure, self-reported health.	AB Demonstration increases healthcare usage, decreases self-reported delayed care, lowers out-of-pocket expenditure, and improves self-reported health. No effect on employment outcomes within first 12 months.
Demonstration to Maintain Independence and Employment (DMIE)	Through the Demonstration to Maintain Independence and Employment (DMIE), the Centers for Medicare & Medicaid Services (CMS) provided funding to Medicaid agencies in Texas, Minnesota, Kansas, and Hawaii to develop, implement, and evaluate innovative projects. Each state implemented their own intervention approach. The DMIE was an early intervention program that provided enhanced access to health care services and other supports for workers with potentially disabling conditions who were not yet receiving SSA disability benefits.	To participate in the DMIE, at the time of enrollment individuals had to be between 18 and 62 years old, working at least 40 hours per month, and not currently receiving or applying for federal disability benefits.	Primary disabling condition: 49% serious mental illness and 47% mental illness in MN; 11% serious mental illness and 44% mental illness in TX; 36% mental illness and 33% musculoskeletal conditions in KS; 12% Type 1 diabetes and 85% Type 2 diabetes in HI.	Employment; Number of hours worked in the past month.	No statistically significant evidence that the DMIE led to differential rates of employment across the treatment and control groups. Even though past study found higher impact in short term, there was no impact on employment retention. DMIE did not lead to statistically significant increases in monthly hours worked for the treatment group relative to the control group in any of the states. There was no significant difference in earnings. In Hawaii, the treatment group reported working 132 hours, compared

Program	Service description	Participant eligibility	Disability type	Outcomes	Key Findings
					with 156 hours in the control group, a decline of almost 24 hours per month one year after enrollment. Hawaii program staff suggested it could result from some treatment group participants seeking to improve “work-life balance,” which may have resulted in fewer hours worked.
Project SEARCH plus Autism Spectrum Disorder Supports	Project SEARCH is a transition-to-work internship program that uses a supported employment approach to assist youth and young adults with developmental disabilities acquire vocational skills. Project SEARCH plus ASD Supports (PS + ASD) provides specific techniques to meet the needs of youth with ASD, including social communication training, provision of visual cues, and behavior support and self-regulation strategies	Inclusion criteria required all participants to: (a) attend local public school where the research was being conducted, (b) have a medical diagnosis of ASD or educational identification of autism, (c) be between the ages of 18–21 on the first day of the next school year, (d) display independent self-care, including using the bathroom, eating, and moving from place to place independently (e) be eligible for funding through the state VR agency, and (f) have continued eligibility for public school services.	73% of the sample had ASD	Competitive integrated employment	<p>Participants in the treatment group were 5.84 times more likely to achieve employment at graduation and 4.50 times more likely to be employed at 1-year follow-up.</p> <p>At 1-year follow-up, employed treated group worked 21.2 hours per week with an hourly wage of \$9.7. Control students worked who were employed worked on average for 15 hours per week for average hourly wage of \$8.75</p>
SourceAmerica Pathways to Career Program	Competitive integrated employment (CIE) opportunities that are	Individuals with intellectual or developmental	Intellectual or developmental	Employment, weekly hours worked, weekly	Percentage with a CIE is lower for Pathways than VR, but difference is not



Program	Service description	Participant eligibility	Disability type	Outcomes	Key Findings
	aligned with individual's skills, interests, strengths, and abilities.	disabilities, or autism spectrum disorder from Clearfield, Utah. Enrollment was from 2012 to 2016.	disabilities, or autism spectrum disorder.	earnings, hourly wage.	<p>statistically significant. Among those employed, Pathway participants work 6.4 hours more per week, earn 1.2 dollars per hour, earning 99 dollars more per week.</p> <p>Another study showed that at 24 months after intake, 82% of Pathways participants had been recently employed in either internships or competitive integrated jobs.</p> <p>By 12 months after intake, average monthly earnings had nearly tripled, increasing by \$287 relative to earnings at the time of application. By 24 months after intake, average earnings had more than doubled, increasing by \$255 relative to earnings at application.</p>
Job Corps (Schochet, Burghardt, & McConnell, 2008; Schochet, 2018)	Vocational training, academic education, counseling, social skills training, health education, provides residence during program participation, placement services.	Youth age 16 to 24, receiving welfare or food stamps or income less than 70% of DOL's "lower living standards income level." Implemented 1994 to 1996.	Not available.	Education, employment, earnings, criminal activity.	<p>By Year 4, higher enrollment rate and GED/vocational degree attainment, higher earnings and hourly wages.</p> <p>By Year 20, the positive</p>



Program	Service description	Participant eligibility	Disability type	Outcomes	Key Findings
					program effects on employment and earnings persisted, but did not grow. No effect for younger participants.
Ticket to Work (TTW) & Work Incentives Planning and Assistance (WIPA) (Stapleton, Mamun, & Page, 2013; Livermore, Prenovitz, & Schimmel, 2011)	<p>TTW: Social Security Administration (SSA) mails each eligible disability program beneficiary a “Ticket” that he or she could assign to either a State Vocational Rehabilitation Agency (SVRA) or to a prequalified local rehabilitation service provider, in exchange for employment placement, job training, and other services.</p> <p>WIPA: work incentives planning and education, assistance with the use of SSA work supports.</p>	<p>Age 18 to 39 at award, new SSDI-only beneficiaries, excluding SSI. Jul. 1999 to Oct. 2003.</p> <p>SSI or DI recipients. Implemented Oct. 2009 to Mar. 2010.</p>	<p>>45% physical disabilities, about 25% psychiatric disorders. 44.2% psychiatric; 12.6% musculoskeletal; 11.7% intellectual; 20.2% other (not sensory or nervous system).</p>	<p>Service enrollment with state VR agency, whether suspend or terminate benefits due to work (STW), Number of STW months during the 48-month period.</p> <p>Overall, more WIPA enrollees had earnings in 2010 than in 2009 (54.8% versus 49.2%) and average annual earnings were higher in 2010 among those with earnings (\$6,736 versus \$5,720).</p>	<p>Increases service enrollment, but no consistent evidence of effect on employment-related outcomes.</p> <p>WIPA positively correlated with employment and annual earnings. The magnitude is small.</p>
Youth Transition Demonstration (YTD) (Fraker, Mamun, Honeycutt, Thompkins, & Valentine, 2014; Mamun, Carter, Fraker, & Timmins,	Individualized work-based experiences and supports, career planning, encourage family involvement.	SSI and DI recipients, age 14 to 25 at five sites (CO, NY Bronx County, NY Erie County, FL, WV) or high school juniors or seniors with severe emotional disturbances (MD). Implemented 2006 to 2012.	<p>Varies by site. Most common type is cognitive or developmental impairments or mental illness.</p> <p>42.6% had a cognitive or developmental</p>	Employment, annual earnings, annual disability benefit amount, annual total income, percent arrested or charged.	<p>Youths enrolled in YTD received more services at four sites.</p> <p>By Year 1, employment rate increased at three programs.</p> <p>By Year 3, employment</p>



Program	Service description	Participant eligibility	Disability type	Outcomes	Key Findings
2018; Cmar & McDonnall, 2019)			<p>disability, 15.9% had a mental illness, 15.8% had a physical disability, 12.8% had a learning disability or an attention deficit disorder, and 6.3% had a sensory impairment. The majority of the sample had some degree of vision and hearing (73.0%, S.E.=3.79).</p>		<p>rate increased at three programs, earnings increased at two programs, and disability benefits increased at four sites. Total income increased at five programs. Arrest/charge rate decreased at two sites.</p> <p>Paid employment during the first year of YTD is associated with a 17 percentage points increase in the likelihood of being employed in the third year.</p> <p>The odds of employment were 2.96 times higher for youth with paid work experience in high school compared to those without paid work experience.</p>



Table 8: Studies examining the associations between services received and employment and schooling outcomes Part 1

Program	Service description	Disability type
Vocational Rehabilitation services (Enayati & Karpur, 2019; Kaya, Chan, Rumrill, Hartman, & Wehman, 2016; Kaya, Maxwell, Chan, & Tansey, 2018; Ji, Schaller, Pazey, & Glynn, 2015; Smith & Lugas, 2010; Rumrill, et al., 2016; Kaya, 2018; Ditchman, Miller, & Easton, 2018)	Assessment, VR counseling and guidance, college or university training, occupational/vocational training, academic remedial or literacy training, disability-related training, job search assistance, transportation, rehabilitation technology, reader services, interpreter services, personal attendant services, technical assistance services, information and referral, job placement, on-the-job support, on-the-job training, maintenance, and other services.	Significant disabilities including Autism, Learning disability, TBI, Mood disorders (e.g., coexisting depression), Physical impairment, Mental impairments
Virginia Vocational Rehabilitation Services (Dean D. , 2015)	Diagnosis and evaluation, job training, education, restoration, maintenance, other services.	Cognitive impairments
Vocational Rehabilitation Services (Giesen & Cavanaugh, 2011; Kaya, 2018; Alsaman & Lee, 2017; Ditchman, Miller, & Easton, 2018; Cimera, Rumrill, Chan, Kaya, & Bezyak, 2015; Chen, Sung, & Pi, 2015)	services related to assessment, diagnostics, and treatment of impairments, as well as counseling and guidance, and other vocational readiness training services.	Primary Disability codes 01 Blindness (legally blind) or 02 Other Visual Impairments, intellectual disability, primary disability category of autism, autism diagnosis as either a primary or a secondary disability
Postsecondary Education (PSE) Support (Honeycutt, Anand, Rubinstein, & Stern, 2017; Powers, Geenen, & Powers, 2009; Rast, Roux, & Shattuck, 2019; Weathers II, Walter, & Schley, 2007)	College and vocational training supports; community-based training.	Intellectual disabilities, Autism, schizophrenia and other psychotic disorders, anxiety disorders, depressive and other mood disorders, eating disorders, personality disorders, learning disorders, developmental disabilities, substance abuse, neurological, trauma, medical/systemic, emotional/behavioral disorders, visual impairments, hearing impairments, and cognitive impairments
Supported Employment (Mann & Croake, 2018)	Personal care, job coaching, and accommodations also job readiness training, job development, job placement, worksite monitoring, and transportation.	None mentioned
Employment Intervention Demonstration Program (EIDP) (Cook, Burke-Miller, & Roessel, 2016)	Supported employment services	Psychiatric disabilities or mental illness
Peer Mentoring (Kramer, Ryan, Moore, & Schwartz, 2018)	Supports needed to implement peer mentoring including a peer mentor supporter.	Developmental



Program	Service description	Disability type
Career Development Activities (Carter E. , et al., 2010)	Career interest assessments, tours of colleges or technical schools, job shadowing programs. Interviewing or resume-writing practice, speakers brought in from local businesses, career exploration courses, college fairs or college days, tours of local businesses or industries, career or job counseling, career aptitude assessments, apprenticeship programs, paid or unpaid internships, job fairs or career days, tech-prep programs, career or job resource center, written career plans for students, cooperative education programs, school-based enterprises or businesses, job placement services for students, mentorship programs with employers.	EBD students and those with a severe disability
Targeted Secondary Transition Program (START) (Langi, Oberoi, Balcazar, & Aswumb, 2017)	Enhanced transition services in integrated school and community-based training/work sites during and after high school. The components of the program are best practices in VR transition services, including classroom instruction on career exploration and job readiness development, job shadowing, training in independent living skills, on-the-job evaluation and training, fully employer-funded work experience, and job coaching.	60% learning disability; 25% intellectual disability; 8% mental illness
Functional Curriculum (Joshi, Bouck, & Maeda, 2012)	Functional skills and applications of core subject areas in high school (academics), vocational education, community access, daily living, financial, independent living, transportation, social/relationships, and self-determination.	Intellectual Disability
Self-determination Interventions in Secondary School (Shogren, Wehmeyer, & Palmer, 2015)	High school campuses in the treatment condition selected from several research-based interventions to promote self-determination: ChoiceMaker, NEXT S.T.E.P. (Student transition and educational planning), Self-Advocacy Strategy, Self-Determined Learning Model of Instruction, Steps to Self-Determination, and Whose Future Is It Anyway?	37% learning disability; 30% intellectual disability; 11% other health impairment; 9% emotional disability; 6% autism
Work Benefits (Shlegelmilch, Roskowski, Anderson, & Hartman, 2019)	Work incentives benefits counseling; financial coaching and individual development (savings) account.	34% mental health or behavioral disorder; 30% developmental or intellectual disabilities; 25% other disabilities; 11% long-term illness



Program	Service description	Disability type
Combination of Vocational Rehabilitation or Special Education Services (Loprest & Wittenburg, 2007) ⁱ	VR services, vocational training, job training, or special education.	88% have a special health care need; 41% need or get mental health treatment; 29% need help with personal care; 75% need help with routine activities
Academic Inclusion (Baer, Daviso, & Flexer, 2011)	Inclusion in regular classes defined as being in regular classes at least 80% of the time.	Learning disabilities, mental retardation; emotional disabilities; and a small percentage of orthopedic disabilities
Career and Technical Education (Baer, Daviso, & Flexer, 2011)	Participation in service was defined as receiving three or more semesters or career and technical classes.	Learning disabilities, mental retardation; emotional disabilities; and a small percentage of orthopedic disabilities
Work Study (Baer, Daviso, & Flexer, 2011)	Participation in service was defined as ever participating in work-study programs during school.	Learning disabilities, mental retardation; emotional disabilities; and a small percentage of orthopedic disabilities
Bundle of Services Offered to Secondary School Students as Part of In-school Programs (Carter, Austin, & Trainor, 2011)	Goals written in student's IEP; participation in vocational classes, career skills assessment, job readiness training, career counseling, job search instruction, job skills training, job shadowing, internship, placement support or job coach.	35% Autism, 26% Intellectual Disability, 40% Multiple Disabilities
West Virginia Youth Works Project (Cobb, Wittenburg, & Stepanczuk, 2018)	Staff-customized employment and other supports to address the youths' specific strengths, skills, and career interests.	23.9% Mental illness, 42% Cognitive or developmental disability, 13.7% Learning disability/Attention Deficit Disorder, 16.1% Physical disability, and 4.3% Speech, hearing, or visual impairment
Project SEARCH (Wehman, et al., 2012)	Providing internship and job coach interventions for youths with autism spectrum disorder.	Autism
School-to-Work (Enayati & Karpur, 2019)		83% Cognitive disabilities, 82% Learning disability, 69% Special education



Table 9: Studies examining the associations between services received and employment and schooling outcomes Part 2

Program	Analytical Method	Outcomes	Key Findings
Vocational Rehabilitation Services	Frequencies, percentages, means and standard deviations, regression analyses (multivariate, logistic), odd ratios, chi-squared analyses, chi-squared automatic interaction detector (CHAID) analysis, core-periphery model, ANOVA testing.	Upper and lower bound of Medicaid costs and SSI benefit receipt for a lifetime; competitive employment; employment closure status.	Several VR services were positively, significantly associated with competitive employment; the greater number of core services an individual received the better the employment outcome.
Virginia Vocational Rehabilitation Services	Discrete choice model with instrumental variables. Used existing administrative data only. Cognitive impairment sample: N=1907 in 1988 and N=1009 in 2000. Cognitive impairment sample: N=1907 in 1988 and N=1009 in 2000. Mental illness sample: N=1555 in 2000. Physical disabilities sample: N=2421 in 2000.	Employment, quarterly earnings.	For individuals with cognitive impairments: positive effects on employment and earnings for Diagnostics and Evaluation, Training, Education, and other services. Negative effects on employment and earnings for restoration and maintenance. The mean long-run benefits of VR services (over \$21,000) exceed the mean costs by four to six times. For individuals with mental illnesses: when combining the employment and earnings effects together, except for diagnosis and evaluation, all of the other service types have positive long-run effects. For individuals with physical disabilities: All services except maintenance increase employment propensity in both the short and long run. Overall, VR services have substantial positive long-run rates of return, with a median rate of return of 174% annually. These estimated rates of return are notably larger than those found for clients with other impairments.
Vocational Rehabilitation Services	Logistic multivariate regression.	Competitive employment.	Various VR services were associated with higher odds of finding a competitive employment for youths with disabilities.
Postsecondary Education (PSE) Support	Regression analyses, factor analysis, Propensity score weighted regression model;	Receipt of college and vocational training support, VR exit with employment, and achieving post-school goals (i.e., independent living, community	VR youth clients with MHC were less likely than those without MHC to have received any VR services or college support; receipt of postsecondary education support was positively associated with being employed at the time of



Program	Analytical Method	Outcomes	Key Findings
	sequential response model, multivariate logit model.	participation, postsecondary education), employment, earnings, graduation, SSI reenrollment.	VR exit, and the associations for those with MHC were not statistically different from those without MHC; Transition-age youth with autism are more likely to exit vocational rehabilitation with a job if it includes postsecondary education training; SSI children who graduated from NTID spent less time in the SSI adult program and had higher earnings than SSI children who did not graduate.
Supported Employment	Regression analyses, odds ratios, percentages related to VR services.	Outcomes include paid work experiences (including for those who exited the VR program) and supports/services for people with disabilities who want to work.	Averaging across SVRAs, the mean percentage of applicants who received services and the mean percentage who exited with employment were highest for the employed applicant subpopulations (78.6% for paid employment without supports, and 76.8% for other paid employment) and lowest for applicants who were neither students nor paid workers (51.5%).
Employment Intervention Demonstration Program (EIDP)	RCT. 449 participants from eight sites in four U.S. geographic regions (Northeast, Mid-Atlantic, Southeast, Southwest). Attrition is high and may be a concern.	Labor force participation, earnings, attainment of SSA nonbeneficiary status through suspension or termination of disability cash payments due to work (NSTW).	24 months later, treatment group 2.89 times more likely to be employed, 12.99 times more likely to be in NSTW, had \$23.82 higher earning/month.
Targeted Secondary Transition Program (START)	QED. Propensity score matching within VR youth: participants divided into START and non-START.	Rehabilitated defined by VR outcome of stable employment for at least 90 days.	START participants had higher employment outcomes: 61% of project START participants were rehabilitated compared to 53% of non-START participants.
Functional Curriculum	Descriptive study.	Immediate and long-term post-school employment.	Functional curriculum was associated with higher employment outcomes: 72% of those who received functional curriculum were ever employed immediately post school, compared to 62% of those who received non-functional curriculum. 50% of those who received functional curriculum were ever employed in the long term (more than 2 years of leaving school), compared to 54% of those who received non-functional curriculum.
Self-determination Interventions	RCT. Although the study randomized high school campuses into	Employment post high school, community access, and independent living.	Students in the control group actually scored higher in community access and employment, although not in life satisfaction. However, differences for community access



Program	Analytical Method	Outcomes	Key Findings
in Secondary School	treatment or control, there is no information on baseline equivalence or sample contamination.		and employment were significantly reduced 2 years post-school.
Work Benefits	RCT of a federal program (PROMISE) which gave access to the service studied (work incentives benefits counseling) but individuals could have self-selected into the service. All analyses are descriptive differences.	Employment, weekly earnings, and number of jobs.	<p>Receiving work benefits counseling was associated with higher employment outcomes. 78% of youth who met with a benefits specialist had at least one job since enrollment into the program, compared to 55% of youth who had not met with a specialist.</p> <p>79% of youth who received financial coaching had at least one job since enrollment into the program compared to 52% of youth who had not received financial coaching.</p> <p>83% of youth who received individual development had at least one job since enrollment into the program compared to 58% of youth who had not received individual development.</p>
Combination of Vocational Rehabilitation or Special Education Services	The study does not identify causal impact of services specifically but does look at the association between SSI receipt and employment while controlling for services received in a multivariate regression.	Employment after age 18.	<p>Those who participate in vocational training are estimated to be 19 percentage points more likely to be working after age 18 than are those who do not participate in vocational training.</p> <p>There is no evidence that the measures of employment are associated with participation in special education, specific job training, or VR.</p>
Academic Inclusion	Multivariate regressions.	Full-time employment; college enrollment after high school graduation.	<p>Inclusion of students with ID associated with doubling the chances of postsecondary education after controlling for other factors.</p> <p>For students with all types of disabilities, included students attended PSE at more than two to four times the rate of non-included students.</p>
Career and Technical Education	Multivariate regressions.	Full-time employment; college enrollment after high school graduation.	Career and technical education had no significant relationship with likelihood of full-time employment for students with ID. Among all students with disabilities,



Program	Analytical Method	Outcomes	Key Findings
			those who participated in career and technical education were one and half times as likely to be employed one year after graduation as nonparticipants.
Work Study	Multivariate regressions.	Full-time employment; college enrollment after high school graduation.	For students with ID, work study was not a significant predictor of full-time employment. Among students with any kind of disability, work-study participants were at least 5% more likely to work full-time than nonparticipants.
Bundle of Services Offered to Secondary School Students as Part of In-school Programs	Multivariate regressions.	Paid work.	<p>Youth with vocational goals written in their IEPs had more than six times the odds of holding a paid job.</p> <p>Participation in internship, tech-prep, or entrepreneurship programs had the strongest association with paid work.</p> <p>The two types of IEP goals, prevocational and vocational, had opposite relationships with paid work, with prevocational goals negatively associated with paid work and vocational goals positively associated with paid work.</p>
West Virginia Youth Works Project	RCT West Virginia, 733 students (389 treatment, 344 control).	Employment and earning, Use of employment-promoting services.	The treatment group had higher employment and earnings outcome in the first follow-up year. The effects dissipated by the third-year follow-up period for both employment and earnings.
Project SEARCH	Case study.	Employment outcome.	Of the two study case participants, one participant currently works in the infection control department at a hospital for 20 hours a week earning U.S. \$9.14 per hour. The second participant was hired to work 20 hours per week in the Intensive Care Unit (ICU), where he earns U.S. \$9.14 per hour.
School-to-Work	Linear Probability Model.	College attendance, employment, wage, and conviction rates.	Youth with disabilities who participate in STW, both with and without beneficiary status, have a higher likelihood of ever working compared with the reference group.



5.2 Barriers and Challenges in Accessing Services and Supports

Transition-age youth with disabilities and their families face numerous barriers to navigating this life stage effectively ranging from a lack of information about options to the varied and fragmented sources of assessment, funding, and services that may be necessary for them to identify and achieve their life goals. Additionally, “disability interacts with other forms of disadvantage, for example, ethnicity, poverty and immigrant status” to make the transition even more challenging (Pandey & Agarwal, 2013; Lindstrom, 2011).

Cameto, Marder, Wagner & Cardoso (2003) examined data from the National Longitudinal Transition Study-2 (NLTS2) to uncover challenges and barriers parents faced when acquiring services for youth with disabilities. When asked about the difficulty to obtain services for their children, about 60% of the parents reported little or no effort in finding services. However, the remaining 40% of the parents reported some or a great deal of effort to obtain services. In terms of barriers to receipt of services, results showed that lack of information and unavailability of the services was the most common barrier with about 24% and 23% of the parents, respectively, reporting each of these challenges. Parents also mentioned poor service quality (20%), scheduling conflicts (18%), cost of services (17%), youth being ineligible for service (17%), location where service is provided (16%), lack of time (15%), transportation (12%), and language barrier (5%). Cameto, Marder, Wager & Cardoso (2003) also found that there were no significant differences in the frequency of barriers in obtaining services between urban, suburban, and rural areas.

In a qualitative study, Marshak et al (2010) interviewed 16 students with disabilities at a medium-sized state university about barriers to use of services and supports. Most students had learning disabilities, other disabilities included ADD, blindness, schizophrenia, cerebral palsy, seizures and arthritis. Marshak et al (2010) identified five categories of barriers, including “(a) identity issues, (b) desire to avoid negative social reaction, (c) insufficient knowledge, (d) perceived quality and usefulness of services, and (e) negative experiences with professors” (p. 154).

Benz & Lindstrom (2000) reviewed the literature on career development for youth with disabilities and classified the barriers that youth face in the workplace into four categories including lack of work experience and limited aspirations, early patterns of employment, limited access to postsecondary education and training, and discrimination and prejudice in the workforce. The literature shows that not having a prior work experience, lack of self-confidence, part-time or entry-level, unskilled positions, and lacking access to postsecondary education or on-the-job trainings are associated with lower job market outcomes for youth with disabilities. Studies also show that while on the job, individuals with disabilities face discrimination and prejudice that inhibit their success at work. Lengnick-Hall et al. (2008) note that most employers hold stereotypical beliefs not supported by research evidence. While several agencies and programs have been in place to identify the strategies to help employers overcome these barriers, negative beliefs of hiring youth with disabilities remain. Lindstrom et al (2011) propose developing skills such as problem solving, goal setting, time management, prioritization and effective communication, broadening career awareness and exploration, developing work opportunities, obtaining postsecondary education, growing on the job, and changing the workplace to accommodate strategies to support career advancement for individuals with disabilities.

5.2.1 Barriers with Employers

While most efforts of services and programs are geared toward the *employee* side—that is, preparing youth with disabilities for employment, there has been relatively lesser focus on the *employer* side.



Literature has almost conclusively shown that many employers hold reservations about hiring individuals with disabilities. Employer interviews and surveys indicated that they are often concerned that people with disabilities lack the necessary skills, may be unable to perform certain tasks, may increase costs to the employer in terms of costly accommodations, healthcare, litigations, and worker's compensation (Fraser, Ajzen, Johnson, Hebert, & Chan, 2011; Lengnick-Hall & Kulkarni, 2008). It is critical to consider each of these factors when designing policies and programs to engage the demand side in addition to targeting people with disabilities (the supply side).

The U.S. Department of Labor's Office of Disability Employment Policy (ODEP) has created an employer engagement strategy that identified the strategies to help employers overcome these barriers including changing perceptions and stereotypes, educating and informing employers, motivating employers through incentives, and applying "nudges" to change the status quo (ODEP, 2015). ODEP recommended implementing these strategies through improved communication, specifically incorporating disability language into communication, engaging employers through cross-functional resource groups, and creating a "roadmap" for information. Other resources by ODEP include guidance on inclusive internship programs, workforce recruitment programs, online tools like TalentWorks which help employers in making eRecruiting technologies accessible to job seekers with disabilities. Aside from ODEP's efforts, there are several federal and state tax incentives related to hiring and providing modifications and accommodations for people with disabilities. These include the WOTC, the Disabled Access Credit, Barrier Removal Tax Deduction, Labor for America Assisted Reemployment Program and multiple state-specific tax credits. In addition, employers may also receive assistance from state VR agencies for costs of assistive and rehabilitation technology when they employ VR clients—Employer Assistance and Resource Network on Disability Inclusion (EARN).

It is important to note that many of these efforts have been in place for years, and yet findings from surveys and focus groups of employers have shown that they have negative beliefs about engaging in these strategies, possibly due to factors that include infrequency of contact by VR agencies, ineffectiveness in positive recruiting and challenges in applying accommodations (Fraser, Ajzen, Johnson, Hebert, & Chan, 2011). Moreover, Fraser et al. (2011) found that disability programs were not very effective for employers, who indicated that community service providers were unable to supply qualified applicants with disabilities. Senior firm representatives were often unaware about who to contact in VR. The authors recommended strong need for education and marketing, tailored to firm size. To alter subjective norms, Fraser et al. (2011) recommended VR agencies to target their marketing to firm management at avenues like Chambers of Commerce, Rotary Clubs, Societies for Human Resource Managers, for making major advances in hiring process (Fraser, Ajzen, Johnson, Hebert, & Chan, 2011). When targeting small firms, the study emphasized on the need to present "bottom line benefits" to employers regarding hiring workers with disabilities and information about available tax credits.

Another study specifically focusing on hospitality firms conducted a survey of employers to understand their concerns about hiring people with disabilities and potential practices that would address those concerns. All firms indicated that tax credits to offset accommodation costs, flexible work schedule, disability awareness training, availability of a specialized recruiting source, and short-term on-the-job-assistance with a job coach would be useful practices in facilitating hiring of people with disabilities (Houtenville & Kalargyrou, 2012). Overall, similar to the Fraser et al. (2011), the results from this study suggested a critical need to provide employers and managers with information about the capabilities of workers with disabilities, overall compensation costs, and training on accommodations and communication skills. As mentioned above, many of these resources have been made available by

ODEP. There is a strong need to facilitate effective communication with employers, likely through state VR agencies, to ensure these resources are leveraged efficiently.

Most recently, The Disability Employment Incentive Act was introduced in the Senate (S.255, 2019) and later introduced in the House of Representatives (H.R.3992, 2019) expanding tax credits and deductions that are available for employers who hire and retain employees with disabilities. It expands the work opportunity tax credit to include the hiring of employees who receive Social Security Disability Insurance (SSDI) benefits. While SSA primarily administers employment programs for SSDI and SSI recipients through its Ticket to Work employment networks, public and private, such legislation would benefit Social Security beneficiaries and directly impact future employment opportunities.

5.2.2 Barriers to Success Emerging from Variations at the State Level

Across the United States, rates of disability among transition-age youth range widely, from 10.1% to 4.1%. National data derived from U.S. Census Bureau's 2013 to 2017 American Community Survey indicates that youth with disabilities ages 14 to 24 begin the transition to adulthood with significant disadvantages relative to their non-disabled peers. In 2017, youth with disabilities were 13.8% less likely to graduate from high school than youth without disabilities and were more than twice as likely to drop out of school before completion. Only 25.4% of young people with disabilities ages 18 to 24 were enrolled in postsecondary education compared to 40.9% of youth without disabilities and 24.9% of transition-age youth with disabilities were employed compared to 41% of their peers without disabilities (IEL, 2019).

There are also wide discrepancies between states concerning the rates of employment of transition-age youth with disabilities. The highest employment rate for these youth with was found to be 43.8%. In the state with the lowest rate of employment, the employment rate for transition-age youth with disabilities was less than half of that at 20.2%. Similarly, the gaps between employment rates of transition-age youth with and without disabilities varied widely between states (IEL, 2019).

The variations observed are not just due to natural differences among the states, they are also impacted by variations in state priorities. As discussed in Section 7.1.3, for example, VR services funding is widely varied across the states. These data suggest that Social Security's policies for supporting SSI youth recipients in the transition to adulthood must address profound challenges. These policies must have the capacity to respond to a wide variety of local conditions, including labor market conditions, which create wide disparities in access to education and employment for transition-age youth with disabilities as well as differences in state priorities toward addressing challenges for youth with disabilities. Addressing these challenges requires collaboration and coordination at the federal, state, and local levels.

6 Research Question 2: What does research show to indicate work activity in adolescence leads to future employment among youth on SSI or eligible to receive SSI?

To answer this question, we searched for studies that used multiple regression techniques to estimate the relationship between work activity during adolescence and future employment outcomes among a sample of youth with disabilities in the United States. Nine studies published between 2010 and 2019 met these criteria (see Table 10: Characteristics of studies providing evidence on the relationship between work activity in adolescence and future employment outcomes). The major design attributes of the studies are described in Section 6.1; the evidence on the correlation between work activity in adolescence and future employment is presented in Section 6.2; and evidence of the influence of other modifiable factors on future employment found in these same studies is summarized in Section 6.3. Finally, a discussion of the remaining gaps in this literature and the policy implications of the evidence we do know are presented in Section 6.4.

6.1 Description of the Body of Evidence

Despite many similarities in data sources and analytic methods, considerable variations in the sample populations, measures, and analytic methods exist across the nine studies. These variations have significant influence on the estimated relationships. The similarities and differences in each major study design attribute are described in turn below.

Sample characteristics. Six studies used nationally representative samples from the second National Longitudinal Transition Study (NLTS2) of youth with disabilities who had received special education services in the early 2000s (Carter, Austin, & Trainor, 2012); (Connors, Curtis, Wall Emerson, & Dormitorio, 2014); (Joshi, Bouck, & Maeda, 2012); (McDonnall M. , 2011); (McDonnall & O'Mally, 2012); (Wehman, et al., 2014).² Two of the remaining three studies used statewide administrative data. The first investigated transitioning Maryland youth who received ongoing state Developmental Disability agency funding and exited school in 2008 (Simonsen & Neubert, 2012). The second investigated transitioning youth with disabilities in a large Great Lakes state who had aged out of special education from May 2005 through May 2008 (Baer, Daviso, & Flexer, 2011). The third study used data on the sample of transitioning youth from the YTD who were receiving SSI benefits and were aged 18 to 20 at enrollment (Mamun, Carter, Fraker, & Timmins, 2018). The YTD was conducted between July 2006 and December 2010 at six sites across the United States.

Most studies examined a subset of youth with disabilities. Three of the studies using NLTS2 data focused on youth with a primary disability of visual impairment (Connors, Curtis, Wall Emerson, & Dormitorio, 2014) ; (McDonnall M. , 2011); (McDonnall & O'Mally, 2012) whereas Joshi et al. (2012) focused on

² The NLTS2 is a Department of Education funded longitudinal study of a nationally representative sample of students receiving special education services as they transition from secondary school to adulthood. The NLTS2 included data on 11,270 youth who were aged 13 to 16 years as of December 1, 2000. Data collection for the NLTS2 sample was conducted in five waves beginning in 2001 and every other year through 2009. [See Box X1 for more information on the NLTS2.] Four of the identified RQ2 studies used data from the first four waves (Carter et al. 2012; Joshi et al. 2012; McDonnall 2011; McDonnall and O'Mally 2012); only the Connors et al. (2014) study also used data from Wave 5.



youth with mild intellectual disabilities and Carter et al. (2011) focused on youth with severe disabilities, defined as intellectual disabilities, autism, or multiple disabilities. The two statewide studies also focused on youth with a primary intellectual disability (Baer, Daviso, & Flexer, 2011; Simonsen & Neubert, 2012) Wehman et al. (2014) and Mamun et al. (2018) included youth with a broader range of primary disabilities, including cognitive or developmental disabilities, mental illness, physical disabilities, learning disabilities, attention deficit disorder, and sensory impairment.

Only Mamun et al. (2018) restricted their study sample to youth receiving SSI; five of the studies did not provide the percentage of youth receiving SSI. Among the other three studies, a majority of study youth were receiving SSI benefits at follow-up—from 61 percent to 74 percent.

All identified studies reported the inclusion of both males and females and multiple races: 31 percent to 48 percent of the study samples were female, and 18 percent to 44 percent were African American. Six studies reported the study samples to be 3 percent to 13 percent Hispanic (see Table 10: Characteristics of studies providing evidence on the relationship between work activity in adolescence and future employment outcomes).

Sample size. One study (Joshi, Bouck, & Maeda, 2012) did not provide unweighted sample sizes. Among the other studies, sample sizes ranged from 190 in the McDonnall (2011) study to 2,900 in the Wehman et al. (2014) study. Some of the NLTS2 studies had overlapping samples. Assuming no overlap with the state studies, we estimate that these results are based on only slightly over 5,000 youth.

Table 10: Characteristics of studies providing evidence on the relationship between work activity in adolescence and future employment outcomes

Citation	Year, Geographic Area Covered, Sample Size & Primary Condition	Demographics	Inclusion Criteria	Analytic Methods
<i>Correlational studies</i>				
Carter, Austin & Trainor, 2012	<i>Year:</i> 2000–2007 <i>Geographic area:</i> Nationally representative <i>Sample Size:</i> 450 total youth, 160 with autism, 120 with intellectual disability, 170 with multiple disabilities	Age at enrollment: 13–16 years Female: 31% African American: 23% SSI: not given	Wave 1 NLTS2 participants with severe disabilities defined as intellectual disabilities, autism, or multiple disabilities in Wave 1, were in school in Wave 2 or Wave 3 and out of school in the subsequent Wave (3 or 4); and had known employment status.	Weighted logistic regression model controlling for demographic, family, community, and program factors that were significant at $p < 0.05$ in prior regressions controlling only for demographic factors.
Baer et al., 2011	<i>Year:</i> 2005–2009 <i>Geographic area:</i> Large Great Lakes state <i>Sample Size:</i> 409 youth with intellectual disabilities	Age: 14–21 years Female: 48% African American: 36.8% SSI: not given	Students with intellectual disabilities selected from a larger random sample of students with disabilities in the state who graduated or aged out of special education in school years ending in 2005–2008.	Logistic regression was used; potential demographic variables were excluded in a backward stepwise fashion based on significance.
Joshi, Bouck & Maeda, 2012	<i>Year:</i> 2000–2007 <i>Geographic area:</i> Nationally representative <i>Sample Size:</i> Only weighted numbers provided <i>Primary condition:</i> Mild intellectual disability	Age at enrollment: 13–16 years Female: 38.3% African American: 24.0% Hispanic: 5.2% SSI: not given Parental income < \$25,000: 43.9%	NLTS2 participant youth with a primary disability of a mild intellectual disability, received special education services while in high school, and were in school during one of Waves 1, 2 or 3 and out of school in the subsequent wave (e.g., Waves 2,3, or 4).	Logistic regression. Potential independent variables were included if they correlated to the outcome variable with a p-value magnitude of 0.1 or higher.



Citation	Year, Geographic Area Covered, Sample Size & Primary Condition	Demographics	Inclusion Criteria	Analytic Methods
Connors et al., 2014`	<i>Year:</i> 2000–2009 <i>Geographic area:</i> Nationally representative <i>Sample Size:</i> 460 visually impaired youth, including 280 low vision, 152 blind, and 28 deafblind	Age at enrollment: 13–16 years Female: 44% African American: 18% Hispanic 12% SSI: not given Parental income < \$25,000: 67.6% at entry and 75.0% in Wave 5 survey	NLTS2 participant youth with a primary disability of visual impairments who had data available on the variables of interest.	Generalized estimating equations (GEEs) were used. Control factors met the model inclusion criteria of an alpha level of 0.05 to be included in the model.
McDonnall 2011	<i>Year:</i> 2000–2007 <i>Geographic area:</i> Nationally representative <i>Sample Size:</i> 190-200 visually impaired youth	Age range: 19–23 years Female: 44% African American: 25% Hispanic: 13% SSI: 63% in 2 years before Wave 4 survey	NLTS2 participant youth with a primary disability of visual impairments who had received special education services in high school, had employment data available at Wave 4, had completed or were no longer attending high school, and were not attending postsecondary school.	Weighted logistic regression model. For inclusion in final model, control factors had to be significant at $p < 0.10$ in prior regressions controlling only for demographic factors.
McDonnall and O’Mally, 2012	<i>Year:</i> 2000–2007 <i>Geographic area:</i> Nationally representative <i>Sample Size:</i> 310 visually impaired youth	Age range: 19–23 years Female: 44% African American: 21% Hispanic: 12% SSI: 39% at Wave 2 and 61% at Wave 3	NLTS2 participant youth with a primary disability of visual impairments who had received special education services, had employment data available at Wave 4, had completed or were no longer attending high school, and were not attending postsecondary school.	Bivariate logistic regression. For inclusions in the final model, control factors had to be significant as measured by chi-square statistics.
Simonsen and Neubert, 2013	<i>Year:</i> 2008–2010 <i>Geographic area:</i> Maryland <i>Sample Size:</i> 338 youth with IDD	Age range: 18–23 years Female: 39.1% African American: 44.4% Hispanic: 2.7% SSI or SSDI recipient: 74%	Transitioning youth with IDD who exited MD schools in 2008; participated in the state interagency transition initiative; were determined eligible for support services from community rehabilitation providers (CPRs); and had a Transition Youth Follow-Up Survey completed for them by their CPR.	Multinomial logistic regression. A 3-step procedure was used to build the model.



Citation	Year, Geographic Area Covered, Sample Size & Primary Condition	Demographics	Inclusion Criteria	Analytic Methods
Wehman et al., 2014	<p><i>Year:</i> 2000–20010</p> <p><i>Geographic area:</i> Nationally representative</p> <p><i>Sample Size:</i> 2,900 youth with disabilities</p>	<p>Age range: 16–25 years</p> <p>Female: 24.6%</p> <p>African American: 17.6%</p> <p>Hispanic: 10.7%</p> <p>SSI: not given</p> <p>Family receives disability benefits: 33.0%</p>	<p>NLTS2 participant youth who were out of school by Wave 2 (2003–2004 school year). Excludes youth in postsecondary programs.</p>	<p>Multivariate logistic regression. Backward selection procedures were used for model reduction.</p>
<i>Dynamic panel estimation studies</i>				
Mamun, Carter, Fraker & Timmins, 2018	<p><i>Year:</i> 2006–2011</p> <p><i>Geographic area:</i> 7 inner cities urban cites across United States,</p> <p><i>Sample Size:</i> 1,054 youth</p> <p><i>Primary conditions:</i> 42.6% cognitive or DD, 15.9% mental illness, 15.8% physical disability, 12.8% learning disability or ADD, 6.3% sensory impairment, 6.6% missing</p>	<p>Age at enrollment: 18–20 years</p> <p>Age at 3-yr follow-up: 21–24 years</p> <p>Female: 38%</p> <p>African American: 29.2%</p> <p>SSI: 100%</p>	<p>YTD participants who were receiving SSI payments and were ages 18 to 20 at enrollment.</p>	<p>Used both a naïve linear regression model that does not consider the potential correlation between an unmeasured characteristic and both the key independent and dependent variables, and a modified fixed effect estimation approach in which employment status at the time of entry into YTD is an instrumental variable.</p>



Employment outcome (dependent variable). These studies used dichotomous variables for whether the youth was employed (yes or no) as the dependent variable. None of the studies investigated the impact of work activity during adolescence on future earnings or total income. The employment outcomes all reflected paid employment following high school or the end of a youth transition service or support program but varied along several dimensions (Table 11: Evidence on the relationship between work activity in adolescence and future employment outcomes).

Six studies did not specify whether the job was full-time or part-time; Baer et al. (2011) specified full-time employment; McDonnall (2011) compared the results of full-time employment, defined as 35+ hours per week, to a variable for employment of 20+ hours per week; McDonnall and O’Mally (2012) used only the 20+ hours per week variable in their analysis. Connors et al. (2014) used a variable for post-high school success, defined as either working for pay or attending postsecondary education. Simonsen and Neubert (2012) used a trichotomous dependent variable that distinguished between: (1) integrated employment, defined as community work with typical peers at minimum wage or higher; (2) other community work, defined as work with peers with disabilities and/or making less than minimum wage; and (3) sheltered or nonwork, defined as work in a community or facility with no pay or spends day in nonwork activities.

Six of the nine studies measured future employment at a point in time but differed in the length of time after school exit the employment measure was evaluated. Simonsen and Neubert (2012) evaluated employment at 18 months post-school exit; Mamun et al. (2018) at 18 months post YTD exit; Carter et al. (2012) at 2 years following high school graduation; Connors et al. (2014) at 2 to 4 years following school exit; and McDonnall (2011) and McDonnall and O’Mally (2012) at 1 to 5 years following school exit. The remaining three studies measured employment over a period of time. Baer et al. (2011) flagged youth as employed if they were ever employed in the first year after school exit; Joshi et al. (2012) did so if youth were engaged in paid employment 2 to 4 years after school exit; and Wehman et al. (2014) used a 2-to-6-year window.

Work activity (key independent variable). The variable used to reflect work activity during adolescence varied by study as well (Table 11: Evidence on the relationship between work activity in adolescence and future employment outcomes). Most of the studies defined this variable regardless of payment source or amount. Joshi et al. (2012) and McDonnall and O’Mally (2012) investigated the impacts of community work and school-based work experiences separately by using separate dichotomous variables for each; Baer et al. (2011) investigated school-sponsored (paid and unpaid) work study only; and Simonsen and Neubert (2012) included only competitively paid work omitting work paid with a stipend or unpaid work in their final model.

Analytical techniques. All but three of the studies used a logistic regression estimation method to estimate the relationship between the independent and dependent variables (Table 10: Characteristics of studies providing evidence on the relationship between work activity in adolescence and future employment outcomes). Simonsen and Neubert (2012) who estimated a trichotomous dependent variable used multinomial logistic regression, and Connors et al. (2014) used generalized estimating equations (GEEs).

In addition, most of the studies used a statistical test to identify which independent factors would be in the final multivariate model. However, because of the small sample sizes, few of the tested variables met the statistical criteria and were retained in the final models. Model reduction procedures are best used for identifying a parsimonious and “best fitting” prediction model, but the procedure is likely to

result in biased estimates for independent effects of factors that are correlated with the omitted variables. For instance, individual VR services and supports are typically provided in a series of progressive steps potentially involving assessment and evaluation, job skills training, job search and job placement, plus a variety of other activities. Work activity in adolescence may be the culmination of a youth's progression through these steps as well as certain inherent skills or characteristics of the youth, the youth's family, and job opportunities in the youth's community. The work activity coefficient in a parsimonious prediction model may be an efficient way to identify success in the future, but it does not illuminate what those underlying factors are that contribute to the success. These underlying factors were typically deleted in the model reduction process. Only Wehman et al. (2014) and Mamun et al. (2019) maintain a number of underlying factors to reduce the bias in their estimates of the independent relationship of work activity during adolescence on future employment.

Using a dynamic panel estimation method, Mamun et al. (2018) also attempts to correct their estimates for unobserved underlying factors that correlate with both employment in adolescence and employment in the short term following school exit and the endogeneity of the work activity variable. To correct for the influence of unobserved factors, the authors used a fixed-effects estimation, which by differencing youth characteristics that do not vary over time results in these time-invariant variables dropping out of the equation. In addition, they used employment status at the time of entry into the YTD evaluation as an instrumental variable for predicting the probability of employment at 1-year post enrollment. To determine the difference between their approach and that of the other authors, Mamun et al. (2018) also ran a naïve correlational model on their data and compared the results from this model with the results from the dynamic panel estimation method.

6.2 Evidence of the Relationship between Work Activity in Adolescence and Future Employment Outcomes

Table 11: Evidence on the relationship between work activity in adolescence and future employment outcomes shows that the percentage of youth with community-based paid work in adolescence varied considerably among the identified studies from 23 percent of youth with low vision in McDonnall and O'Mally (2012) to 60.5 percent of youth with a broad range of disabilities in Wehman et al. (2014). In most studies reporting both data points, the percentage with paid community work at follow-up was slightly *higher* than the percentage with paid community work in adolescence. Baer et al. (2011) found the percentage with paid work within the first year following school exit was considerably lower than the percentage with school-based work study while in school, and Wehman et al. (2014) found the percentage with competitive employment 2 to 6 years after school exit was considerably lower than the percentage with any employment while in school.

Paid community work. All the studies found a strong significant relationship between paid community work in adolescence and future paid work. The estimated odds ratios from the correlational studies show that, compared with other youth with disabilities, those who had paid community jobs during school were 2.4 (McDonnall M. , 2011) to 5.7 (Joshi, Bouck, & Maeda, 2012) times as likely to have a paid community job at specific follow-up times in the first few years out of school. Mamun et al. (2018) found a similar strong impact of paid community work in adolescence on future post-school employment in their naïve model.

In contrast, Wehman et al. (2014) found a much smaller 40 percent increase in the odds of competitive employment 2 to 6 years following school exit among youth who worked in high school compared to youth who did not work in high school. Besides including youth with a broader range of disabilities, this



study also included several other factors in their final model that had significant independent effects on future employment (See Section 6.3). Furthermore, Mamun et al. (2018) found their estimated effect drops from 35.8 percentage points estimated from the naïve correlational model to 17.1 percentage points using dynamic panel methods.

The results from these latter two studies suggest the evidence in the earlier correlational studies are biased upwards. Thus, whereas these data still support the hypothesis that paid community work in adolescence may have an important role in shaping the trajectories of employment among SSI youth, caution should be taken in using these results to support policy initiatives.

School-sponsored work. Neither of the two studies that investigated the impact of relationships between school-sponsored work in adolescence and future employment found it to have a significant impact on current employment at follow-up (Baer, Daviso, & Flexer, 2011; Simonsen & Neubert, 2012). However, Joshi et al. (2012) found the impact of school-sponsored work on the likelihood of ever being employed in the 2 to 4 years following school exit among youth with school-sponsored work to be 3.5 times the likelihood of youth who did not have this experience. However, this estimate is likely biased upwards due to other factors influencing future employment that were left out of the final model as well as unobserved factors.

Table 11: Evidence on the relationship between work activity in adolescence and future employment outcomes

Citation	Work Activity during Adolescence	Percentage Working in Adolescence	Employment Outcomes Analyzed	Percentage Working after High School	Impact of Work Activity in Adolescence on Future Employment
<i>Correlational studies</i>					
Carter, Austin & Trainor, 2012	Paid work defined as whether or not the student had a paid community job in the past 12 months and/or held a paid work-study job; Within-school work study and Outside-school work study were not found to be statistically significant at $p=0.04$ and therefore were excluded from the final model.	26%	Paid employment 2 years following high school graduation.	27%	Adjusted odds ratio (95% CI): 2.46 (1.52, 3.98)
Baer et al., 2011	Paid or unpaid work-study participation according to school records.	51.6%	Any full-time competitive employment within 1 year of school exit, where competitive employment was defined as working for competitive pay 35 hours per week.	28.6% ID; 38.6% LD, ED, OHI	Risk-odds ratio (95% CI): 0.857 (0.575, 1.277)
Joshi, Bouck & Maeda, 2012	(1) Paid work apart from school-sponsored job, and (2) School-sponsored work experiences	53.4% paid work; 59.7% school based	Whether students had ever engaged in paid employment 2 to 4 years after school exit.	62.1% currently; 75.9% ever after school exit	Students with paid work experiences apart from school-sponsored work were 5.704 times more likely and those with school-sponsored work were 3.489 times more likely to ever engage in paid employment in the first 2 years after school
Connors et al., 2014	Paid work experience during high school (Note this information was missing for 37% of youth), with No work omitted.	56%	Post-high school success defined as either working for pay or attending postsecondary education 2 to 4 years after school exit.	78% employed or in school	Adjusted odds ratio (95% CI): 3.60 (1.59, 8.18)



Citation	Work Activity during Adolescence	Percentage Working in Adolescence	Employment Outcomes Analyzed	Percentage Working after High School	Impact of Work Activity in Adolescence on Future Employment
McDonnall 2011	Paid work anytime between 1 year prior to Wave 1 to Wave 3 while in high school.	42%	(1) Currently working 20 or more hours per week (PT or FT), and (2) Currently working 35 or more hours per week (FT), reported in Wave 4. Both variables were evaluated at 1 to 5 years post-school exit; 52% of study sample left HS more than 2 years prior.	Not given	<i>Odds ratio (95% CI)</i> 20+ hrs per week: 2.42 (1.22, 4.81); 35+ hrs per week: 2.10 (0.94, 4.7)
McDonnall and O'Mally, 2012	(1) Paid work experience while in high school and (2) Participation in school-sponsored work (e.g., work study, internship, or school-based business), reported at Waves 1, 2, or 3	23% paid work; 9% school based	Currently working 20+ hrs. per week reported in Wave 4, evaluated at 1 to 5 years post-school exit; 52% of study sample left HS more than 2 years prior.	29%	<i>Odds ratio:</i> Paid work significantly predicted future employment +p=0.01) with an odds ratio of 3.3; school-sponsored work during high school did not (p=0.71)
Simonsen and Neubert, 2013	Competitively paid work during secondary school, omitting paid with a stipend and unpaid work.	Not given	Current work status: (1) Integrated work, (2) Other community work, and (3) Sheltered or nonwork activities (reference category) 18 months after exiting school.	14.2% integrated; 28.7% other community	<i>Adjusted odds ratio (95% CI):</i> Paid work during school increased the likelihood of Integrated employment 4.53 (1.72, 11.98) and Other community work 2.15 (0.87, 5.30) relative to sheltered or nonwork; Stipend work and unpaid work were not significant at p=0.10 in bivariate analyses and hence not included in the multivariate analysis.



Citation	Work Activity during Adolescence	Percentage Working in Adolescence	Employment Outcomes Analyzed	Percentage Working after High School	Impact of Work Activity in Adolescence on Future Employment
Wehman et al., 2014	Employed in high school.	60.5%	Whether student was competitively employed anytime during Waves 3–5. Competitive employment was defined as any paid job where the youth made at least minimum wage and worked in a setting where most employees did not have disabilities.	38.8%	<i>Adjusted odds ratio (95% CI):</i> 1.41 (1.17, 1.70)
<i>Dynamic panel estimation studies</i>					
Mamun, Carter, Fraker & Timmins, 2018	Paid employment status at 1-year post YTD entry.	33%	Paid employment status at 3-years post YTD entry.	36.9%	<i>Percentage point difference:</i> Paid employment 1-year after entry increased likelihood of paid employment 3-years after entry by 35.8 percentage pts (SE 0.034, p<0.01) in naïve regression and by 17.1 percentage pts (SE 0.0778, p < 0.05) in the fixed-effects regression



6.3 Evidence of Relationships between Other Indicators and Future Employment Outcomes

The studies providing evidence on the relationship between work activity in adolescence and future employment among youth with disabilities also provide evidence of relationships between other factors and future employment. These factors suggest other policy initiatives may be equally as important as the promotion of paid work in adolescence for attaining successful future employment among youth with disabilities. Table 12 shows the different factors investigated in the reviewed studies. The evidence of an impact of these factors on future employment among youth with disabilities is summarized below.

High school and postsecondary education. Connors et al. (2014) found high school completion was significantly associated with post-high school success. Youth with vision impairments who had completed high school had 3.3 times the odds of being successfully employed compared to those who had not completed high school. In a study of youth with a broader set of disabilities, Wehman et al. (2014) found youth with a high school diploma to have had moderately higher (24%) odds of future employment compared to youth who had not graduated. Furthermore, their estimate was only marginally significant ($p=0.07$).

McDonnall (2011) found youth with visual impairments who had completed a postsecondary program had odds of being employed full-time that is three times greater than those who had not completed a postsecondary program. Wehman et al. (2014) found youth attending a vocational or 4-year university had significantly higher odds of future employment than youth who had community college experience or no postsecondary education.

Economic conditions. Connors et al. (2014) found that students who left high school in 2000-2002 were 2.2 times more likely to be successfully employed compared to those who left high school in 2006-2008. The authors noted that the labor market declined from the second half of 2007 through the end of 2008. They suggest that the economic pressure of the recession significantly affected the employment of students exiting high school in 2006 to 2008 compared with their peers who exited in 2000 to 2002. It also illustrates the need for studies examining employment to consider the economic conditions specific to the years of data collection.

Economic conditions also vary by geographic location and therefore different policy initiatives may have differing impacts on youth with disabilities residing in different geographic areas. Mamun et al. (2018) found that the estimated effect of employment among youth with disabilities during the first year after YTD entry on the likelihood of being employed in the third year after YTD entry varies by site, ranging from three percentage points in Miami-Dade County, Florida, to 65 percentage points in Bronx County, New York. Furthermore, in the West Virginia site, the impact estimate, while positive, is not significantly different from zero. The authors suggest that this variation may reflect differences in local labor market conditions not captured by their control variables, as well as differences in employment barriers facing youth with disabilities.

Transportation difficulty. McDonnall (2011) provides evidence that, for youth with visual impairments, transportation difficulty is a barrier to employment. The author estimated that youth with visual impairments who reported that transportation was easy or somewhat easy had odds of being employed after school exit 2.4 times greater than did those who reported difficulties with transportation. Simonsen and Neubert (2012) found community mobility skills doubled the odds of integrated employment 18 months after school exit among youth with intellectual development disabilities. Using a



sample of youth with a broad set of disabilities, Wehman et al. (2014) found that the odds of being employed after high school exit for youth with the ability to get to places was 1.7 times greater than for youth who had difficulty.

Social and life skills. Several studies point to certain skills among transitioning youth that influence future employment. McDonnall (2011) found social skills, as evidenced by invitations from friends to social activities, increased the odds of being employed 20 or more hours per week among youth with visual impairments by more than threefold. Carter et al. (2012) investigated the impact of the relationship between a variety of different social and life skills and paid employment 2 years following high school graduation among youth with disabilities. They found the ability to feed and dress self and a high score on a classroom social scale increased the odds of future employment more than two-fold in both bivariate models and a combined final model with paid work in adolescence, whereas little to no trouble communicating, getting places outside the home, a high classroom behavior scale, and self-advocacy, similarly increased the odds of future employment more than two-fold in the bivariate analysis but lost significance in the combined model. This result suggests possible correlations among these skills and paid work in adolescence.

Family preferences and expectations. Simonsen and Neubert (2012) found the impact of the relationship between family preference for community work and future employment was particularly strong, with an odds ratio of 6.5 for integrated employment and 2.7 for other community work. Carter et al. (2012) investigated the relationship between the impact of a variety of family factors and paid employment 2 years after high school graduation. They found family expectations that the student will get a paying job and to eventually be self-supporting and a moderate/high household responsibility score each increased the odds of future employment by two-fold to more than threefold in both bivariate and combined models. Interestingly, paid work in high school lost statistical significance in the combined equation with family factors. Similarly, Wehman et al. (2014) found parental expectations for their child's future to be critical for the success of youth in the transition process, estimating an odds of 1.73 for parental expectations of their child having a job. Unlike the Carter et al. (2012) study, the employment in high school remained significant in the equation but was the lowest estimate among those we found in the literature. These results also suggest possible correlations among parental expectations and paid work in adolescence.

Table 12: Other factors influencing future employment outcomes

Citation	Demographic, Health and Disability	Other Student	Family	Transition Services and Supports	Other
<i>Correlational studies</i>					
Carter, Austin & Trainor, 2012	Age in years; Gender; Race; Primary disability	Student skills: Communication; Understanding; Feeds/dress self independently; Goes places outside the home; Social skills scale; Classroom social scale; Classroom behavior scale; Self-advocacy	Head of household education; Head of household employment status; Income; Transportation; Expect student to get a paying job; Expect student to eventually be self-supporting; Household responsibilities score	Prevocational classes; Vocational classes; IEP primary goal is prevocational skills; IEP primary goal is vocational skills; Career skills assessment; Career counseling; Job readiness training; Job search instruction; Job skills training; Job shadowing; Job coach; Outside-school work study; Within-school work study	
Joshi, Bouck & Maeda, 2012				Employment activities summation score	
Connors et al., 2014	Gender; Race/ethnicity; Vision level; Presence of second disability; General health	High school completion; Time period student left school (2000–2002, 2002–2004, 2004–2006, 2006–2008); Time since exiting high school (0–2, 2–4, 4–6, 6–8 years)	Income; Mother or father attended postsecondary school		
McDonnall 2011	Blind; Good health;	SSI benefits (past 2 years); Difficulty with transportation; Independent travel skills; Social skills; Use of assistive technology; Reading achievement; Number of recent jobs; Postsecondary completion	Parent expects student to support self		



Citation	Demographic, Health and Disability	Other Student	Family	Transition Services and Supports	Other
McDonnall and O’Mally, 2012		Receipt of SSI benefits in preceding 2 years			Job characteristics: Number of paid jobs during the preceding 2-years; Whether the youth had found his/her own job; Length of the job (in months) of the longest job held
Simonsen and Neubert, 2013	Gender; Race/ethnicity;	Self-determination skills; Self-management skills; Community mobility skills;	Level of family involvement; Family expressed preference for paid work in community	Unemployment rate	School setting
Wehman et al. 2014		Feeds self; Gets places by self; Graduated from high school; Computer skills; Postsecondary education; Arrest record; Participated in community activities	Household education level; Parental expectation of a job; Parental expectation of self-support		High school type
<i>Dynamic panel estimation studies</i>					
Mamun, Carter, Fraker & Timmins, 2018	Age at entry; Gender; Race; Site; Primary disability; Health status	SSA benefit amounts; Health insurance; Enrolled in school; Expects to continue education; Expects to work at least PT for pay;	Family income; Mother’s education; Father’s education; SNAP receipt; TANF receipt	State unemployment rate	In YTD treatment group

6.4 Gaps in the Evidence Base

We reviewed nine studies examining the relationship between a future employment outcome and work activity among youth with disabilities who were receiving SSI or eligible to receive SSI. These studies investigated this question among a variety of subsamples from the NLTS2 (six studies), statewide administrative databases for applicants of VR services and supports (two studies), and the YTD evaluation databases (one study). Differences in the sample populations, measures, and analytic methods resulted in widely varying estimates, but all were statistically significant and of sizable magnitude.

However, caution should be taken in using these results to support policy initiatives. Many of the early studies that found the odds of future employment higher by two- to five-fold among youth with work activity in adolescence compared to youth with no work activity in adolescence are likely biased upwards by a substantial amount due to the analytic methods used.

Furthermore, these same studies suggested that other modifiable factors, may influence the probability of future employment equally as well or better than early work activity and should be considered in concert with any future policy initiatives promoting work activities in adolescence. These include promoting postsecondary education, improving economic opportunities in the community, providing accessible transportation, social skills training, and increasing family member awareness of the importance of their support and encouragement. Specific recommendations on how to address these gaps may be found in Section 9.5.

7 Research Question 3: Within the context of existing federal legislation and regulations available to youth ages 14 to 25, how does SSA fit in?

7.1 Identify How SSA Fits in Within the Context of Existing Federal Legislation and Regulations Available to Youth Ages 14 to 25

To determine how SSA fits with existing legislation, we identified three pieces of legislation for analysis: IDEA, WIOA, and the Rehabilitation Act of 1973. Fit, in this context, refers to how youth ages 14 to 25 receiving SSI benefits might take advantage of both the legislation and SSI benefits to promote the best possible employment outcomes. The following sections provides a description of how each legislation serves transition-age youth with disabilities and discusses how the legislation fits within SSA's policies and programs.

7.1.1 IDEA

The IDEA legislation relates to the students' time in school and additional supports and education provided. IDEA requires public schools to provide a free appropriate public education (FAPE) to children with disabilities. IDEA covers students from birth to graduation from high school or up to age 21. Schools have the responsibility for identifying and evaluating students with disabilities and a parent can request an evaluation.

7.1.1.1 *How IDEA Serves SSI Youth in Transition*

To be eligible for special education under IDEA, a child must have a disability that falls under one of the 13 categories IDEA covers AND the child must need special education to make progress in school. The 13 categories each correspond diagnostically with one of the following SSA Childhood Listings Body Systems: 101.00 Musculoskeletal System, 102.00 Special Senses and Speech, 110.00 Congenital Disorders that Affect Multiple Body Systems, 111.00 Neurological Disorders, and 112.00 Mental Disorders. The most frequent way youth with disabilities qualify is for a specific learning disability (Lee, n.d.).

If a child is eligible, parents and a school team including special education personnel will develop an IEP. The team records the student's goals and the services and supports that are needed to achieve them on the IEP. At age 16, or earlier in some states, transition planning and services must be included in the IEP.

Transition planning is required by the IDEA legislation for all students with an IEP. The purpose of transition planning is to assist the student with a disability to move successfully from school to adult activities including employment. IDEA describes transition planning as a "coordinated set of activities" designed to contribute to the student achieving their adult goals. Ideally, transition planning also endeavors to define the responsibilities and coordinate the involvement of other agencies that offer transition services (e.g., Vocational Rehabilitation). However, IDEA does not mandate that the IEP transition planning process include work incentives counseling for SSI youth.

7.1.1.2 *SSA Policy Fit with IDEA*

In this section, we discuss SSA policy fit with IDEA for students with IEPs under IDEA, SSA's Ticket to Work, SSA's 301 benefits payment provisions, IDEA transition planning goals, SSI work incentives like the Student Earned Income Exclusion, and WIPA.

SSI beneficiaries will likely meet one of the 13 disability categories that are necessary for eligibility for an IEP under IDEA. However, some youth with disabilities have IEPs, but are not SSI beneficiaries (perhaps due to income/resources requirements) and some SSI beneficiaries do not have IEPs although they may very well be eligible to have one (Wittenburg, 2007). A large coalition of advocates has recommended that SSA should establish a data exchange with the Department of Education to ensure that all youth receiving SSI have at least been identified and offered an evaluation for special education and other services through an IEP or 504 plan (Consortium for Citizens with Disabilities, 2018).

See connected
recommendation
in Section 9.1

IDEA covers youth with disabilities while in school but not SSI youth who are out of school (dropouts). Specifically, IDEA Part B covers youth with disabilities from elementary school to completion of secondary education or age 22 whichever is earlier. Yet, in comparison to SSA programs, SSA's **Ticket to Work** does not begin until age 18. Similarly, at age 18, SSA redetermines a youth's disability using adult disability rules which evaluate ability to work. Those youth who are determined able to work will lose their benefits. For SSI beneficiaries ages 22 to 25, post coverage under IDEA, Ticket to Work may be a fit if they remain disabled according to SSA's criteria.

See connected
recommendation
in Section 9.1

Conversely, SSA's 301 benefits payment provisions are of particular advantage to an SSI youth with an IEP under IDEA at least up through age 21. That is, if they have had disability benefits ceased medically or have been denied at an age 18 redetermination, and also are participating in an appropriate education program, they may continue to receive benefits through program completion.

Additionally, IDEA transition planning goals for the duration of an IEP can be broader than just employment (i.e., postsecondary education, independent living). Therefore, the **SSI work incentives** that presume the beneficiary has been/is working (i.e., Earned Income Exclusion, IRWEs, Reinstating Disability Without a New Application), only fit if employment is attempted.

The **Student Earned Income Exclusion (SEIE)** is the best fit with the IDEA among the SSI work incentives if the student is working while in school. SEIE is available up until a student turns 22 so may support an SSI beneficiary through completion of an IEP and transition to SSI adult benefits. However, schooling and training programs may take longer to complete for individuals with disabilities. The age limit of the SEIE might not fully consider their need for extended time. Additionally, there is a high administrative burden on all parties. SSA could presume that youth ages 14 to 17 are students, unless evidence to the contrary is obtained. Evidence shows that 94 percent of 14 to 17-year-old youth on SSI reported being enrolled in school (GAO, 2017; Loprest & Wittenburg, 2007). This approach would reduce the administrative burden both to families, youth, and SSA staff and strengthen the incentive for youth to work.



See connected recommendation in Section 9.1

Furthermore, the documentation required to use these work incentives (e.g., documenting earned income and school participation) present significant barriers for these youth who may for various reasons may have difficulty with managing their affairs and complying with such requirements.

Finally, SSA should facilitate inclusion of work incentives counseling in IEP transition planning by incentivizing **WIPA** programs to engage school administrators, special educators, and parents.

Table 14 provides a visual representation of the fit of SSA with the IDEA legislation. It indicates at what age youth with disabilities would be able to use both SSA programs and IDEA policy requirements.

Table 13: SSA fit table key

SSA Fit: Table Key	
■	No Exceptions
□	Partial Exceptions
	Not Applicable
○	Funding Contingency

Table 14: Federal legislation and regulations summary and SSA fit analysis: IDEA

IDEA Policy Requirements				
Service	Ages 14–15	Ages 16–18	Ages 19–22	Ages 23–25
Entitled to FAPE	■	■	■	
May be eligible for IEP	■	■	■	
Transitions Planning and Services Required for IEP at age 16 (age 14 in some states)	□	■	■	
SSA Fit with IDEA Policy Requirements				
Ticket to Work Program (SSI Recipients 18 to 64) eligible to participate)			■	■
Student Earned Income Exclusion (SSI student beneficiary with earned income under age 22 are eligible to apply)	■	■	■	
SSI beneficiaries with earned income are eligible to participate in the following work incentives : <i>Earned Income Exclusion; IRWE; PASS; Continued Medicaid Eligibility 1619 (b); Reinstating Eligibility without a New Application</i>	■	■	■	■
VR Cost Reimbursement Program (VR eligible SSI recipients of working age if SGA for 9 continuous months)		■	■	■
Title V of SS Act Maternal and Child Health Block Grant: Transition Planning and Services—transition for youth with special health care needs to adult healthcare services as a critical support to employment (age of 1 year, up to day before 22 birthday)	■	■	■	

7.1.2 WIOA Title I

7.1.2.1 How WIOA Serves SSI Youth in Transition

Signed into law on July 22, 2014, the WIOA is designed to help job seekers obtain employment, education, training, and support services and to match employers with skilled workers. WIOA is a vast and comprehensive piece of legislation that supersedes the Workforce Investment Act of 1998 and

amends the Adult Education and Family Literacy Act, the Wagner-Peyser Act, and the Rehabilitation Act of 1973. It provides and coordinates employment and training services for multiple populations including youth with disabilities (WIOA Overview, n.d.)

WIOA provides services through its system of One-Stop centers (American Job Centers) nationwide, where state and local WIOA employment and training activities and partner programs such as Vocational Rehabilitation are to be coordinated. This system is also intended to provide employment and training services that are responsive to the demands of local area employers who are represented on boards that have oversight of the programs and services offered in their area (Bradley, 2015).

With respect to SSI youth beneficiaries, WIOA specifically addresses services for out of school youth (OSY) to achieve successful employment by increasing the percentage of funds to be used for them to 75 percent. It adds an additional requirement to spend 20 percent of those funds on work experience activities such as summer jobs, pre-apprenticeship, on-the-job training, and internships so that youth are prepared for employment (WIOA Overview, n.d.) WIOA youth funding may also help youth obtain a high school diploma or equivalent or attend postsecondary and/or to develop career readiness.

The definition of disability that applies to services provided under the WIOA is the Americans with Disabilities Act definition: an individual with a physical or mental impairment that substantially limits one or more major life activities; a record of such an impairment; or regarded as having an impairment (Hoff, 2014.) By definition, SSI disability beneficiaries meet the income and resource standards for any programs under WIOA that have those requirements.

Youth funding under WIOA addresses both OSY and In-school youth (ISY) with disabilities. OSY (those not attending school) must be at least age 16 and not older than 24 at the time of program enrollment. ISY are those attending either secondary or postsecondary school and at least age 14 but not older than age 21 at enrollment, Hoff (2014.) Furthermore, WIOA provides universal access to its career services (Bradley, 2015), including a priority of service for low-income adults, for SSI youth age 18 or older, who do not need to meet any qualifying characteristics.

Participants in the WIOA youth program may receive the following services, “WIOA Youth Program Fact Sheet” (2019):

- tutoring
- alternative secondary school services
- paid and unpaid work experiences, including: summer and year-round employment opportunities
- pre-apprenticeship programs
- internships
- job shadowing; and on-the-job training
- occupational skill training
- education offered concurrently with workforce preparation and training
- leadership development opportunities
- supportive services
- mentoring
- follow-up services
- comprehensive guidance and counseling
- financial literacy education

- entrepreneurial skills training
- services that provide labor market and employment information
- postsecondary education and training preparation activities

7.1.2.2 *SSA Policy Fit with WIOA*

In this section, we discuss SSA policy fit with WIOA for youth such as SSI work incentives like the Student Earned Income Exclusion, Ticket to Work, and SSA's 301 benefits payment provisions.

WIOA youth services focused on transition to employment are, for the most part, well-structured policy-wise to benefit SSI youth beneficiaries. In fact, WIOA transition activities may fill service gaps left unfilled by IDEA (which is only for in-school students) or VR wait lists. SSI beneficiaries who are no longer in school or who are in an older transition group (age 22 to 24) and even SSI child beneficiaries who no longer meet the adult definition of disability following the Age 18 redetermination, are especially likely to benefit from access to these services.

However, in-school youth may only benefit up to age 22, so SSI beneficiaries who have not completed postsecondary education programs by that age may face the loss of support for their WIOA transition programming as well as loss of SSA's **SEIE** if working, since availability for SEIE ends at age 22 and is therefore not accessible to older youth in the target group.

Other **SSI work incentives** such as **Impairment-Related Work Expenses (IRWE)** and **Plan to Achieve Self-Support (PASS)** and SSA's **Work Incentives Planning and Assistance (WIPA)** services are not age-limited (or start as early as age 14 or 15) and are available from a policy perspective to support SSI youth receiving WIOA services in achieving a successful employment outcome.

Beginning at age 18, SSA's **Ticket to Work** program can be an effective employment assistance alternative for youth up to 25 whether they are ISY or OSY. WIOA requires that the designated state VR unit coordinate activities with any other state agency (including the state workforce agency) that is functioning as an employment network (EN) under the Ticket to Work and Self-Sufficiency Program. For example, American Job Centers can be approved Ticket to Work employment networks (i.e., Workforce Networks), thus providing specialized employment services to the older cohort of SSI youth beneficiaries within a collaborative context. ENs, whether public or private, also have the expertise to offer in-depth benefits planning and work incentives counseling to SSI youth regarding SSI work incentives.

In addition, SSA's 301 benefits payment provisions are of particular advantage to an SSI youth who participates in a program carried out under an individual work plan (IWP) with an employment network under the Ticket to Work and Self-Sufficiency Program as described in POMS DI 55020.001B. That is, if they have had disability benefits ceased medically or have been denied at an age 18 redetermination, and also are participating in an appropriate employment program, they may continue to receive benefits through program completion.

Table 15 provides a visual representation of the fit of SSA with the WIOA legislation. It indicates at what age youth with disabilities would be able to use both SSA programs and WIOA services.

Table 15: Federal legislation and regulations summary and SSA fit analysis: WIOA Title I

WIOA Title I				
Service	Ages 14–15	Ages 16–18	Ages 19–22	Ages 23–25
Employment, education, training, and support services for individuals with disabilities (including out-of-school youth)	■	■	■	■
Eligibility: <i>In-School-Youth (ISY) (14 to not older than 21 at time of enrollment); SSI youth recipient qualifies based on income and resources and definition of disability)</i>	■	■	■	
Eligibility: <i>Out-of-School Youth (OSY) (16 to 24 at time of enrollment); SSI youth recipient qualifies based on income and resources and definition of disability)</i>		■	■	■
Transitions Planning and Services (includes 14 program elements for youth): <i>Basic Services Include the following: Outreach, Job Search, Placement</i> <i>More Comprehensive Services Including: Individualized Employment Plan, Counseling, Career Planning</i>	■	■	■	■
SSA Fit with WIOA Title I				
Ticket to Work Program (SSI Recipients 18 to 64) eligible to participate)			■	■
Student Earned Income Exclusion (SSI student beneficiary with earned income under age 22 are eligible to apply)	■	■	■	
SSI beneficiaries with earned income are eligible to participate in the following work incentives: <i>Earned Income Exclusion, IRWE, PASS, Continued Medicaid Eligibility 1619 (b), Reinstating Eligibility without a New Application</i>	■	■	■	■
VR Cost Reimbursement Program (VR eligible SSI recipients of working age if SGA for 9 continuous months)		■	■	■
Title V of SS Act Maternal and Child Health Block Grant: Transition Planning and Services—transition for youth with special health care needs to adult healthcare services as a critical support to employment (age of 1 year, up to day before 22 birthday)	■	■	■	

7.1.3 Rehabilitation Act of 1973

7.1.3.1 How Vocational Rehabilitation Serves SSI Youth in Transition

The **Rehabilitation Act of 1973 Title I**, as amended by WIOA, provides for a comprehensive complement of services for individuals with disabilities who are found eligible and accepted for services. There is no age requirement for VR services, however, service planning for eligible individuals with disabilities, known as the Individualized Plan for Employment (IPE), must include an employment goal and services provided must be those that lead to/support employment. The WIOA amendments to the Rehabilitation Act, required VR agencies to set aside at least 15% of their federal funds to provide pre-employment transition services to students with disabilities whether they are eligible or potentially eligible.

SSI youth receiving benefits, whether in school or out of school, by definition have a disability for purposes of eligibility for VR services and will be accepted for the full range of services as long as the state VR agency does not have an order of selection (OoS) which defers their acceptance (“Practices of

States,” n.d.). On the other hand, it is common for states to institute an order of selection when they deem that resources are insufficient to serve all eligible individuals with disabilities. In 2016, the same report described the states of California, Illinois, Rhode Island, Delaware, Maine, Minnesota, Missouri and Wisconsin as having an OoS for at least one of their VR programs (“Practices of States,” n.d.). With OoS, states must prioritize services to those with the “most significant disabilities.” While the rules automatically categorize SSI recipient youth as having a “significant disability” they may still be excluded from the category of ‘most significant disabilities’ and not be accepted for services when funding is inadequate. Inclusion of SSI youth with disabilities in the definition of those with the “most significant disabilities” would increase the likelihood of their receiving VR services.

SSA must rely on schools to make the connection with VR for students with disabilities through IEPs. VR representatives may be invited but schools are not mandated to include VR in the IEP for youth with disabilities. On the other hand, VR agencies are required by law to collaborate with the state’s workforce development system and to participate in planning under IDEA for in-school youth, if invited.

SSI youth, whether in-school or out, may also benefit from mandated statewide pre-employment transition services for potentially (not yet) VR eligible youth. For youth, including SSI beneficiaries, who are VR eligible and have an IPE, the Rehabilitation Act also supports a lengthy list of transition-oriented services. Pre-employment transition services the VR agency is required to provide include the following (“Collaborative Partnerships,” 2019):

- Job exploration counseling
- Work-based learning experiences, which may include in-school or after school opportunities, or experience outside the traditional school setting (including internships), that is provided in an integrated environment in the community to the maximum extent possible
- Counseling on opportunities for enrollment in comprehensive transition or postsecondary educational programs at institutions of higher education
- Workplace readiness training to develop social skills and independent living
- Instruction in self-advocacy

Furthermore, the GAO found (“Supplemental Security Income: SSA Could Strengthen,” 2017) that SSA is hindered in its ability to connect transition-age youth to VR services because they cannot directly refer them to VR (due to privacy concerns) and SSI recipients under age 18 are not included in the Ticket to Work program for adults. SSI recipients under 18 are not included in the Ticket Work program nor are state VR agencies eligible for cost-reimbursement for services provided to this age group.

Clearly, for youth and young adults receiving SSI, Title I VR services, with the goal of achieving financial independence through work, are well-focused from a policy perspective. However, the opportunity for SSI youth to receive the benefit of VR services can be uneven across the country due to inadequate funding since VR is not an entitlement program. Additionally, the incentive that could be provided by cost-reimbursement is not available for services to youth under age 18.

In addition, even when a state VR agency has sufficient funding, SSI recipients must be aware of and motivated to apply for services since VR is a voluntary program. Although state VR agencies have long recognized the importance of “benefits planning” (often referred to as work incentives counseling) as a service to help individuals receiving SSDI and/or SSI disability benefits, WIOA legislation for the first time, in 2014, specifically recognized those services as a VR service available to beneficiaries. In 2016,

federal regulations specified that state VR agencies must provide assistance with benefits planning (“Policy Brief: Building State Vocational Rehabilitation,” n.d.).

The purpose of **Title VI of the Rehabilitation Act** is to fund state VR agencies to provide supported employment services for individuals (including youth) with the *most significant disabilities*. For SSI beneficiaries in special education who are eligible and receiving VR supported employment services, Title VI requires that VR IPE services provided “... will be coordinated with services provided under other individualized plans established under other Federal or State programs,” (Rehabilitation Act of 1973 as amended by WIOA). In addition, the IPE must include transition planning aimed at supported employment in a competitive integrated setting as well as specifying who will provide funding for long-term (up to 4 years) support services.

Section 504 of the Rehabilitation Act has the potential to protect and benefit *all* individuals with disabilities, including SSI youth in transition, by prohibiting discrimination on the basis of disability in any program or activity operated by recipients of federal funds.

7.1.3.2 Cost Reimbursement

Although state VR agencies may choose payments under either the Ticket to Work payment system or Social Security’s VR Cost Reimbursement program. Most choose the CR payment system (Hyde & O’Leary, 2018). Another study (Althshuler, 2011) also found that, even after SSA restructured the Ticket to Work out-come based payment system, VR agencies still served the majority of Ticket-eligible beneficiaries under the traditional cost-reimbursement system.

Social Security’s Vocational Rehabilitation Cost Reimbursement (CR) program was authorized in 1981. The two purposes of the CR program are to make state VR services more readily available to Social Security beneficiaries with disabilities and to generate savings to the General Revenue Fund for Supplemental Security Income beneficiaries and to the Social Security Trust Fund for SSDI beneficiaries (SSA, n.d.).

Under the CR program, SSA pays state VR agencies in the form of reimbursement for the cost of services provided when beneficiaries served by those agencies enter the workforce and achieve 9 continuous months of earnings at or above the SGA level. Currently, only state VR agencies are eligible to participate in the VR reimbursement program (SSA, Cost Reimbursement Program, n.d.).

As such, the VR Cost Reimbursement program is primarily a financial incentive to VR agencies to serve SSDI/SSI recipients who are, by statute, among those with “significant disabilities.” However, in states where the VR agency has insufficient funding and an order of selection (OoS), not all SSI recipients will necessarily be served immediately. Other states may choose, due to insufficient resources to prioritize services by implementing a “needs test” which is less likely to exclude SSI youth who, by definition, meet SSI income and resource requirements.

Research (which only studied adults) shows that relatively few SSA beneficiaries, of any age, who sought VR services, generated a Cost Reimbursement payment from SSA to a State Vocational Rehabilitation Agency (SVRA) (Hyde & O’Leary, 2018). Of all disability beneficiary VR applicants in 2002, only three percent generated a VR reimbursement payment in 4 years after case closure and only 3.6% did so by 2012 (Hyde & O’Leary, 2018). In addition, the numbers of reimbursement claims have remained relatively static over time. By example, in FFY 2019, SSA reports that 14, 573 VR reimbursement claims were allowed with total dollars reimbursed amounting to \$185,499,507.10. The highest year for

reimbursements since 1998 was FFY 2018 when 16,237 claims were allowed with a total reimbursement of \$215,417,316.50 (SSA, 2019).

SSDI/SSI recipients are, by statute, among those with “significant disabilities” and potentially eligible for VR services. However, in states where the VR agency has insufficient funding and an order of selection (OoS), not all recipients will necessarily be served immediately. Other states may choose, due to insufficient resources, to prioritize services by implementing a “needs test” which is less likely to exclude SSI youth who, by definition, meet SSI income and resource requirements. Additionally, the VR Cost Reimbursement program is, as currently constituted, only a financial incentive to VR agencies to serve adult recipients.

With respect to SSI youth the GAO has found that, “Although youth receiving SSI are generally presumed to be eligible for VR services and despite the advantages of participating in VR programs, ...upon review of data from five state VR agencies, that transition-age youth (ages 14 to 17) receiving SSI had open VR service records in calendar year 2015. Specifically, in four of the five states, the percentage of transition-age youth ages 14 to 17 on SSI with open VR service records was less than 1 percent” (GAO, 2017). Another study that examined state differences in the vocational rehabilitation experiences of youth with disabilities (Honeycutt, 2014) stated that “One state-level factor was significantly correlated with the service ratio. The mean cost of purchased services per individual served was negatively correlated with the proportion of youth applicants served, and the magnitude of the correlation was among the strongest observed for any factor. One possible explanation is that agencies with higher per-capita costs may encounter more resource constraints that limit their ability to serve all youth interested in services.”

The VR Cost Reimbursement program appears to support return to employment and SGA for some beneficiaries. (Hyde & O'Leary, 2018). SSA administrative data shows that “...benefits foregone for work (BFW) after VR application not only exceed the VR payment amounts but, in general, are 8 to 10 times their size.” (Hyde, 2018). This data is consistent with the notion that VR services are cost-effective (Hyde & O'Leary, 2018).

7.1.3.3 SSA Policy Fit with the Rehabilitation Act of 1973

In this section, we discuss SSA policy fit with the Rehabilitation Act of 1973 for youth such as SSI work incentives like the Student Earned Income Exclusion, WIPA, Ticket to Work, and VR Cost Reimbursement.

SSA’s **SEIE** is a beneficial support for SSI youth in secondary and postsecondary education youth who are also receiving VR services. However, eligibility for SEIE ends at age 22 and is therefore is not accessible to older youth in the target group. This limitation may be particularly significant to youth with disabilities who may require extra time to complete their education. Other **SSI work incentives** such as **IRWE and PASS** may be a positive adjunct to achieving a successful employment outcome for many SSI youth eligible for and receiving VR services.

SSA’s 301 benefits payment provisions are of particular advantage to an SSI youth with an IPE. That is, if they have had disability benefits medically ceased or have been determined to be ineligible due to an age 18 redetermination, and also are participating in an appropriate VR program, they may continue to receive benefits through program completion.

SSA’s **WIPA** services are available to SSI beneficiaries, including SSI youth, to increase awareness and use of SSI work incentives, from age 14 up to full retirement age.

SSA’s **Ticket to Work** program is a cost-effective employment assistance alternative. SSA’s Office of the Inspector General has found that since the program’s inception, “SSA has incurred costs over \$2.8 billion to operate the program (and that) as of Fiscal Year (FY) 2016, the TTW program had saved the Agency approximately \$5.9 billion.” However, SSI beneficiaries under age 18 in transition cannot benefit because of the age limitation. Lowering the minimum age to sixteen could result in more SSI youth served.

SSA’s **VR Cost Reimbursement** program is primarily an incentive to state VR agencies to serve SSI recipients, as long as they are eligible for and receiving services.

Below in Table 16, the legislative fit of the Rehabilitation Act of 1973 is portrayed to depict the analysis above.

Table 16: Federal legislation and regulations summary and SSA fit analysis: Rehabilitation Act of 1973

Title I as amended by WIOA Title IV				
Service	Ages 14–15	Ages 16–18	Ages 19–22	Ages 23–25
Must have following three things: Disability, Impediment to employment, Benefit from VR services for employment outcome	■	■	■	■
Presumption of eligibility for SSI/SSDI	■	■	■	■
Pre-Employment Transition Services (depending on state)	■	■	■	
Transition Services (VR eligible & accepted for services with IEP)	■	■	■	■
Out-of-School Youth		■	■	■
State VR agency has Order of Selection (OoS)	○	○	○	○
Title VI as amended by WIOA Title IV				
Supported Employment Services in CIE for individuals with the most significant disabilities	■	■	■	■
Transition Planning and Services. The IEP must include the following leading to CIE: <i>Pre-employment transition services; extended services (not to exceed 4 years)</i>	■	■	■	■
Section 504				
Civil Rights Statute: prohibits discrimination based on disability by recipients of federal funds	■	■	■	■
May be eligible for 504 Plan in Elementary and Secondary schools	■	■	■	■
SSA Fit with Rehabilitation Act of 1973				
Ticket to Work Program (SSI Recipients 18 to 64) eligible to participate)			■	■
Student Earned Income Exclusion (SSI student beneficiary with earned income under age 22 are eligible to apply)	■	■	■	
SSI beneficiaries with earned income are eligible to participate in the following work incentives: <i>Earned Income Exclusion, IRWE, PASS, Continued Medicaid Eligibility 1619 (b), Reinstating Eligibility without a New Application</i>	■	■	■	■
VR Cost Reimbursement Program (VR eligible SSI recipients of working age if SGA for 9 continuous months)		■	■	■
Title V of SS Act Maternal and Child Health Block Grant: Transition Planning and Services—transition for youth with special health care needs	■	■	■	

to adult healthcare services as a critical support to employment (age of 1 year, up to day before 22 birthday)				
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7.2 Describe the Gaps in Lack of Services and Lack of Access to National, State, and Local Supports

There are several gaps in services which if addressed could make a significant impact and increase the supports needed to increase earnings and ultimately decrease the need for SSI benefits.

Recommendations for addressing these gaps can be found in Section 9 of this report.

- Ticket to Work cannot be accessed by beneficiaries under the age of 18. The supports available through Employment Networks and the long-term planning implicit in the Ticket to Work Individual Work Plan process would provide the ongoing support needed to create and implement an employment plan including training and education during the transition from youth into adulthood. (See 7.1.3.2 above.)
- WIPA services are available to SSI youth 14 years of age and older. However, youth are not usually aware of the services offered by WIPAs. These services could help these young SSI recipients and their families to understand the complexities of the Social Security and public health care system and build a bridge to self-sufficiency when appropriate. Improved access to work incentives counseling has been an important feature of the demonstration programs such as YTD and PROMISE (Fraker, 2014; Honeycutt, 2018);
- The SSI Student Earned Income Exclusion extends only up through age 21. If the SEIE age limit was to be modified to extend up through age 25, this would allow more time for these young beneficiaries to complete their education or training while using this work incentive. Evidence shows a steady increase in the longevity of SEIE use as students age, which tapers off as they approach the maximum SEIE age limit at age 22 (Kemp, 2010). This evidence suggests that the age limit creates a gap for those youth who may need a longer period of time to complete their postsecondary education or training.
- “SSA does not have a systematic way to connect transition-age youth on SSI to state Vocational Rehabilitation (VR) agencies that provide training and employment services under the VR State Grants program administered by the Department of Education (Education).” SSA and state Disability Determination Services (DDS) no longer screen for rehabilitation potential and make direct referral to VR. (“Supplemental Security Income: SSA Could Strengthen,” 2017)
- The SSI Earned Income Allowance of \$65.00 was established very early in the program’s history and never increased. It often provides too little incentive for young SSI recipients and their families to consider work as a profitable option. The federal minimum wage is currently \$7.25 dollars per hour (U.S. Department of Labor, 2020). The total amount for a day’s wages at this rate would then be \$58. Therefore, the current \$65 earned income allowance is only \$7 more than a day’s wages at the federal minimum. A review of the literature found no studies measuring its impact, but SSA should consider including an increase and then tapering of this exclusion as a feature in any future demonstrations pertaining to transition-age youth.

8 Conclusions Based on the Environmental Scan

This report presents results of an environmental scan of available literature on youth with disabilities to identify research, programs, and policies that are most successful in leading to youth future employment. A total of 145 studies were identified and reviewed examining the relationship between receipt of services, supports, and work activity supports and employment or schooling outcomes of transition-age youth with disabilities.

In general, the literature shows there are limited studies with meaningful research showing direct causation between services and supports and employment. Some literature shows that youth with disabilities who receive services, especially more than one service, have higher employment outcomes. Large demonstration projects, such as YTD projects, Ticket to Work for youth ages 18 and up (TTW), Accelerated Benefits Demonstration (AB), and Job Corps, have shown positive effects on employment, but the size of the effect often depends on the type of disability, type of service (VR, supported employment PSE) and measures (or outcomes) used to evaluate success.

Other policy initiatives were also found to be associated with promoting paid work in adolescence for attaining successful future employment among youth with disabilities, including high school completion, economic conditions, transportation, social skills, family preferences, and SSI benefits.

Significant gaps remain, however, between youth with and without disabilities in education and the workforce, despite federal and state legislation and systemic efforts to improve opportunities. Barriers to promote higher employment among youth with disabilities fall into three categories:

1. Restrictive eligibility requirements of program participation
2. Inadequate outreach for families, schools, and employers to promote employment
3. Poor services and support delivery and coordination

While numerous research studies have examined program effectiveness, very few represent rigorous evaluation studies with well-defined schooling and a variety of employment outcomes, such as earnings and quality of employment. Future studies also need to establish longitudinal studies more than 3 years in length, as well as documenting challenges to program participation. Future research also needs to provide consistent methodologies and contextualize its findings in realistic, actionable steps to promote successful outcomes among transition-age youth.

Throughout this environmental scan phase of the project, we also found a myriad of study designs, multitude of measures, and wide assortment of statistical analyses performed. Currently, there is no central location or repository of research findings for service providers or researchers to access. We suggest SSA develop such as a user-friendly repository that stores research findings and includes best practices in research and document available (and successful) program and services which can easily be queried among all stakeholders.

The following Table 17 provides an overview of the barriers and challenges identified by the environmental scan, potential insights to address these challenges and the corresponding section of this report. Section 9 discusses some of these insights in more detail as recommendations for SSA's consideration.



Table 17: List of barriers/challenges and brief insights for SSA

Barriers and Challenges	Recommendations for SSA (Evidence)	Potential Benefit or Outcome
1. Restrictive eligibility requirements		
Age limit currently at 21; does not consider need for more time to complete schooling and training programs (location: pages 75, 85)	1. Extend age limit for the SEIE up through age 25	May incentivize more youth to continue or to begin their education as they reach a greater level of maturity. Costs to the program are likely to be relatively modest (See Section 9.1)
High administrative burden to complete documentation (location: pages 76,85)	2. Remove the requirement that students submit school enrollment documentation or require the U.S. Department of Education to report students' enrollment status	Would reduce burden to families, youth, and SSA staff and strengthen incentive for youth to work (See Section 9.1)
TTW employment-based services are only available for adults age 18-64, (location: pages 75,85)	3. Change TTW available for SSI beneficiaries from 18 to 16 years old	Would better connect beneficiaries to the vocational supports at an earlier age and may increase the rate of successful transitions to employment and adulthood. (See Section 9.2)
2. Inadequate outreach and funding		
Employer knowledge about hiring people with disabilities is not widespread. Employers reluctant to hire without guidance and roadmap of information (location: pages 55-57)	1. Educate employers about federal tax credits for hiring people with disabilities through workshops or webinars	Would raise awareness of incentives, tax credits, and deductions that are available for employers who hire and retain employees with disabilities (See Section 9.3)
The Cost Reimbursement program does not cover SSI youth age under 18, (location: pages 56,85)	2. Lower the age at which VR agencies can receive cost reimbursements from age 18 to 14	Exploring a VR cost reimbursement program for SSI youth ages 14-16 to get an understanding if such an option would be viable for VR agencies to participate. SSA could convene a Technical Expert Panel (TEP) that would ask the question. A TEP in which RSA VR staff and experts would be invited to participate. (Section 9.6)
The Cost Reimbursement program does not act as a financial incentive for VR agencies to service younger youth (location: page 56)	3. Incentivize providers by expanding the Cost Reimbursement program to individuals less than 18 years old	
3. Poor services and support delivery and coordination		
Wide disparities in state access to education and employment opportunities (location: page 57)	1. Establish clear channels of communication among all relevant agencies that provide services, supports, and training	Giving greater role of VR staff helping youth plan for transition services, and to collaborate with local school personnel such as IPE meeting <i>would increase the number of youth receiving rehabilitation services and ultimately improve employment</i> (See Section 9.4)
SSA cannot directly refer transition-age youth to VR (due to privacy concerns) (location: page 80)	2. Promote greater collaboration between social service agencies and their partners,	Customized individual supports have been shown to stronger employment effects than less customized approaches (See Section 9.4)

Barriers and Challenges	Recommendations for SSA (Evidence)	Potential Benefit or Outcome
	including the referrals to VR	
4. Lack of adequate rigorous research and Support Section 234 and 1110 Authorities		
Research studies do not focus on program implementation, such as delivery of program, quality of implementation, and attrition of program participants (location: page 38)	1. Support research documenting challenges to program participation	Promotes rigor of research studies by better understanding challenges of implementing program for future studies (See Sections 9.5)
Small number of studies examined long-term effects of programs and services, making it difficult to assess any lasting impact (location: page 32)	2. Establish longitudinal studies over 3 to 5 years	Helps to determine whether there are long-term effects of programs and services or whether additional program and services need to continue (See Sections 9.5)
Research studies often do not include a wide range and severity of disabilities, making it challenging to align outcome measures with the type or severity of disability (location: pages 48-54)	3. Include a range of disabilities and confounding variables to serve as controls	Better understanding of outcomes measures based on effects of disabilities and severity of disability in research studies (See Section 9.5)
Different research studies measure different employment outcomes making outcome measures across studies hard to compare (location: pages 40-47, 60-63, 66-68)	4. Evaluation studies should include well-defined education and a variety of employment outcomes	Establishes consistent outcome measures, such as employment rates, length of employment, income/ earnings, number of hours working, etc. (See Section 9.5)

9 Recommendations for SSA's Consideration

Based on comprehensive evidence included in this review, three evidence-based suggestions emerge.

- *Individualized work-based training and support* seems to be the most effective method to assist transition-age disadvantaged youth and youth with disabilities.
- Incorporating elements of *academic training* into the program would likely help.
- *Work incentives benefits counseling* would likely be an effective service. However, these suggestions should be taken with caution. Effectiveness of the programs likely depends on both service content and service intensity. Since existing studies rarely quantify the effect of the intensity of specific services, we are constrained to making recommendations based solely on evidence from service content but not service intensity. Please see Section 5.1.3 for further evidence to support this recommendation.

A recent study identified five key factors for success in projects supporting disability employment, including: a focus on changing attitudes, a person-centered approach to employment, technological platforms or model documentation, strong community partnerships, and wraparound services (Kessler Foundation, 2018). SSA could consider contacting the Kessler Foundation to assess the impact of these approaches and feasibility of implementing them on a larger or national scale.

Addressing these barriers will assist SSA in improving access to services, promoting the harmonization and coordination of all stakeholders, and designing large-scale rigorous demonstration projects that will improve programs and services among youth with disabilities toward promoting employment and self-sufficiency.

Next, we provide recommendations for consideration to address most of the challenges and barriers identified during our literature review. We focus on the following topics:

- Modifications to the SEIE
- Modifications to the Ticket to Work program
- Suggestions for how SSA can better engage with employers
- Collaboration and cooperation
- Specific ideas for future research
- Other suggestions for further development

9.1 Modify the Student Earned Income Exclusion

Please refer to Table 17 for the corresponding challenges associate to inadequate eligibility.

- ***Extend age limit for the SEIE up through age 25 (Insight 1.1)***
- ***Remove the requirement that students submit school enrollment documentation or require the Department of Education to report students' enrollment status (Insight 1.2)***

Barriers and Challenges. Eligibility for the SEIE ends when a student turns 22. The SSI program rules, as currently configured, do not provide enough incentive (and reassurance) to encourage these vulnerable young people to surmount the many barriers they face. Child SSI recipients lag far behind their nondisabled peers in achieving important milestones in the transition to adulthood with respect to education and employment (Wittenburg, 2011). Additionally, there is evidence that their families may tend to underinvest in these youth, perhaps due to a perception that their children will remain on



disability benefits as adults (Morales, 2018; Deshpande and Dizon-Ross, 2016; Davies, 2009). Therefore, although the age limitation on the SEIE might arguably be appropriate for typically developing youth, it is likely inadequate to meet the needs of youth with disabilities.

Evidence. Previous research shows a steady increase in the longevity of SEIE use as students age, which tapers off as they approach the maximum SEIE age limit at age 22 (Kemp, 2010) By eliminating the age limit, Social Security may incentivize more youth to continue or to begin their education as they reach a greater level of maturity. Costs to the program are likely to be relatively modest as most youth do not utilize the full amount of the SEIE earned income exclusion available to them (Kemp, 2010). Evidence shows that 94 percent of 14- to 17-year-old youth on SSI reported being enrolled in school (GAO, 2017; Loprest & Wittenburg, 2007).

The fear of losing benefits as a result of the age 18 redetermination process has the effect of disincentivizing work among transition-age SSI recipients. SSA could also consider eliminating the consideration of earnings from the age 18 redetermination process and rely solely upon medical evidence to assess continued eligibility. Evidence shows that few youths undergoing the age 18 redetermination process have earnings above SGA (GAO, 2017). Therefore, eliminating consideration of earnings at this juncture could have the effect of allaying the concerns of families and youth without resulting in a significant increase in program costs.

In addition, evidence suggests that although student status is routinely collected for SSI recipients as part of the application or annual redetermination process, this information is not processed in a manner that leads to the application of the SEIE to the earnings of SSI recipients who qualify for it (GAO, 2017).

Recommendation. SSA should extend the age limit on the SEIE and make it available to SSI recipients up through the age of 25. There is precedent for this age limit in the Affordable Care Act which allows young adults to stay on their parents' health insurance through the age of 25 (i.e. ending when they turn 26).

Furthermore, SSA should reduce the administrative barriers to utilization of the SEIE by adopting a presumption that youth age 14-17 are students, unless evidence to the contrary is obtained. This presumption is justified by evidence that shows that 94 percent of 14-17-year-old youth on SSI reported being enrolled in school (GAO, 2017; Wittenburg & Loprest, 2007). This approach would reduce the administrative burden both to families, youth and SSA staff and strengthen the incentive for youth to work.

9.2 Modify Ticket to Work

Please refer to Table 17 for the corresponding challenges associate to inadequate eligibility.

- ***Change TTW available for SSI beneficiaries from 18 to 16 years old (Insight 1.3)***

Barriers and Challenges. Ticket to Work employment-based services are currently only available for adults age 18-64. VR is the primary service delivery system for transition age youth with disabilities, including SSI youth under age 18. However, there are relatively few transition-age SSI youth (ages 14-17) served by VR agencies, less than 1% were being served in five states that were studied in 2015 (GAO, 2017). The WIOA amendments to the Rehabilitation Act (2014) are intended to increase VR focus and funding on transition services for youth with disabilities. VR services are not an entitlement and funding limitations may even lead to wait lists in some states (Order of Selection), further restricting access for

SSI youth. WIOA also targeted funding to youth transition and those on SSI are among the groups with a priority for services. There seems to be a gap of availability of employment-focused service options specifically for SSI youth ages 16-17.

Evidence. A GAO study stated that, “although youth receiving SSI are generally presumed to be eligible for VR services and despite the advantages of participating in VR programs, GAO found, upon review of data from five state VR agencies, that few transition-age youth (ages 14 to 17) receiving SSI had open VR service records in calendar year 2015. Specifically, in four of the five states, the percentage of transition-age youth ages 14 to 17 on SSI with open VR service records was less than 1 percent” (GAO, 2017).

Although we did not find specific evidence that 16 and 17-year-olds would be expected to have higher rates of participation, there is evidence that youth in the older age range (18-24 years) show a significantly higher percentage of eligible beneficiaries (13.5%) participating in Ticket to Work than that age group’s percentage of the overall eligible population (5.2%) (SSA , 2011).

As described earlier in Section 7 of this report, paid community work in adolescence has a strong significant relationship with future paid work. ENs, already structured with an outcomes-based focus, are well-equipped to provide services to youth under age 18 and to adapt successfully to a modified milestone payment system for SSI youth 16-17. Systematic provision of employment-focused services coupled with accurate information about SSI work incentives prior to the Age 18 redetermination (when many previous child SSI beneficiaries are found not disabled) would be expected to increase the rate of successful transitions to employment and adulthood for SSI youth.

**Providing SSI youth with
incentive to work**

SSA could reduce the age of start to age 16 for SSI beneficiaries for Ticket to Work in order to better connect beneficiaries to the vocational supports at an earlier age.

Recommendation. Making Ticket to Work available for SSI youth at age 16, rather than 18, will expand the employment-focused services available to that age cohort. Granted, under the current system, a limited number of beneficiaries will be able to meet the earning milestones over the short term. However, it will be helpful for the beneficiaries and their families to have access to the vocational supports, educational linkages, and work incentives counseling that ENs can offer. Over time, milestone payments will become available as beneficiaries develop earnings.

9.3 Engagement with Employers

Please refer to Table 17 for the corresponding challenges associate to inadequate outreach and funding.

- **Educate employers about federal tax credits for hiring people with disabilities via workshops or webinars (Insight 2.1)**

Barriers and Challenges. Employers hold reservations about hiring individuals with disabilities due to concerns about lack of necessary skills, inability to perform certain tasks, and extra cost of accommodations, healthcare, litigations, and worker’s compensation (Fraser, Ajzen, Johnson, Hebert, & Chan, 2011; Lengnick-Hall & Kulkarni, 2008). The United States has policies to promote employment for people with disabilities, although knowledge of them among employers may not be widespread.

Evidence. Studies show that it is critical to provide employers and managers with information about the capabilities of workers with disabilities, overall compensation costs, and training on accommodations and communication skills (Fraser et al., 2011). Employers indicated that tax credits to offset accommodation costs, flexible work schedule, disability awareness training, availability of a specialized recruiting source, and short-term on-the-job-assistance with a job coach would be useful practices in facilitating hiring of people with disabilities (Houtenville & Kalargyrou, 2012).

The WOTC is a federal tax credit available to for-profit and non-profit employers which is designed to incentivize them to hire workers who are members of at least one of ten targeted groups who face significant barriers to employment, including SSI recipients (IRS, Work Opportunity Tax Credit, 2019a). The WOTC is largely used by large employers (GAO, 2001). These large employers have systems in place that enable them to efficiently identify applicants who may be members of one of the targeted groups. Small and midsize employers may not have such ready access to this information. ODEP has already developed online tools, such as TalentWorks to help incentive employers to hire and retain employees with disabilities.

Recommendation. Social Security may find it useful to raise awareness of the several federal and state tax incentives related to hiring and providing modifications and accommodations for people with disabilities including the WOTC, the Disabled Access Credit, Barrier Removal Tax Deduction, Labor for America Assisted Reemployment Program and multiple state-specific tax credits. Information about these incentives could be communicated to employers, especially the small and midsize entities, through a variety of means, including its routine communications with employers. Additionally, SSA could make workshops and webinars on the benefits of hiring SSI recipients to use the available incentives directly or through national, state or local organizations that serve the interests of various types of employer groups (IRS, 2019b).

Better engage with employers to hire youth with disabilities

Raise awareness of the WOTC, Disabled Access Credit, and Architectural Barrier Removal Tax Deduction among small and mid-sized employers through workshops, webinars and routine communications.

Small employers who may have concerns about the cost of providing accommodations to individuals with disabilities may also be eligible for the Disabled Access Credit, which permits employers who earned \$1 million or less or had no more than 30 full-time employees in the previous year to take a credit for each year in which they incur expenses for accommodations. In addition, employers may also receive assistance from state VR agencies for costs of assistive and rehabilitation technology when they employ VR clients—Employer Assistance and Resource Network on Disability Inclusion (EARN).

The Architectural Barrier Removal Tax Deduction permits businesses of any size to claim a deduction of up to \$15,000 a year for qualified expenses incurred to remove architectural and transportation barriers to the mobility of persons with disabilities (IRS, 2019b). Awareness of these incentives could also be raised in routine communications with employers and educational efforts disseminated through employer organizations.

9.4 Collaboration and Coordination Across All Levels

Please refer to Table 17 for the corresponding challenges on poor services and supports delivery and coordination.



- ***Establish clear channels of communication among all relevant agencies that provide services, supports, and training (Insight 3.1)***
- ***Promote greater collaboration between social service agencies and their partners, including the referrals to VR (Insight 3.2)***

Barriers and Challenges. Efforts to coordinate programs for transition-age youth are hindered by a variety of obstacles.

A recent GAO study states that, although the SSA used to require state Disability Determination Services (DDS) and field offices to screen for rehabilitation potential at each initial or continuing disability determination, following the passage of the Ticket to Work and Self-Sufficiency Act in 1999, VR referrals were discontinued (GAO, 2017).

SSA's rationale for discontinuance, as reported in their Program Operations Manual Systems ("the POMS"), was that the Ticket to Work and Work Incentives Improvement Act removed legislative language that explicitly required SSA to make direct referrals of SSI recipients and other beneficiaries to vocational rehabilitation. This change has been interpreted by SSA as "eliminat[ing] SSA's authority to refer [SSI] recipients for vocational rehabilitation (VR) services" in states in which the Ticket to Work program operates, which currently includes all states (GAO, 2017). Although SSA's the POMS permit local SSA staff to provide informal opportunities to educate SSI recipients about vocational rehabilitation, they are not authorized to make direct referrals (Social Security Administration, 2002).

Evidence. Currently, the primary source of referrals of transition-age youth to vocational rehabilitation is local schools³. Even so, capacity constraints may inhibit the ability of VR staff to take a more active role in helping youth plan for the transition from school to postsecondary education or employment and to collaborate with local school personnel in supporting students by participating in activities such as IEP meetings to which they may be invited (GAO, 2017).

Intensive case management has been an important feature in the YTD and PROMISE demonstrations that have sought to identify mechanisms for supporting transition-age youth in obtaining employment (Camacho & Hemmeter, 2013; Honeycutt & Livermore, 2018a). This mechanism, to some extent, compensates for the limited coordination at the federal and state levels. It also makes individualization of supports more feasible, and such customized individual supports have been shown to stronger employment effects than less customized approaches (Honeycutt, 2018b). One study of adults found that "The most positive earnings outcomes came for individuals who received the combination intervention (of) [benefits counseling and vocational rehabilitation]. Not only did the actual likelihood of employment increase significantly, but quarterly earnings were higher following intervention, and the duration of higher earnings was also greater (Gruman, 2010). However, funding such efforts can be challenging.

³ In 2015, over 80 percent of youth whose cases closed had been referred to VR agencies by their local schools (GAO, 2017)

Recommendation. Attendance by VR staff at IEP meetings could be addressed by making attendance at IEP meetings mandatory for VR staff. Such a requirement may necessitate a shift in priorities and/or funding to ensure that state VR agencies have the resources needed to meet this obligation.

To address privacy and similar concerns, SSA may find it useful to explore whether data sharing arrangements and practices such as secure messaging might permit greater data sharing in accordance with laws regarding personal information and privacy requirements (GAO, 2017). Additionally, SSA may find it worthwhile to examine the relevant statutory language and assess whether the conclusion that it no longer has the authority to make direct referrals is consistent with current interpretations of the law and/or whether this language should be modified to explicitly permit direct referrals to VR.

Alternatively, SSA could broaden the scope of a current demonstration that it is conducting, known as the Ohio Direct Referral Demonstration (ODRD), regarding the effectiveness of VR referrals for 18 and 19-year-olds at initial and continuing disability applications as well as age 18 redeterminations (“Annual Report on Section 234,” 2019). In this demonstration, the Ohio DDS refers SSI applicants and beneficiaries directly to the Ohio Bureau of Vocational Rehabilitation.

SSA could collaborate with the Centers for Medicare and Medicaid Services (CMS) to broaden the availability of case management by encouraging states to use Medicaid case management funding to meet the transition-related needs of SSI youth. Medicaid case management services are defined as “services which will assist individuals . . . in gaining access to needed medical, social, educational, and other services (42 U.S.C. 1915(g)(2)). Case management is available to youth under 21 under Medicaid’s Early and Periodic Screening Diagnostic and Treatment benefit (EPSDT), and state Medicaid agencies implementing EPSDT are required to “make appropriate use of state health agencies, State Vocational Rehabilitation agencies, and Title V grantees . . .” (42.C.F.R. §441.61; Rosenbaum, 2008). For transition-age youth over 21, state plan Medicaid case management services could be a possible source of support. Similarly, states could use targeted case management services which are commonly used to serve specific Medicaid populations, such as those with severe mental illness. Given the high percentage of SSI youth with mental health conditions, this might also be a viable option.

Encourage collaboration and coordination at all levels

- Explore whether data sharing arrangements can be made possible to help facilitate referrals and explore whether the language should be modified to explicitly permit direct referrals to VR.
- Make attendance at IEP meetings mandatory for VR staff, though this may necessitate a shift in funding and/or priorities.
- SSA should expand upon its existing demonstration project to evaluate whether direct referral to state VR agencies of SSI youth ages 14 to 17 would increase the numbers receiving vocational rehabilitation services and ultimately improve their employment outcomes.
- Collaborate with CMS to encourage states to utilize Medicaid to coordinate the array of services needed to support SSI youth in a transition to employment.

9.5 Future Research under Section 234 and 1110 Authorities

Please refer to Table 17 for the corresponding challenges to robust research and evidence gaps

- *Support research documenting challenges to program participation (Insight 4.1).*
- *Establish longitudinal studies over 3 to 5 years and more (Insight 4.2).*
- *Include a range of disabilities and confounding variables to serve as controls (Insight 4.3).*



- ***Evaluation studies should include well-defined education and a variety of employment outcomes (Insight 4.4).***

Barriers and Challenges. A significant challenge is the extent to which research studies did not ask and analyze the most appropriate policy question. The studies reviewed only measured “correlation” between work activity in adolescence and paid future work but did not address causality. In addition, none of the studies examined future earnings or income. All of the studies reviewed regarding work activity had relatively short time ranges, most evaluating future employment within 3 years of high school graduation or service exit. Most studies reviewed neglected any discussion of postsecondary education attendance as a successful outcome. Finally, other factors may be equally as important in promoting future employment, including post-secondary education, prevailing economic conditions, accessible transportation, social and life skills proficiency, and family support and expectations, and not discussed in the research studies.

Evidence. Only the Mamun et al. (2018) study applied statistical procedures to correct for the endogeneity of the key independent variables (the identification issue).⁴ This is the only study that corrected for unobservable youth characteristics with fixed individual effects. While not a demonstration project, Job Corps, two studies followed up with participants four years and 20 years after program participation. While year 4 results found the treatment group individuals had higher enrollment rate and GED/vocational degree attainment, higher earnings and hourly wages, the effect by year 20 concentrated on older participants and no effect was found for younger participants.

Recommendation. To ensure that demonstrations and research studies under the 234 and 1110 authorities of the Social Security Act can provide unbiased evidence for the policy questions that need to be addressed, the following general research criteria should be required:

- The study must be representative of the populations for which the policies will be applied, including geographically (e.g., urban and rural sites), different primary disability type and severity, SSI recipients and youth eligible but not receiving SSI.
- The study must be adequately sized to conduct analyses of subsets of the youth with disabilities population and allow for inclusion of adequate control variables in the empirical equations.
- The proposed analyses must accurately reflect the different trajectories youth in transition may take, specifically identifying the contribution of education to employment outcomes along the trajectories.
- The employment outcomes examined should include aspects beyond just whether the youth obtain paid employment, such as employment earnings, total income, and job satisfaction.
- Study timelines should be assessed both in the short-run and long-run (e.g., 6 to 8 years following school exit).
- The analytic methods need to address the endogeneity of the use of transition services and supports and work activity during adolescence; control for known, observable confounding factors; and adjust for unobservable confounding factors.

Some suggestions for future research studies include the following:

⁴ Endogeneity is a type of measurement error, where the explanatory variable is correlated with the error term in the model.

- The magnitude of the relationship between work activity in adolescence and future work activity found in the Mamun et al. (2018) that used the YTD evaluation data should be verified. Some examples on how this could be done include the following:
 - Collecting long-run follow-up information on employment and earnings on the YTD sample and analyzing the impact of work activity in adolescence on these outcomes.
 - Conducting similar analyses on data from the PROMISE demonstrations.
 - Creating a longitudinal database from state and federal administrative data that follows the employment, earnings, and SSI/DI benefits of an independent, representative sample from a cohort of youth with disabilities be analyzed over an 8- to 10-year period.

9.6 Incentivize Providers: Cost Reimbursement

Please refer to Table 17 for the corresponding challenges associate to inadequate outreach and funding:

- ***Lower the age at which VR agencies can receive cost reimbursements from age 18 to 14 (Insight 2.2)***
- ***Incentivize providers by expanding the Cost Reimbursement program to individuals less than 18 years old (Insight 2.3)***

Barriers and Challenges. There are relatively few transition-age SSI youth (ages 14-17) served by VR agencies. (GAO, 2017) At least part of the reason for the low number of youth served by VR agencies is related to funding constraints (Honeycutt, 2014).

Under the Cost Reimbursement program, SSA pays state VR agencies in the form of reimbursement for the cost of services provided when beneficiaries served by VR enter the workforce and achieve nine continuous months of earnings at or above the SGA level. The two purposes of the CR program are to make state VR services more readily available to Social Security beneficiaries with disabilities and to generate savings to the General Revenue Fund for Supplemental Security Income beneficiaries and to the Social Security Trust Fund for SSDI beneficiaries (SSA, n.d.) There is data that supports the notion that the CR program is cost effective (Hyde & O'Leary, 2018). However, the Cost Reimbursement program, as currently constituted, does not cover SSI youth under age 18 and therefore cannot act as a financial incentive for VR agencies to serve that younger cohort.

Incentivize providers to serve SSI youth aged 14 to 17

- Expand the Cost Reimbursement program availability to Ticket to Work providers.
- Additionally, SSA could limit expansion of CR payment methodology to SSI youth ages 14 to 24 to further target that population.

Evidence. Specifically, with respect SSI youth, a GAO study stated that, “Although youth receiving SSI are generally presumed to be eligible for VR services and despite the advantages of participating in VR programs, GAO found, upon review of data from five state VR agencies, that few transition-age youth (ages 14 to 17) receiving SSI had open VR service records in calendar year 2015. Specifically, in four of the five states, the percentage of transition-age youth ages 14 to 17 on SSI with open VR service records was less than 1 percent” (GAO, 2017).



Another study that examined state differences in the vocational rehabilitation experiences of youth with disabilities (Honeycutt, 2014) stated that "One state-level factor was significantly correlated with the service ratio. The mean cost of purchased services per individual served was negatively correlated with the proportion of youth applicants served, and the magnitude of the correlation was among the strongest observed for any factor. One possible explanation is that agencies with higher per-capita costs may encounter more resource constraints that limit their ability to serve all youth interested in services." VR cost reimbursement for SSI youth could potentially provide additional resources that VR agencies need to serve that population.

The VR Cost Reimbursement program appears to support return to employment and SGA for some beneficiaries. (Hyde & O'Leary, 2018). SSA administrative data shows that "...benefits foregone for work (BFW) after VR application not only exceed the VR payment amounts but, in general, are 8 to 10 times their size." (Hyde, 2018). This data is consistent with the notion that VR services are cost-effective (Hyde & O'Leary, 2018).

Recommendation. SSA should consider lowering the age at which VR agencies can receive cost reimbursement from age 18 to 14. Exploring a VR cost reimbursement program for SSI youth ages 14-16 to get an understanding if such an option would be viable for VR agencies to participate. SSA could convene a Technical Expert Panel (TEP) that would ask the question. A TEP in which RSA VR staff and experts would be invited to participate

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Appendix A — Resource Libraries and Project Tools

Table 18: Reports and studies to be included in literature review

Reports
Evaluation of Ticket to Work: https://www.ssa.gov/disabilityresearch/twe_reports.htm
Evaluation of Accelerated benefits: https://clear.dol.gov/study/accelerated-benefits-demonstration-and-evaluation-project-impacts-health-and-employment-twelve
National Job Corps Study: 20-Year Follow-Up Study Using Tax Data: https://www.dol.gov/sites/dolgov/files/OASP/legacy/files/Job-Corps-IRS-Report.pdf
Pathways to Careers: https://www.mathematica.org/our-publications-and-findings/projects/pathways-to-careers-program-evaluation
Opportunities for Improving Programs and Services for Children with Disabilities: http://nationalacademies.org/hmd/reports/2018/opportunities-for-improving-programs-and-services-for-children-with-disabilities.aspx
Institute of Medicine, Mental Disorders and Disabilities Among Low-Income Children: https://www.ncbi.nlm.nih.gov/books/NBK332882/
A Transition Guide to Postsecondary Education and Employment for Students and Youth with Disabilities, U.S. Department of Education [Produced by AIR]: https://www2.ed.gov/about/offices/list/osers/transition/products/postsecondary-transition-guide-may-2017.pdf
National Alliance for Secondary Education and Transition (NASET). “National Standards and Quality Indicators: Transition Toolkit for Systems Improvement.” Minneapolis: University of Minnesota, Institute on Community Integration, 2005: http://www.nasetalliance.org/toolkit/
Evaluation of Initiatives to Improve Adult Outcomes and Employment Opportunities for Young Recipients of Supplemental Security Income (SSI): https://www.mathematica.org/our-publications-and-findings/projects/initiatives-to-improve-adult-outcomes-and-employment-opportunities-for-young-recipients-of-ssi
Hoffman, D., Hemmeter, J., & Bailey, M. S. (2017). Vocational Rehabilitation: A Bridge to Self-sufficiency for youth who receive Supplemental Security Income.
Research Studies
Anand, Priyanka and Todd Honeycutt, “Long-Term Outcomes for Transition-Age Youth with Mental Health Conditions Who Receive Postsecondary Education Support.” <i>Journal of Disability Policy Studies</i> . May 2019.
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Schochet, P. Z., J. A. Burghardt, S. M. McConnell, et al. (2006). "National Job Corps Study and Longer-Term Follow-Up Study: Impact and Benefit-Cost Findings Using Survey and Summary Earnings Records Data." US Department of Labor, Employment and Training Administration.
Schochet, P. Z., J. Burghardt, and S. McConnell (2008). "Does Job Corps Work? Impact Findings from the National Job Corps Study." <i>The American Economic Review</i> 98 (5), 1864–1886.
Todd Honeycutt, David Wittenburg, Richard Luecking, Kelli Crane, and David R. Mann. "Potential Strategies to Improve the Employment Outcomes of Youth SSI Recipients." Mathematica Policy Research, April 18, 2018.
Wittenburg, David C., and Pamela J. Loprest. 2007. "Early Transition Experiences of Transition-Age Child SSI Recipients: New Evidence from the National Survey of Children and Families." <i>Journal of Disability Policy Studies</i> 18(3): 176–187.

Table 19: Resources for targeted search

Targeted Resources
Promoting Readiness of Minors in SSI (PROMISE)— https://www.ssa.gov/disabilityresearch/promise.htm
Youth Transition Demonstration— https://www.ssa.gov/disabilityresearch/youth.htm
Clearinghouse for Labor Evaluation and Research (CLEAR)— https://clear.dol.gov/
Department of Labor youth employment studies— https://www.dol.gov/odep/topics/youth/
Department of Labor Employment Training Administration— https://www.doleta.gov/
Transition Work-based learning demonstration: California, Maine, Maryland, Massachusetts, Vermont https://rsa.ed.gov/programs.cfm?pc=TWBLMD
Career Pathways for Individuals with Disabilities Model Demonstrations (Career Pathways) https://www2.ed.gov/programs/rsa-cpid/index.html
The Substantial Gainful Activity Project— https://www.communityinclusion.org/project.php?project_id=58
National Secondary Transition Technical Assistance Center— https://transitionta.org/
National Collaborative on Workforce and Disability— http://www.ncwd-youth.info/
Disability Research Consortium— https://www.disabilitypolicyresearch.org/our-publications-and-findings/projects/disability-research-consortium
The National Rehabilitation Information Center (NARIC)— https://www.naric.com/?q=en/NIDRR
Think College— https://thinkcollege.net/topics/program-evaluation
National Center on Secondary Education and Transition— http://www.ncset.org/
Institute on Community Integration— https://ici.umn.edu/program-areas/transition

Table 20: Screening Tool

Screening Tool
Study citation
Reviewer
Date
Screening
Focus: Does the study focus on services and supports for individuals with disabilities? (Yes or No)
Sample: Does the study involve transition-age youth ages 14 to 25?
Sample: Does the study involve transition-age youth ages 14 to 25 who are currently receiving SSI?
Sample: Does the study involve transition-age youth ages 14 to 25 who may receive SSI?
Time: When was the study published?
Age or Grade Range: What is the age or grade range?
Location: Is the study examine individuals in the United States or an OECD country?
Outcomes: Does the study address at least one outcome of interest?
Design: What is the design of the study (randomized controlled trial, quasi-experimental, regression discontinuity, single-case, descriptive, or informational)?

Table 21: Data Extraction Tool

Data Extraction Tool
Study citation
Reviewer
Date
Outcomes
What is the main outcome?
What is outcome 2?
What is outcome 3?
Services and Supports
What is the main service or support?
What is the service or support 2?
What is the service or support 3?
Design
What is the analytical approach?
Are there any data, analytical, or other issues?
Legislation
Does this relate to existing federal legislation and regulations on youth ages 14 to 25?
If so, does it show that SSA fits within the existing legislation and regulations?
Rating
What is the study design? (RCT, QED, RD)
How are the intervention and comparison groups formed?
For QEDs or RCTs with high attrition, is baseline equivalence established and statistical adjustment used for characteristics relevant to equating the groups if needed?
Are there any other data or analytical issues that would affect the rating?
What is the score of rigor for this study? (4, 3, 2, 1, NA)
Record Study Results
What is the main result of the study?
What is the supplementary result 1?
What is the supplementary result 2?
What is the supplementary result 3?
Record Study Recommendations (If author(s) made any recommendations)
What is the recommendation 1?
What is the recommendation 2?
What is the recommendation 3?
Record Study Setting
What are the services and supports examined?
Service 1: Please describe each service and fill out the following elements for the setting
o Applicability: location (state, county, or local level) and number of participants
o Responsible provider(s)
o Length of time services available
o Eligibility requirements
o Average time participants use services
o Service methodology
o Marketing and outreach methods
o Available evidence for the use of services and supports
o Incentives for youth with disabilities and their families to participate

Data Extraction Tool
o How participants are identified
o Participant characteristics (SSI receipt, age, gender, race/ethnicity, disability, health conditions, educational attainment, and income levels)
SSI receipt
Age
Gender
Race/ethnicity
Disability
Health conditions
Educational attainment
Income levels
o Identify challenges participants have in obtaining access to services and supports.

Appendix B — Objectives

Table 22: Objectives

<p>Identify and describe evidence-based research on services and supports leading to employment for youth ages 14 to 25, including evidence among youth who receive or may receive SSI.</p> <p>Identify the services and supports leading to employment for youth with disabilities ages 14 to 25, including youth on SSI;</p> <p>Describe what is working and not working when transition-age youth from ages 14 to 25 use current services and supports from federal, state, and local providers and include the following.</p> <ul style="list-style-type: none">Applicability (for example, broad or narrow);Responsible provider(s);Length of time services available;Eligibility requirements;Average time participants use services;Service methodology;Marketing and outreach methods;Available evidence for the use of services and supports;Incentives for youth with disabilities and their families to participate;How participants are identified; <p>Participant characteristics (age, gender, race/ethnicity, disability, health conditions, educational attainment, and income levels); and</p> <p>Identify challenges participants have in obtaining access to services and supports.</p>
<p>Identify and describe existing research to indicate work activity in adolescence leads to future employment among youth who receive or may receive SSI.</p> <p>Synthesis the evidence from studies of services for youth on SSI or eligible for SSI to transition from school to work (include studies involving out-of-school youth with disabilities);</p> <p>Describe what services and supports currently impact, or with policy changes, would impact better employment outcomes for youth with disabilities ages 14 to 25, including youth on SSI</p> <p>Describe what ways the services and supports do make or may make an impact on pre-employment as well as part- and full-time employment and describe the principles to impacting the successful transition; and</p> <p>Identify the indicators of what works or could work to lead youth on SSI or eligible to receive SSI to work.</p>
<p>Identify how SSA fits in within the context of existing federal legislation and regulations available to youth ages 14 to 25.</p> <p>Identify where SSA may fit in the current federal context of youth transition with regards to an individual with a disability for purposes of the Individuals with Disability Education Act (IDEA), the section 504 of the Rehabilitation</p>

Act of 1973, the sections of the Rehabilitation Act of 1973 relevant to the delivery of pre-employment transition services and transition services, Title I and Title VI of Workforce Innovation and Opportunity Act (WIOA), and Title V of the Social Security Act;

Identify what changes to SSA regulations and policies can incentivize youth on SSI and their families to engage in school and post-school transition activities leading to achieving education and vocational goals.

When reviewing the available information, the contractor shall consider incorporating the following examples for regulatory and policy changes:

Identify new initiatives for SSA to support transition-age youth in their successful transition to adulthood within the context of existing the Social Security work incentives and supports available to youth and adults;

Identify and describe how youth who receive or may receive SSI may take part in the Ticket to Work program or something similar; and

Define what initiatives from SSA would incentivize state VR programs and community service providers to agree to engage youth on SSI ages 14 to 17 and their families to achieve goals to successfully transition to employment.

Describe the gaps in lack of services and lack of access to national, state, and local supports;

Identify the system linkages and the break down within the systems linkages;

Identify a way for SSA to organize current or new policies and programs to fit in current federal context;

Identify a direction that will lead to better adult outcomes for youth who receive or may receive SSI.

Identify and describe recommendations for SSA's consideration within the context of SSA's programs and policies. The contractor must provide a minimum of five recommendations for regulatory and policy changes to support work activity among youth ages 14 to 25 who receive SSI or may receive SSI and identify recommendations. The contractor will:

Analysis of the evidence to find what supports the recommendations. The analysis involves compiling and ranking factors for successful work outcomes for youth who receive or may receive SSI;

Define what evidence there is for continuing the available services and supports from SSA for transition-age youth and evidence of what else SSA can put in place;

Describe what recommendations align with responses from the most recent RFI and say which have an evidence base; and

Identify what services to include in SSA's policies and programs, and why include the policies you recommend.

Appendix C — Services and Supports Studied

List of services and support studied by the documents we reviewed:

- Service
- VR
- Vocational training
- Assessment
- Job readiness
- Job search
- Supported employment
- College training
- Counseling
- Job training
- Job placement
- Mentoring
- Special education
- Vocational classes
- YTD
- Augmentative skills
- Diagnosis and evaluation
- IEP
- Internship
- Job shadowing
- Job skills
- Maintenance
- PSE
- Remedial training
- Self-determination
- Transportation
- Work study
- Apprenticeship
- Benefits
- Diagnostics and treatment
- ILP
- Job corps
- Job support
- Paid work
- Placement
- Restoration
- School-to-work collaborative
- SSI
- Tours
- TTW
- Work experience
- Youth service professionals
- Able
- Academic education
- Accelerated benefits
- Accommodations
- American job centers
- AmeriCorps
- Aspire
- Basic skills
- Career center
- Career coach
- Career counseling
- Career exploration
- Child welfare information gateway
- Coaching
- Collaborative model for promoting com..
- College fairs
- Community-based training
- Community employment
- Continued payment
- CTE
- Customized employment
- Discovery profile
- Education
- Employment
- Employment services
- Family involvement
- Financial coaching
- Functional curriculum
- Hands on banking
- Health care benefits
- Health education
- Health insurance
- IDA
- Inclusion
- Interviewing
- IPE
- IWRP
- Job
- Job coach
- Job counseling
- Job fairs
- Learning plan
- Miscellaneous
- Multicomponent
- NTID
- On
- Online training
- Other
- Outreach
- Parent training
- Parent-teacher consultation
- Physical integration
- Post-school goals
- Practice activities
- Project search
- Residence
- Savings account
- Services
- Social skills
- Speakers
- START
- System linkages
- Tech-prep programs
- Training
- Transition
- Transportation
- Universal design
- Vocational education
- WIPA
- Work incentives
- Work incentives benefits counseling
- Work supports
- Work incentives education
- Youth empowerment

Appendix D — Detailed RQ1 Analysis of Selected Studies

This appendix provides a closer look at eleven articles providing evidence on the relationship between the provision of transition services and supports to youth with disabilities and employment outcomes. We restricted the studies to those that focused on samples of youth ages 14 to 25 when services were received and that measured the relationship using multivariate regression techniques. We first describe the body of evidence and then discuss the findings by type of service or support, outcome measure, and receipt of SSI or DI.

D.1 Description of the body of evidence on services and supports

We have identified and reviewed eleven studies that meet these criteria. The studies and their major attributes are listed in Table 23. Four of the studies used survey data: two of the studies used data from the second National Longitudinal Transition Study (NLTS2) (Carter et al. 2011; Carter et al. 2012); one used the National Longitudinal Study of Adolescent Health (Add Health) (Enayati & Karpur, 2019); one used surveys conducted for the evaluation of the Youth Transition Demonstration (YTD) (Fraker, Cobb, Hemmeter, Luecking, & Mamun, 2018). The remaining six studies used administrative data: five of the studies used data from the Department of Education’s Rehabilitation Services Administration (RSA) Case Service Report (Form-911) database (Kaya et al. 2011; Kaya et al. 2018; Rast, Roux & Shattuck 2019; Rumrill et al. 2016); one study used linked data from the SSA Ticket Research File (TRF) and the RSA-911 database (Berry & Caplan, 2010); and one used administrative data from the Virginia Department of Aging and Rehabilitation Services (VDARS) (Dean D. , 2019). All of these databases were nationally representative, except for the YTD and VDARS databases. The data span the years from 1994 through 2015.

Sample characteristics. The sample sizes of the studies ranged from 450 youth to 25,218 youth and averaged 6,145 youth. Most studies included the full range of transition-aged youth; Enayati and Karpur (2019) looked at long-run outcomes of youth ages 12 to 18 at entry into the study; the Bronx County, New York YTD site restricted enrollment to youth in their last 2 years of high school (ages 15 to 19) at entry, and Kaya et al. (2018) restricted the sample to older youth from 19 to 25 years at application for VR services.

Several studies restricted the sample to youth with specific disabilities: autism (Kaya et al. 2015; Kaya et al. 2018; Rast et al 2019), learning disabilities (Ji, Schaller, Pazey, & Glynn, 2015), traumatic brain injury (Rumrill, et al., 2016), emotional disturbance or other significant mental illness (Bronx County, NY in Fraker et al. 2018), and severe disabilities, defined as intellectual disabilities, autism or multiple disabilities (Carter et al. 2011; Carter et al. 2012). The other four studies investigated youth with a broader set of disabilities, including mental retardation, mental illness, emotional disorders, orthopedic impairment, and other disabilities. Enayati and Karpur (2019) included both disabled and nondisabled youth but estimated the difference in the impact of transition services on each group separately.

A majority of the participants in most of the studies were male and white. The percentage of females ranged from 15.3% in a study of youth with autism to 42.9% in two studies of youth with a broad set of disabilities. In studies providing data on racial/ethnic composition, African American youth accounted for 8.9% to 26.9% of study participants and Hispanic/Latino youth accounted for 6.0% to 24.6% of study participants.

The Berry & Caplan (2010) study and the YTD in Bronx County, New York were restricted to youth receiving SSI benefits; the other five sites of the YTD included SSI and DI recipients only (Fraker et al. 2018); and although the Enayati and Karpur (2019) study included both disabled and nondisabled SSI/DI beneficiaries and nonbeneficiaries, they reported findings for each group separately. Three studies did not provide the percentage of the study sample who had received SSI/DI benefits (Carter et al. 2011; Carter et al. 2012). Among the other seven studies, the percentage of youth who had received SSI benefits varied widely, ranging from 4.8% to 63.0%.

Employment Outcomes. An employment outcome used in all the studies and reported here is whether or not the youth was employed either full- or part-time for pay. Three studies required that the pay be minimum wage or above (Kaya et al. 2015; Kaya et al. 2018; Rumrill et al. 2016), and four studies required that the work be in a community or integrated setting (Carter et al. 2011; Carter et al. 2012; Ji et al. 2015; Rast et al. 2019).

The studies also varied in the timing of when they assessed employment. Most measured employment in the short-run: two assessed employment while the youth were still receiving transition services (Carter et al. 2011; Fraker et al. 2018); five assessed employment at VR case closure (Kaya et al. 2015; Kaya et al. 2019; Ji et al. 2015; Rast et al. 2019; Rumrill et al. 2016); two 18 months to two years following VR exit (Berry & Caplan 2010; Fraker et al. 2018); and one two years following high school graduation (Carter et al. 2012). Only two studies looked at employment in the long run: Dean et al. (2019) assessed employment each quarter up to eight years following VR service application, and Enayati and Karpur (2019) assessed employment 14 years after study entry.

Only three studies investigated the impact of VR services on earnings. They all used different variables to represent earnings. Dean et al. (2019) used the log of quarterly earnings and Enayati and Karpur (2019) use the log of the hourly wage rate. In both of these studies, the earnings equations were conditional on employment. In contrast, Fraker et al. (2018) estimated the impact of annual income from earnings for all study participants regardless of employment history. Using a similar annual earnings variable, Berry and Caplan (2010) estimated the impact of PSE on earnings growth from 2001 to 2005.

Services and supports. The services for which the studies provided estimates of the correlation with employment outcomes are shown in Table 24 and Table 25. For the most part, these services are those listed in the in the RSA Case Service Report 911 form.

As discussed below, most authors dropped services and other variables from the final estimated models if they were not statistically significant in preliminary bivariate analyses, keeping only those with significant impacts. Thus, some services were tested in studies but are not listed in the tables which show services in the final models only. In other studies, too few youths received the service, and therefore, they could not be tested. Services that were not significant or had too few users in all studies include assessment, basic academic remedial or literacy training, job readiness training, disability-related augmentative skill training, transportation, readers, interpreters, personal attendants, and technical assistance. These services may be important elements of a service package represented by another service within the package in the final model. For example, assessment and job readiness training may be critical for obtaining and keeping a job for many youths with disabilities, but job placement may have subsequently been provided to these youth and was the final key service enabling them to work.

Some studies estimated the correlation between employment outcomes and a package of services. Fraker et al. (2018) estimated the receipt of employment services in the YTD projects. These included career counseling, resume preparation support, job-search assistance, job shadowing and apprenticeship, SSI and DI benefits and work incentives counseling, and other employment services. Enayati and Karpur (2019) estimated the impact on employment outcomes of any VR service receipt while in high school.

Analytic techniques. Most of the studies used logistic regression to estimate the correlation between VR services and employment and presented the odds ratios for the different service variables. Enayati and Karpur (2019) use a linear probability model, and Dean et al. (2019) use a dynamic discrete choice model.

Many studies also used statistical tests to reduce the number of explanatory variables in the equation to the most parsimonious and “best fit” model (e.g., stepwise regression or purposeful selection as described by Hosmer et al.) (2013). However, these procedures eliminated from the equation many VR services that may have been provided as part of a package of services (see discussion above), as well as other important theoretical constructs.

More importantly, most studies used a very small number of control variables outside of a few demographic characteristics, such as age, race/ethnicity, receipt of SSI, and educational attainment at entry. Exceptions include the Berry and Caplan (2010) and Dean et al. (2019) which linked data from multiple administrative databases and thereby were able to control for additional confounders, and Fraker et al. (2018) and Enayati and Karpur (2019) which used a set of longitudinal surveys designed to gather a rich set of information on the characteristics of the youths, family members, and schools staff. As discussed in the section on Research Question 2, the omission of important explanatory variables could lead to biased estimates of the relationship between the various services and employment outcomes.

Only a handful of studies used more sophisticated study designs and statistical techniques to address the correlation problem. Fraker et al. (2018) was based on a randomized controlled trial which designed to balance both the observable and unobservable characteristics of the treatment and control sample populations. Rast, Roux, and Shattuck (2019), who were interested only in the impact of postsecondary education (PSE) training, used the receipt of selected VR services as variables to construct propensity score weights. This procedure equivocated the receipt of services among the sample with PSE training and the sample without PSE training. Dean et al. (2019) controlled for pre-service labor market differences between those who do and do not receive VR services in a difference-in-difference design and explicitly accounted for correlations between the unobserved variables in separate PERT, VR service, and labor market equations in the factor model. Finally, Ji et al. (2015) divided their large sample of 25,218 youth into two equivalent subgroups and compared the results of their model building and final estimations between the two samples as a test of the final model.

Furthermore, few studies addressed the issue of the endogeneity of VR services and PSE in their study design and analyses. Carter et al. (2012) included only youth who were out of school during the two years prior to assessment of employment for the analysis. Dean et al. (2019) used instrumental variables to address the resulting endogenous selection problem.

D.2 Evidence of the relationship between transition services and paid employment by service type

Table 24 provides the estimated odds ratio of the relationship between the receipt of specific transition services/supports and paid employment from studies that used logistic regression. Table 25 provides evidence presented in other forms. Evidence of the relationship between transition service/supports and earnings are also provided in Table 25.

The two VR services with the strongest evidence of a positive correlation on paid employment are job placement assistance and on-the-job supports (Table 24). These services each had three or more studies with odds ratios over 2.00. We also found evidence in two or more studies of a positive correlation for job search instruction, post-secondary education training, on-the-job training, and maintenance services. Descriptions of each of these services from the RSA's Case Service Report (Form-911) and the evidence for each are provided below.

Although the evidence from these studies are overwhelmingly positive, the study methodologies have several flaws (e.g., short time frames, inadequate controls for confounding factors, no correction for the endogeneity of VR participation) as discussed above. These flaws tend to bias the correlations upwards. Furthermore, the methods do not provide evidence of causation, only correlation. Hence, the reader should interpret the results with caution when using them to develop policy.

Job placement assistance. Job placement assistance is defined as referral to a specific job resulting in an interview, whether or not the individual obtained the job. Job placement assistance was one of the most frequently received services among the study subjects, with 36% to 49.3% of participants receiving the service in studies reporting this data. Four of the reviewed studies found the odds of a transition-aged youth with disabilities having a job at the end of VR services to be 2.23 to 3.75 times higher if they had received job placement assistance than if they had not (Kaya et al. 2018; Kaya et al. 2015, Rumrill et al. 2016; Ji et al. 2015).

A fifth study found a significant negative impact of job placement assistance: Berry and Caplan (Berry & Caplan, 2010)(2010) found job placement services provided through VR decreased the odds of employment two years later by 15%. This study included youth with a wider range of disabilities than the other studies and, in contrast to the other studies, included only SSI beneficiaries. The study also evaluated employment status two years later than the other studies and controlled for more individual and state-level characteristics than the other studies. The authors suggest that job placement may be insufficient for transition-aged SSI beneficiaries without other subsequent or recurring supports.

On-the-job supports. On-the-job supports are support services provided to an individual who has been placed in employment in order to stabilize the placement and enhance job retention. Such services include job coaching, follow-up and follow-along, and job retention services. These services were frequently used among youth with autism—Kaya et al. (2018) reported that 43.2% of their study subjects had received on-the-job supports by case closure. Three of the reviewed studies found the odds of a transition-aged youth with disabilities having a job at the end of VR services to be 2.25 to 4.30 times higher if they had received on-the-job supports than if they had not (Kaya et al. 2018; Kaya et al. 2015; Rumrill et al. 2016).

Job skills training. Occupational, vocational, or job skills training helps prepare students for gainful employment in a recognized occupation but does not lead to an academic degree or certification. The frequency of its use among youth in the reviewed studies varied from less than 10% to 30.9%. Three

studies found a significant positive impact on short-term employment, with the odds of a transition-aged youth with disabilities having a job at the end of high school or other VR services ranging from 1.21 to 2.28 times higher if they had received job skills training than if they had not (Ji et al. 2015; Rumrill et al. 2016; Kaya et al. 2015). A fourth study had the largest estimated odds ratio at 2.43, but it was not statistically significant (Carter et al. 2011).

Job search instruction. Job search instruction includes help in preparing resumes, identifying appropriate job opportunities, and developing interview skills, and may include making contacts with companies on behalf of the youth. Carter et al. (2012) reported that a quarter of the youth with severe disabilities receiving these services increasing their odds of employment after high school graduation two-fold. Two other studies found significant but smaller increases in the odds of employment from job search instruction at VR case closure of 34% to 45% (Kaya et al. 2015; Rumrill et al. 2016, respectively). A fourth study found a non-significant, positive impact of job search instruction on employment two years after VR exit among transition-aged SSI recipients (Berry & Caplan 2010).

Post-secondary education (PSE) training. PSE training includes full- or part-time academic training above the high school level that leads to a degree (associate, baccalaureate, graduate or professional), a certificate or other recognized educational credential. Such training may be provided by a four-year college or university, community college, junior college or technical school. Two of the reviewed studies found 18% to 21% of VR cases among transition-aged youth with disabilities received PSE training and that their odds of having a job at VR case closure were 1.59 to 1.88 times higher compared to youth who had not received PSE training (Ji et al. 2015; Rast et al. 2019).

A third study found a significant negative impact of PSE training: Berry and Caplan (2010) found PSE training provided through VR decreased the odds of SSI participants having paid employment two years after VR case closure by 29%. Presumably, some youth were attending PSE instead of working in the first few years following VR case closure. In the same study, Berry and Caplan (2010) also found that college or university training was the strongest predictor of earnings growth in the first five years after VR case closure and that workers with sustained college or university training demonstrated the greatest likelihood of reducing or moving away from SSI cash benefits altogether.

On-the-job training. On-the-job training encompasses training in specific job skills by a prospective employer. It includes apprenticeship training programs conducted or sponsored by an employer, a group of employers, or a joint apprenticeship committee representing both employers and a union. Generally, the individual is paid during this training and will remain in the same or a similar job upon successful completion. Two studies of youth with autism found that less than 10% had received on-the-job training and that the odds of these youth having paid employment at VR case closure was 1.67 to 1.74 times higher if they had received these services than if they had not (Kaya et al. 2015; Kaya et al. 2018). A third study reported a non-significant, positive impact of on-the-job training on employment two years after VR exit among transition-aged SSI recipients (Berry & Caplan 2016).

Maintenance services. Maintenance services refers to monetary support provided for those expenses, such as food, shelter and clothing, that are in excess of normal expenses and are necessitated by the individual's participation in an assessment for determining eligibility and VR needs or while receiving services under an individualized plan for employment (IPE). These services were received by 9.2% of youth with autism in the Kaya et al. (2018) study. This study and a second study (Rumrill et al. 2016) found that the odds of paid employment at VR case closure was increased by more than 50% among

transition-aged youth with disabilities who had received maintenance services compared to those who had not.

D.3 Evidence of the relationship between transition services and earnings

Table 25 provides evidence of the relationship between transition services and earnings in both the short- and long-run for youth with disabilities. Only three studies are listed—too few to be able to see patterns in the results.

In the short run, Fraker et al. (2018) found significant, positive correlations between receipt of YTD services and annual earnings in only two of six study sites. Dean et al. (2019) found significant, positive correlations between the log of quarterly earnings and Post-secondary Education and Rehabilitation Transition services (PERT), diagnosis and evaluation, and training services.

In the long run, Enayati and Karpur (2019) found no significant correlations between any VR service and the log of hourly wages for nondisabled youth and youth with disabilities who were not receiving SSI or DI, but a significant, negative correlation for youth with disabilities receiving SSI or DI. Dean et al. (2019) found significant, positive correlations between the log of quarterly earnings and the same transition services with significant, positive correlations in the short run plus restoration services.

D.4 Evidence of the relationship between transition services and employment outcomes by SSI/DI status

In general, transition services and supports appear to have a positive effect among the targeted population of youth with disabilities receiving or eligible to receive SSI or DI. Enayati and Kampur (2019) show a significantly positive correlation between receipt of any VR service in high school and paid work 14 years later among youth with disabilities, with a greater positive correlation among youth with disabilities who were also recipients of SSI or DI.

However, in two studies focusing on SSI beneficiaries, the findings are not as strong as those in studies of broader samples of youth with disabilities. Berry and Caplan (2010) found a significant, negative correlations between paid employment and job placement assistance and between paid employment and PSE, and non-significant correlations between paid employment and job search instruction and between paid employment and on-the-job training (Table 24). Fraker et al. (2018) found significant, positive correlations between paid employment and the YTD bundle of transition services and supports in only two of the six study sites providing services to SSI recipients (Table 25).

The findings on the correlation between earnings and transition services for SSI recipients are also mixed, varying by type of service or support received. Berry and Caplan (2010) found the mean earnings growth among SSI youth with college or university training was 1.8 times higher than for those without college or university training in 2001 and increased in each of the following four years. On the other hand, Fraker et al. (2018) found significant, positive correlations between receipt of YTD services and annual earnings in only two of six study sites in the short-run, and Enayati and Karpur found a significant, negative correlation between the receipt of any VR service in high school and the log of hourly wages 14 years later.

Table 23: Description of studies providing evidence on what services and supports lead to employment

Citation	Year and Geographic Area Covered, & Sample Size	Data Source and Inclusion Criteria	Participant Demographics & Primary Disability	Study Design	Employment Outcomes Analyzed (Percentage employed)
Berry & Caplan, 2010	Year: 2001-2003, Geographic area: All US States, Sample size: 3,046 youth with disabilities	Linked SSA Ticket Research File (TRF) and the RSA-911 databases for SSI beneficiaries ages 16-25 and had self-reported earnings in 2001	Age in 2001 - 16-25; Female - 40.2%; AfrAm - 18.8%; Primary disability - 61.0% mental retardation, 8.9% mental illness/emotional disorder, 8.3% LD, 7.3% orthopedic impairment, 14.5% other; SSI = 100%	Hierarchical logistic modeling that controlled for both individual and state characteristics	1. Whether employed at any time in 2003 (2 years after exiting VR) based on positive earnings for the year in the TRF (Percentage employed in 2003 not given); 2. annual earnings
Carter, Austin & Trainor 2011	Year: 2000-2006 (early - still in school), Geographic area: Nationally representative, Sample size: 1,510 youth with severe disabilities	Wave 1 NLT2 participants with severe disabilities defined as intellectual disabilities, autism, or multiple disabilities; and had known employment status	Age at enrollment- 13-16; Female -37.1%; AfrAm - 26.9%; Hispanic - 12.3%; Below poverty - 35.4%; Primary disability - 25.8% intellectual disabilities, 34.4% autism, 39.7% multiple disabilities; SSI/DI - not given	Weighted logistic regression model controlling for demographic, family, community, and program factors that were significant at $p<0.05$ in prior regressions controlling only for demographic factors	Whether had a paid community job in the past 12 months and/or held a paid work-study job (31.3%)
Carter, Austin & Trainor 2012	Year: 2000-2008, Geographic area: Nationally representative, Sample size: 450 total youth with severe disabilities	Wave 1 NLT2 participants with severe disabilities defined as intellectual disabilities, autism, or multiple disabilities in Wave 1, were in school in Wave 2 or Wave 3 and out of school in the subsequent Wave; and had known employment status	Age at enrollment - 13-16 yrs; Female - 31%; African Am - 23%; Primary disability - 35.6% intellectual disability, 26.7% autism, 37.8% multiple disabilities; SSI - not given	Weighted logistic regression model controlling for demographics, family, community, and program factors that were significant at $p<0.05$ in prior regressions controlling only for demographic factors	Whether had paid community job 2 years following high school graduation (27%)
Dean et al. 2019	Year: 2000-2008, Geographic area: State	Panel data set containing more than a decade of employment and service	Age - 15-25; Female - 39.3%; Nonwhite - 32.4%; Primary disability - 10.6%	Multivariate discrete choice model where VR	1. Whether worked in the quarter (45.3%); 2. log

Citation	Year and Geographic Area Covered, & Sample Size	Data Source and Inclusion Criteria	Participant Demographics & Primary Disability	Study Design	Employment Outcomes Analyzed (Percentage employed)
	of Virginia, Sample size: 3,073	provision information for disabled youth who applied to receive VR services from the Virginia DARS in State FY 2000; excluded individuals whose first service spell was prior to FY 2000	musculoskeletal, 27.7% mental illness, 26.1% intellectual disability, 44.3% learning disability, 2.8% substance abuse disorder; SSI/DI - not given	services are endogenously selected	quarterly earnings conditional on working
Enayati and Karpur 2019	Year: 1994-2008, Geographic area: Nationally representative sample of disabled and nondisabled youth, Sample size: 8,584 all; 1,230 disabled	National Longitudinal Study of Adolescent Health (Add Health) that followed youth in grades 7-12 in 1994-95 for 14 years to 2008.	Age - 12-18 at entry and 26-32 at evaluation; Female - 42.9% (41.5% of disabled); African Am - 18.2% (15.0% of disabled); Hispanic - 15.5% (13.6% of disabled); Disabled - 14.3%; SSI/SSDI - 14.8% (22.1% of disabled);	Linear probability model controlling for demographic variables, grade retention, self-reported health, verbal aptitude, maternal characteristics and school characteristics including school fixed effects	1. Whether currently employed (14 years after study entry) (57% disabled SSI/SSDI beneficiaries, and 78% disabled nonbeneficiaries); 2. log hourly wage conditional on having a history of employment
Fraker, Cobb, et al. 2018	Year: 2005-2014, Geographic area: 6 U.S. project sites, Sample size: 5,103 total (2,347 controls, 2,756 treatment)	All sites, except MD, restricted enrollment to youths who were SSI or DI beneficiaries; Bronx Co. further restricted enrollment to SSI recipients. Bronx Co., NY: SSI only. Maryland: Last 2 years of high school and had a severe emotional disturbance or other significant mental illness (i.e., high risk of receiving SSI as adults)	Age - 15-25 at entry; Female - 42.9%; AfrAm - 8.9%; Hispanic - 24.6%; Mental illness - 17.5%, Cognitive or developmental - 43.3%, Learning or ADD - 7.0%, Physical - 23.9%, Speech, hearing, or visual - 8.2%; SSI/DI - 100%	RCT with follow-up surveys and administrative data evaluated at 1- and 3-years following enrollment. Logistic regression used for binary outcome variables and OLS for continuous outcome variables	1. Paid employment (22.8% to 53.4%); 2. Income from earnings
Ji, et al. 2015	Year: Cases closed in FY 2012, Geographic area: All US States,	VR clients in the RSA-911 database with learning disabilities, aged 15-18 who applied for services	Age - 15-18; Female - 38.7%; AfrAm - 22.8%; Hispanic - 18%; Primary or	Sample was split in two groups. Multivariate logistic regression was run separately on each	Successful employment defined as employment in a competitive, integrated setting for at least 90 days (54.7%)

Citation	Year and Geographic Area Covered, & Sample Size	Data Source and Inclusion Criteria	Participant Demographics & Primary Disability	Study Design	Employment Outcomes Analyzed (Percentage employed)
	Sample size: 25,218 youth with learning disabilities	from the state/federal VR system	secondary disability - SSI/SSDI - 4.8%;	sample. Models were built using forward stepwise entry of variables	
Kaya et al. 2015	Year: Cases closed in FY 2011, Geographic area: All US States, Sample size: 4,322 VR clients with autism	VR clients in the RSA-911 database who had a primary diagnosis of autism, were ages 16-25 years and unemployed at application, and had their cases closed in FY 2011	Age at application - 16-25; Female - 15.3%; AfrAm - 10.1%; Hispanic - 6.0%; Primary disability - 100% autism; SSI/SSDI - 33%	Multivariate logistic regression analysis with purposeful selection of explanatory variables that included demographic, Social Security disability benefits, and VR services	Competitive employment defined as working full- or part-time in an integrated setting or a state managed BEP, or self-employed, for which the individual is paid at or above minimum wage (50%)
Kaya, et al. 2018	Year: Cases closed in FY 2013, Geographic area: All US States, Sample size: 3,243 VR clients with autism	VR clients in the RSA-911 database with a primary diagnosis of autism, 19-25 years old, unemployed at the time of application for VR services, accepted into VR program, received at least one service, and had their cases closed in FY 2013	Age at application - 19-25; Female - 16.9%; AfrAm - 10.8%; Hispanic - 6.8%; Primary disability - 100% autism; SSI/SSDI - 43.7%	Multivariate logistic regression analysis with purposeful selection of explanatory variables that included demographic, Social Security disability benefits, and VR services	Competitive employment defined as working full- or part-time in an integrated setting or a state managed BEP, or self-employed, for which the individual is paid at or above minimum wage (55.4%)
Rast, Roux, & Shattuck 2019	Year: Cases closed in FY 2015, Geographic area: All US States, Sample Size: 11,503 youth with autism	VR clients in the RSA-911 database ages 14-24 at application who received VR services and had case closed in FY 2015	Age at application 14-24; Female - 16.9%; AfrAm - 9.7%; Hispanic - 6.6%; Primary or secondary disability - 100% autism; SSI/SSDI at application - 34.2%	Propensity score weighted logistic regression where the weights were based on demographics, source of income, and VR history including receipt of job placement, on-the-job supports, job search assistance, job readiness training, and VR counseling	Employment at exit from VR, defined as full- or part-time job in an integrated setting paying below, at or above the minimum wage or self-employment. Employment in a state agency managed BEP, working as an unpaid family worker, and working as a homemaker were excluded (59.6%)

Citation	Year and Geographic Area Covered, & Sample Size	Data Source and Inclusion Criteria	Participant Demographics & Primary Disability	Study Design	Employment Outcomes Analyzed (Percentage employed)
Rumrill, et al. 2016	Year: Case closed in FY 2011, Geographic area: All US States, Sample size: 1,546 youth with traumatic brain injury	VR clients in RSA-911 database with traumatic brain injury, ages 16-25 at the time of application, whose VR cases were closed in FY 2011	Age at application - 16-25; Female: 32.8%; AfrAm - 13.1%; Hispanic - 9.6%; Primary disability = 100% traumatic brain injury; SSI/SSDI = 63%	Logistic regression analysis controlling for demographics, SSI receipt, and secondary disabilities	Competitive employment defined as working either full- or part-time in an integrated setting, as self-employed, or in a state-managed BEP for a payment of minimum or above-minimum wage (49.7%)

Notes: BEP - Business Enterprise Program; FY - fiscal year; IEP - Individualized Education Program; NLT - National Longitudinal Transition Study; RSA - Rehabilitation Services Administration (U.S. Department of Education); SSI - Supplemental Security Income; SSDI - Social Security Disability Insurance; VR - vocational rehabilitation; Virginia DARS - Virginia Department for Aging and Rehabilitation Services

Table 24 Evidence of impact of specific transition services¹ on employment outcomes

Citation	Percentage of Sample Youth Using Service	Timing of Employment Assessment	Odds Ratio (95% CI or p-value)
Job placement assistance			
Kaya, et al. 2018	49.3%	At VR case closure	3.75 (3.20, 4.41)
Kaya, et al. 2015	46.6%	At VR case closure	3.15 (2.71, 3.66)
Rumrill, et al. 2016	40.7%	At VR case closure	2.55 (1.99, 3.27)
Ji, et al. 2015	36.0%	At VR case closure	Sample 1: 2.88 (p = 0.000) Sample 2: 2.23 (p = 0.000)
Berry & Caplan, 2010	NG	2 years after exiting VR	0.85 (p < 0.05)
On-the-job supports			
Kaya, et al. 2015	NG	At VR case closure	4.30 (3.69, 5.01)
Kaya, et al. 2018	43.2%	At VR case closure	3.20 (2.73, 3.77)
Rumrill, et al. 2016	NG	At VR case closure	2.25 (1.71, 2.96)
Job skills training			
Carter, Austin & Trainor 2011	30.9%	In high school	2.43 (0.91, 7.26) (NS)
Ji, et al. 2015	14.0%	At VR case closure	Sample 1: 2.28 (p = 0.000) Sample 2: 2.19 (p = 0.000)
Rumrill, et al. 2016	NG	At VR case closure	1.39 (1.00, 1.93)
Kaya, et al. 2015	<10%	At VR case closure	1.21 (1.02, 1.44)
Job search instruction			
Carter, Austin & Trainor 2012	25%	2 years after HS graduation	1.98 (1.00, 3.92)
Rumrill, et al. 2016	NG	At VR case closure	1.45 (1.10, 1.91)
Kaya, et al. 2015	NG	At VR case closure	1.34 (1.12, 1.59)
Berry & Caplan 2010	NG	2 years after exiting VR	1.10 (NS)
Post-secondary education training			
Ji, et al. 2015	21.2%	At VR case closure	Sample 1: 1.78 (p = 0.000) Sample 2: 1.88 (p = 0.000)
Rast, Roux, & Shattuck 2019	18.3%	At VR case closure	1.59 (1.38, 1.84)
Berry & Caplan 2010	NG	2 years after exiting VR	0.71 (p < 0.001)
On-the-job training			
Kaya, et al. 2018	5.2%	At VR case closure	1.74 (1.19, 2.55)
Kaya, et al. 2015	<10%	At VR case closure	1.67 (1.29, 2.16)
Berry & Caplan 2016	NG	2 years after exiting VR	1.04 (NS)



Citation	Percentage of Sample Youth Using Service	Timing of Employment Assessment	Odds Ratio (95% CI or p-value)
Internship, tech prep, or entrepreneurship			
Carter, Austin & Trainor 2011	5.7%	In high school	3.36 (0.76, 14.83) (NS)
Career skills assessment			
Carter, Austin & Trainor 2011	35.8%	In high school	2.12 (0.98, 4.57) (NS)
IEP primary goal vocational skills			
Carter, Austin & Trainor 2012	50%	2 years after HS graduation	1.74 (1.00, 3.04)
Rehabilitation technology			
Kaya, et al. 2015	<10%	At VR case closure	1.69 (1.10, 2.60)
Maintenance services			
Rumrill, et al. 2016	NG	At VR case closure	1.59 (1.16, 2.16)
Kaya, et al. 2018	9.2%	At VR case closure	1.55 (1.17, 2.05)
Information referral			
Rumrill, et al. 2016	NG	At VR case closure	1.38 (1.03, 1.84)
Kaya, et al. 2018	19.5%	At VR case closure	0.71 (0.62, 0.92)
Vocational rehabilitation counseling and guidance services			
Kaya, et al. 2015	61.5%	At VR case closure	1.32 (1.14, 1.54)
Supported Employment			
Berry & Caplan, 2010	NG	2 years after exiting VR	1.14 (p < 0.05)
Diagnosis and treatment			
Kaya, et al. 2018	20.4%	At VR case closure	0.69 (0.56, 0.84)
Other services			
Kaya, et al. 2018	21.9%	At VR case closure	1.50 (1.23, 1.81)
Kaya, et al. 2015	NG	At VR case closure	1.43 (1.21, 1.68)

Notes: CI - confidence interval; NG - not given; NS - not significant; VR - vocational rehabilitation

¹Other services investigated by the authors but not found to be statistically significant in the modeling phase include assessment, basic academic remedial or literacy training, job readiness training, disability-related augmentative skill training, transportation, readers, interpreters, personal attendants, and technical assistance.

Table 25: Evidence of impact of bundled transition services on employment outcomes in recent studies

Citation	Percentage of Sample Youth Using Service	Short-run Employment (0-2 years after VR services)	Long-run employment (> 2 years after VR Services)	Short-run Earnings (0-2 years after VR services)	Long-run Earnings (> 2 years after VR Services)
Youth Transition Demonstration (YTD)					
Fraker, Cobb, et al. 2018	YTD employment services	Percentage point difference (p-value)		Change in annual earnings (p-value)	
Colorado	54.4% (Avg hrs 4.0)	0.2 pp (p=0.96)		-\$94 (p=0.76)	
Bronx Co., NY	91.7% (Avg hrs 20.7)	-0.1 pp (p=0.98)		\$25 (p=0.89)	
Erie Co., NY	85.0% (Avg hrs 4.8)	7.7 pp (p=0.03)		\$521 (p=0.11)	
Florida	99.0% (Avg hrs 13.9)	7.8 pp (p=0.02)		\$615 (p=0.04)	
Maryland	99.5% (Avg hrs 20.2)	3.6 pp (p=0.35)		\$1,162 (p=0.06)	
West Virginia	96.4% (Avg hrs 23.6)	5.7 pp (p=0.11)		\$241 (p=0.40)	
Post-secondary Education and Rehabilitation Transitions (PERT)					
Dean et al. 2019		Coefficient (p-value)	Coefficient (p-value)	Coefficient of log quarterly earnings (p-value)	Coefficient of log quarterly earnings (p-value)
PERT	12.8%	0.271 (p<0.05)	0.438 (p<0.05)	0.132 (p<0.05)	0.194 (p<0.05)
Diagnosis and evaluation	60.4%	0.198 (p<0.05)	0.098 (p<0.05)	0.177 (p<0.05)	0.471 (p<0.05)
Training	40.3%	0.287 (p<0.05)	0.133 (p<0.05)	0.215 (p<0.05)	0.151 (p<0.05)
Education	16.0%	0.132 (p<0.05)	0.286 (p<0.05)	0.105 (p<0.05)	0.623 (p<0.05)
Restoration	28.9%	-0.026 (NS)	-0.191 (p<0.05)	-0.060 (NS)	0.122 (p<0.05)
Maintenance	28.5%	-0.154 (p<0.05)	-0.129 (p<0.05)	-0.028 (NS)	0.023 (NS)
Other services	36.3%	0.312 (p<0.05)	0.472 (p<0.05)	0.378 (p<0.05)	0.628 (p<0.05)
Any Vocational Rehabilitation Service in High School					
Enayati and Karpur 2019			Percentage point difference (p-value)		Change in log hourly wages (p-value)
NonDisabled & NonBeneficiary	1%		2 pp (NS)		0.06 (NS)
NonDisabled & Beneficiary	3%		7 pp (NS)		-0.13 (NS)
Disabled NonBeneficiary	2%		20 pp (p<0.05)		0.03 (NS)
Disabled Beneficiary	2%		30 pp (p<0.05)		-0.41 (p<.05)

Notes: NS - not significant; VR - vocational rehabilitation

Also see Section 4 Describe Pathways to Employment for an example of how the evidence review will affect the depiction of actual pathways to employment.
