



research brief

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Rehabilitation Research & Training Center



## Transition-Age Youth who Seek Services at Vocational Rehabilitation Agencies for the Blind: Six-Year Outcomes

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Federal and state-funded vocational rehabilitation (VR) agencies for the blind provide special supports and services to people who are blind or visually impaired to help them reach their employment goals, such as finding a job or returning to work. These agencies are required to help transition-age youth—youth ages 14 to 24—find work and develop skills to support their future employment and independence. States may have one or two VR agencies. Those with one agency (a combined VR agency) serve all eligible individuals, including those with blindness or visual impairments. Those with two agencies have one that serves people who are blind (blind VR agency) and one that serves people with all other impairments (general VR agency).

2

Past studies have focused on promoting employment for VR clients who are blind (Giesen and Cavanaugh 2012, for example). But to our knowledge, no researchers have published findings on the long-term outcomes of transition-age youth who seek services at blind VR agencies, in terms of their employment, earnings, or receipt of benefits from the Social Security Administration’s (SSA’s) disability programs. Findings on this topic are important for VR administrators and counselors charged with helping their young clients reach their employment goals. And they are doubly important given the need for competitive, integrated employment and more services for transition-age youth, as mandated by the Workforce Innovation and Opportunity Act (U.S. Department of Education n.d.).

To help fill this gap in knowledge, we explored the long-term outcomes for transition-age youth who applied and were found eligible for services at blind VR agencies from 2004 to 2007. Our analyses built on previous research on youth who applied to general and combined VR agencies (Honeycutt et al. 2017a, 2017b; Martin et al. forthcoming in 2018). This research showed that outcomes six years after entry into VR services varied a great deal between VR participants, based on their education and employment status at application. For example, youth who were working or in postsecondary school when they applied for VR services were more likely to have higher earnings, had larger reductions in their SSA benefits (if they were receiving them at application), and were less likely to eventually receive SSA benefits (if they did not already receive them). In contrast, youth who did not have a high school diploma and were neither working nor in school when they applied for VR services had lower earnings and were more likely to be on the SSA benefit rolls.

## Methods

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This brief focuses on the individual characteristics—especially the role of human-capital characteristics such as educational status and work experience—associated with VR status, earnings, and SSA-benefit outcomes of youth who apply to blind VR agencies. In 2015, 24 states ran blind VR agencies. In our sample, between 2004 and 2007, 4,287 youth applied and were deemed eligible for VR services from these agencies. We used ordinary least-squares or logistic regression models for each outcome, controlled for individual and agency characteristics, and restricted the sample to only youth at blind VR agencies (with other restrictions depending on the outcome; see Appendices A, B, and C for details). We did not compare the statistics of youth at blind VR agencies with youth at general or combined VR agencies because the comparison would not be “apples to apples;” blind VR agencies serve a much different youth population than other VR agencies.

## Data Sources

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We used data from the Rehabilitation Services Administration’s Case Service Report (RSA-911) matched to SSA’s Disability Analysis File (DAF) and the Master Earnings File (MEF). RSA-911 files used in this analysis contain administrative data compiled annually for everyone who exited a blind VR agency in a given fiscal year; the files include these individuals’ demographic characteristics, disability information, service descriptions, and outcomes related to VR case closure status. The DAF is intended to support longitudinal

research on SSA's disability programs. This file includes a record for every person ages 18 to 65 who received benefits from Supplemental Security Income (SSI) or Social Security Disability Insurance (SSDI) in at least one month since 1996. It also includes all youth ages 10 to 17 who received benefits in any month since 2005. Among other data, the DAF includes variables on monthly benefit receipt and amounts (Bronnikov et al. 2016). By matching these two data sets, the RSA-911 and DAF, we can determine a person's SSA-benefit status at the time of VR application, calculate SSA benefits forgone due to work, and track new enrollments in SSA benefit programs after VR application.

Finally, we matched the DAF and RSA-911 records to longitudinal data from the Internal Revenue Service (IRS) in SSA's MEF, which includes earnings records for 96 percent of the U.S. workforce (Olsen and Hudson 2009). This enabled us to see the annual earnings for each record in the analysis file from 2004 through 2014. Access to the MEF data is restricted to people who meet IRS code requirements; one of the study authors, a qualified SSA employee, served in this role.

Matched data are particularly useful for conducting longitudinal research. However, the RSA-911 and DAF data have two limitations that do not significantly affect our results but should be noted. First, the RSA-911 data are collected and intended for administrative—not research—purposes. They therefore do not include variables such as motivation and social supports, which might have been included had the data been developed as part of a study. Second, the DAF age restriction means that we are unable to identify a very small number of 2004 youth VR applicants who had SSA benefits in 2004 but not in subsequent years.

Despite these limitations, the administrative data sets together provide a useful composite of young people's experiences after VR application.

## **Demographic Characteristics**

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Figure 1 shows the characteristics of youth at blind VR agencies, including their sex, race, ethnicity, and receipt of public benefits. At the top are the categories for education and employment status at application, which will be the focus of later analyses because these categories correspond to long-term outcomes (see Appendix D for the definitions of these variables).

The largest categories of youth at blind VR agencies were those who had a high school diploma but were not working (25 percent) and those who were enrolled in high school at the time of VR application (23 percent). About 13 percent of youth were ages 18 or younger and did not have a high school diploma but were working at application. These youth were likely enrolled in high school, but the administrative data did not include details on both their educational enrollment and work status at application. In addition, 12 percent of youth did not have a high school diploma and were not working, 11 percent of youth had a high school diploma and were working at the time of VR application, and 9 percent were enrolled in postsecondary school.

At the time of VR application, more than half of youth (52 percent) at blind VR agencies received benefits from SSI, SSDI, or both (with the majority receiving SSI benefits). This pattern could be due to youth with blindness being more likely to qualify for SSI and SSDI because of the severity their health conditions.

Regarding other demographic characteristics, more youth applicants at blind VR agencies were male than female, the majority were white, and almost half were ages 14 to less than 19. In addition, less than 1 in 10 received public benefits other than SSA disability benefits (such as benefits from Temporary Assistance for Needy Families).

## VR Status

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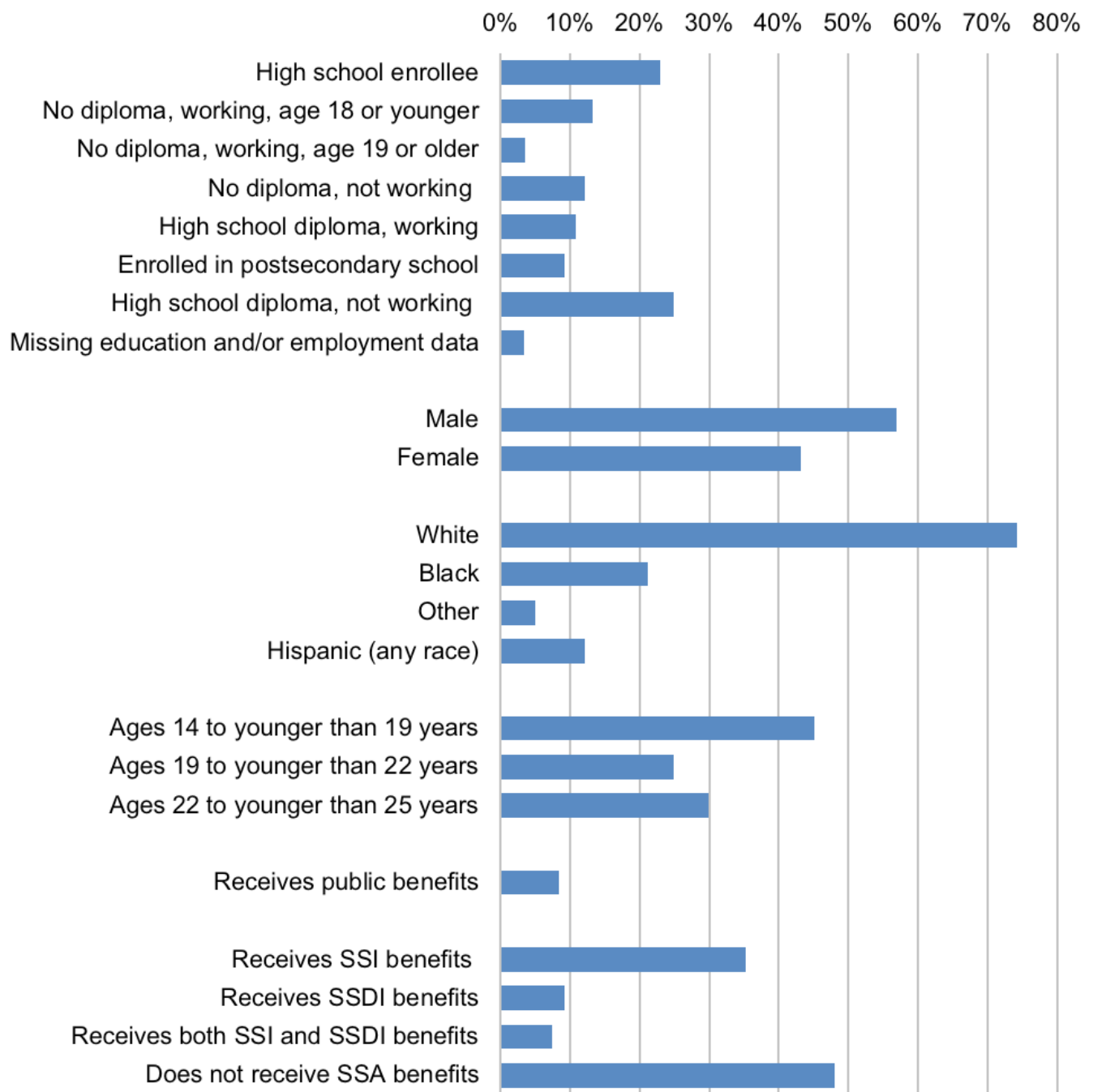
We considered two stages of “VR status,” or involvement with VR services. The first status is the receipt of services. Though we restricted the sample to youth who were found eligible, not all go on to receive services. We identified youth as receiving services if they signed an individualized plan for employment (IPE), which is a document that describes each youth’s goals and the services he or she will receive to achieve those goals. Most youth at blind VR agencies received services; only 25 percent exited before receiving services despite being eligible (Figure 2).

The second VR status we assessed involved employment at case closure. Among youth who received services, we classified them as either exiting with employment (that is, they worked at a job for at least 90 days) or exiting without employment. The percentage of youth VR applicants who exited with employment after receiving services (38 percent) was similar to that of applicants who exited without employment after receiving services (37 percent).

**Individual characteristics of youth applicants associated with VR status.** Several individual characteristics were associated with VR service receipt or exiting with employment among youth who applied at blind VR agencies (Appendix A).

- Youth were more likely to receive services if they were older—ages 22 to less than 25, relative to ages 14 to less than 19. They were also more likely to receive services if they had completed high school and were either working or in postsecondary school, or if they had not completed high school and were working and age 19 or older, compared with youth still in high school. Youth were less likely to receive services if they were black (relative to those who were white) or if they received SSI or SSDI benefits (relative to those without these benefits).
- Youth were more likely to exit with employment if they had a high school diploma and were working (relative to high school students) and if they were older (ages 19 to less than 25, relative to ages 14 to less than 19). Youth who were male or did not receive any type of SSA benefits were more likely to exit with employment relative to female youth and SSA beneficiaries, respectively.

**Figure 1. Demographic characteristics of eligible youth applicants at blind VR agencies**

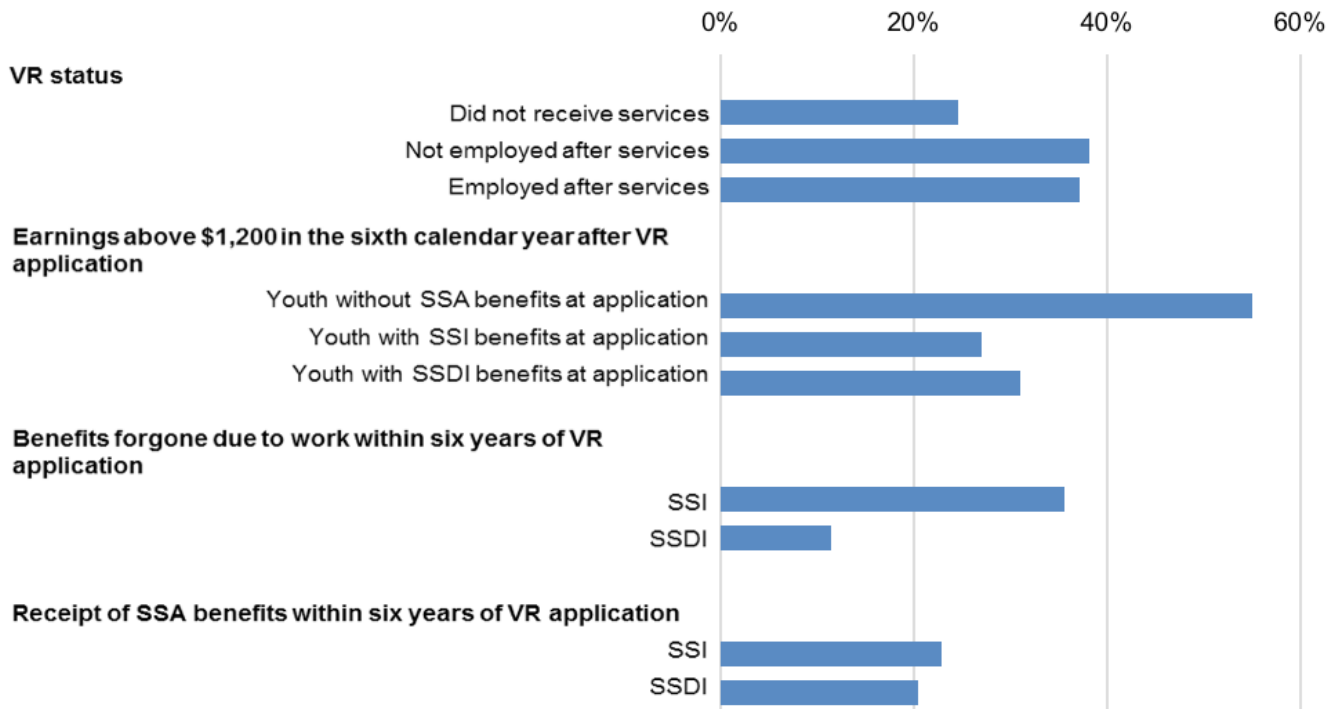


Source: RSA-911 fiscal years 2004 through 2013.

Note: Our sample consists of youth ages 14 to 24 who applied for and were determined eligible to receive VR services between 2004–2007 from blind VR agencies (N = 4,287).

SSA = Social Security Administration; SSDI = Social Security Disability Insurance; SSI = Supplemental Security Income; VR = vocational rehabilitation.

**Figure 2. Rates of service receipt, employment, and benefit outcomes for eligible youth applicants at agencies serving the blind**



Source. RSA-911 fiscal years 2004 through 2013.

Note: VR status: our sample consists of youth ages 14 to 24 who applied for and were determined eligible to receive VR services between 2004 and 2007 from blind VR agencies (N = 4,287).

Earnings above \$1,200 in the sixth calendar year after VR application: N = 2,061 (without SSA benefits at application); 1,828 (with SSI benefits at application); and 717 (with SSDI benefits at application). Concurrent beneficiaries (those with both SSI and SSDI) are included in the calculations for both SSI and SSDI benefits at application.

Benefits forgone due to work within six years of VR application: N = 1,828 (SSI) and 717 (SSDI).

Receipt of SSA benefits within six years of VR application: N = 2,061.

SSA = Social Security Administration; SSDI = Social Security Disability Insurance; SSI = Supplemental Security Income; VR = vocational rehabilitation.

## Earnings-Related Outcome

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Our analysis focused on two long-term earnings outcomes: (1) a binary measure of any substantive earnings (greater than \$1,200) in the sixth calendar year and (2) the amount of earnings in the sixth calendar year<sup>1</sup>. These measures, identified through SSA administrative data, provide an independent gauge of earnings separate from that found in the VR administrative data and (in most cases) allow enough time for VR services to have been completed. Youth who did not receive SSA benefits were more likely to earn above \$1,200 in the sixth calendar year after application (55 percent) than youth who received SSI or SSDI (27 percent and 31 percent, respectively) (Figure 2). Similarly, the average amount of earnings for youth without SSA benefits at application was more than twice that of youth who received either SSI or SSDI (Figure 3).

**Individual characteristics of youth applicants associated with earnings-related outcomes.** Working or being in postsecondary school at application was linked to higher long-term earnings among youth applicants at blind VR agencies. Youth still in high school were less likely to have earnings greater than \$1,200 and had much lower predicted earnings in the sixth year after application compared with (1) youth who already had a high school diploma and were either working or in postsecondary school or (2) youth who were age 19 or older, did not have a high school diploma, and were working at application (Appendix B). Predicted earnings for youth in these two groups were \$2,500 to \$4,700 more than the earnings for high school students.

Long-term earnings were also higher for youth who had successful VR experiences. Compared with youth who left VR without employment after receiving services, youth who left with employment earned \$6,900 more in the sixth year after VR application, on average, and were almost six times more likely to have earnings greater than \$1,200 that year.

Other youth characteristics associated with earnings include sex (females had lower earnings than males), age (youth ages 22 to less than 25 years had higher earnings than youth ages 14 to less than 19 in the sixth year after VR application), and receipt of public benefits or SSA disability benefits (youth without those benefits earned more than youth with those benefits).

## Benefits Related Outcomes

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Long-term SSA benefit receipt is an important indicator of employment because it shows whether youth's earnings were enough to reduce their SSA benefits—or to prevent them from seeking benefits in the first place. SSDI beneficiaries will lose their cash benefits if they engage in substantial gainful activity (SGA), or earn more than a certain amount for a sufficiently long period. Likewise, SSI beneficiaries will forgo some or all of their cash

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<sup>1</sup> The \$1,200 threshold is equal to one quarter of coverage for SSA benefit purposes in 2014, the year of our data analysis. This threshold is an important benchmark to track because quarters of coverage are used, in part, to calculate disability-insured status.

benefits if they earn above certain amounts. (Note that the work rules and incentives for both SSDI and SSI can differ for beneficiaries who are blind, resulting in higher benefit amounts after earnings relative to people who qualify for benefits due to other conditions.) Alternatively, people who are not receiving SSA benefits at VR application might eventually apply for and receive them, depending on their health and employment.

We found that the rates at which people gave up benefits due to work—and the amounts they gave up—differed for SSI versus SSDI youth. SSI youth at blind VR agencies were more likely to forgo benefits due to work than were SSDI youth (Figure 2). On the other hand, SSDI youth had higher amounts of benefits forgone than did SSI youth (Figure 3).

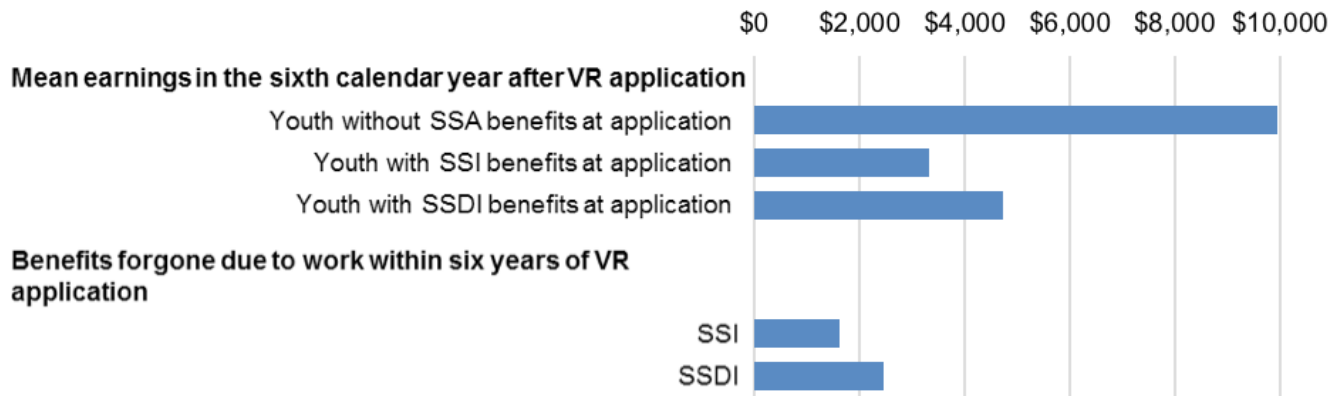
Similar proportions of youth who do not receive benefits eventually enroll in either SSI or SSDI. Among youth at blind VR agencies who did not receive SSA benefits at application, 23 percent enrolled in SSI and 21 percent enrolled in SSDI within six years of VR application (Figure 2).

**Individual characteristics of youth applicants associated with benefits-related outcomes.** SSI youth were more likely to forgo benefits due to work if they had a high school diploma and worked (compared with youth still in high school), if they exited from VR with employment (compared with exiting from VR without employment after receiving services), and if they were in the two older age groups (compared with youth ages 14 to less than 19) (Appendix C). SSI youth were also less likely to forgo benefits due to work if they were female (relative to male) or received both SSI and SSDI benefits (relative to only SSI benefits) (Appendix C). Note that we do not include similar results for youth SSDI beneficiaries because of the relatively small number of such beneficiaries.

The sizeable rates of eventual receipt of SSA benefits among non-SSA youth at blind VR agencies suggest the need for further examination of the characteristics of those youth. As documented in Appendix C, non-SSA youth who were working at application or who were ages 22 to less than 25 were least likely to enter the SSI rolls. Non-SSA youth most likely to enter the SSDI rolls were those ages 19 to 22 or ages 22 to less than 25 years (relative to youth ages 14 to less than 19), or youth who had a high school diploma but were neither working nor enrolled in school at application (relative to high school students). Non-SSA youth least likely to enter the SSDI rolls included youth who were black or Hispanic (compared with those who were white), who had exited before signing an IPE (compared with youth who exited without employment after receiving services), or who received public benefits at application (compared with those who did not).



**Figure 3. Earnings in the sixth year after application and benefits forgone due to work within six years of VR application for eligible youth clients who receive SSI and/or SSDI benefits**



Source: RSA-911 fiscal years 2004–2013; 2013 Disability Analysis File.

Note: Mean earnings in the sixth calendar year after VR application:  $N = 2,061$  (without SSA benefits at application);  $1,828$  (with SSI benefits at application); and  $717$  (with SSDI benefits at application) at blind VR agencies. Concurrent beneficiaries (those with both SSI and SSDI) are included in the calculations for both SSI and SSDI benefits at application.

Benefits forgone due to work within six years of VR application:  $N = 1,828$  (SSI) and  $717$  (SSDI).

SSDI = Social Security Disability Insurance; SSI = Supplemental Security Income; VR = vocational rehabilitation.

## Conclusion

Youth who receive services at blind VR agencies represent a small fraction of the overall VR population. But this group has unique needs for employment services, and VR administrators need data to understand the characteristics and long-term outcomes of these youth who pass through their programs.

Our study provides descriptive evidence of variations in long-term outcomes across different groups of these youth. Once youth were determined eligible, a large share (75 percent) received services, and about half of those who received services exited VR with employment. Overall, youth at blind VR agencies typically had more positive VR and long-term outcomes if (1) they were working or enrolled in postsecondary education at the time of application or (2) they exited from VR with employment. Two groups of youth at particular risk of poorer outcomes include high school dropouts—youth who were not in school and not working at the time of VR application (about 16 percent of our sample)—and youth who received SSA benefits at the time of VR application (over half of all youth).

Staff at blind VR agencies might want to consider these findings as they strive to improve the quality of their services and to address requirements of the Workforce Innovation and Opportunity Act. Knowing the likely outcomes for different types of youth can help staff provide additional supports and funding to promote youth’s long-term success.

## References

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## Funding

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## Appendix A

### Predicting VR service receipt and exiting with employment through 2013 for eligible youth who applied to VR agencies serving the blind between 2004 and 2007

Variable	Service receipt		Exiting with employment	
	Odds ratio	95% confidence interval	Odds ratio	95% confidence interval
<b>Individual characteristics</b>				
<b>Education and employment status</b>				
Enrolled in high school, not working	Reference		Reference	
No high school diploma, working or in school, age 18 or younger	1.005	(0.781, 1.294)	1.123	(0.852, 1.481)
No high school diploma, working or in school, age 19 or older	1.710**	(1.044, 2.803)	1.551*	(0.971, 2.477)
No high school diploma, not working or in school	0.902	(0.678, 1.200)	0.617***	(0.446, 0.853)
High school diploma, working	2.592***	(1.760, 3.817)	3.274***	(2.266, 4.730)
High school diploma, in postsecondary school	2.037***	(1.457, 2.847)	1.269	(0.920, 1.752)
High school diploma, not working or in school	1.212	(0.916, 1.605)	1.143	(0.848, 1.542)
Missing education and/or employment data	2.580***	(1.508, 4.413)	1.509*	(0.977, 2.331)
<b>Sex</b>				
Male	Reference		Reference	
Female	1.059	(0.909, 1.234)	0.811***	(0.695, 0.947)
<b>Race</b>				
White	Reference		Reference	
Black	0.845*	(0.695, 1.026)	0.916	(0.747, 1.124)
Asian	0.913	(0.562, 1.483)	0.862	(0.496, 1.498)
American Indian	Omitted		Omitted	
Pacific Islander	Omitted		Omitted	
Multiple races	Omitted		Omitted	
Hispanic	0.891	(0.699, 1.136)	1.058	(0.819, 1.367)
<b>Age at application</b>				
14 to younger than 19 years	Reference		Reference	
19 to younger than 22 years	1.021	(0.799, 1.305)	1.672***	(1.293, 2.164)
22 to younger than 25 years	1.330**	(1.021, 1.734)	2.453***	(1.871, 3.216)
<b>Public support at application</b>				
Receipt of public benefits	1.077	(0.805, 1.440)	0.926	(0.702, 1.222)
SSI benefits	0.793***	(0.668, 0.941)	0.534***	(0.447, 0.637)
SSDI benefits	0.783*	(0.593, 1.034)	0.602***	(0.456, 0.797)
Both SSI and SSDI benefits	0.973	(0.709, 1.336)	0.635***	(0.468, 0.860)
<b>Agency characteristics</b>				
Agency in order of selection	1.237	(0.795, 1.925)	1.431	(0.886, 2.310)
Proportion of youth applicants	Omitted		Omitted	
Proportion of youth who received services	Omitted		Omitted	
Average time from application to eligibility for youth (in months)	0.755***	(0.642, 0.889)	1.060	(0.876, 1.283)
Average time from eligibility to IPE (in months)	1.029	(0.991, 1.067)	0.981	(0.938, 1.026)
Average cost of purchased services for youth	0.970	(0.927, 1.015)	1.057**	(1.004, 1.112)

Sources: RSA-911 fiscal years 2004 through 2013; RSA-113 fiscal years 2004–2007; 2013 Disability Analysis File.

Note: N = 4,287 for service-receipt model (all youth VR applicants eligible for services) and 3,230 for exiting with employment model (all youth VR applicants who received services). The results are from a logistic regression model predicting service receipt, relative to exiting before signing an IPE. Two agency-level variables—proportion of youth applicants and proportion of youth who received services—were omitted

from the models owing to collinearity with the outcome. Certain race categories were included in the models but not reported here because of small sample size.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

IPE = individualized plan for employment; RSA = Rehabilitation Services Administration; SSA = Social Security Administration; SSDI = Social Security Disability Insurance; SSI = Supplemental Security Income; SVRA = state vocational rehabilitation agency; VR = vocational rehabilitation.

## Appendix B

### Earnings outcomes for eligible youth who applied to VR agencies for the blind between 2004 and 2007

Variable	Earnings greater than \$1,200 in the sixth calendar year after VR application		Amount of earnings in the sixth calendar year after VR application	
	Odds ratio	95% confidence interval	\$	Standard error
<b>Individual characteristics</b>				
<b>Education and employment status</b>				
Enrolled in high school, not working	Reference		Reference	
No high school diploma, working or in school, age 18 or younger	0.834	(0.648, 1.073)	155.85	(516.83)
No high school diploma, working or in school, age 19 or older	2.089***	(1.342, 3.251)	2,538.77***	(912.92)
No high school diploma, not working or in school	0.884	(0.662, 1.181)	-506.06	(579.76)
High school diploma, working	2.214***	(1.597, 3.070)	4,662.80***	(671.03)
High school diploma, in postsecondary school	1.600***	(1.184, 2.163)	3,166.28***	(628.70)
High school diploma, not working or in school	1.160	(0.884, 1.522)	532.69	(555.38)
Missing education and/or employment data	1.571**	(1.037, 2.380)	3,290.84***	(880.79)
<b>VR closure status</b>				
Exited after IPE without employment	Reference		Reference	
Exited before IPE	1.034	(0.848, 1.261)	479.05	(398.32)
Exited after IPE with employment	5.615***	(4.731, 6.665)	6,885.33***	(357.56)
<b>Sex</b>				
Male	Reference		Reference	
Female	0.805***	(0.697, 0.930)	-1,495.93***	(293.60)
<b>Race</b>				
White	Reference		Reference	
Black	1.179*	(0.978, 1.421)	162.21	(380.13)
Asian	1.216	(0.756, 1.956)	1,057.99	(1,025.12)
American Indian	Omitted		Omitted	
Pacific Islander	Omitted		Omitted	
Multiple races	Omitted		Omitted	
Hispanic	1.088	(0.860, 1.376)	-6.82	(481.52)
<b>Age at application</b>				
14 to younger than 19 years	Reference		Reference	
19 to younger than 22 years	0.863	(0.683, 1.091)	642.36	(477.69)
22 to younger than 25 years	0.983	(0.767, 1.260)	2,206.43***	(506.99)
<b>Public support at application</b>				
Receipt of public benefits	0.776*	(0.593, 1.016)	-1,132.99**	(538.60)
SSI benefits	0.347***	(0.295, 0.410)	-5,060.44***	(337.02)
SSDI benefits	0.394***	(0.303, 0.512)	-4,393.41***	(531.75)
Both SSI and SSDI benefits	0.277***	(0.205, 0.374)	-5,807.80***	(592.77)
<b>Agency characteristics</b>				
Agency in order of selection	0.808	(0.520, 1.255)	803.66	(899.44)
Proportion of youth applicants	Omitted		Omitted	
Proportion of youth who received services	Omitted		Omitted	
Average time from application to eligibility for youth (in months)	1.034	(0.871, 1.228)	335.39	(347.94)
Average time from eligibility to IPE (in months)	0.969	(0.933, 1.008)	-84.52	(79.19)
Average cost of purchased services for youth	0.990	(0.944, 1.038)	68.73	(95.49)
Intercept	0.626	(0.137, 2.862)	5,740.39*	(3,086.80)

Sources: RSA-911 fiscal years 2004–2013; RSA-113 fiscal years 2004–2007; 2013 Disability Analysis File; Master Earnings File.

Note: N = 4,287 (all youth VR applicants who are eligible for services). The results are from logistic and ordinary least-squares regression models predicting any earnings over \$1,200 per year in the sixth calendar year after VR application and predicting the amount of earnings in the sixth calendar year after VR application, respectively. Two agency-level variables—proportion of youth applicants and proportion of youth who received services—were omitted from the models owing to collinearity with the outcome. Certain race categories were included in the models but not reported here because of small sample size.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

IPE = individualized plan for employment; RSA = Rehabilitation Services Administration; SSA = Social Security Administration; SSDI = Social Security Disability Insurance; SSI = Supplemental Security Income; SVRA = state vocational rehabilitation agency; VR = vocational rehabilitation.

## Appendix C

### SSA outcomes for eligible youth who applied to VR agencies for the blind between 2004 and 2007, with and without SSA benefits at VR application

Variable	Any benefits forgone due to work within six years of application for youth who had SSI benefits at VR application		Any SSI benefits within six years of application for youth who did not have SSA benefits at VR application		Any SSDI benefits within six years of application for youth who did not have SSA benefits at VR application	
	Odds ratio	95% confidence interval	Odds ratio	95% confidence interval	Odds ratio	95% confidence interval
<b>Individual characteristics</b>						
<b>Education and employment status</b>						
Enrolled in high school, not working	Reference		Reference		Reference	
No high school diploma, working or in school, age 18 or younger	0.746	(0.480, 1.158)	1.189	(0.862, 1.640)	1.296	(0.873, 1.924)
No high school diploma, working or in school, age 19 or older	0.817	(0.410, 1.63)	0.379**	(0.157, 0.913)	1.261	(0.633, 2.514)
No high school diploma, not working or in school	1.021	(0.683, 1.528)	0.972	(0.630, 1.500)	1.272	(0.775, 2.088)
High school diploma, working	2.325**	(1.208, 4.475)	0.416***	(0.246, 0.703)	1.230	(0.749, 2.019)
High school diploma, in postsecondary school	1.092	(0.691, 1.725)	0.814	(0.516, 1.284)	0.944	(0.564, 1.582)
High school diploma, not working or in school	1.023	(0.700, 1.496)	0.730	(0.464, 1.147)	1.671**	(1.042, 2.682)
Missing education and/or employment data	1.197	(0.636, 2.253)	0.740	(0.376, 1.455)	0.798	(0.364, 1.752)
<b>VR closure status</b>						
Exited after IPE without employment	Reference		Reference		Reference	
Exited before IPE	1.006	(0.757, 1.339)	1.006	(0.743, 1.363)	0.737*	(0.527, 1.030)
Exited after IPE with employment	5.66***	(4.349, 7.366)	0.806	(0.616, 1.055)	0.951	(0.725, 1.248)
<b>Sex</b>						
Male	Reference		Reference		Reference	
Female	0.744***	(0.598, 0.927)	1.047	(0.839, 1.306)	0.943	(0.749, 1.186)
<b>Race</b>						
White	Reference		Reference		Reference	
Black	1.213	(0.927, 1.588)	1.017	(0.748, 1.382)	0.731**	(0.534, 0.999)
Asian	1.038	(0.454, 2.375)	1.93**	(1.065, 3.498)	0.575	(0.251, 1.317)
American Indian	Omitted		Omitted		Omitted	
Pacific Islander	Omitted		Omitted		Omitted	
Multiple races	Omitted		Omitted		Omitted	
Hispanic	1.026	(0.717, 1.469)	1.129	(0.786, 1.622)	0.676**	(0.458, 0.998)

Variable	Any benefits forgone due to work within six years of application for youth who had SSI benefits at VR application		Any SSI benefits within six years of application for youth who did not have SSA benefits at VR application		Any SSDI benefits within six years of application for youth who did not have SSA benefits at VR application	
	Odds ratio	95% confidence interval	Odds ratio	95% confidence interval	Odds ratio	95% confidence interval
<b>Age at application</b>						
14 to younger than 19 years	Reference		Reference		Reference	
19 to younger than 22 years	1.392**	(1.002, 1.932)	0.781	(0.533, 1.144)	1.569**	(1.048, 2.348)
22 to younger than 25 years	1.427*	(1.000, 2.038)	0.583**	(0.382, 0.891)	1.993***	(1.320, 3.010)
<b>Public support at application</b>						
Receipt of public benefits	0.739	(0.499, 1.096)	0.779	(0.491, 1.236)	0.614*	(0.374, 1.009)
SSI benefits	Reference		n.a.		n.a.	
SSDI benefits	n.a.		n.a.		n.a.	
Both SSI and SSDI benefits	0.536***	(0.395, 0.729)	n.a.		n.a.	
<b>Agency characteristics</b>						
Agency in order of selection	0.678	(0.359, 1.279)	1.296	(0.650, 2.585)	0.973	(0.479, 1.978)
Proportion of youth applicants	Omitted		Omitted		Omitted	
Proportion of youth who received services	Omitted		Omitted		Omitted	
Average time from application to eligibility for youth (in months)	1.181	(0.906, 1.540)	1.110	(0.852, 1.448)	0.868	(0.637, 1.182)
Average time from eligibility to IPE (in months)	0.959	(0.906, 1.016)	0.958	(0.901, 1.018)	0.955	(0.894, 1.020)
Average cost of purchased services for youth	0.988	(0.924, 1.058)	1.020	(0.955, 1.089)	1.062*	(0.990, 1.140)

Sources: RSA-911 fiscal years 2004–2013; RSA-113 fiscal years 2004–2007; 2013 Disability Analysis File; Master Earnings File.

Note: N = 2,061 (all youth who did not have SSA benefits at application) for Models 3 and 4, and N = 1,828 (all youth who had SSI or concurrent SSI/SSDI benefits at application) for Model 5. The results are from logistic regression models predicting any SSI benefits within six years of VR application for youth who did not have SSA benefits at application (Model 1); any SSDI benefits within six years of VR application for youth who did not have SSA benefits at application (Model 2); and any benefits forgone due to work within six years of VR application for youth who had SSI benefits at application (Model 3). We omitted two agency-level variables—proportion of youth applicants and proportion of youth who received services—from the models owing to collinearity with the outcome. Certain race categories were included in the models but not reported here because of small sample size.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

IPE = individualized plan for employment; RSA = Rehabilitation Services Administration; SSA = Social Security Administration; SSDI = Social Security Disability Insurance; SSI = Supplemental Security Income; SVRA = state vocational rehabilitation agency; VR = vocational rehabilitation; n.a. = not applicable.



## Appendix D

### Education and employment status categories for youth VR clients at VR application

Education and employment status category	Description	Educational attainment of at least a high school diploma or special education certificate	School enrollment (based on employment status at education variable)	Employment status	Age at application
Enrolled in high school, not working	Enrolled in high school without a high school diploma and not working	No	Student in secondary education	Not working	Any
No high school diploma, working or in school, age 18 or younger	Had no high school diploma or special education certificate and were working and likely in training or school, ages 18 or younger	No	Unknown	Working	18 and under
No high school diploma, working or in school, age 19 or older	Had no high school diploma or special education certificate and were working and may also be in training or school, ages 19 or older	No	Unknown	Working	19 and older
No high school diploma, neither working nor in school	Had no high school diploma or special education certificate and were not working or in school	No	Not enrolled	Not working	Any
High school diploma, working	Had at least a high school diploma or special education certificate and were working	Yes	Unknown	Working	Any
High school diploma, in postsecondary school	Had at least a high school diploma or special education certificate and were enrolled in school other than secondary	Yes	Student other than secondary education	Not working	Any
High school diploma, neither working nor in school	Had at least a high school diploma or special education certificate and were neither working nor enrolled in school	Yes	No	Not working	Any
Missing education and/or employment data	Had missing or inconsistent information on school enrollment and/or employment	Missing	Missing	Missing	Any