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Improving the Outcomes of Youth with Medical Limitations Through Comprehensive Training and Employment Services: Evidence from the National Job Corps Study

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ABSTRACT

We use data from a randomized evaluation of the Job Corps program to understand its impacts for youth with limitations from medical conditions. Job Corps was originally designed for economically disadvantaged youth facing education or employment barriers due to their community living environment. The program provides all enrollees with an integrated package of work-focused supports including general education, vocational training, soft skills development, and ultimately job placement. Our findings provide new information about the program's impacts for approximately 470 youths with medical limitations (YMLs) included in the 1990s National Job Corps Study. Although YMLs were at greater risk for adverse outcomes relative to other enrollees, the impacts of Job Corps for this group have not been previously assessed. We find positive, large, and significant impacts per participant on self-reported employment and earnings; further, the program significantly reduced their dependence on long-term disability benefits. These estimated per-participant impacts were at least twice the size of the corresponding impacts for other youths who did not have medical limitations at enrollment. Although more research on current program operations is needed, our findings suggest that Job Corps could help meet state and national policy goals of improving adult work outcomes for youth with disabilities and reducing their reliance on disability benefits.

I.   INTRODUCTION

Expanding access to meaningful employment for youth and young adults with disabilities is a policy priority, given how they fare in the labor market compared to their peers. Transition-age youth have substantially lower employment rates than other youth, especially if they do not complete high school, come from lower-income families, or face other barriers (Newman et al. 2011). As they transition to adulthood, these youth also face substantial challenges related to their health or impairments, access to medical services, to finding adequate education and employment supports, and navigating a complex, fragmented support system (Osgood, Foster, and Courtney 2010; Kregel 2012; U.S. Government Accountability Office 2012). Limited employment prospects or other functional limitations stemming from a medical condition can result in a reliance on long-term disability benefits from the Supplemental Security Income (SSI) program (Davies, Rupp, and Wittenburg 2009).

A potentially promising way to serve some youth with disabilities is through Job Corps, a program that was initially established to serve youth and young adults with economic disadvantages. Job Corps is one of the most extensive youth programs outside the traditional K-12 schooling system. A large-scale experimental evaluation conducted in the mid-1990s, the National Job Corps Study (NJCS), found positive impacts on medium-term (but not long-term) work and earnings outcomes, while reducing criminal activity and the receipt of certain forms of public assistance (Schochet, Burghardt, and Glazerman 2001; Schochet, Burghardt, and McConnell 2008). Other research also suggests that the Job Corps model could be particularly advantageous for youth with disabilities. The relatively more successful interventions serving these youth have tended to be those that provided relatively more intensive employment services and initial work-place experience, as well as job placement and retention supports (Wittenburg, Mann, and Thompkins 2013; U.S. Department of Labor [DOL] 2015).

In this paper, we leverage the NJCS's experimental design and data to assess Job Corps' impacts on employment and other outcomes for 472 youths who initially identified a "serious physical or emotional problem" that limited their work or daily activities. We focus on their condition at enrollment; some of these limitations, or the underlying conditions, subsequently resolved. For this group of youths with medical limitations (YMLs) at baseline, we estimate impacts over a period covering four years after random assignment and compare them to impacts for other participating youths. Given that less than three quarters of eligible youths in the NJCS treatment group participated in Job Corps and only a tiny share of youths in the control group did so, we focus on impacts per participant rather than impacts per eligible youth.

Job Corps substantially increased human capital investments received by YMLs during the four-year period after random assignment. YML participants received approximately 1,810 hours of education and training, but would have received only 780 had they not had access to Job Corps. The average increase of the four-year period (about 1,000 hours) corresponds to the number of hours of instructional time in a typical school year. Per-participant impacts of Job-Corps on high school completion were also substantial, an increase of over 15 percentage points compared to a counterfactual base of 43 percent. This effect came almost entirely through attainment of a General Educational Development (GED) degree.

Participation in Job Corps also resulted in significant increases in the self-reported earnings of YMLs, impacts that were much larger than the impacts for youths who did not indicate a medical limitation at baseline. Per-participant impacts on the earnings of YMLs were over $3,000 in each of the second through fourth years after random assignment—a period when most were no longer in the program. (All dollar figures are expressed in inflation-adjusted terms using 2016 as the target year.) These impacts correspond to increases of 50 to 60 percent relative to YML participants' counterfactual average earnings. Among other youths, the largest single-year earnings impact was $1,700, which was realized in the fourth year and amounted to an 11 percent increase over what they would otherwise have earned in that year.

Job Corps also at least halved the dollar amount of SSI benefits that YMLs reported receiving during the four-year follow-up period. The per-participant reduction was $2,000 on a base of just under $4,000. Among other youths, both the base amount of SSI and the impacts were substantially smaller. The impact for YMLs is also particularly notable given that other employment interventions for youth with disabilities have not typically achieved reductions in the collection of long-term disability benefits (Wittenburg et al. 2013).

Taken together, our findings suggest that the intensive model of Job Corps could be a promising option for serving transition-age youth with disabilities, although additional research is needed to fully understand its effectiveness for such youth today. For example, our analysis revealed considerable variation in earnings and SSI impacts across subgroups of YML participants. In addition, our results are based on self-reported information from survey data. This suggests a measure of caution in interpreting our findings, even though the results are generally robust to adjustments used in the original NJCS evaluation to account for the potential influence of survey response issues (Schochet, McConnell, and Burghardt 2003). Finally, the Job Corps program and economic context have changed in important ways since the 1990s, including through concerted efforts to make public programs more accessible to people with disabilities. Further research that includes the use of administrative data could provide an improved understanding of the impacts for youth served in the 1990s, as well as changes since that point in the composition of YMLs entering Job Corps, the services they receive, and the average impacts of the program.

The rest of this paper proceeds as follows. In Section II, we provide additional background on Job Corps, including an overview of its operations structure, a summary of the NJCS evaluation, and a discussion of potential effectiveness for youth with disabilities. In Section III, we describe the YML sample from the NJCS evaluation, and we outline our main analysis methods. In Section IV, we present our main impact estimates across a range of training and labor-market outcomes. In Section V, we put these impact estimates in context by comparing them to impact estimates obtained for NJCS youth without limitations stemming from medical conditions at baseline, as well as examine how YML impacts differed across subgroups. In Section VI, we present results from sensitivity analyses intended to gauge the potential extent to which our conclusions might be affected by reliance on self-reported data. Section VII, includes additional discussion of our results and potential avenues for future research.

II. BACKGROUND ON JOB CORPS

Overview of the program

Outside of the traditional schooling system, Job Corps is the nation's largest education and training program for economically at-risk youth between the ages of 16 and 24. Since its inception in 1964, nearly 3 million youths have participated in Job Corps (Kirsch et al. 2014). The program currently serves approximately 50,000 youths at over 120 local Job Corps centers nationwide (DOL 2016a). In order to be eligible for Job Corps, applicants must meet several criteria that establish both a need for the services and the potential to benefit. Among other factors, these criteria cover an income determination, a determination about specific education or employment barriers that qualify applicants for the program, a determination that Job Corps can meet the applicant's need for additional education/training, and a determination that an applicant can reasonably be expected to successfully participate in the program (DOL 2016b). Once eligibility is determined, applicants are assigned to a specific Job Corps center; most participants live on-site at the center (Kirsch et al. 2014).

Job Corps provides an integrated package of work-focused supports including general education, vocational training, soft skills development, and ultimately job placement (Johnson et al. 1999; Kirsch et al. 2016; DOL 2016a, 2016b). A distinctive feature of the education and training services provided by Job Corps is that they are career-focused, aligned with industry standards, and oftentimes hands-on in nature. The program also emphasizes learning-by-doing through employer-based training opportunities and community service projects. In addition, participants receive social skills training and participate in other group activities designed to improve their employability. Throughout, the program provides a living allowance to active participants. Because Job Corps is a voluntary program, participants can exit at any time (and some eligible applicants are "no shows"). Progress through the program is monitored extensively by Job Corps staff but is ultimately self-paced. In the mid-1990s and the mid-2000s the average length of stay was around eight months (Schochet et al. 2008; DOL 2009); quarterly performance reports indicate that this has risen to over nine months in recent years.[1] Finally, exiting participants are provided with pre-employment counseling, job search assistance, and additional services to support job retention.

The 1990s NJCS evaluation

The overall effectiveness of Job Corps for youth enrolled in the mid-1990s was evaluated in the NJCS, a large-scale experiment conducted for the U.S. Department of Labor using a stratified randomization and sampling design. We provide a summary of the NJCS here; Schochet et al. (2008) give a broader overview and references to study reports with additional details.

The evaluation intake sample consisted of nearly all youths who applied to the Job Corps program in the contiguous 48 states between November 1994 and December 1995 and were subsequently found eligible to participate in it. Most eligibility criteria at that time were basically similar to those used today. However, in the 1990s, the program excluded applicants with "health conditions … that represent[ed] a hazard to themselves or others at a center, preclude[d]

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[1] Performance reports are available from http://www.jobcorps.gov/AboutJobCorps/performance_planning.aspx.

participation in Job Corps with an expectation of successful completion, or require[d] intensive and costly treatment" (Johnson et el. 1999). The study randomly assigned almost 81,000 eligible applicants using probabilities that were fixed within 16 strata.[2] Overall, approximately 83 percent were allowed to enroll in Job Corps and 7 percent were assigned to a control group embargoed from receiving Job Corps services for a three-year period.

The NJCS research sample consisted of all 5,977 youths assigned to the control group and a treatment group consisting of 9,409 youths randomly subsampled from the pool of potential Job Corps participants. Data collected for the research sample included a baseline survey (fielded soon after random assignment); follow-up surveys at 12, 30, and 48 months after random assignment; detailed program participation and cost data from the Job Corps management information system; and administrative data on earnings from the Social Security Administration and a select set of state unemployment insurance agencies.[3] The administrative earnings data were not retained in the evaluation's public-use files, so subsequent analysis must use self-reported information on outcomes from the follow-up surveys; we return to the analytic implications of this below.

Findings from the NJCS indicated that Job Corps participation led to substantial short-run increases in receipt of education/training services and decreases in arrest rates, as well as medium-run improvements in self-reported labor marked outcomes (Schochet et al. 2001). Of those assigned to the treatment group, 73 percent eventually participated in Job Corps. Over the four years after random assignment, these participants received almost 1,000 additional hours of education and training than they otherwise would have, and almost 95 percent of this increase came in the first 1.5 years. Over that timeframe, Job Corps participation also significantly reduced the self-reported employment rates. However, per-participant impacts on employment became positive in the third year after random assignment and remained positive through the end of the fourth year. Impacts on annual earnings followed a similar pattern over time.

A longer-term assessment (Schochet, Burghardt, and McConnell 2006) using administrative data found that the employment and earnings impacts of Job Corps were not sustained beyond the period covered by the 48-month survey. The evaluation also revealed that impacts based on the survey data were larger than impacts based on the administrative data. The authors determined that this partly reflected some genuine differences such as (1) informal employment not being reflected in the administrative data and (2) survey respondents having a different distribution of outcomes than the population of Job Corps participants as a whole. However, their analysis also suggested that hours worked were likely over-reported in the survey, and they could not rule out a "slight" upward bias in survey-based impacts due to treatment-control differences in nonresponse (although they also found no direct evidence of this). Nonetheless, Job Corps is one of the few federal programs for which a rigorous evaluation has shown sizeable impacts on

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[2] These strata were defined by four factors related to meeting the Job Corps recruitment targets while conducting the evaluation: (1) gender, (2) being designated for a nonresidential program slot by a Job Corps counselor, (3) living in an area from which a high proportion of nonresidential females came, and (4) time period.

[3] As reported by Schochet (2001), the baseline survey response rate was 93.1 percent, with a 1.5 percentage point treatment-control difference. The 48-month survey yielded the self-reported outcomes data, and it was fielded to a random subsample of those completing the baseline survey. The (conditional) response rates for the 48-month survey were 81.5 percent and 77.8 for the treatment and control groups, respectively.

the labor market outcomes of low-income youth, even if only in the medium term. Also, as discussed later, our key results are largely robust to sensitivity checks for potential nonresponse differentials like those used in the original evaluation.

Potential effectiveness for youth with disabilities and SSI recipients

Although originally designed to improve the employment outcomes of youth whose economic disadvantages were not necessarily medical in nature, Job Corps also now serves a large number of youth with disabilities. The program no longer imposes the eligibility criterion related to health conditions used in the 1990s, and over one-fifth of recent enrollees report having a disability (DOL 2016a). Like other federal workforce programs, Job Corps currently provides accommodations for youth with disabilities.

Several aspects of the program might make it particularly beneficial for transition-age youth with disabilities, compared to other options. The intensity of services provided by Job Corps tends to exceed what is offered through other youth workforce programs, and Job Corps includes a strong job-placement component that is not found elsewhere. In addition, Job Corps provides wraparound supports that include medical examinations, treatment, and counseling for mental health and emotional problems. Other services include free meals, recreational activities, driver education, on-site child care support, and substance abuse treatment programs. Further, as noted above, most participants live in a residential facility, which might better allow for physical accommodations and alleviate potential transportation challenges. Finally, Job Corps services are tailored for each individual youth, often including input from a "disability coordinator," if needed. This could especially benefit youth facing complex challenges in the job market related to their medical condition.

Job Corps might also be effective at reducing participants' reliance on benefits from the SSI program, which is the main source of cash assistance for low-income youth and young adults with significant disabilities. Although there is an eligibility redetermination at age 18, a substantial majority of child SSI recipients continue to receive benefits as adults (Hemmeter and Gilby 2009). Participation in Job Corps might reduce the extent of reliance on SSI through three mechanisms. First, Job Corps may directly reduce SSI payments to at least some participants, especially older youth, because the program provides room and board, as well as an allowance.[4] Second, impacts of Job Corps on earnings could directly reduce SSI payments due to a $2-for-$1 benefit reduction rule. Some of those whose SSI benefits were reduced to zero might end up losing their SSI eligibility. Third, improvements in employment prospects because of Job Corps participation may divert some participants from applying for SSI benefits. This effect might be particularly among those over 18 who did not previously qualify for SSI due to parental resources and/or whose eligibility is initially terminated at the age 18 redetermination.

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[4] Among those living at a Job Corps center who are either emancipated or at least 18 years old, receipt of room and board would reduce maximum SSI monthly benefit amounts by one-third. In addition, SSI benefits are reduced by $1 for every $2 for earnings above a disregard that is $85 if the beneficiary receives no income from other sources. In such cases, most of the Job Corps allowance might fall under the disregard amount. In addition, the disregard amount is much higher for those younger than 22 due to special provision for students, although this provision did not apply in the 1990s to those who were married or heads of household.

III. DATA AND METHODS FOR ANALYZING YOUTH WITH MEDICAL LIMITATIONS IN THE NJCS EVALUATION

We analyze a sample of YMLs identified in the public-use evaluation data files from the NJCS, a group that has not been examined separately in the study's evaluation reports or subsequent work. We identified these youths using a baseline survey question asking whether they had "any serious physical or emotional problem which limits the amount of work [they] can do or other regular daily activities." Approximately five percent of youths completing the baseline survey responded affirmatively to this question. In this section, we describe our approach to analyzing this group of YMLs, and we provide descriptive information about their baseline characteristics.

Analysis sample and weights

Our analysis sample is based on youths in the NJCS study who responded to the baseline survey, answering the key question about medical limitations. Key outcome measures are based on the 48-month follow-up survey, since the public-use files do not contain administrative data. We focus study applicants who were randomly assigned by the end of November 1995; later applicants had missing or incomplete data on the fourth year after random assignment because they responded to the 48-month follow-up survey earlier. We further restrict our sample to those who completed the 48-month survey and for whom compliance with treatment assignment could be determined using the Job Corps participation data. Finally, we kept only randomization strata containing at least one YML in both the treatment and control groups. The resulting sample includes 472 YMLs (271 treatment and 201 control). For the purposes of comparison, we also describe the characteristics and report program impacts for 9,366 other youths (5,632 treatment and 3,734 control) meeting the same sample inclusion criteria but not reporting a medical limitation at baseline.

We rely, in part, on the NJCS evaluation's analysis weights to account for nonresponse and the stratified random assignment design. Among YMLs meeting our other sample selection criteria, 82.2 percent had follow-up data available (83.1 percent in the treatment group and 81.0 percent in the control group). Among other youths, the share with follow-up data available was 81.8 percent (82.0 percent in the treatment group and 81.4 percent in the control group). The NJCS nonresponse weights were developed using baseline characteristic through propensity models fit separately for the treatment and control groups (Schochet 2001). The final analysis weights also included components to account for randomization and sampling rates by stratum to produce nationally representative estimates. However, given the relatively small size of the YML analysis group and the fact that some randomization/sampling strata were dropped, our results are based only on within-stratum comparisons. To improve precision for in-sample estimates and avoid small-sample imbalances, we adjust the weights so that the YMLs in the treatment and control groups follow the same (weighted) distribution across strata and have the same weighted sample size; we make the same adjustment for youths without medical limitations. Our main impact estimates also include controls for baseline covariates, as discussed below.

Baseline characteristics and medical conditions of YMLs in the analysis

Consistent with how the Job Corps program is targeted, the YMLs in our analysis tended to be from more disadvantaged backgrounds than those participating around the same time in

programs specifically targeting youth with disabilities. For example, 37 percent of the younger youths in our sample received welfare assistance. In contrast, based on the figures reported by Wagner, Cameto, and Newman (2003), the share of high-school-aged special education students in the 1990s who received welfare assistance was likely between 10 and 14 percent. Additionally, compared to special education students, higher shares of the high-school-aged YMLs in our sample were black, and they were more likely to have a recent history of work.

Our data on YMLs are also consistent with Job Corps focusing admissions on those with relatively treatable medical conditions during the 1990s. For example, the categories of impairments available in the data likely (Table 1) encompass a range of conditions that could impose various degrees of limitations on the extent to which these YMLs could work. To better understand the severity of the medical problems facing YMLs at enrollment, we assess the extent to which they were associated with subsequent SSI benefit receipt in the control group.[5] We found that 16.2 percent of all YMLs in the control group received SSI in the third year after random assignment (Table 1), as did 21.5 percent of those who were age 18 or older at random assignment. This is markedly lower than the rate of SSI receipt during the mid-1990s among transition-age youth participants in employment programs designed for people with disabilities (Hayward and Schmidt-Davis 2000).

Table 1.   Distribution of medical conditions and rates of SSI receipt among YMLs in the analysis sample

Type of medical condition	Prevalence (fraction of sample)	SSI receipt rate in third year after random assignment (percent, control group only)
Asthma, allergies, respiratory conditions	0.29	6.4
Mental disorders	0.17	32.6
Upper and lower extremities, arthritis	0.15	19.6
Back	0.14	11.7
Heart or high blood pressure	0.07	19.7
Ulcers, diabetes, stomach, kidney, spleen	0.05	7.7
Epilepsy, cerebral palsy	0.03	31.3
Hearing, visual	0.03	40.1
Headaches, migraines	0.02	0.0
Other	0.05	5.5
Total	**1.00**	**16.2**

Note: The types of medical conditions listed in the table are labeled to reflect the categories given in the documentation for the Job Corps baseline survey. The original evaluation established these categories by back-coding YML survey respondents' verbatim answers to the question: "What kind of serious health problem do you have?" All figures in the table were calculated using the main analysis sample of YMLs and nonresponse/stratification weights described in Section III. The prevalence of medical condition type is based on the 468 YMLs whose medical problem could be classified for the original evaluation. SSI receipt rates proportions of the subset of those YMLs who were assigned to the control group (N = 200).

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[5] The Job Corps evaluation did not collect baseline measures of SSI receipt, but the rate at which the control group collected SSI during after random assignment provides a counterfactual point of comparison. We focus specifically on the third year after random assignment—the last year the evaluation's embargo was enforced.

Nonetheless, among YMLs in the Job Corps control group, SSI receipt in the third year after random assignment ranged from 0 to 40 percent across medical conditions. In subsequent analyses, we use a binary variable to summarize these conditions according to whether the control group's rate of SSI receipt in the third year was above average. The set of "higher SSI propensity" medical conditions includes mental disorders, issues affecting the extremities, arthritis, heart and blood-pressure issues, epilepsy, cerebral palsy, hearing problems, and vision problems.

Table 2 summarizes additional baseline characteristics for YMLs, as well as treatment-control differences that imply that the two groups can plausibly be regarded as representing the same population even though a few characteristics are moderately imbalanced between them. We assessed a range of covariates covering demographics, family structure, health, receipt of public assistance, criminal activity, education and training, work experience, and motivations for applying to the Job Corps program. Only one of the 54 differences between the treatment and control groups is statistically significant, and only at the 10 percent level. The moderate imbalances observed could arise due to attrition, as noted above, and/or could reflect chance differences given the relatively small sample of YMLs. The few noticeable differences do not follow a clear pattern that would suggest a particular direction of bias for impact estimates.

Table 2.   Comparison of baseline characteristics between treatment and control YMLs in the analysis sample

Variable	Pooled mean	Treatment-control difference	Standard error of difference
Age category			
Ages 15-16	23.8	-1.2	(4.1)
Ages 17-18	39.4	-0.5	(4.8)
Age 19 or older	36.8	1.7	(4.7)
Race/ethnicity			
White, non-Hispanic	37.8	0.4	(4.7)
Black, non-Hispanic	44.7	0.5	(4.8)
Hispanic	12.3	0.5	(3.2)
Other race/ethnicity	5.1	-1.4	(2.0)
Native English speaker	92.6	-2.9	(2.5)
Never married, not living together	89.6	0.9	(3.0)
Parenthood			
No children	79.6	0.1	(4.0)
Has child younger than two	13.3	0.1	(3.3)
Has child at least two years old	7.1	-0.2	(2.7)
Household structure			
Living with both parents	14.1	3.3	(3.3)
Living with one parent	46.2	-2.7	(4.9)
Living with nonparent adult	18.8	-4.4	(3.8)
Living with no other adults	20.9	3.8	(4.1)
Youth is household head	12.4	-3.3	(3.2)
Number in household (count)	4.3	0.1	(0.2)

Variable	Pooled mean	Treatment-control difference	Standard error of difference
Family's receipt of welfare while growing up			
Never	42.9	1.2	(5.1)
Occasionally	21.3	0.1	(4.2)
Half the time	10.7	-2.4	(3.1)
Most of the time	25.2	1.1	(4.3)
Receipt of public assistance in year before random assignment (RA) date			
Received AFDC	30.4	-1.7	(4.5)
Received food stamps	47.1	0.8	(5.0)
Received other welfare	31.9	-0.9	(4.8)
Housing arrangements			
Living in public/subsidized housing	26.5	6.5	(4.3)
Family rents home without subsidy	29.4	-0.1	(4.5)
Family owns home	44.1	-6.4	(4.8)
Contributes to rent or mortgage	29.8	-1.9	(4.7)
Nature of medical condition			
Had condition for less than three years	31.1	5.1	(4.7)
Had condition for at least three but less than six years	18.3	3.6	(3.9)
Had condition for six or more years	50.6	-8.7*	(5.0)
Had condition associated with higher propensity of SSI receipt	44.0	0.9	(4.9)
Self-assessment of general health			
Excellent	21.5	0.9	(4.0)
Good	40.9	-0.2	(4.9)
Fair or poor	37.6	-0.7	(4.8)
Risky health behavior			
Smoked cigarettes in the past year	60.2	5.3	(4.7)
Drank alcohol in the past year	63.1	2.0	(4.7)
Smoked marijuana in the past year	36.4	4.0	(4.7)
Involvement with criminal justice system			
Ever arrested or charged	32.2	3.7	(4.7)
Arrested multiple times	14.9	3.9	(3.6)
Ever convicted or pleaded guilty	21.0	3.3	(4.2)
Ever served time in jail	6.8	0.3	(2.8)
Education and training			
Had not attended high school by RA date	14.8	-1.1	(3.4)
Attended but did not complete high school by RA date	70.3	2.0	(4.4)
Completed high school by RA date	14.9	-0.9	(3.5)
Attended education or training program in year prior to RA date	68.3	-1.0	(4.5)
Work experience			
Ever had a full-time or part-time job	82.0	1.7	(3.7)
Had a job in the year prior to RA date	66.7	-0.5	(4.6)
Earnings over the past year (dollars)	4,618	-220	(826)
Reasons for joining Job Corps			
Joined to get away from community problems	59.8	-2.0	(4.8)
Joined to get away from home	58.2	-2.4	(4.8)
Joined for general self-improvement	9.7	1.2	(2.9)
Joined to be able to find work	88.2	-3.4	(3.2)
Joined to improve financial situation	4.9	0.0	(2.1)
Joined for other specific reason	10.9	-1.1	(3.1)

Variable	Pooled mean	Treatment-control difference	Standard error of difference
Expectations of Job Corps			
Expected to improve self-control or discipline	58.1	-1.1	(4.8)
Expected to improve self-esteem	54.4	1.1	(4.9)
Expected to improve ability to get along with people	56.0	5.8	(4.8)
Expected new friendships	62.8	-0.7	(4.7)
Expected to improve math skills	62.7	0.6	(4.8)
Expected to improve reading skills	50.7	-1.2	(4.9)
Expected to receive training for specific job	94.6	-0.6	(2.1)

Note: Estimates are percentages (means) and percentage points (differences) unless otherwise indicated and are based on the main analysis sample of YMLs (N = 472) and nonresponse/stratification weights described in Section III. Results for each covariate exclude cases with missing data, so sample sizes differ by row—see Appendix Table A.1. The propensity of SSI receipt by medical condition was measured using data on the outcomes of YMLs in the control group in the third year after random assignment. Baseline earnings are expressed in 2016 dollars. Standard errors of treatment-control differences are based on weighted regression models that included stratum fixed effects, and they are robust to heteroscedasticity. * / ** / *** denotes a treatment-control contrast that is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

In the appendix, Table A.1 presents additional details on group-specific means for YMLs and Table A.2 summarizes the baseline characteristics for other youths. As seen there, treatment-control differences at baseline among youths without medical limitations were even smaller than those found for YMLs, likely due to the larger sample size. Only two such differences for other youths were significant at the 10 percent level.

Estimating and interpreting impacts

For all outcome, we estimate two treatment effects that have different interpretations: (1) the intent-to-treat (ITT) effect and (2) the complier average causal effect (CACE). The ITT is the effect of being *assigned* to the treatment group. The CACE is the effect of the *receipt* of Job Corps services among youth who participate when assigned to the treatment group but who would not have participated if assigned to the control group. When no members of the control group "cross over" to participate in the program, the CACE impact is equivalent to the treatment-on-treated impact (or impact per participant), which represents the average effect of Job Corps service receipt for all participants.

We focus on the CACE estimates, rather than the ITT estimates, because they provide a clearer gauge of program effectiveness for the youths that participated. As in the original NJCS analysis, we refer to the CACE estimates as "per-participant" impacts, because the control crossover rate is negligible (Schochet et al. 2001, 2003, 2006, 2008).[6] Similarly, we refer to the treated mean for compliers as the "participant mean" and present a "counterfactual mean," which we define as the estimated treated mean for compliers minus the estimated impact.[7] Relative to

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[6] During the three-year embargo period, just under 70 percent of treatment YML in our analysis sample enrolled in a Job Corps center, whereas 0.3 percent of YML assigned to the control group did so. In our analysis sample of other youths who did not have medical limitations, 74.3 percent of those in the treatment group enrolled in a Job Corps center during that three-year period, while 1.1 percent of those in the control group did so.

[7] In the appendix, we report estimated treated and untreated means for compliers based on the formulas in Imbens and Rubin (1997), and calculate the underlying weighted means and proportions for observed random-assignment

the ITT effect, the per-participant is more interesting because it is not diluted due to the substantial no-show rate in the treatment group. The per-participant impact is also more directly comparable between subgroups because participation rates differ between various subgroups in our analyses (whereas the rate of crossover from the control group was always trivial). We present the ITTs only in appendix tables.

We use instrumental variables (IV) to estimate CACE impacts and standard regression models to estimate ITT impacts. Our first-stage regressions for IV are of the form:

$$(1) \qquad J_{is} = \theta T_i + \kappa_s + \boldsymbol{\gamma}' \boldsymbol{X}_i + \nu_i,$$

where J_{is} indicates whether individual i in randomization stratum s enrolled in Job Corps during the three-year embargo period, T_i is a binary denoting whether s/he was assigned to the treatment group, κ_s is a stratum fixed effect, $\boldsymbol{X}_i$ is a vector of covariates, and ν_i is an individual-level error term. The covariates in $\boldsymbol{X}_i$ correspond to the baseline measures shown in Table 2, excluding omitted categories for mutually exclusive sets of variables and adding the square of baseline earnings. Second-stage regressions for IV are of the form:

$$(2) \qquad Y_{is} = \theta \hat{J}_{is} + \alpha_s + \boldsymbol{\beta}' \boldsymbol{X}_i + \varepsilon_i,$$

where Y_{is} is the outcome, $\hat{J}_{is}$ is the predicted value of enrollment from equation (1), and all other terms are analogous to those in the first-stage regression. We estimate both regressions using the weights described previously and use robust standard errors to account for heteroscedasticity.

To compare CACE impacts across subgroups of YMLs, we create subgroup interaction terms for the participation indicator in equation (2), and in both of two corresponding first-stage equations based on equation (1), we include interaction terms for the assignment indicator. In both equations, we include separate stratum fixed effects for each subgroup. We do not, however, create subgroup-by-covariate interaction terms given the relatively small sample size of YMLs. As a result, we conducted statistical tests of each subgroup impact after partitioning out degrees-of-freedom losses from covariates according to the relative size of the subgroup.[8] To compare impacts between YMLs and other youths, we estimate equations (1) and (2) separately by group. When estimating the ITT impacts shown in the appendix, we use equation (1), but with Y_{is} substituted in place of J_{is}. In all cases, we use t tests to gauge the statistical significance of each impact and chi-squared tests to determine the significance of differences between groups.

The main estimates we report in the text are covariate-adjusted, to compensate for the modest treatment-control differences shown in Table 2 for YMLs in the analysis sample. Including baseline covariates as regressors also provides an additional layer of robustness against potential nonresponse bias, as discussed previously, and is expected to improve the precision of the impact estimates. Missing values in the original data were relatively rare, never exceeding 10

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and participation groups. It is not possible to construct a counterfactual mean more directly from the control group data, because we cannot determine which of its members would have complied had they been assigned to treatment.

[8] That is, if N is the total sample size, p_g is the proportion in subgroup g, there are S strata, and the regression includes K covariates with non-interacted coefficients, we used $p_g(N - K) - S$ in place of $N - K - S$ to calculate standard errors and test degrees of freedom for group g.

percent for any covariate and below 5 percent for most of them (Appendix Tables A.1 and A.2). Hence, given the relatively small initial sample size of YMLs, we imputed missing values of the covariates using a single draw from a multivariate chained imputation algorithm (implemented in Stata). For completeness, we also present in the appendix tables of impact estimates allowing for stratum fixed effects only, with no controls for other baseline covariates.

Virtually all of the outcome measures we examine come directly from variables in the NJCS evaluation files or are simple transformations of those variables. For example, we convert weekly earnings into annual earnings—both measures include zeroes for the jobless, as do measure of weeks and hours worked per year—and, we account for inflation by converting to 2016 dollars.[9] The one exception is an hourly wage measure that we defined based on the reported earnings and hours work only for those who were employed. Hence, estimated treatment-control differences or IV results for this wage measure might not represent impacts if Job Corps participation resulted in compositional differences in the set of people who became employed. All other outcomes were defined for the full set of youths in the analysis sample.

IV. MAIN RESULTS FOR YOUTH WITH MEDICAL LIMITATIONS

Training and education outcomes

Job Corps was highly successful in delivering education and training to YMLs, although many participants would have received some amount of education/training elsewhere. Job Corps enrollees typically have substantial deficits in their literacy and numeracy skills, with fewer than 20 percent of YMLs having a high school diploma at entry (Table 2 above). An important goal of Job Corps' academic program is to alleviate these deficits through remedial education and GED preparation, as well as by providing vocational training to facilitate entry into the labor market. As seen in Figure 1, YML participants received almost 1,200 hours of education or training during the first year after randomization, nearly four times the number of hours that they would have received had they not had access to Job Corps; the first-year impact was 879 hours. There were smaller positive impacts on hours of education/training received in the second and third years after random assignment. Job Corps participation data suggest that this decline was likely driven by program exits; approximately 76 percent of YMLs had exited by the end of the first year after random assignment, and 94 percent had done so by the end of the second year.

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[9] The public-use file documentation indicates that earnings measures in the data were in 1995 dollars, and so we have inflated them by a factor of 1.584. Neither that documentation nor the main NJCS reports indicate whether public assistance amounts were inflation adjusted. Hence, we assume that they were expressed in nominal terms and multiply them by a factor of 1.504 based on the price level in 2016 relative to 1997, roughly the mid-point of the follow-up period.

Figure 1.   Hours of education/training for YML participants, by year
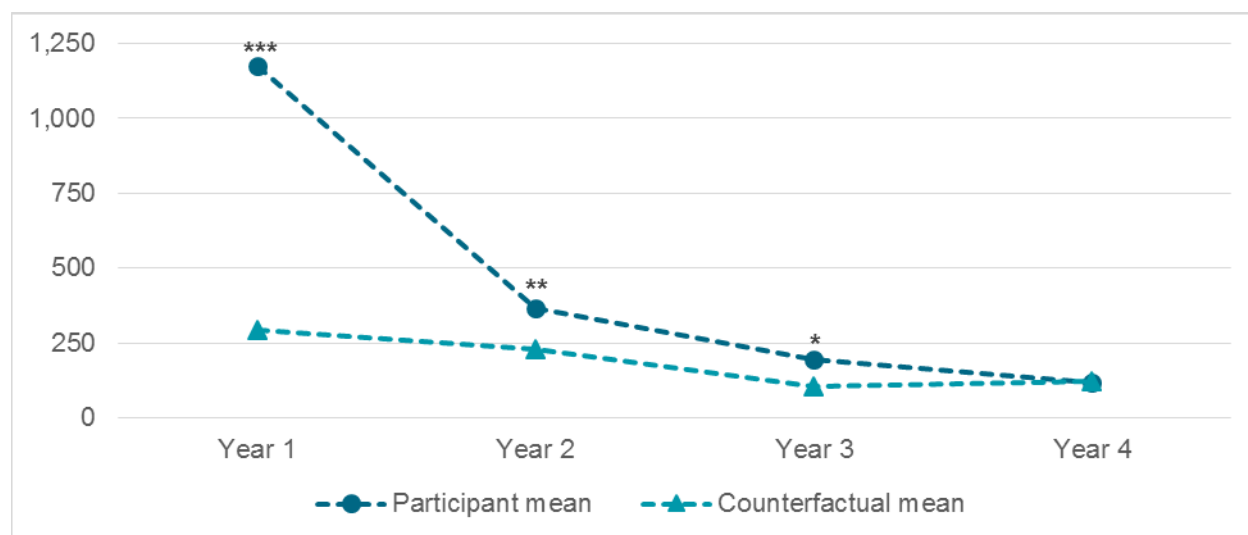
Note: All estimates are expressed in hours and were calculated using the main analysis sample of YMLs
          (N = 472) and nonresponse/stratification weights described in Section III. Participant means are estimated
          average treated outcomes for compliers; counterfactual means are complier's treated means minus a
          covariate-adjusted CACE impact for the given outcome. Impacts are based on the regressions specified in
          Section III that exclude cases with missing data for the given outcome, so sample sizes differ by year.
          Precision is based on standard errors that are robust to heteroscedasticity. Appendix Tables A.3 and A.4
          contain additional details about the sample sizes and estimates. * / ** / *** indicates that the underlying
          impact estimate is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

As indicated by the estimates in Table 3, Job Corps led to substantial increases at the extensive margin of education/training receipt, but the bulk of its impacts came from the intensive nature of program services. Over 45 percent of participants received education/training in the first year due to their participation in Job Corps, and this impact on the extensive margin was almost 24 percent over the whole four-year period after random assignment. In addition, the overall impact across the four-year period was an increase of 1,030 hours of education/training per participant – or approximately the number of hours in a standard school year. This impact represents an increase of 120 percent over the 783 hours YMLs would otherwise have received. Together, the estimates imply that most of this impact was based on the intensiveness of the Job Corps program, as opposed to the increase in the share of youths who received education or training. To see this, consider holding hours per participant fixed at the counterfactual level of 783. The extensive-margin impact would translate into an increase of only 187 hours [= 783 × 0.239]. Hence, over four-fifths of the overall impact arose from the larger number of hours of education/training provided by Job Corps, compared to what programs participants might otherwise have sought out.

Table 3.   Per-participant impacts on education/training outcomes of YMLs

Outcome	Counterfactual mean	Per-participant impact	Standard error of impact
Receipt of education or training			
Any education/training in year 1	53.9	45.4***	(5.9)
Any education/training in year 2	46.2	2.9	(6.9)
Any education/training in year 3	24.0	8.2	(6.5)
Any education/training in year 4	27.0	1.1	(6.4)
Any education/training over four-year period	76.1	23.9***	(5.2)
Amount of education/training received (hours)			
Hours of education/training in year 1	295	879***	(73)
Hours of education/training in year 2	228	138**	(62)
Hours of education/training in year 3	106	87*	(49)
Hours of education/training in year 4	121	-5	(40)
Total hours of education/training over four-year period	783	1,030***	(140)
High school completion rate			
Had a GED at end of year 4	27.2	14.6**	(6.3)
Had a high school (HS) diploma at end of year 4	15.3	-0.3	(2.6)
Had either GED or HS diploma at end of year 4	42.5	14.4**	(6.4)

Note: Estimates are percentages (counterfactual means) and percentage points (impacts and standard errors) unless otherwise indicated. Each row presents covariate-adjusted CACE impact estimates for the given outcome using the main analysis sample of YMLs (N = 472), the nonresponse/stratification weights, and the regression specification described in Section III. Results for each outcome exclude cases with missing data, so sample sizes differ by row. Standard errors are robust to heteroscedasticity. Appendix Tables A.3 and A.4 contain additional details about the sample sizes and estimates. * / ** / *** indicates that the impact estimate is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

We also find that Job Corps resulted in large increases in GED attainment among YMLs. Program participants were 14.6 percentage points more likely to have had a GED by the end of the fourth year after random assignment; this constitutes over a 50 percent increase relative to the counterfactual completion rate (Table 3). The likelihood of receiving a high school diploma was not substantially altered by Job Corps, however. Given that past research has found that the GED *per se* has minimal pecuniary returns in the labor market (Heckman, Humphries, and Kautz 2014), any impacts of Job Corps on earnings would likely arise from human capital formation or job placement, not the attainment of this credential.

Labor market outcomes

Participation in Job Corps resulted in large improvements in most labor market outcomes for YMLs in the second through fourth years after random assignment, a period when most were no longer participating in Job Corps. This is most clearly seen in Figure 2, which focuses on earnings by year. During the first year, YMLs who took up Job Corps earned $546 less than what they otherwise would have received, but the difference was not statistically significant. Participants' earnings would have grown over time even if they had not entered the program (Figure 2). However, the earnings of Job Corps participants jumped significantly compared to their counterfactual level of earnings in the second year, at which point over three-quarters of participants had exited Job Corps. Per-participant impacts were $3,490 in the second year, $4,104 in the third year, and $4,304 in the fourth year—increases of 57, 51, and 38 percent, respectively, over what their earnings would have been without access to Job Corps.

Figure 2.   Earnings for YML participants, by year

Note: See notes to Figure 1. All estimates are expressed in 2016 dollars. Appendix Tables A.3 and A.4 contain additional details about the sample sizes and estimates. * / ** / *** indicates that the underlying impact estimate is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.
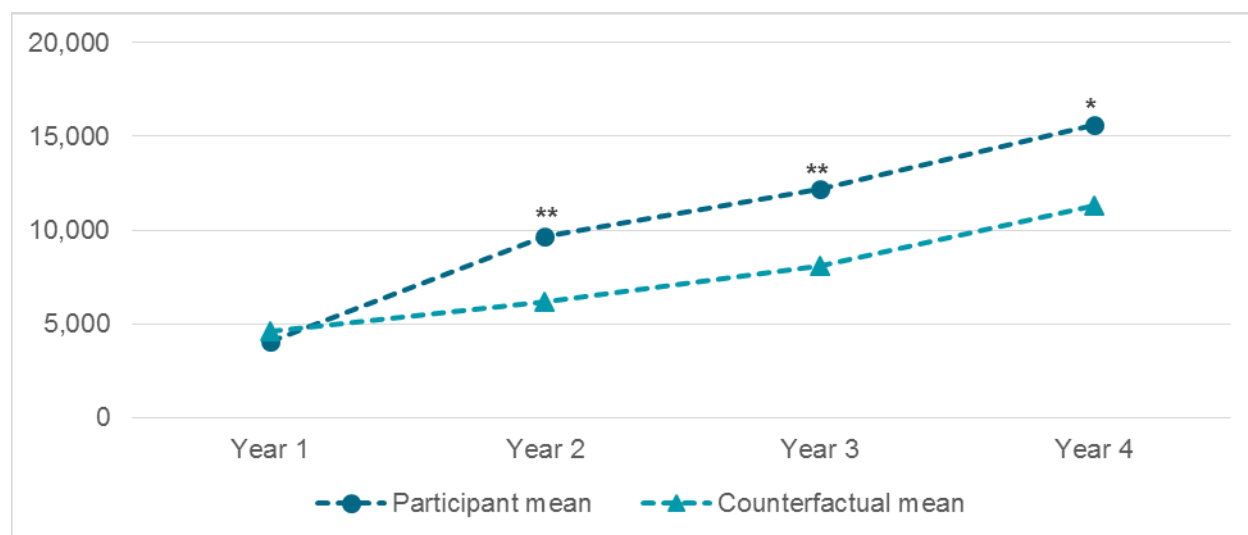
The pattern of earnings impacts suggests that program participation did not crowd out employment early on, consistent with the negligible impacts of Job Corps on the number of weeks or hours worked in the first year, shown in Table 4.[10] Despite the large increase in the time spent in education/training as a result of Job Corps, YMLs did not substantially reduce their labor supply during the first year after random assignment. In subsequent years, Job Corps had positive impacts on the number of weeks and hours worked. Across the whole four-year period, Job Corps resulted in YML participants working, on average, 21.1 more weeks and 998 more hours, both constituting 32 percent increases over the number of weeks/hours that these YMLs otherwise would have spent working.

Overall, Job Corps had an estimated earnings impact of $9,708 for YML participants over the four-year period, a 29 percent increase over their counterfactual base. A substantial portion of this impact is likely driven by growth in the amount of time employed. As indicated in Table 4, estimates for hourly wages among those who worked were small, negative, and insignificant. However, these estimates might not represent impacts on wages for those who otherwise would have been employed, given the potential for changes in the number and types of youths who became employed or the nature of work they obtained as a result of participation in Job Corps.

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[10] Outcome measures exclude work activities related to Job Corps such as the allowance paid to program enrollees.

Table 4.   Per-participant impacts on labor market outcomes of YMLs

Outcome	Counterfactual mean	Per-participant impact	Standard error of impact
Earnings (dollars)			
Earnings in year 1	4,615	-546	(1,086)
Earnings in year 2	6,165	3,490**	(1,487)
Earnings in year 3	8,057	4,104**	(1,589)
Earnings in year 4	11,318	4,304*	(2,263)
Total earnings over four-year period	33,269	9,708**	(4,655)
Employment rate (percentages for means and percentage points for impacts)			
Any employment in year 1	53.0	8.2	(6.7)
Any employment in year 2	64.2	9.4	(6.4)
Any employment in year 3	69.0	9.7	(6.1)
Any employment in year 4	61.7	16.9***	(6.1)
Ever employed over four-year period	92.6	4.1	(3.3)
Weeks worked			
Weeks worked in year 1	13.2	-1.8	(2.3)
Weeks worked in year 2	14.4	7.9***	(2.7)
Weeks worked in year 3	17.7	7.7***	(2.7)
Weeks worked in year 4	20.4	8.9***	(2.8)
Total weeks worked over four-year period	67.5	21.1***	(8.0)
Hours worked			
Hours worked in year 1	540	-79	(111)
Hours worked in year 2	624	370***	(133)
Hours worked in year 3	754	392***	(129)
Hours worked in year 4	887	479***	(147)
Total hours worked over four-year period	3,077	998***	(376)
Hourly wage (dollars)[a]			
Average hourly wage in year 1	8.2	0.1	(0.5)
Average hourly wage in year 2	10.0	-0.6	(0.8)
Average hourly wage in year 3	10.4	-0.2	(0.7)
Average hourly wage in year 4	11.6	-0.6	(1.0)

Note: See notes to Table 3. Financial amounts have been inflation adjusted to 2016 dollars. Appendix Tables A.3 and A.4 contain additional details about the sample sizes and estimates. * / ** / *** indicates that the impact estimate is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

[a]Hourly wages were calculated only among youths who were working in a given year. Hence, the reported wage estimates might not represent true impacts if program participation changed the nature of selection into employment.

Receipt of public assistance

The earnings impacts of Job Corps appear to have led to increased economic self-sufficiency among YMLs, and the resulting reductions in receipt of public assistance were more apparent for SSI benefits than for general welfare programs. The point estimates in Table 5 suggest small reductions in the receipt of benefits through the Aid to Families with Dependent Children (AFDC), Temporary Assistance for Needy Families (TANF), and food stamps programs combined. For example, over four years there was a small and statistically insignificant impact of -$533 (in 2016 dollars) on the amount of such welfare/food stamp benefits received, an 11 percent reduction from what YML participants would otherwise have collected. In contrast, the impact on total SSI benefits received was -$2,088—a 52 percent reduction from the counterfactual average—and statistically significant at the 10 percent level. Hence, although a general goal of Job Corps is to improve the economic independence of disadvantaged youth, these aims were realized for YMLs most clearly in relation to long-term disability benefits through the SSI program.

Table 5.   Per-participant impacts on receipt of public assistance by YMLs

Outcome	Counterfactual mean	Per-participant impact	Standard error of impact
Welfare or food stamp benefits			
AFDC/TANF or food stamp receipt in year 1	37.5	-2.3	(5.2)
AFDC/TANF or food stamp receipt in year 2	34.7	-3.3	(6.4)
AFDC/TANF or food stamp receipt in year 3	31.6	-5.5	(6.2)
AFDC/TANF or food stamp receipt in year 4	25.0	-1.6	(5.4)
Amount of AFDC/TANF or food stamp benefits collected over four-year period (dollars)	4,925	-533	(1,105)
SSI benefits			
SSI receipt in year 1	13.9	-7.9*	(4.5)
SSI receipt in year 2	16.5	-8.9**	(4.5)
SSI receipt in year 3	16.5	-8.8*	(4.6)
SSI receipt in year 4	14.4	-6.5	(4.3)
Amount of SSI benefits collected over four-year period (dollars)	3,825	-2,008*	(1,052)

Note: See notes to Table 3. Entries are percentages (counterfactual means) and percentage points (impacts and standard errors) unless otherwise indicated. Financial amounts have been inflation adjusted to 2016 dollars. Appendix Tables A.3 and A.4 contain additional details about the sample sizes and estimates. */ ** / *** indicates that the impact estimate is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

The reduction in the total dollar amount of SSI benefits collected by YMLs as a result of Job Corps participation can plausibly be explained by the impacts of the program on annual benefit recipiency rates. The inflation-adjusted monthly SSI benefit amount during the study period was $726. If the SSI recipients who stopped collecting benefits would otherwise have collected the full benefit amount for the whole of each year, this implies a four-year reduction of $2,797 [= $726 × 12 × (0.079 + 0.089 + 0.088 + 0.065)] in total benefits collected. The projected reduction based on those assumptions is larger in absolute value than the observed impact of -$2,008 on total benefits collected, which makes sense given that at least some recipients would collect partial benefits (or no benefits) for a portion each year. As noted previously, reductions in SSI receipt could arise through several mechanisms, but it is not feasible to sort out the relative importance of each mechanism in the present analysis.

Other outcomes

Our estimates suggest that Job Corps may have helped reduce the medical limitations facing YMLs in the period shortly after random assignment, but this effect does not show up in a reliable and consistent fashion. Job Corps could conceivably improve health outcomes by directly providing healthcare; by providing education that allowed YMLs to better take advantage of available services or engage in self-care; by increasing their earnings and, therefore, spending power; and by helping them find work for which their medical conditions was not a limiting factor. Estimated impacts on presence of medical limitations at the 12-month survey and the 30-month survey were -7.2 and -6.9 percentage points, respectively, as shown in Table 6. However, these estimates are not statistically significant, and the counterfactual means suggest that less than one-third of YML participants would continue to report limitations at 30 months even if they had not participated in Job Corps. Moreover, the estimated impact on medical limitations at 48 months has the opposite sign, although this, too, is statistically insignificant.

Table 6.   Per-participant impacts on other outcomes of YMLs

Outcome	Counterfactual mean	Per-participant impact	Standard error of impact
Prevalence of medical limitations			
Medical limitation at time of 12-month survey	34.3	-7.2	(6.4)
Medical limitation at time of 30-month survey	30.5	-6.9	(6.6)
Medical limitation at time of 48-month survey	18.2	3.3	(6.1)
Arrest rates			
Arrested/charged in year 1	21.5	-11.1**	(4.9)
Arrested/charged in year 2	12.7	-3.2	(4.3)
Arrested/charged in year 3	16.8	-3.8	(4.7)
Arrested/charged in year 4	10.7	-0.4	(4.8)

Note: See notes to Table 3. Entries are percentages (counterfactual means) and percentage points (impacts and standard errors). Appendix Tables A.3 and A.4 contain additional details about the sample sizes and estimates. * / ** / *** indicates that the impact estimate is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

We also found that Job Corps decreased the likelihood of being arrested or charged with a crime. As indicated by the estimates in Table 6, program participation roughly halved the probability that participants would be arrested/charged with a crime—from 21.5 percent to 10.4 percent—during the first year after random assignment. Reductions in arrests were smaller and statistically insignificant in later years, suggesting that the first-year effect potentially arose because participants were diverted from criminal activity by intensive Job Corps program activities, rather than behavioral changes *per se*. However, within-year impacts in years two through four might also be understated if the counterfactual rate of criminal activity diminished over time in the control group due to an increasing cumulative incarceration rate.

V. DIFFERENCES IN IMPACTS ACROSS GROUPS

Comparison of YMLs to other youths without medical limitations at baseline

The earnings impacts for YMLs reported in Section IV are substantially larger than what was reported in the original NJCS evaluation for the all youth participants (Schochet et al. 2001, 2003, 2008). Our estimates are not directly comparable to those reported in the original study reports due to differences in methodologies (see Section III). Hence, we re-estimated impacts for other youths who did not have medical limitations at baseline using the same methodology and sample restrictions as used for YMLs. Appendix Tables A.5 through A.7 include estimates of these impacts for youths without baseline medical limitations and how they differ from the impacts found for YMLs. Here, we compare impacts for a key subset of outcomes only.

Youth participants without medical limitations at baseline had a notably different earnings profile over time than did YML participants. As seen in Figure 3, these youths experienced an earnings loss in the first year after random assignment, presumably because of their participation in Job Corps. Positive impacts for these youths did not emerge until the third year after random assignment. Comparing Figures 2 and 3, their earnings impacts appear smaller than for YMLs. Further the estimates indicate that youths without baseline medical limitations would still have earned more had they not participated in Job Corps than YMLs who did take up Job Corps services. This could be related to the better general health of youths without baseline limitations or other factors that differed between the groups—an issue we return to in Section VI.

Figure 3.   Earnings for youth participants without medical limitations at baseline, by year
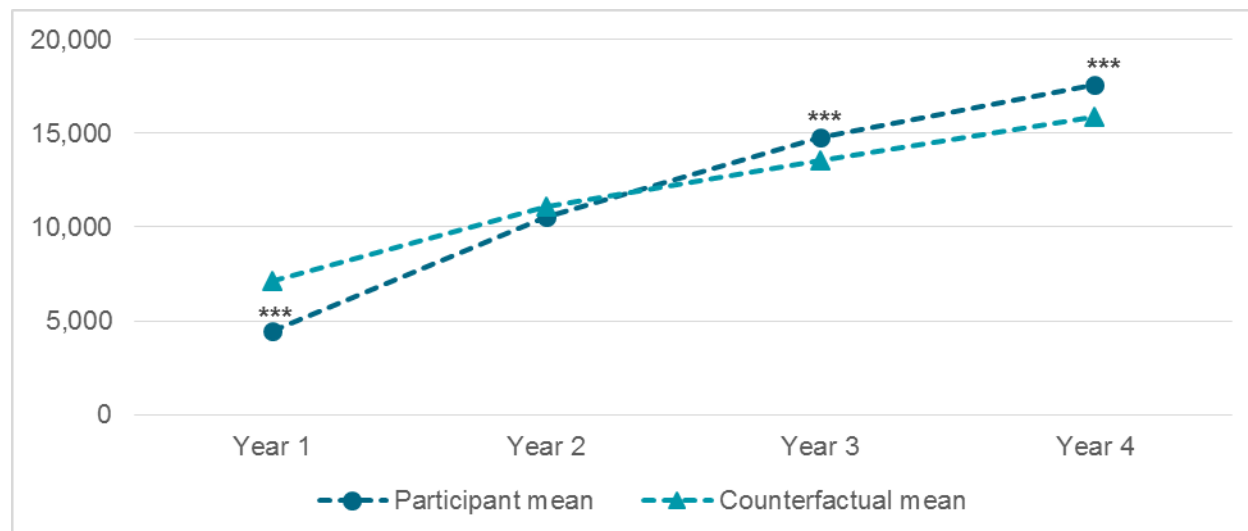
Note: See notes to Figure 1. All estimates are expressed in 2016 dollars. Appendix Tables A.5 and A.6 contain additional details about the sample sizes and estimates. * / ** / *** indicates that the underlying impact estimate is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

YMLs derived dramatically larger earnings increases from Job Corps participation than did other youths, even though the education/training impacts were similar amounts across groups. Compared to other youths, YMLs experiences smaller declines in earnings during the first year after random assignment and substantially larger positive earnings impacts in subsequent years. Over the four-year period as a whole, Job Corps increased the earnings of YML participants by $9,611, whereas other youth participants basically broke even. The number of hours of additional training and education received as a result of Job Corps was only slightly higher among YMLs compared to other youth: 1,030 versus 984, a non-significant difference. In proportionate terms, this represented a 131 percent increase over the counterfactual number for YML participants and 114 percent increase for other youth participants. In addition, the impacts on the likelihood of a GED or high school degree were not measurably different for YMLs and other youths.

Per-participant impacts of Job Corps on SSI receipt were also substantially higher among YMLs relative to other youths, as was the impact on arrest rates during the first year after random assignment. As indicated in Table 7, reductions in annual SSI recipiency rates as a result of Job Corps participation were 45 to 57 percent among YMLs, relative to the counterfactual rates, but only 18 to 27 percent among other youths. (Further, counterfactual recipiency rates were almost twice as high among YMLs than among other youths, indicating that the baseline question on medical limitations differentiates to some extent among enrollees according to their rates of later SSI receipt.) This is consistent with larger earnings impacts arising for YMLs, relative to other youths, arising due to greater alleviation or avoidance of a functional limitation. However, the data do not allow us to establish this definitively, and there were other differences in short-term impacts that could have led to different medium-term earnings impacts. For example, the magnitude of the per-participant impact on criminal activity in the first year after random assignment was larger for YMLs than other youths (-10.6 versus -4.1 percentage points).

Table 7.   Per-participant impacts for YMLs compared to other youth

Outcome	Estimates for YML participants			Estimates for other youths participating in Job Corps			Diff. in impacts	SE of diff.
	CF mean	Impact	SE of impact	CF mean	Impact	SE of impact		
Amount of education/training received (hours)								
Hours of education/training in year 1	295	879***	(73)	324	826***	(16)	53	(74)
Hours of education/training in year 2	228	138**	(62)	236	175***	(15)	-37	(64)
Hours of education/training in year 3	106	87*	(49)	173	16	(11)	72	(51)
Hours of education/training in year 4	121	-5	(40)	144	-10	(10)	5	(41)
Total hours of education/training over four-year period	783	1,030***	(40)	861	984***	(33)	46	(144)
High school completion rate (percentages for means and percentage points for impacts)								
Had a GED at end of year 4	27.2	14.6**	(6.3)	25.5	15.5***	(1.2)	-0.9	(6.4)
Had a high school (HS) diploma at end of year 4	15.3	-0.3	(2.6)	22.8	-2.0***	(0.6)	1.7	(2.7)
Had either GED or HS diploma at end of year 4	42.5	14.4**	(6.4)	48.4	13.7***	(1.3)	0.7	(6.5)
Earnings (dollars)								
Earnings in year 1	4,615	-546	(1,086)	7,130	-2,688***	(221)	2,143*	(1,108)
Earnings in year 2	6,165	3,490**	(1,487)	11,067	-516	(331)	4,007***	(1,523)
Earnings in year 3	8,057	4,104**	(1,589)	13,548	1,226***	(369)	2,878*	(1,631)
Earnings in year 4	11,318	4,304*	(2,263)	15,874	1,699***	(423)	2,606	(2,302)
Total earnings over four-year period	33,269	9,708**	(4,655)	46,714	97	(960)	9,611**	(4,753)
SSI benefits (percentages for means and percentage points for impacts unless otherwise indicated)								
SSI receipt in year 1	13.9	-7.9*	(4.5)	6.2	-1.1	(0.7)	-6.8	(4.6)
SSI receipt in year 2	16.5	-8.9**	(4.5)	8.1	-1.7**	(0.8)	-7.2	(4.6)
SSI receipt in year 3	16.5	-8.8*	(4.6)	5.2	-1.4**	(0.6)	-7.4	(4.7)
SSI receipt in year 4	14.4	-6.5	(4.3)	3.9	-1.0*	(0.6)	-5.6	(4.3)
Amount of SSI benefits collected over four-year period (dollars)	3,825	-2,008*	(1,052)	1,368	-359**	(149)	-1,650	(1,062)
Arrest rates (percentages for means and percentage points for impacts)								
Arrested/charged in year 1	21.5	-11.1**	(4.9)	13.7	-4.1***	(0.9)	-7.0	(5.0)
Arrested/charged in year 2	12.7	-3.2	(4.3)	11.0	-1.1	(0.9)	-2.1	(4.4)
Arrested/charged in year 3	16.8	-3.8	(4.7)	10.9	-0.3	(0.9)	-3.6	(4.8)
Arrested/charged in year 4	10.7	-0.4	(4.8)	11.0	-1.3	(0.9)	0.9	(4.9)

Note: See notes to Table 3. Financial amounts have been inflation adjusted to 2016 dollars. Appendix Tables A.5 through A.7 contain additional details about the sample sizes and estimates. * / ** / *** indicates that the impact estimate or between-group difference in impacts is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

CF = counterfactual; SE = standard error.

Variation in impacts across subgroups of YMLs

We examine whether impacts differ between subgroups of YMLs to ascertain which types of these youths benefited the most from Job Corps. Although this analysis is inherently exploratory, particularly given the sample size, the results might inform a future assessment of how to optimally serve various types of youth with disabilities. We form three subgroups based on standard demographic measures that were also considered in the original NJCS evaluation: age at baseline, gender, and race/ethnicity. In addition, we form two health-related subgroups that were not considered in the original study. First, we divide the sample based on self-reported general health at baseline. Second, as discussed in Section III, we form subgroups based on types of baseline medical conditions that, based on data from the control group, were associated with a higher/lower propensity to subsequently receive SSI. We conduct this analysis for two summary outcomes: total earnings during the four years after random assignment (Figure 4) and total SSI benefits received over the same period (Figure 5).

Differences in the sizes of the earnings impacts across subgroups defined by age, gender, and race/ethnicity are qualitatively consistent with findings from the original NJCS evaluation (Schochet et al. 2008), and the SSI impacts follow a similar pattern. Earnings impacts per participant were substantially larger in magnitude for older participants than for younger participants ($21,561 versus $3,548). More strikingly, the entire reduction in SSI receipt among YMLs as a result of program participation appears to stem from the impact on those older than 18. One reason may be how SSI rules change as recipients age, as discussed in Section II. Our estimates also indicate that the earnings and SSI impacts were somewhat larger for white participants than non-white participants, but the differences by gender were small.

Program impacts on both earnings and SSI receipt were substantially larger among YMLs whose baseline medical conditions predicted a relatively high propensity to later receive SSI benefits. Participation appears to have resulted in substantially higher earnings impacts for this group relative to other youths ($16,424 versus $3,751). Combined with the estimated counterfactual means in Appendix Table A.9, the impact estimates suggest that Job Corps helped them catch up to other YMLs. Job Corps participation also reduced the extent to which youths with higher-SSI-propensity medical conditions actually collected SSI benefits. The impact on total SSI dollars received for this group was -$5,700 (highly significant); for other YMLs this impact was $542 (not significant). Earnings impacts of Job Corps were also somewhat larger among YMLs who were in worse general health at baseline, compared to those in better general health. However, reductions in actual SSI receipt were modestly larger among YMLs who were in better health at baseline than among those in worse health.

Figure 4. Impacts on total earnings and SSI benefits received by YML subgroup

(a) Per-participant impacts on total earnings over the four-year follow-up period
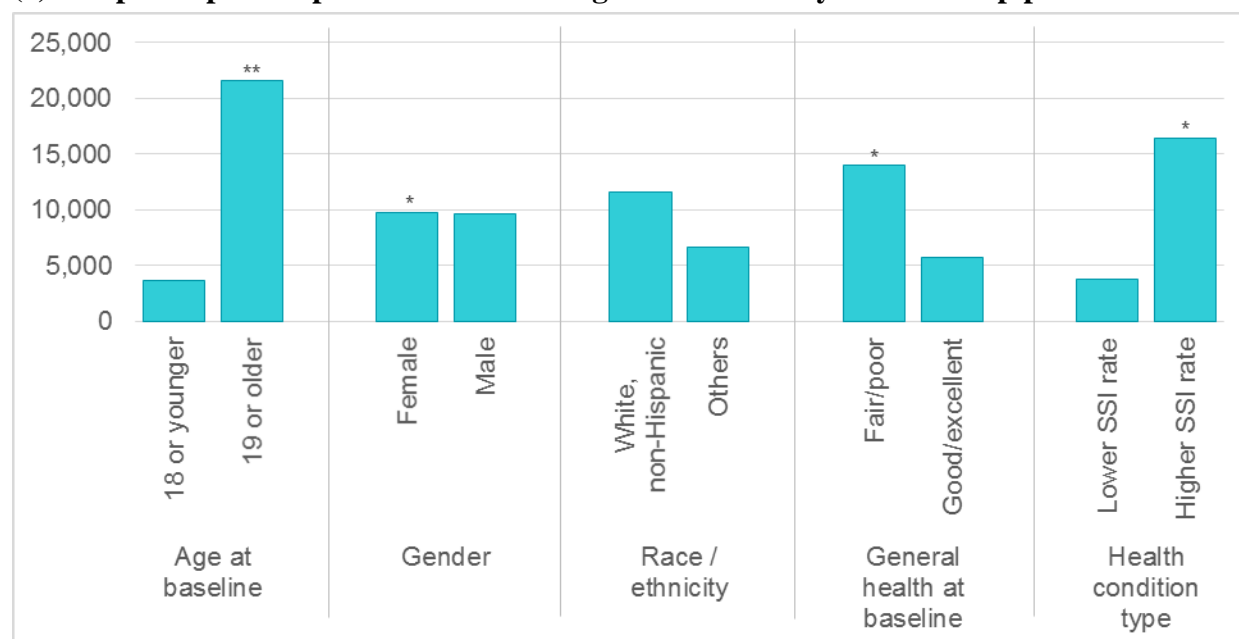
(b) Per-participant impacts on total dollars of SSI benefits received over the four-year follow-up period
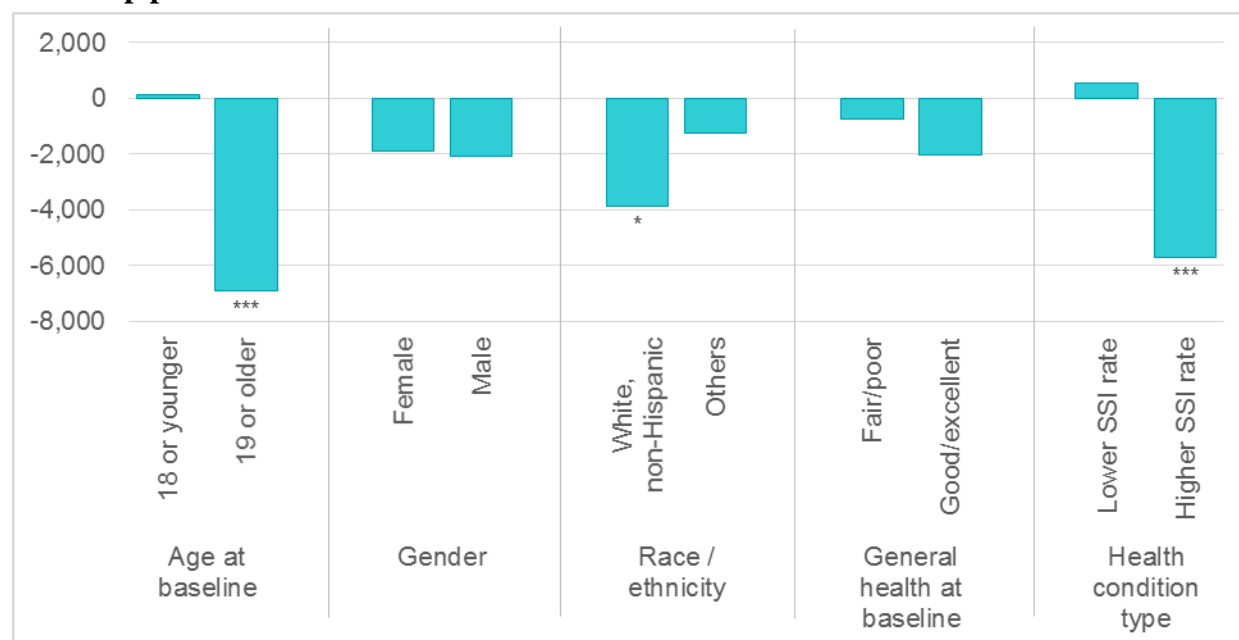
Note: All estimates are expressed in 2016 dollars. Each bar presents a separate covariate-adjusted CACE impact estimate for the given subgroup using the main analysis sample, nonresponse/stratification weights, and regression specification described in Section III. Results for each subgroup exclude cases with missing data, so sample sizes differ by row. Appendix Tables A.8 and A.9 contain additional details about the sample sizes and estimates. * / ** / *** indicates that the impact estimate for the given subgroup is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

VI. RESULTS FROM SENSITIVITY ANALYSES

Accounting for differences in characteristics between YMLs and other youth

We found larger and sometimes statistically significant differences in the impacts of Job Corps on YMLs compared to other youths (Section V), but these two groups also differed markedly in their other baseline characteristics (cf. Appendix Tables A.1 and A.2). Hence, differences in impacts might be due to differences in these other characteristics, rather than the presence or absence of medical limitations at baseline. As might be expected, YMLs were much more likely to report that they were in fair or poor general health at baseline—38 percent versus 12 percent. As a group, YMLs also faced moderately more socioeconomic disadvantages than other youths. For example, YMLs were more likely to receive welfare most of the time in childhood (25 percent versus 21 percent). Upon enrolling in Job Corps, they also were somewhat more likely to be living in public or subsidized housing (26 percent versus 22 percent) and less likely to have finished high school (15 percent versus 19 percent). At the same time, a larger share of YMLs was non-Hispanic and white, and a larger share of them indicated that they were native English speakers at baseline. Given the heterogeneity in impacts discussed in Section V, these baseline dissimilarities likely contribute to different impacts for YMLs, although the sign of the expected difference is not *a priori* clear.

To assess the potential for factors other than medical limitations to produce the observed differences in impacts, we re-estimated impacts for youths without such limitations after reweighting them to account for differences in other baseline characteristics. To do this, we estimated a logit model using the full sample of YMLs and other youths, with baseline medical limitations as the dependent variable. The explanatory variables consisted of the non-collinear subset of the variables in Table 2, excluding the measures related to the duration or nature of YMLs' medical conditions but including self-reported general health at baseline. Based on the logit, we calculated propensity odds-ratio weights and applied them to the group of youths without baseline medical limitations (in combination with the base nonresponse/stratification weights). Using this weighted sample, we re-estimated impacts for two key outcomes—total earnings and total SSI receipt over the four-year follow-up period. Comparing the original and reweighted estimates for youths without medical limitations sheds light on the extent to which differences in other observable characteristics played a role in determining the differences in impacts between these youths and YMLs.

Our estimates show that the baseline characteristics we adjusted for did not substantially moderate the observed impacts. As indicated in Figure 5, the earnings impact for youths without health limitations increases modestly when reweighting this group toward the baseline distribution of YML characteristics. However, the resulting four-year impact estimate for these other youths is $1,420, which is still well below the $9,708 impact found for YMLs. Similarly, reweighting slightly increases the magnitude of the impact of Job Corps on SSI receipt among youths without baseline medical limitations, but it does not appreciably diminish the gap between the estimate for YMLs and these other youths. Combined with our analysis of YML subgroups, these results are consistent with the hypothesis that some feature of the program is particularly effective at improving the employment prospects of youth facing medical challenges more generally. Of course, there could be other unobserved differences between groups that were not accounted for in this analysis.

Figure 5.   Impacts for YMLs and other youths before and after accounting for baseline differences between groups

(a) Per-participant impacts on total earnings over the four-year follow-up period
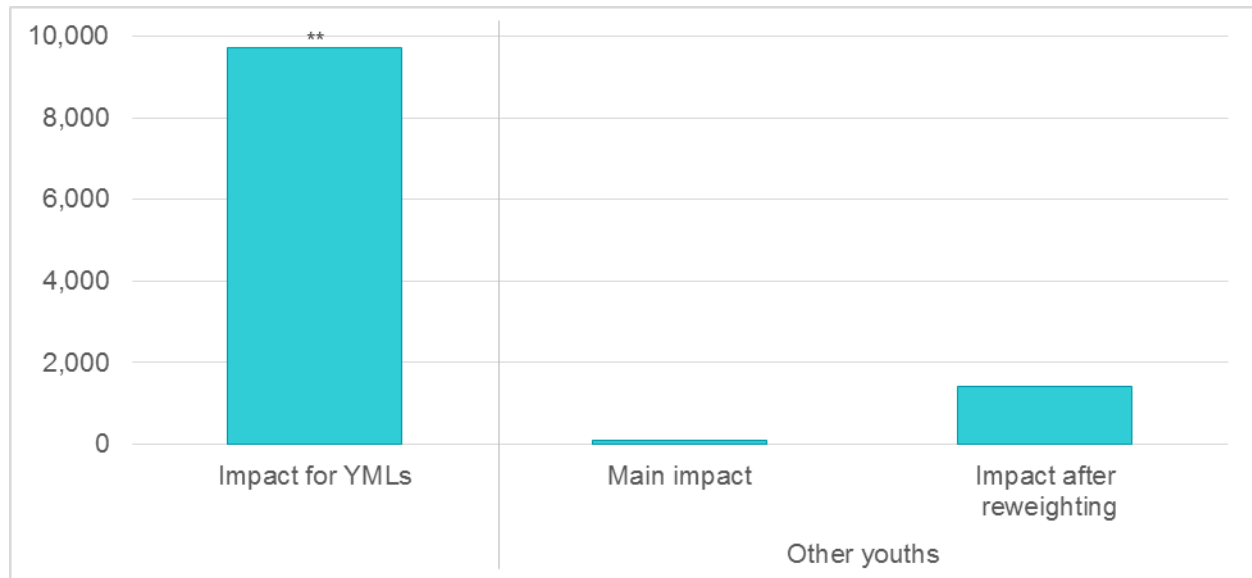
(b) Per-participant impacts on total dollars of SSI benefits received over the four-year follow-up period
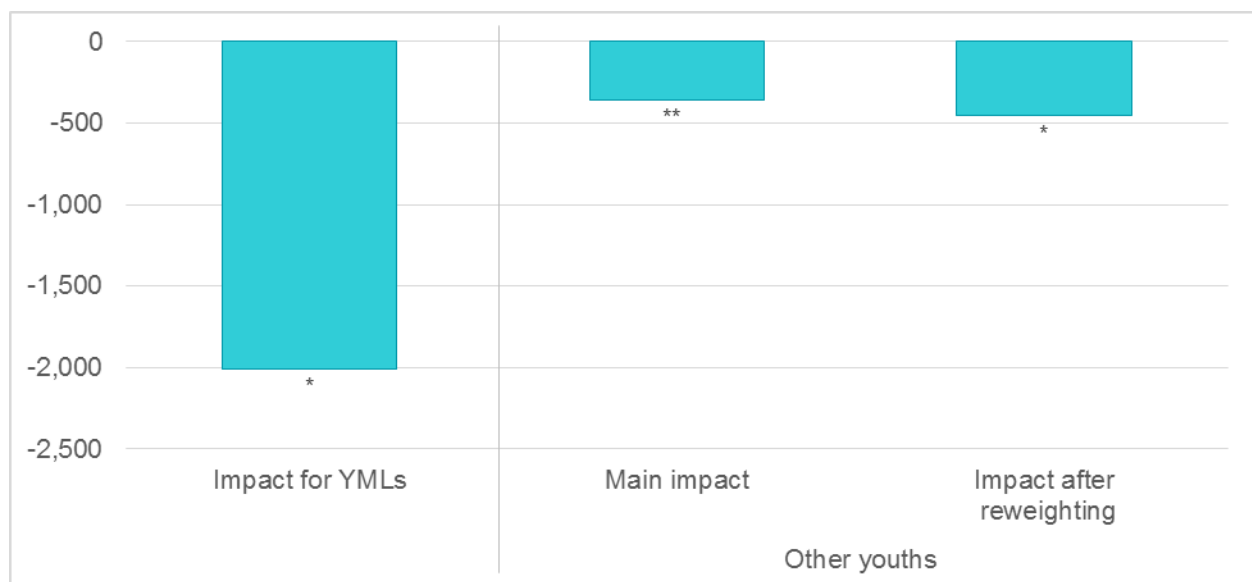
Note: All estimates are expressed in 2016 dollars. Impacts for YMLs and the main impacts for other youths are the same as in Table 7. The second set of impacts for other youths are CACE estimates that use the same sample and methods, but additionally reweight youths without baseline medical limitations so that their distribution of other baseline characteristics more closely resembles that of YMLs. Appendix Tables A.10 and A.11 contain additional details about the sample sizes and estimates. * / ** / *** indicates that the given impact estimate is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

Assessing how survey response issues potentially affected earnings impact estimates

We assess the extent to which relying on self-reported outcome measures for the sample of survey respondents might have biased our results. As discussed in Section II, some issues identified in the NJCS—namely, treatment-control differences in the propensity to respond to the survey—could affect the internal validity of our estimates. In addition, survey-based earnings outcomes were based in part on the number of hours worked, and respondents to the final Job Corps survey reported working about 10 percent more hours per week than the national average for all adults at that time. Although this finding could partially reflect a genuine difference, the authors noted that it also may reflect systematic recall bias from, say, respondents incorrectly including unpaid leave time or furloughs in their reported hours worked.

To assess the extent to which these issues might have affected our estimated impact, we conducted three several sensitivity checks along the lines of those in the original evaluation. As in Section VI, we focused on summary dollar amounts covering the four-year period after random assignment. The results are reported in Appendix Tables A.10 and A.11. Here, we focus on the results of these analyses for earnings, for which a more comprehensive set of adjustments was possible, based on the information reported by Schochet et al. (2003). As reported previously, without making any adjustments for survey response issues, we found an impact on total earnings of $9,708 among YMLs and $97 among other youths.

First, we trimmed the sample to adjust for observed nonresponse differentials, which resulted in negligible changes to our estimated earnings impacts. For this check, we removed the latest survey respondents to equalize the likelihood of being included in the analysis sample for each of the four main analysis groups (defined by random assignment status and presence or absence of medical limitations at baseline). Given the inclusion rates reported in Section III, this amounted to trimming YMLs from the treatment group, as well as other youths in both assignment groups, so that the resulting sample inclusion rate was 81 percent—the initial rate for YMLs in the control group.[11] As indicated by the first set of bars in Figure 6, this adjustment slightly increased the estimated impacts on total earnings: $10,075 for YMLs and $103 for other youths. These estimates differ by only 4 to 6 percent from the unadjusted estimates. The estimated impact of Job Corps on total SSI benefits collected over the four-year period based on the trimmed sample also differed very little from the impacts estimated without making this adjustment (Appendix Table A.11).

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[11] We identified the "latest" respondents using percentiles of response time based on the date that they completed the 48-month survey. Because the public-use files did not contain the initial survey release dates, we used the earliest response date among individuals who were randomly assigned in each week as a proxy. In addition, we constructed percentiles within random-assignment weeks or groups of adjacent weeks in cases when a subset of individual weeks contained fewer than 250 cases. We defined percentiles in these relative terms because individuals randomly assigned in earlier weeks tended to have a wider distribution of response times (with higher averages and medians), presumably because they had more time to complete the survey before the study ended.

Figure 6.   Per-participant impacts on four-year earnings for YMLs and other youths, after adjustments based on potential survey response issues
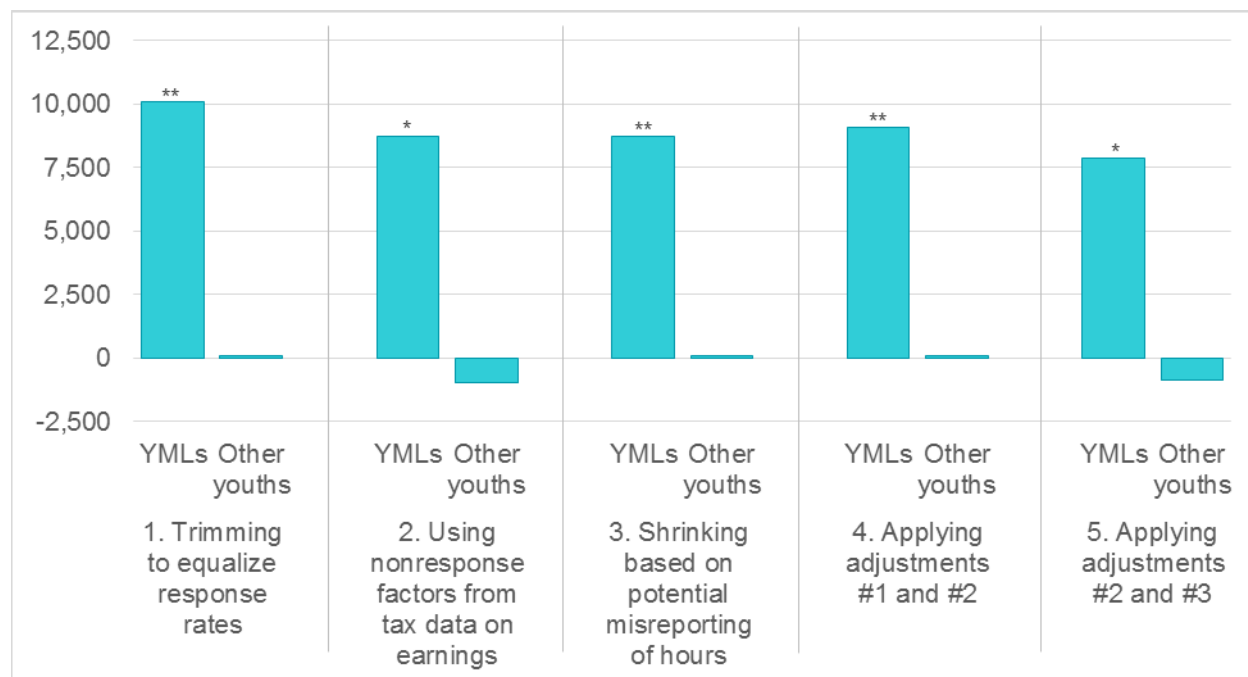
Note: All estimates are expressed in 2016 dollars. Each bar presents a separate covariate-adjusted CACE impact estimate for the given group using the weights, and regression specification described in Section III, but adjusting either the sample or the outcome measures as described in the text of this section. Appendix Table A.10 contains additional details about the sample sizes and estimates. * / ** / *** indicates that the impact estimate for the given group is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

Second, we applied nonresponse adjustment factors derived from administrative tax data; the resulting earnings impact estimates were somewhat smaller than the unadjusted estimates, although the differences were not considerable. These adjustment factors were calculated by Schochet et al. (2003) based on how earnings in the administrative data compared between each random-assignment group as a whole and the survey respondents in that group. That is, for random-assignment group g and follow-up year y, the adjustment factor was $f_{g,y} = \bar{A}_{g,y}/\bar{R}_{g,y}$, where $\bar{A}_{g,y}$ and $\bar{R}_{g,y}$ denote average earnings in that year for the full group and respondents, respectively. These adjustment factors were all less than one, indicating a general tendency for survey respondents to have higher average earnings than those who did not respond. Applying them separately to each assignment group's survey earnings data, as in the original evaluation, would both correct for potential external and internal validity concerns. Given our focus on internally valid estimates within the sample, we used these factors to account only for the treatment-control differential, multiplying the control group's earnings in year y by $f_{C,y}/f_{T,y}$.[12] This yielded estimated impacts of Job Corps participation on total earnings of $8,744 for YMLs and -$977 for other youths (Figure 6). Compared to the unadjusted estimate, this adjustment reduced the estimated impact for YMLs by approximately 10 percent. However, the difference in

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[12] Separate adjustment factors were not available for subgroups, so we applied the overall adjustment factors for the treatment group and the control group to the earnings of both YMLs and other youth within the respective group.

impacts between YMLs and other youths was similar when making this adjustment ($9,721) to the difference in the unadjusted impacts ($9,611).

Third, we adjusted for potential over-reporting of hours worked among survey respondents, which resulted in more-conservative impact estimates that still suggest large benefits for YMLs (and limited effects for other youths). Following Schochet et al. (2008), we implemented this adjustment by scaling all earning measures down by 10 percent, yielding impact estimates that are also 10 percent smaller in in magnitude. Combining this with the nonresponse adjustment factors based on administrative tax data, as described above, yielded an even smaller per-participant impact of Job Corps on the total earnings of YMLs over the four-year period. However, the resulting estimate of $7,870 is significantly different from zero and within 20 percent of the unadjusted estimate. This adjusted estimate for YMLs is still quite sizeable, particularly when compared to the analogous impact estimate of -$879 for other youths.

VII. DISCUSSION

Based on data from the late-1990s NJCS, we found that Job Corps services for YML participants significantly increased their self-reported earnings and significantly reduced their reliance on SSI. Impacts on earnings correspond to 50 to 60 percent of counterfactual average earnings, and SSI benefits received were cut in half. These earnings and SSI impacts for YMLs were substantially larger in magnitude than the impacts we found for comparable youths who did not report a medical limitation at baseline. We also found especially strong impacts among YMLs over age 18 and among who would be at a relatively high risk of SSI receipt in the absence of Job Corps.

This pattern of results is encouraging when considering the relative cost-effectiveness of Job Corps for YMLs (compared to other youth), but data limitations prevent us from establishing the net social benefits for this group. The operating costs of Job Corps are high, and the original NJCS evaluation only found it to be cost effective for subgroups with large and sustained earnings impacts (Schochet et al. 2006). Considering our sample, per-participant operating costs were only slightly lower for YMLs than for other youths ($25,300 versus $27,800 in 2016 dollars). Although some social benefits would probably be larger for YML participants than for others (reduced crime, for example), results from the original evaluation indicate that program costs would largely need to be offset through the increased earnings of participants. Per-participant earning impacts for YMLs group are on the order of $7,500 to $10,000 over a four-year period (or 30 to 40 percent of the per-participant cost). In addition to helping mitigate against potential survey response issues, administrative data are needed to establish whether these impacts persisted substantially beyond the four-year period covered by the survey.[13]

Nonetheless, our findings suggest that Job Corps increased the foothold in the labor market for YMLs enrolled during the 1990s, and thereby improved the work outcomes of at least some youth with disabilities. This could be an important finding in and of itself, given that roughly three-quarters of a million youths with disabilities in the United States make the transition to

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[13] Administrative data on disability benefits could also be used to produce improved estimates of the impacts of Job Corps on SSI receipt. This would not affect the assessment of cost-effectiveness, however, because transfer programs like SSI have no net social cost or benefit.

adulthood annually, and future cohorts are likely to grow larger (Halfon et al. 2012; Slomski 2012). The Workforce Innovation and Opportunity Act (WIOA), which went into effect in 2015, tasked vocational rehabilitation (VR) agencies with setting aside at least 15 percent of their annual federal grant funds to provide employment services. Although VR agencies have historically served such youth, many are seeking new or improved ways to do so. Job Corps could be a promising model for them to explore. It is noteworthy that our estimated impacts of Job Corps for YMLs were generally larger and more-sustained than what was found in the Youth Transition Demonstration (YTD), which provided early work-place experience, job placement, and employment services, and other supports (Fraker et al. 2014; 2015). However, the population served by YTD consisted of transition-age youth either receiving or likely eligible for SSI benefits. These youth almost certainly faced more-significant disabilities and likely were in poorer health than the YMLs enrolled in the in the NJCS during the 1990s.

An important caveat is that the impact of Job Corps on earnings and benefit outcomes today may be quite different than in the 1990s due both to changes in how the program serves YMLs and broader policy changes affecting youth with disabilities. One notable example, discussed previously, is the removal of the Job Corps eligibility criterion designed to screen out youth with more significant medical conditions. Among those who were included in the NJCS, our estimates indicate that earnings impacts were also apparent for those in worse general health at baseline, but this group showed a smaller reduction in SSI receipt than those in better general health at baseline. However, it is not clear whether these results could be extrapolated to youth who would have been screened at the time the NJCS was conducted. More generally, there have been concerted efforts to make public employment and other programs more accessible to people with disabilities. These types of adaptations to workforce programs are likely to have changed the composition of YMLs enrolling in Job Corps and the services they receive, leading to different mean impacts. Similar changes are likely to have arisen based on substantial revisions to SSI program rules and large-scale health-care initiatives such as the Affordable Care Act.

It would be of great interest to know the extent to which Job Corps serves youth with significant disabilities today, what accommodations it provides for their disabilities, and its impacts on their earnings and other outcomes. Another important topic to investigate is how the effectiveness of Job Corps services for such youth compare to that of programs set up specifically for those with significant medical limitations—most notably state VR programs. Such information would be particularly helpful for VR agencies struggling to meet WIOA's mandated increases in delivery of services to youth with disabilities. VR agencies might find it attractive to encourage some of the youth they serve to enroll in Job Corps, perhaps providing accommodations or other specialized supports while they are enrolled. Moreover, the comprehensive structure of the Job Corps program is a longstanding model that could inform current pilot efforts in the federal workforce system (as discussed by Bleimann et al. [2016]) to improve the outcomes of youth with disabilities through increased coordination among disparate employment, training, and financial preparedness programs. Job Corps also has the appeal of delivering services to youth with disabilities in a setting in which they are integrated with other youth; this parallels the push to integrate students with disabilities with others in schools and provide them with better opportunities for employment in integrated, competitive settings.

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APPENDIX: SUPPLEMENTAL TABLES

Table. A.1. Baseline equivalence checks for YMLs

Variable	Treatment group		Control group		Diff. between groups	SE of diff.
	Sample Size	Mean	Sample Size	Mean		
Age category						
Ages 15-16	271	23.2	201	24.5	-1.2	(4.1)
Ages 17-18	271	39.2	201	39.6	-0.5	(4.8)
Age 19 or older	271	37.6	201	35.9	1.7	(4.7)
Race/ethnicity						
White, non-Hispanic	271	38.0	201	37.6	0.4	(4.7)
Black, non-Hispanic	271	45.0	201	44.5	0.5	(4.8)
Hispanic	271	12.6	201	12.1	0.5	(3.2)
Other race/ethnicity	271	4.4	201	5.8	-1.4	(2.0)
Native English speaker	270	91.2	201	94.1	-2.9	(2.5)
Never married, not living together	271	90.0	201	89.1	0.9	(3.0)
Parenthood						
No children	269	79.7	195	79.5	0.1	(4.0)
Has child younger than two	269	13.3	195	13.3	0.1	(3.3)
Has child at least two years old	269	7.0	195	7.2	-0.2	(2.7)
Household structure						
Living with both parents	271	15.8	198	12.5	3.3	(3.3)
Living with one parent	271	44.8	198	47.6	-2.7	(4.9)
Living with nonparent adult	271	16.6	198	21.0	-4.4	(3.8)
Living with no other adults	271	22.8	198	19.0	3.8	(4.1)
Youth is household head	270	10.8	200	14.1	-3.3	(3.2)
Number in household (count)	271	4.3	198	4.2	0.1	(0.2)
Nature of medical condition						
Had condition for less than three years	261	33.7	191	28.6	5.1	(4.7)
Had condition for at least three but less than six years	261	20.1	191	16.5	3.6	(3.9)
Had condition for six or more years	261	46.2	191	54.9	-8.7*	(5.0)
Had condition associated with higher propensity of SSI receipt	267	44.5	201	43.6	0.9	(4.9)
Self-assessment of general health						
Excellent	271	21.9	200	21.0	0.9	(4.0)
Good	271	40.8	200	41.0	-0.2	(4.9)
Fair or poor	271	37.3	200	38.0	-0.7	(4.8)
Risky health behavior						
Smoked cigarettes in the past year	271	62.8	201	57.5	5.3	(4.7)
Drank alcohol in the past year	269	64.1	200	62.1	2.0	(4.7)
Smoked marijuana in the past year	270	38.4	201	34.4	4.0	(4.7)
Family's receipt of welfare while growing up						
Never	255	43.5	185	42.3	1.2	(5.1)
Occasionally	255	21.3	185	21.2	0.1	(4.2)
Half the time	255	9.4	185	11.9	-2.4	(3.1)
Most of the time	255	25.7	185	24.6	1.1	(4.3)
Receipt of public assistance in year before random assignment (RA) date						
Received AFDC	254	29.5	178	31.2	-1.7	(4.5)
Received food stamps	258	47.5	183	46.7	0.8	(5.0)
Received other welfare	254	31.5	182	32.4	-0.9	(4.8)
Housing arrangements						
Living in public/subsidized housing	270	29.8	196	23.2	6.5	(4.3)
Family rents home without subsidy	270	29.4	196	29.5	-0.1	(4.5)
Family owns home	270	40.8	196	47.3	-6.4	(4.8)

Variable	Treatment group		Control group		Diff. between groups	SE of diff.
	Sample Size	Mean	Sample Size	Mean		
Contributes to rent or mortgage	254	28.9	187	30.8	-1.9	(4.7)
Involvement with criminal justice system						
Ever arrested or charged	267	34.1	198	30.4	3.7	(4.7)
Arrested multiple times	262	16.8	197	12.9	3.9	(3.6)
Ever convicted or pleaded guilty	265	22.6	198	19.3	3.3	(4.2)
Ever served time in jail	252	7.0	190	6.7	0.3	(2.8)
Education and training						
Had not attended high school by RA date	270	14.2	199	15.3	-1.1	(3.4)
Attended but did not complete high school by RA date	270	71.3	199	69.4	2.0	(4.4)
Completed high school by RA date	270	14.4	199	15.3	-0.9	(3.5)
Attended education or training program in year prior to RA date	268	67.8	198	68.8	-1.0	(4.5)
Work experience						
Ever had a full-time or part-time job	271	82.8	201	81.1	1.7	(3.7)
Had a job in the year prior to RA date	269	66.5	200	66.9	-0.5	(4.6)
Earnings over the past year (dollars)	245	4,508	180	4,728	-220	(826)
Reasons for joining Job Corps						
Joined to get away from community problems	270	58.8	201	60.8	-2.0	(4.8)
Joined to get away from home	270	57.1	200	59.4	-2.4	(4.8)
Joined for general self-improvement	267	10.3	198	9.1	1.2	(2.9)
Joined to be able to find work	268	86.5	200	89.9	-3.4	(3.2)
Joined to improve financial situation	267	4.9	198	4.9	0.0	(2.1)
Joined for other specific reason	267	10.4	198	11.4	-1.1	(3.1)
Expectations of Job Corps						
Expected to improve self-control or discipline	269	57.6	201	58.7	-1.1	(4.8)
Expected to improve self-esteem	270	55.0	201	53.8	1.1	(4.9)
Expected to improve ability to get along with people	271	58.9	200	53.1	5.8	(4.8)
Expected new friendships	268	62.4	200	63.2	-0.7	(4.7)
Expected to improve math skills	271	63.0	197	62.4	0.6	(4.8)
Expected to improve reading skills	270	50.1	199	51.3	-1.2	(4.9)
Expected to receive training for specific job	270	94.3	201	94.9	-0.6	(2.1)

Note: Estimates are percentages (means) and percentage points (differences and standard errors) unless otherwise indicated. These estimates are based on the main analysis sample of YMLs (N = 472) and nonresponse/stratification weights described in Section III. Results for each covariate exclude cases with missing data. The propensity of SSI receipt by medical condition was measured using data on the outcomes of YMLs in the control group in the third year after random assignment. Baseline earnings are expressed in 2016 dollars. Standard errors of treatment-control differences are based on weighted regression models that include stratum fixed effects, and they are robust to heteroscedasticity. * / ** / *** denotes a treatment-control difference that is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

Table. A.2. Baseline equivalence checks for youths without medical limitations

Variable	Treatment group		Control group		Diff. between groups	SE of diff.
	Sample Size	Mean	Sample Size	Mean		
Age category						
Ages 15-16	5,632	23.5	3,734	22.8	0.7	(0.9)
Ages 17-18	5,632	36.2	3,734	37.5	-1.3	(1.0)
Age 19 or older	5,632	40.3	3,734	39.8	0.6	(1.1)
Race/ethnicity						
White, non-Hispanic	5,632	26.7	3,734	25.7	1.0	(0.9)
Black, non-Hispanic	5,632	48.5	3,734	48.2	0.3	(1.1)
Hispanic	5,632	17.4	3,734	18.4	-1.0	(0.8)
Other race/ethnicity	5,632	7.3	3,734	7.7	-0.4	(0.6)
Native English speaker	5,627	86.0	3,726	85.4	0.7	(0.8)
Never married, not living together	5,630	92.1	3,730	91.8	0.3	(0.6)
Parenthood						
No children	5,607	82.6	3,710	82.2	0.4	(0.8)
Has child younger than two	5,605	11.6	3,709	12.1	-0.5	(0.7)
Has child at least two years old	5,605	5.8	3,709	5.7	0.0	(0.5)
Household structure						
Living with both parents	5,618	17.8	3,719	18.9	-1.0	(0.8)
Living with one parent	5,618	48.7	3,719	48.7	0.0	(1.1)
Living with nonparent adult	5,618	16.0	3,719	16.4	-0.4	(0.8)
Living with no other adults	5,618	17.4	3,719	16.1	1.3*	(0.8)
Youth is household head	5,605	11.2	3,724	11.7	-0.5	(0.7)
Number in household (count)	5,618	4.5	3,719	4.5	0.0	(0.0)
Self-assessment of general health						
Excellent	5,625	48.1	3,731	47.9	0.2	(1.1)
Good	5,625	40.3	3,731	39.7	0.6	(1.1)
Fair or poor	5,625	11.5	3,731	12.4	-0.9	(0.7)
Risky health behavior						
Smoked cigarettes in the past year	5,628	52.0	3,729	51.4	0.5	(1.1)
Drank alcohol in the past year	5,621	54.0	3,729	52.2	1.8*	(1.1)
Smoked marijuana in the past year	5,623	30.0	3,729	29.3	0.7	(1.0)
Family's receipt of welfare while growing up						
Never	5,308	47.3	3,492	45.7	1.6	(1.1)
Occasionally	5,308	21.1	3,492	22.0	-0.9	(0.9)
Half the time	5,308	11.2	3,492	11.6	-0.4	(0.7)
Most of the time	5,308	20.4	3,492	20.7	-0.2	(0.9)
Receipt of public assistance in year before random assignment (RA) date						
Received AFDC	5,064	29.2	3,340	28.9	0.4	(1.0)
Received food stamps	5,238	41.6	3,475	42.1	-0.5	(1.1)
Received other welfare	5,088	24.5	3,377	25.7	-1.2	(1.0)
Housing arrangements						
Living in public/subsidized housing	5,546	22.3	3,690	22.3	0.0	(0.9)
Family rents home without subsidy	5,546	34.5	3,690	34.3	0.1	(1.0)
Family owns home	5,546	43.2	3,690	43.3	-0.1	(1.1)
Contributes to rent or mortgage	5,387	24.5	3,562	25.0	-0.5	(0.9)
Involvement with criminal justice system						
Ever arrested or charged	5,564	24.5	3,687	24.7	-0.2	(0.9)
Arrested multiple times	5,498	8.9	3,627	8.8	0.0	(0.6)
Ever convicted or pleaded guilty	5,532	15.8	3,671	15.6	0.2	(0.8)
Ever served time in jail	5,330	5.4	3,525	5.8	-0.4	(0.5)

Variable	Treatment group		Control group		Diff. between groups	SE of diff.
	Sample Size	Mean	Sample Size	Mean		
Education and training						
Had not attended high school by RA date	5,595	14.9	3,717	14.3	0.6	(0.8)
Attended but did not complete high school by RA date	5,595	66.9	3,717	67.0	-0.1	(1.0)
Completed high school by RA date	5,604	18.2	3,723	18.7	-0.5	(0.8)
Attended education or training program in year prior to RA date	5,595	67.2	3,705	67.2	0.1	(1.0)
Work experience						
Ever had a full-time or part-time job	5,631	80.1	3,733	78.9	1.2	(0.9)
Had a job in the year prior to RA date	5,606	65.1	3,717	63.8	1.3	(1.0)
Earnings over the past year (dollars)	5,273	4,670	3,491	4,516	154	(154)
Reasons for joining Job Corps						
Joined to get away from community problems	5,614	60.1	3,722	58.6	1.6	(1.1)
Joined to get away from home	5,617	56.4	3,724	57.6	-1.2	(1.1)
Joined for general self-improvement	5,581	9.0	3,708	9.5	-0.5	(0.6)
Joined to be able to find work	5,569	90.1	3,704	90.3	-0.2	(0.6)
Joined to improve financial situation	5,581	3.9	3,708	4.1	-0.3	(0.4)
Joined for other specific reason	5,581	7.9	3,708	8.0	-0.1	(0.6)
Expectations of Job Corps						
Expected to improve self-control or discipline	5,595	57.2	3,709	58.8	-1.6	(1.1)
Expected to improve self-esteem	5,593	57.5	3,702	57.8	-0.3	(1.1)
Expected to improve ability to get along with people	5,595	59.8	3,702	59.8	-0.1	(1.1)
Expected new friendships	5,591	71.0	3,702	69.5	1.5	(1.0)
Expected to improve math skills	5,553	69.8	3,682	68.2	1.6	(1.0)
Expected to improve reading skills	5,595	54.0	3,704	53.4	0.6	(1.1)
Expected to receive training for specific job	5,587	94.9	3,720	95.4	-0.5	(0.5)

Note: Estimates are percentages (means) and percentage points (differences and standard errors) unless otherwise indicated. These estimates are based on the main analysis sample of youths without medical limitations at baseline (N = 9,366) and nonresponse/stratification weights described in Section III. Results for each covariate exclude cases with missing data. Baseline earnings are expressed in 2016 dollars. Standard errors of treatment-control differences are based on weighted regression models that include stratum fixed effects, and they are robust to heteroscedasticity. * / ** / *** denotes a treatment-control difference that is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

Table. A.3.ITT impact estimates for YMLs

Outcome	Treatment Group N	Treatment Group Mean	Control Group N	Control Group Mean	Unadjusted ITT Est.	Unadjusted ITT SE	Covariate-adjusted ITT Est.	Covariate-adjusted ITT SE
Participation in Job Corps	271	69.6	201	0.3	69.3***	(2.9)	68.3***	(3.1)
Receipt of education or training (percentages for means and percentage points for impacts)								
Any education/training in year 1	257	81.2	181	50.4	30.8***	(4.6)	30.7***	(4.3)
Any education/training in year 2	261	43.8	193	43.2	0.6	(5.0)	2.0	(4.7)
Any education/training in year 3	260	31.4	192	29.2	2.2	(4.6)	5.6	(4.5)
Any education/training in year 4	265	28.2	186	29.1	-1.0	(4.5)	0.7	(4.4)
Any education/training over four-year period	264	90.7	184	75.1	15.6***	(3.9)	16.3***	(3.7)
Amount of education/training received (hours)								
Hours of education/ training in year 1	257	877	181	279	598***	(60)	595***	(57)
Hours of education/ training in year 2	261	299	193	208	91**	(46)	94**	(42)
Hours of education/ training in year 3	260	172	196	129	43	(35)	60*	(34)
Hours of education/ training in year 4	265	114	193	130	-16	(29)	-4	(27)
Total hours of education/training over four-year period	264	1,449	191	772	677***	(111)	708***	(101)
High school completion rate (percentages for means and percentage points for impacts)								
Had a GED at end of year 4	268	36.7	200	25.3	11.4**	(4.6)	10.0**	(4.3)
Had a high school (HS) diploma at end of year 4	268	18.0	199	19.6	-1.6	(3.9)	-0.2	(1.8)
Had either GED or HS diploma at end of year 4	267	54.9	198	45.4	9.5*	(5.0)	9.9**	(4.4)
Earnings (dollars)								
Earnings in year 1	260	5,352	196	5,944	-592	(830)	-377	(752)
Earnings in year 2	264	10,403	196	8,471	1,932*	(1,111)	2,436**	(1,033)
Earnings in year 3	264	13,399	197	10,724	2,675**	(1,170)	2,813***	(1,076)
Earnings in year 4	268	16,754	199	13,784	2,970*	(1,576)	2,951*	(1,531)
Total earnings over four-year period	262	45,972	197	39,874	6,099*	(3,565)	6,685**	(3,172)
Employment rate (percentages for means and percentage points for impacts)								
Any employment in year 1	260	64.9	196	59.8	5.1	(4.8)	5.7	(4.6)
Any employment in year 2	264	73.7	196	69.3	4.4	(4.6)	6.5	(4.4)
Any employment in year 3	264	79.0	197	73.5	5.6	(4.2)	6.7	(4.2)
Any employment in year 4	268	80.8	199	70.1	10.7**	(4.3)	11.6***	(4.1)
Ever employed over four-year period	266	95.3	199	92.9	2.4	(2.4)	2.8	(2.3)
Weeks worked								
Weeks worked in year 1	260	14.2	196	16.1	-1.8	(1.7)	-1.2	(1.6)
Weeks worked in year 2	264	23.6	196	19.4	4.2**	(1.9)	5.5***	(1.9)
Weeks worked in year 3	264	27.0	197	23.2	3.9**	(1.9)	5.3***	(1.8)
Weeks worked in year 4	268	30.4	199	25.4	5.1**	(2.1)	6.1***	(1.9)

Outcome	Treatment Group		Control Group		Unadjusted ITT		Covariate-adjusted ITT	
	N	Mean	N	Mean	Est.	SE	Est.	SE
Total weeks worked over four-year period	249	95.2	188	85.4	9.9	(6.0)	14.6***	(5.4)
Hours worked								
Hours worked in year 1	260	595	196	680	-85	(83)	-54	(77)
Hours worked in year 2	264	1,050	196	837	213**	(98)	258***	(92)
Hours worked in year 3	264	1,226	197	984	242***	(92)	269***	(87)
Hours worked in year 4	268	1,415	199	1,139	276**	(108)	328***	(99)
Total hours worked over four-year period	262	4,287	197	3,714	573**	(282)	687***	(257)
Hourly wage (dollars)[a]								
Average hourly wage in year 1	167	8.7	123	8.6	0.1	(0.3)	0.0	(0.3)
Average hourly wage in year 2	194	9.5	140	10.0	-0.4	(0.6)	-0.4	(0.6)
Average hourly wage in year 3	206	10.4	146	10.8	-0.3	(0.6)	-0.1	(0.5)
Average hourly wage in year 4	213	11.4	147	11.9	-0.5	(0.7)	-0.4	(0.7)
AFDC/TANF or food stamp benefits (percentages for means and percentage points for impacts unless otherwise indicated)								
Any AFDC/TANF or food stamps receipt in year 1	258	39.3	190	42.9	-3.7	(4.8)	-1.6	(3.6)
Any AFDC/TANF or food stamps receipt in year 2	262	34.1	192	39.6	-5.4	(4.5)	-2.2	(4.4)
Any AFDC/TANF or food stamps receipt in year 3	263	29.8	195	34.8	-5.0	(4.3)	-3.7	(4.3)
Any AFDC/TANF or food stamps receipt in year 4	264	24.7	193	26.4	-1.7	(3.9)	-1.1	(3.8)
Amount of AFDC/TANF or food stamps collected over four-year period (dollars)	244	4,926	174	5,631	-705	(859)	-368	(763)
SSI benefits (percentages for means and percentage points for impacts unless otherwise indicated)								
Any SSI receipt in year 1	262	8.2	197	14.6	-6.4*	(3.4)	-5.4*	(3.1)
Any SSI receipt in year 2	266	9.5	199	16.8	-7.4**	(3.4)	-6.1*	(3.1)
Any SSI receipt in year 3	268	9.6	200	16.2	-6.5*	(3.5)	-6.0*	(3.2)
Any SSI receipt in year 4	267	7.7	198	12.0	-4.3	(3.0)	-4.5	(2.9)
Amount of SSI collected over four-year period (dollars)	262	2,199	196	3,767	-1,568*	(808)	-1,393*	(729)
Arrest rates (percentages for means and percentage points for impacts)								
Arrested or charged in year 1	268	9.7	201	18.0	-8.3**	(3.4)	-7.6**	(3.3)
Arrested or charged in year 2	267	9.6	201	12.2	-2.6	(3.2)	-2.2	(2.9)
Arrested or charged in year 3	266	10.8	201	13.7	-3.0	(3.2)	-2.6	(3.2)
Arrested or charged in year 4	267	12.2	201	12.3	-0.1	(3.2)	-0.3	(3.3)
Ever arrested/charged over four-year period	270	32.0	201	40.4	-8.5*	(4.7)	-7.3	(4.5)

Outcome	Treatment Group		Control Group		Unadjusted ITT		Covariate-adjusted ITT	
	N	Mean	N	Mean	Est.	SE	Est.	SE
Prevalence of medical limitations (percentages for means and percentage points for impacts)								
Medical limitation at time of 12-month survey	257	28.0	191	32.8	-4.8	(4.6)	-5.1	(4.5)
Medical limitation at time of 30-month survey	239	25.0	185	28.0	-3.0	(4.5)	-4.7	(4.5)
Medical limitation at time of 48-month survey	270	24.3	199	20.7	3.6	(4.1)	2.2	(4.2)

Note: Each row presents estimates for a separate outcome using the main analysis sample of YMLs (N = 472) and the nonresponse/stratification weights described in Section III. Results for each outcome exclude cases with missing data. Impact estimates are based on the regression specification indicated in Section III. Unadjusted impact estimates include stratum fixed effects; covariate-adjusted impacts also include the non-collinear subset of baseline variables listed in Appendix Table A.1. Standard errors are robust to heteroscedasticity. * / ** / *** indicates that the impact estimate is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

[a]Hourly wages were calculated only among youths who were working in a given year. Hence, the reported wage estimates might not represent true impacts if program participation changed the nature of selection into employment.

Table. A.4.CACE impact estimates for YMLs

Outcome	Est. treated mean for compliers	Est. untreated mean for compliers	Unadjusted CACE		Covariate-adjusted CACE	
			Est.	SE	Est.	SE
Receipt of education or training (percentages for means and percentage points for impacts)						
Any education/training in year 1	99.3	54.8	44.5***	(6.2)	45.4***	(5.9)
Any education/training in year 2	49.1	48.2	0.9	(7.2)	2.9	(6.9)
Any education/training in year 3	32.2	29.0	3.2	(6.5)	8.2	(6.5)
Any education/training in year 4	28.1	29.5	-1.4	(6.5)	1.1	(6.4)
Any education/training over four-year period	100.0	77.8	22.2***	(5.4)	23.9***	(5.2)
Amount of education/training received (hours)						
Hours of education/training in year 1	1,174	311	863***	(76)	879***	(73)
Hours of education/training in year 2	367	233	133**	(66)	138**	(62)
Hours of education/training in year 3	193	131	62	(50)	87*	(49)
Hours of education/training in year 4	116	139	-23	(42)	-5	(40)
Total hours of education/training over four-year period	1,813	847	966***	(149)	1,030***	(140)
High school completion rate (percentages for means and percentage points for impacts)						
Had a GED at end of year 4	41.8	25.4	16.4**	(6.5)	14.6**	(6.3)
Had a high school (HS) diploma at end of year 4	15.0	17.3	-2.3	(5.5)	-0.3	(2.6)
Had either GED or HS diploma at end of year 4	56.9	43.3	13.6*	(7.1)	14.4**	(6.4)
Earnings (dollars)						
Earnings in year 1	4,069	4,919	-850	(1,186)	-546	(1,086)
Earnings in year 2	9,655	6,922	2,734*	(1,586)	3,490**	(1,487)
Earnings in year 3	12,161	8,309	3,852**	(1,711)	4,104**	(1,589)
Earnings in year 4	15,622	11,347	4,275*	(2,290)	4,304*	(2,263)
Total earnings over four-year period	42,977	34,254	8,723*	(5,149)	9,708**	(4,655)
Employment rate (percentages for means and percentage points for impacts)						
Any employment in year 1	61.2	53.9	7.3	(7.0)	8.2	(6.7)
Any employment in year 2	73.6	67.4	6.2	(6.5)	9.4	(6.4)
Any employment in year 3	78.7	70.7	8.0	(6.0)	9.7	(6.1)
Any employment in year 4	78.6	63.2	15.4**	(6.2)	16.9***	(6.1)
Ever employed over four-year period	96.7	93.2	3.5	(3.4)	4.1	(3.3)
Weeks worked						
Weeks worked in year 1	11.4	14.0	-2.6	(2.4)	-1.8	(2.3)
Weeks worked in year 2	22.3	16.4	5.9**	(2.8)	7.9***	(2.7)
Weeks worked in year 3	25.4	19.8	5.5**	(2.8)	7.7***	(2.7)
Weeks worked in year 4	29.3	22.0	7.3**	(3.0)	8.9***	(2.8)
Total weeks worked over four-year period	88.6	74.5	14.2	(8.7)	21.1***	(8.0)
Hours worked						
Hours worked in year 1	461	583	-122	(119)	-79	(111)
Hours worked in year 2	994	693	301**	(140)	370***	(133)
Hours worked in year 3	1,146	797	349***	(134)	392***	(129)
Hours worked in year 4	1,366	968	397**	(157)	479***	(147)

Outcome	Est. treated mean for compliers	Est. untreated mean for compliers	Unadjusted CACE		Covariate-adjusted CACE	
			Est.	SE	Est.	SE
Total hours worked over four-year period	4,075	3,255	820**	(408)	998***	(376)
Hourly wage (dollars)[a]						
Average hourly wage in year 1	8.3	8.2	0.1	(0.5)	0.1	(0.5)
Average hourly wage in year 2	9.4	10.0	-0.6	(0.9)	-0.6	(0.8)
Average hourly wage in year 3	10.2	10.6	-0.5	(0.9)	-0.2	(0.7)
Average hourly wage in year 4	11.0	11.7	-0.7	(1.0)	-0.6	(1.0)
AFDC/TANF or food stamp benefits (percentages for means and percentage points for impacts unless otherwise indicated)						
Any AFDC/TANF or food stamps receipt in year 1	35.2	40.5	-5.3	(6.9)	-2.3	(5.2)
Any AFDC/TANF or food stamps receipt in year 2	31.4	39.2	-7.8	(6.5)	-3.3	(6.4)
Any AFDC/TANF or food stamps receipt in year 3	26.1	33.4	-7.3	(6.1)	-5.5	(6.2)
Any AFDC/TANF or food stamps receipt in year 4	23.4	25.8	-2.4	(5.5)	-1.6	(5.4)
Amount of AFDC/TANF or food stamps collected over four-year period (dollars)	4,392	5,400	-1,008	(1,225)	-533	(1,105)
SSI benefits (percentages for means and percentage points for impacts unless otherwise indicated)						
Any SSI receipt in year 1	6.0	15.1	-9.1*	(4.8)	-7.9*	(4.5)
Any SSI receipt in year 2	7.6	18.2	-10.6**	(4.9)	-8.9**	(4.5)
Any SSI receipt in year 3	7.7	17.1	-9.4*	(5.0)	-8.8*	(4.6)
Any SSI receipt in year 4	7.9	14.2	-6.2	(4.4)	-6.5	(4.3)
Amount of SSI collected over four-year period (dollars)	1,817	4,049	-2,232*	(1,151)	-2,008*	(1,052)
Arrest rates (percentages for means and percentage points for impacts)						
Arrested or charged in year 1	10.4	22.5	-12.0**	(5.0)	-11.1**	(4.9)
Arrested or charged in year 2	9.5	13.3	-3.7	(4.6)	-3.2	(4.3)
Arrested or charged in year 3	13.0	17.3	-4.3	(4.7)	-3.8	(4.7)
Arrested or charged in year 4	10.3	10.4	-0.1	(4.6)	-0.4	(4.8)
Ever arrested/charged over four-year period	32.3	44.6	-12.2*	(6.8)	-10.7	(6.6)
Prevalence of medical limitations (percentages for means and percentage points for impacts)						
Medical limitation at time of 12-month survey	27.1	33.9	-6.8	(6.5)	-7.2	(6.4)
Medical limitation at time of 30-month survey	23.6	28.0	-4.4	(6.6)	-6.9	(6.6)
Medical limitation at time of 48-month survey	21.5	16.3	5.2	(5.9)	3.3	(6.1)

Note: Each row presents estimates for a separate outcome using the analysis sample of YMLs (N = 472) and the nonresponse/stratification weights described in Section III. Results for each outcome exclude cases with missing data. Treated and untreated means for compliers were estimated using the approach of Imbens and Rubin (1997). Impact estimates are based on the regression specification indicated in Section III. Unadjusted impact estimates include stratum fixed effects; covariate-adjusted impacts also include the non-collinear subset of baseline variables listed in Appendix Table A.1. Standard errors are robust to heteroscedasticity. * / ** / *** indicates that the impact estimate is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

[a]Hourly wages were calculated only among youths who were working in a given year. Hence, the reported wage estimates might not represent true impacts if program participation changed the nature of selection into employment.

Table. A.5.ITT impact estimates for youths without medical limitations

Outcome	Treatment Group N	Treatment Group Mean	Control Group N	Control Group Mean	Unadjusted ITT Est.	Unadjusted ITT SE	Covariate-adjusted ITT Est.	Covariate-adjusted ITT SE
Participation in Job Corps	5,632	74.3	3,734	1.1	73.2***	(0.6)	73.1***	(0.6)
Receipt of education or training (percentages for means and percentage points for impacts)								
Any education/training in year 1	5,332	84.9	3,477	49.1	35.8***	(1.0)	35.9***	(1.0)
Any education/training in year 2	5,331	49.4	3,588	39.0	10.4***	(1.1)	10.7***	(1.1)
Any education/training in year 3	5,383	33.5	3,502	34.7	-1.2	(1.1)	-1.0	(1.0)
Any education/training in year 4	5,470	28.5	3,505	28.9	-0.4	(1.0)	-0.3	(1.0)
Any education/training over four-year period	5,485	92.8	3,477	71.6	21.3***	(0.9)	21.3***	(0.8)
Amount of education/training received (hours)								
Hours of education/ training in year 1	5,320	919	3,477	315	604***	(14)	606***	(13)
Hours of education/ training in year 2	5,331	362	3,588	238	124***	(11)	127***	(11)
Hours of education/ training in year 3	5,383	185	3,592	176	9	(9)	12	(8)
Hours of education/ training in year 4	5,470	137	3,624	146	-9	(8)	-7	(8)
Total hours of education/ training over four-year period	5,485	1,590	3,596	874	716***	(26)	725***	(25)
High school completion rate (percentages for means and percentage points for impacts)								
Had a GED at end of year 4	5,585	37.4	3,709	25.9	11.4***	(1.0)	11.4***	(0.9)
Had a high school (HS) diploma at end of year 4	5,574	22.3	3,700	24.4	-2.1**	(0.9)	-1.5***	(0.5)
Had either GED or HS diploma at end of year 4	5,551	60.0	3,690	50.6	9.4***	(1.1)	10.0***	(0.9)
Earnings (dollars)								
Earnings in year 1	5,451	5,391	3,598	7,273	-1,882***	(182)	-1,976***	(164)
Earnings in year 2	5,543	10,823	3,673	11,110	-287	(260)	-378	(243)
Earnings in year 3	5,556	14,622	3,672	13,666	956***	(285)	896***	(270)
Earnings in year 4	5,550	17,333	3,677	16,015	1,318***	(325)	1,243***	(309)
Total earnings over four-year period	5,487	47,591	3,626	47,111	480	(788)	71	(705)
Employment rate (percentages for means and percentage points for impacts)								
Any employment in year 1	5,451	64.5	3,598	72.0	-7.5***	(1.0)	-8.0***	(0.9)
Any employment in year 2	5,543	74.2	3,673	75.7	-1.6*	(0.9)	-1.9**	(0.9)
Any employment in year 3	5,556	82.2	3,672	80.6	1.6*	(0.8)	1.5*	(0.8)
Any employment in year 4	5,550	82.8	3,677	80.9	2.0**	(0.8)	1.8**	(0.8)
Ever employed over four-year period	5,586	95.9	3,700	95.2	0.7	(0.4)	0.6	(0.4)
Weeks worked								
Weeks worked in year 1	5,451	14.1	3,598	19.8	-5.7***	(0.4)	-5.9***	(0.4)
Weeks worked in year 2	5,543	23.3	3,673	24.7	-1.5***	(0.4)	-1.6***	(0.4)
Weeks worked in year 3	5,556	28.8	3,672	28.0	0.7*	(0.4)	0.7*	(0.4)
Weeks worked in year 4	5,550	31.4	3,677	29.9	1.5***	(0.4)	1.4***	(0.4)

Outcome	Treatment Group		Control Group		Unadjusted ITT		Covariate-adjusted ITT	
	N	Mean	N	Mean	Est.	SE	Est.	SE
Total weeks worked over four-year period	5,309	98.0	3,486	102.7	-4.7***	(1.3)	-5.1***	(1.2)
Hours worked								
Hours worked in year 1	5,451	580	3,598	808	-227***	(18)	-236***	(16)
Hours worked in year 2	5,543	1,024	3,673	1,087	-63***	(22)	-71***	(21)
Hours worked in year 3	5,556	1,286	3,672	1,243	43**	(22)	39*	(20)
Hours worked in year 4	5,550	1,428	3,677	1,362	66***	(23)	61***	(22)
Total hours worked over four-year period	5,488	4,260	3,627	4,414	-154**	(60)	-185***	(54)
Hourly wage (dollars)[a]								
Average hourly wage in year 1	3,503	8.9	2,584	8.7	0.2**	(0.1)	0.2*	(0.1)
Average hourly wage in year 2	4,108	10.2	2,774	9.9	0.4***	(0.1)	0.3***	(0.1)
Average hourly wage in year 3	4,559	11.0	2,957	10.5	0.4***	(0.1)	0.4***	(0.1)
Average hourly wage in year 4	4,584	11.8	2,978	11.3	0.5***	(0.2)	0.5***	(0.2)
AFDC/TANF or food stamp benefits (percentages for means and percentage points for impacts unless otherwise indicated)								
Any AFDC/TANF or food stamps receipt in year 1	5,410	36.9	3,561	38.5	-1.6	(1.0)	-0.9	(0.8)
Any AFDC/TANF or food stamps receipt in year 2	5,478	28.1	3,609	30.0	-1.9**	(0.9)	-1.7*	(0.9)
Any AFDC/TANF or food stamps receipt in year 3	5,513	22.5	3,656	24.5	-2.0**	(0.9)	-1.9**	(0.8)
Any AFDC/TANF or food stamps receipt in year 4	5,548	18.9	3,684	18.8	0.1	(0.8)	0.2	(0.8)
Amount of AFDC/TANF or food stamps collected over four-year period (dollars)	5,201	4,160	3,421	4,385	-225	(178)	-189	(158)
SSI benefits (percentages for means and percentage points for impacts unless otherwise indicated)								
Any SSI receipt in year 1	5,463	5.3	3,613	6.2	-0.9*	(0.5)	-0.8	(0.5)
Any SSI receipt in year 2	5,558	6.7	3,677	8.0	-1.4**	(0.6)	-1.3**	(0.6)
Any SSI receipt in year 3	5,572	4.2	3,697	5.3	-1.2**	(0.5)	-1.0**	(0.5)
Any SSI receipt in year 4	5,586	3.1	3,711	3.9	-0.8*	(0.4)	-0.7*	(0.4)
Amount of SSI collected over four-year period (dollars)	5,423	1,094	3,590	1,388	-294***	(114)	-264**	(110)
Arrest rates (percentages for means and percentage points for impacts)								
Arrested or charged in year 1	5,601	10.9	3,715	13.8	-2.9***	(0.7)	-3.0***	(0.7)
Arrested or charged in year 2	5,603	10.4	3,716	11.2	-0.8	(0.7)	-0.8	(0.7)
Arrested or charged in year 3	5,605	11.1	3,716	11.3	-0.2	(0.7)	-0.2	(0.7)
Arrested or charged in year 4	5,605	9.5	3,717	10.4	-0.9	(0.6)	-1.0	(0.6)
Ever arrested/charged over four-year period	5,625	28.9	3,727	32.3	-3.5***	(1.0)	-3.6***	(0.9)

A.13

Outcome	Treatment Group		Control Group		Unadjusted ITT		Covariate-adjusted ITT	
	N	Mean	N	Mean	Est.	SE	Est.	SE
Prevalence of medical limitations (percentages for means and percentage points for impacts)								
Medical limitation at time of 12-month survey	5,353	11.9	3,521	13.0	-1.1	(0.7)	-1.1	(0.7)
Medical limitation at time of 30-month survey	4,992	12.7	3,320	13.6	-0.8	(0.8)	-0.9	(0.8)
Medical limitation at time of 48-month survey	5,606	12.3	3,723	13.7	-1.4*	(0.7)	-1.4*	(0.7)

Note: Each row presents estimates for a separate outcome using the analysis sample of youths without medical limitations at baseline (N = 9,366) and the nonresponse/stratification weights described in Section III. Results for each outcome exclude cases with missing data. Impact estimates are based on the regression specification indicated in Section III. Unadjusted impact estimates include stratum fixed effects; covariate-adjusted impacts also include the non-collinear subset of baseline variables listed in Appendix Table A.2. Standard errors are robust to heteroscedasticity. * / ** / *** indicates that the impact estimate is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

[a]Hourly wages were calculated only among youths who were working in a given year. Hence, the reported wage estimates might not represent true impacts if program participation changed the nature of selection into employment.

Table. A.6.CACE impact estimates for youths without medical limitations

Outcome	Est. treated mean for compliers	Est. untreated mean for compliers	Unadjusted CACE		Covariate-adjusted CACE	
			Est.	SE	Est.	SE
Receipt of education or training (percentages for means and percentage points for impacts)						
Any education/training in year 1	99.0	50.3	48.7***	(1.3)	48.9***	(1.2)
Any education/training in year 2	52.9	38.6	14.3***	(1.5)	14.6***	(1.5)
Any education/training in year 3	33.0	34.7	-1.7	(1.4)	-1.4	(1.4)
Any education/training in year 4	27.5	28.1	-0.6	(1.4)	-0.4	(1.4)
Any education/training over four-year period	100.0	71.1	28.9***	(1.1)	28.9***	(1.1)
Amount of education/training received (hours)						
Hours of education/training in year 1	1,150	327	823***	(17)	826***	(16)
Hours of education/training in year 2	411	240	171***	(15)	175***	(15)
Hours of education/training in year 3	188	176	12	(12)	16	(11)
Hours of education/training in year 4	134	146	-12	(11)	-10	(10)
Total hours of education/training over four-year period	1,845	874	971***	(35)	984***	(33)
High school completion rate (percentages for means and percentage points for impacts)						
Had a GED at end of year 4	41.0	25.4	15.6***	(1.3)	15.5***	(1.2)
Had a high school (HS) diploma at end of year 4	20.8	23.7	-2.9**	(1.3)	-2.0***	(0.6)
Had either GED or HS diploma at end of year 4	62.1	49.2	12.9***	(1.5)	13.7***	(1.3)
Earnings (dollars)						
Earnings in year 1	4,442	7,001	-2,559***	(245)	-2,688***	(221)
Earnings in year 2	10,550	10,941	-391	(354)	-516	(331)
Earnings in year 3	14,774	13,467	1,307***	(390)	1,226***	(369)
Earnings in year 4	17,573	15,773	1,799***	(444)	1,699***	(423)
Total earnings over four-year period	46,810	46,158	652	(1,072)	97	(960)
Employment rate (percentages for means and percentage points for impacts)						
Any employment in year 1	61.3	71.5	-10.2***	(1.4)	-10.9***	(1.3)
Any employment in year 2	73.8	75.9	-2.1*	(1.3)	-2.6**	(1.2)
Any employment in year 3	83.0	80.7	2.3*	(1.2)	2.1*	(1.1)
Any employment in year 4	83.6	80.9	2.7**	(1.1)	2.5**	(1.1)
Ever employed over four-year period	96.1	95.1	1.0	(0.6)	0.8	(0.6)
Weeks worked						
Weeks worked in year 1	11.9	19.6	-7.7***	(0.5)	-8.0***	(0.5)
Weeks worked in year 2	22.7	24.7	-2.0***	(0.6)	-2.2***	(0.6)
Weeks worked in year 3	29.0	28.0	1.0*	(0.6)	0.9*	(0.6)
Weeks worked in year 4	31.7	29.7	2.0***	(0.6)	1.9***	(0.6)
Total weeks worked over four-year period	95.7	102.0	-6.4***	(1.8)	-7.0***	(1.6)
Hours worked						
Hours worked in year 1	484	793	-309***	(24)	-322***	(22)
Hours worked in year 2	1,003	1,088	-86***	(30)	-96***	(28)
Hours worked in year 3	1,306	1,247	59**	(29)	54*	(28)
Hours worked in year 4	1,446	1,355	91***	(31)	83***	(30)

Outcome	Est. treated mean for compliers	Est. untreated mean for compliers	Unadjusted CACE		Covariate-adjusted CACE	
			Est.	SE	Est.	SE
Total hours worked over four-year period	4,187	4,396	-209**	(82)	-252***	(74)
Hourly wage (dollars)[a]						
Average hourly wage in year 1	8.9	8.6	0.3**	(0.1)	0.2*	(0.1)
Average hourly wage in year 2	10.2	9.7	0.5***	(0.1)	0.5***	(0.1)
Average hourly wage in year 3	11.0	10.4	0.6***	(0.1)	0.6***	(0.1)
Average hourly wage in year 4	11.7	11.0	0.6***	(0.2)	0.6***	(0.2)
AFDC/TANF or food stamp benefits (percentages for means and percentage points for impacts unless otherwise indicated)						
Any AFDC/TANF or food stamps receipt in year 1	34.8	37.0	-2.2	(1.4)	-1.2	(1.1)
Any AFDC/TANF or food stamps receipt in year 2	25.8	28.4	-2.6**	(1.3)	-2.3*	(1.2)
Any AFDC/TANF or food stamps receipt in year 3	21.3	23.9	-2.7**	(1.2)	-2.6**	(1.1)
Any AFDC/TANF or food stamps receipt in year 4	17.9	17.8	0.2	(1.1)	0.2	(1.0)
Amount of AFDC/TANF or food stamps collected over four-year period (dollars)	3,702	4,007	-305	(242)	-257	(215)
SSI benefits (percentages for means and percentage points for impacts unless otherwise indicated)						
Any SSI receipt in year 1	5.1	6.3	-1.2*	(0.7)	-1.1	(0.7)
Any SSI receipt in year 2	6.4	8.3	-1.9**	(0.8)	-1.7**	(0.8)
Any SSI receipt in year 3	3.8	5.4	-1.6**	(0.6)	-1.4**	(0.6)
Any SSI receipt in year 4	2.9	4.0	-1.1*	(0.6)	-1.0*	(0.6)
Amount of SSI collected over four-year period (dollars)	1,009	1,409	-400***	(155)	-359**	(149)
Arrest rates (percentages for means and percentage points for impacts)						
Arrested or charged in year 1	9.6	13.6	-4.0***	(1.0)	-4.1***	(0.9)
Arrested or charged in year 2	9.9	11.0	-1.1	(0.9)	-1.1	(0.9)
Arrested or charged in year 3	10.6	10.9	-0.3	(0.9)	-0.3	(0.9)
Arrested or charged in year 4	9.7	11.0	-1.3	(0.9)	-1.3	(0.9)
Ever arrested/charged over four-year period	27.7	32.4	-4.7***	(1.3)	-4.9***	(1.2)
Prevalence of medical limitations (percentages for means and percentage points for impacts)						
Medical limitation at time of 12-month survey	11.8	13.3	-1.5	(1.0)	-1.5	(1.0)
Medical limitation at time of 30-month survey	12.7	13.8	-1.1	(1.1)	-1.2	(1.0)
Medical limitation at time of 48-month survey	12.2	14.0	-1.9*	(1.0)	-1.9*	(1.0)

Note: Each row presents estimates for a separate outcome using the analysis sample of youths without medical limitations at baseline (N = 9,366) and the nonresponse/stratification weights described in Section III. Results for each outcome exclude cases with missing data. Treated and untreated means for compliers were estimated using the approach of Imbens and Rubin (1997). Impact estimates are based on the regression specification indicated in Section III. Unadjusted impact estimates include stratum fixed effects; covariate-adjusted impacts also include the non-collinear subset of baseline variables listed in Appendix Table A.2. Standard errors are robust to heteroscedasticity. * / ** / *** indicates that the impact estimate is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

[a]Hourly wages were calculated only among youths who were working in a given year. Hence, the reported wage estimates might not represent true impacts if program participation changed the nature of selection into employment.

Table. A.7.Estimated differences in CACE impacts between YMLs and other youths

Outcome	Unadjusted CACE		Covariate-adjusted CACE	
	Est. Diff (YMLs vs. other youths)	SE	Est. Diff (YMLs vs. other youths)	SE
Receipt of education or training (percentage points)				
Any education/training in year 1	-4.2	(6.3)	-3.5	(6.0)
Any education/training in year 2	-13.4*	(7.4)	-11.8*	(7.0)
Any education/training in year 3	4.9	(6.7)	9.6	(6.7)
Any education/training in year 4	-0.8	(6.7)	1.5	(6.5)
Any education/training over four-year period	-6.7	(5.6)	-5.0	(5.3)
Amount of education/training received (hours)				
Hours of education/training in year 1	39.5	(77)	52.6	(74)
Hours of education/training in year 2	-37.6	(67)	-36.6	(64)
Hours of education/training in year 3	50.1	(51)	71.5	(51)
Hours of education/training in year 4	-11.1	(44)	5.0	(41)
Total hours of education/training over four-year period	-5.2	(153)	46.0	(144)
High school completion rate (percentage points)				
Had a GED at end of year 4	0.8	(6.7)	-0.9	(6.4)
Had a high school (HS) diploma at end of year 4	0.6	(5.7)	1.7	(2.7)
Had either GED or HS diploma at end of year 4	0.8	(7.3)	0.7	(6.5)
Earnings (dollars)				
Earnings in year 1	1,709.4	(1,211)	2,142.8*	(1,108)
Earnings in year 2	3,124.7*	(1,625)	4,006.5***	(1,523)
Earnings in year 3	2,544.6	(1,755)	2,877.9*	(1,631)
Earnings in year 4	2,475.5	(2,333)	2,605.8	(2,302)
Total earnings over four-year period	8,070.9	(5,259)	9,611.0**	(4,753)
Employment rate (percentages)				
Any employment in year 1	17.5**	(7.1)	19.1***	(6.8)
Any employment in year 2	8.3	(6.6)	11.9*	(6.5)
Any employment in year 3	5.8	(6.1)	7.6	(6.2)
Any employment in year 4	12.7**	(6.3)	14.4**	(6.2)
Ever employed over four-year period	2.5	(3.5)	3.3	(3.4)
Weeks worked				
Weeks worked in year 1	5.1**	(2.5)	6.2***	(2.3)
Weeks worked in year 2	7.9***	(2.9)	10.0***	(2.8)
Weeks worked in year 3	4.5	(2.8)	6.7**	(2.7)
Weeks worked in year 4	5.3*	(3.1)	7.0**	(2.9)
Total weeks worked over four-year period	20.5**	(8.9)	28.0***	(8.1)
Hours worked				
Hours worked in year 1	187.4	(121)	243.0**	(113)
Hours worked in year 2	386.3***	(143)	466.4***	(136)
Hours worked in year 3	289.7**	(138)	338.3**	(132)
Hours worked in year 4	306.8*	(160)	395.6***	(150)
Total hours worked over four-year period	1,028.6**	(416)	1,250.0***	(384)
Hourly wage (dollars)[a]				
Average hourly wage in year 1	-0.1	(0.5)	-0.2	(0.5)
Average hourly wage in year 2	-1.1	(0.9)	-1.0	(0.8)
Average hourly wage in year 3	-1.1	(0.9)	-0.8	(0.7)
Average hourly wage in year 4	-1.3	(1.1)	-1.2	(1.0)

Outcome	Unadjusted CACE		Covariate-adjusted CACE	
	Est. Diff (YMLs vs. other youths)	SE	Est. Diff (YMLs vs. other youths)	SE
AFDC/TANF or food stamp benefits (percentage points unless otherwise indicated)				
Any AFDC/TANF or food stamps receipt in year 1	-3.1	(7.0)	-1.2	(5.3)
Any AFDC/TANF or food stamps receipt in year 2	-5.2	(6.7)	-1.0	(6.5)
Any AFDC/TANF or food stamps receipt in year 3	-4.6	(6.2)	-2.9	(6.3)
Any AFDC/TANF or food stamps receipt in year 4	-2.6	(5.6)	-1.9	(5.5)
Amount of AFDC/TANF or food stamps collected over four-year period (dollars)	-702.7	(1,248)	-276.1	(1,126)
SSI benefits (percentage points unless otherwise indicated)				
Any SSI receipt in year 1	-7.9	(4.9)	-6.8	(4.6)
Any SSI receipt in year 2	-8.8*	(5.0)	-7.2	(4.6)
Any SSI receipt in year 3	-7.8	(5.0)	-7.4	(4.7)
Any SSI receipt in year 4	-5.1	(4.4)	-5.6	(4.3)
Amount of SSI collected over four-year period (dollars)	-1,832.1	(1,161)	-1,649.7	(1,062)
Arrest rates (percentage points)				
Arrested or charged in year 1	-8.0	(5.1)	-7.0	(5.0)
Arrested or charged in year 2	-2.7	(4.6)	-2.1	(4.4)
Arrested or charged in year 3	-4.0	(4.8)	-3.6	(4.8)
Arrested or charged in year 4	1.2	(4.7)	0.9	(4.9)
Ever arrested/charged over four-year period	-7.5	(6.9)	-5.7	(6.7)
Prevalence of medical limitations (percentage points)				
Medical limitation at time of 12-month survey	-5.3	(6.5)	-5.7	(6.5)
Medical limitation at time of 30-month survey	-3.2	(6.7)	-5.7	(6.7)
Medical limitation at time of 48-month survey	7.1	(6.0)	5.2	(6.2)

Note: Each row presents estimated differences in CACE impacts between YMLs and youths without medical limitations at baseline (shown in Appendix Tables A.4 and A.6, respectively). Unadjusted impact estimates include stratum fixed effects; covariate-adjusted impacts also include the non-collinear subset of baseline variables listed in Appendix Table A.2. Standard errors are robust to heteroscedasticity. * / ** / *** indicates that the between-group difference in impact estimates is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

[a]Hourly wages were calculated only among youths who were working in a given year. Hence, the reported wage estimates might not represent true impacts if program participation changed the nature of selection into employment.

Table. A.8.CACE impacts for total earnings over four-year period, by YML subgroup

	Sample Size		Est. treated mean for compliers	Est. untreated mean for compliers	Unadjusted CACE		Covariate-adjusted CACE	
	Treatment Group	Control Group			Estimate	Standard Error	Estimate	Standard Error
Subgroups based on age								
Ages 18 or younger	160	126	39,896	38,890	1,006	(5,798)	3,648	(5,169)
Ages 19 or older	102	71	49,545	27,983	21,561**	(10,651)	21,561**	(10,770)
Difference between subgroups			-9,649	10,907	-20,555*	(12,127)	-17,913	(11,946)
Subgroups based on gender								
Females	132	82	30,420	22,495	7,925	(5,692)	9,762*	(5,770)
Males	130	115	52,293	42,977	9,316	(7,926)	9,666	(7,030)
Difference between subgroups			-21,873	-20,482	-1,391	(9,758)	97	(9,095)
Subgroups based on race/ethnicity								
Non-Hispanic whites	90	68	50,697	33,954	16,743*	(9,623)	11,624	(9,332)
Other races/ethnicities	151	115	37,537	34,631	2,906	(5,924)	6,661	(5,611)
Difference between subgroups			13,160	-677	13,837	(11,301)	4,963	(10,889)
Subgroups based on general health at enrollment								
Fair/poor health at enrollment	90	73	37,030	25,550	11,480	(7,340)	14,059*	(7,707)
Good/excellent health at enrollment	152	113	45,142	38,182	6,960	(7,462)	5,791	(6,963)
Difference between subgroups			-8,112	-12,632	4,520	(10,467)	8,268	(10,387)
Subgroups based on association between medical condition at enrollment and subsequent SSI receipt								
Lower SSI propensity condition	151	111	43,812	40,305	3,507	(6,820)	3,751	(5,704)
Higher SSI propensity condition	105	80	40,390	26,639	13,751	(8,546)	16,424*	(8,676)
Difference between subgroups			3,422	13,666	-10,244	(10,934)	-12,673	(10,383)

Note: Each row presents estimates for a separate subgroup or for the difference between subgroups. All estimates are based on the analysis sample of YMLs (N = 472) and the nonresponse/stratification weights described in Section III. The propensity of SSI receipt by medical condition was measured using data on the outcomes of YMLs in the control group in the third year after random assignment. Results for each outcome exclude cases with missing data. Treated and untreated means for compliers were estimated using the approach of Imbens and Rubin (1997). Impact estimates are based on the regression specification indicated in Section III. Unadjusted impact estimates include stratum fixed effects; covariate-adjusted impacts also include the non-collinear subset of baseline variables listed in Appendix Table A.1. (Estimates for each subgroup exclude covariates that, by construction, do not differ within the given subgroup.) Standard errors are robust to heteroscedasticity. * / ** / *** indicates that the estimated impact or difference between impacts is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

Table. A.9.CACE impacts for total dollars of SSI benefits received over four-year period, by YML subgroup

	Sample Size		Est. treated mean for compliers	Est. untreated mean for compliers	Unadjusted CACE		Covariate-adjusted CACE	
	Treatment Group	Control Group			Estimate	Standard Error	Estimate	Standard Error
Subgroups based on age								
Ages 18 or younger	160	126	1,550	1,832	-282	(976)	140	(1,076)
Ages 19 or older	102	70	2,080	8,816	-6,736**	(2,694)	-6,896***	(2,254)
Difference between subgroups			-530	-6,984	6,454**	(2,866)	7,036***	(2,498)
Subgroups based on gender								
Females	134	83	1,246	2,535	-1,289	(1,304)	-1,904	(1,371)
Males	128	113	2,253	5,206	-2,953*	(1,769)	-2,091	(1,562)
Difference between subgroups			-1,007	-2,671	1,664	(2,198)	187	(2,078)
Subgroups based on race/ethnicity								
Non-Hispanic whites	90	69	1,468	6,788	-5,320**	(2,521)	-3,876*	(2,166)
Other races/ethnicities	150	113	1,990	2,778	-788	(1,080)	-1,267	(1,057)
Difference between subgroups			-522	4,010	-4,531*	(2,743)	-2,610	(2,410)
Subgroups based on general health at enrollment								
Fair/poor health at enrollment	91	72	3,512	3,822	-310	(2,048)	-751	(1,717)
Good/excellent health at enrollment	153	113	809	3,730	-2,921*	(1,514)	-2,040	(1,286)
Difference between subgroups			2,703	92	2,612	(2,547)	1,289	(2,145)
Subgroups based on association between medical condition at enrollment and subsequent SSI receipt								
Lower SSI propensity condition	148	110	1,772	1,339	433	(922)	542	(989)
Higher SSI propensity condition	108	80	2,173	8,010	-5,837**	(2,422)	-5,700***	(2,154)
Difference between subgroups			-401	-6,671	6,271**	(2,592)	6,243***	(2,370)

Note: Each row presents estimates for a separate subgroup or for the difference between subgroups. All estimates are based on the analysis sample of YMLs (N = 472) and the nonresponse/stratification weights described in Section III. The propensity of SSI receipt by medical condition was measured using data on the outcomes of YMLs in the control group in the third year after random assignment. Results for each outcome exclude cases with missing data. Treated and untreated means for compliers were estimated using the approach of Imbens and Rubin (1997). Impact estimates are based on the regression specification indicated in Section III. Unadjusted impact estimates include stratum fixed effects; covariate-adjusted impacts also include the non-collinear subset of baseline variables listed in Appendix Table A.1. (Estimates for each subgroup exclude covariates that, by construction, do not differ within the given subgroup.) Standard errors are robust to heteroscedasticity. * / ** / *** indicates that the estimated impact or difference between impacts is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

Table. A.10.   CACE impacts for total earnings over four-year period among YMLs and other youths: results from sensitivity analyses

	Sample Size		Est. treated mean for compliers	Est. untreated mean for compliers	Unadjusted CACE		Covariate-adjusted CACE	
	Treatment Group	Control Group			Estimate	Standard Error	Estimate	Standard Error
Main estimates								
YMLs	262	197	42,977	34,254	8,723*	(5,149)	9,708**	(4,655)
Other youths	5,487	3,626	46,810	46,158	652	(1,072)	97	(960)
Difference between YMLs and other youths			-3,833	-11,904	8,071	(5,259)	9,611**	(4,753)
Estimates after reweighting other youths so that distribution of covariates more closely resembles that of YMLs								
YMLs	262	197	42,977	34,254	8,723*	(5,149)	9,708**	(4,655)
Other youths	5,487	3,626	48,146	46,147	1,999	(1,657)	1,415	(1,492)
Difference between YMLs and other youths			-5,169	-11,893	6,724	(5,409)	8,293*	(4,888)
Estimates after trimming latest responders to equalize response rates								
YMLs	255	197	43,677	34,399	9,278*	(5,105)	10,075**	(4,645)
Other youths	5,429	3,614	46,914	46,265	649	(1,073)	103	(961)
Difference between YMLs and other youths			-3,237	-11,866	8,629*	(5,216)	9,972**	(4,744)
Estimates after applying nonresponse (NR) adjustment factors based on administrative tax data								
YMLs	262	197	42,976	35,214	7,763	(5,187)	8,744*	(4,688)
Other youths	5,487	3,626	46,799	47,216	-417	(1,082)	-977	(969)
Difference between YMLs and other youths			-3,823	-12,002	8,180	(5,299)	9,721**	(4,787)
Estimates after shrinking earnings measures to account for potential misreporting of hours								
YMLs	262	197	38,679	30,828	7,851*	(4,634)	8,737**	(4,189)
Other youths	5,487	3,626	42,129	41,542	587	(965)	87	(864)
Difference between YMLs and other youths			-3,450	-10,714	7,264	(4,733)	8,650**	(4,277)
Estimates after trimming to equalize response rates and shrinking based on hours misreporting								
YMLs	255	197	39,310	30,959	8,351*	(4,594)	9,067**	(4,181)
Other youths	5,429	3,614	42,222	41,638	584	(965)	92	(864)
Difference between YMLs and other youths			-2,912	-10,679	7,766*	(4,695)	8,975**	(4,269)

	Sample Size		Est. treated mean for compliers	Est. untreated mean for compliers	Unadjusted CACE		Covariate-adjusted CACE	
	Treatment Group	Control Group			Estimate	Standard Error	Estimate	Standard Error
Estimates after trimming to equalize response rates and shrinking based on hours misreporting								
YMLs	262	197	38,679	31,693	6,986	(4,669)	7,870*	(4,219)
Other youths	5,487	3,626	42,119	42,494	-375	(974)	-879	(873)
Difference between YMLs and other youths			-3,440	-10,801	7,362	(4,769)	8,749**	(4,308)

Note: Each row presents estimates for a separate group (YMLs versus other youths) or for the difference between groups. All estimates are based on the analysis sample of YMLs (N = 472) and the nonresponse/stratification weights described in Section III. Results for each outcome exclude cases with missing data. Treated and untreated means for compliers were estimated using the approach of Imbens and Rubin (1997). Impact estimates are based on the regression specification indicated in Section III. Unadjusted impact estimates include stratum fixed effects; covariate-adjusted impacts also include the non-collinear subset of baseline variables listed in Appendix Table A.1. (Regressions for youths without medical limitations at enrollment exclude covariates related to such conditions.) Standard errors are robust to heteroscedasticity. * / ** / *** indicates that the estimated impact or difference between impacts is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

Table. A.11.   CACE impacts for total dollars of SSI benefits received over four-year period among YMLs and other youths: results from sensitivity analyses

	Sample Size		Est. treated mean for compliers	Est. untreated mean for compliers	Unadjusted CACE		Covariate-adjusted CACE	
	Treatment Group	Control Group			Estimate	Standard Error	Estimate	Standard Error
Main estimates								
YMLs	262	196	1,817	4,049	-2,232*	(1,151)	-2,008*	(1,052)
Other youths	5,423	3,590	1,009	1,409	-400***	(155)	-359**	(149)
Difference between YMLs and other youths			808	2,640	-1,832	(1,161)	-1,650	(1,062)
Estimates after reweighting other youths so that distribution of covariates more closely resembles that of YMLs								
YMLs	262	196	1,817	4,049	-2,232*	(1,151)	-2,008*	(1,052)
Other youths	5,423	3,590	1,254	1,875	-621**	(284)	-456*	(251)
Difference between YMLs and other youths			563	2,174	-1,611	(1,185)	-1,552	(1,081)
Estimates after trimming latest responders to equalize response rates								
YMLs	256	196	1,850	3,994	-2,143*	(1,151)	-1,931*	(1,055)
Other youths	5,372	3,578	1,001	1,402	-400***	(155)	-362**	(149)
Difference between YMLs and other youths			849	2,592	-1,743	(1,161)	-1,570	(1,065)

Note: Each row presents estimates for a separate group (YMLs versus other youths) or for the difference between groups. All estimates are based on the analysis sample of YMLs (N = 472) and the nonresponse/stratification weights described in Section III. Results for each outcome exclude cases with missing data. Treated and untreated means for compliers were estimated using the approach of Imbens and Rubin (1997). Impact estimates are based on the regression specification indicated in Section III. Unadjusted impact estimates include stratum fixed effects; covariate-adjusted impacts also include the non-collinear subset of baseline variables listed in Appendix Table A.1. (Regressions for youths without medical limitations at enrollment exclude covariates related to such conditions.) Standard errors are robust to heteroscedasticity. * / ** / *** indicates that the estimated impact or difference between impacts is significantly different from zero at the 0.10 / 0.05 / 0.01 level based on a two-tailed test.

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