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# Meeting the Challenge

## The Social Return on Investment in the National Guard Youth ChalleNGe Program

According to government statistics, about 25 percent of U.S. high school freshman fail to graduate from high school within four years. The National Guard Youth ChalleNGe program, a residential program coupled with post-residential mentoring, seeks to alter the life course of high school dropouts. Dropouts ages 16–18 who are U.S. citizens or legal residents, drug free, un- or underemployed, and have either no police record or a police record limited to juvenile status offenses are eligible to apply for admission. A RAND study, sponsored by the National Guard Youth Foundation, has assessed the costs and benefits of the ChalleNGe program to provide policymakers and other interested parties with an estimate of the overall return on investment in the program.

### Background

ChalleNGe participants, called cadets, are housed together, often on a National Guard base or training center, for the first 22 weeks of the program. During these weeks, the program immerses cadets in a quasi-military environment in which they focus on discipline, academic excellence, teamwork, physical fitness, leadership, and service to the community. The program encourages cadets to obtain a General Educational Development (GED) credential and to seek further education and training or employment during a one-year post-residential phase in which cadets receive mentoring and other support and guidance. There are currently 34 ChalleNGe programs operating in 27 states and Puerto Rico graduating some 8,200 high school dropouts each year.

A rigorous evaluation of the ChalleNGe program employing random assignment at ten sites has demonstrated that the program has positive effects on educational attainment and employment. Thirty-six months following randomization, admission to the ChalleNGe program had

### Key findings:

- Admission to the National Guard Youth ChalleNGe program, an intensive residential and mentoring program for high school dropouts ages 16–18, is projected to increase the present discounted lifetime earnings of ChalleNGe admittees by \$43,514 (in 2010 dollars).
- ChalleNGe admission is estimated to generate labor market earnings and other benefits of \$2.66 for every dollar expended on the program, a return on investment of 166 percent.
- This cost-benefit analysis supports public investment in the program as currently operated and targeted.

increased GED attainment by 22 percentage points, traditional high school diploma attainment by 4 percentage points, some college attendance by 16 percentage points, vocational training and employment by 7 percentage points, and annual earnings by \$2,266 (an increase in earnings of 20 percent). The evaluation also found evidence that admission to the ChalleNGe program lowered criminal activity. The RAND study employed the results of this program evaluation to compare the monetary value of the program's costs and benefits.

### Program Costs Consist of Operating and Opportunity Costs

Employing site-level budget data for the ten ChalleNGe sites that participated in the program evaluation, supplemented with information on off-budget costs obtained through interviews with site directors, the RAND study estimated the present discounted value (PDV) of ChalleNGe

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Corporate Headquarters  
 1776 Main Street  
 P.O. Box 2138  
 Santa Monica, California  
 90407-2138  
 TEL 310.393.0411  
 FAX 310.393.4818

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operating costs to be \$11,633 (in 2010 dollars) per admittee (assuming a social discount rate of 3 percent). Estimated PDV opportunity costs—the value of the time spent by ChalleNGe applicants, admittees, and mentors that could have been spent in some other productive activity—total \$2,058 per admittee. The efficiency cost of raising revenue to fund the ChalleNGe program (also referred to as the “deadweight loss” of taxation) totals \$1,745 per admittee, bringing total PDV program costs to \$15,436 per admittee (see Panel A in the table below).

### Program Benefits Accrue Largely through Earnings

A key benefit of greater educational attainment is higher labor market earnings. The RAND study estimated that over his or her working life, the average ChalleNGe admittee accrues an additional \$43,514 in present discounted earnings as a result of higher educational attainment induced by admission to the ChalleNGe program (Panel B). The RAND study further estimated that the ChalleNGe program yields \$1,334 in present discounted social benefits per admittee as the result of reduced social welfare dependency, reduced criminal activity, and increased service to the community, which is an integral component of the residential program.

### Estimated Benefits Significantly Outweigh Costs

Total PDV benefits per admittee (net of the cost of education) amount to \$40,985. Thus, PDV net benefits of the ChalleNGe program amount to \$25,549, or \$2.66 in benefits for every dollar expended (Panel C). The return on investment in the ChalleNGe program is 166 percent.

These findings are sensitive to the assumed social discount rate—which accounts for the extent to which individuals value current over future consumption—and the exact nature of the estimated relationship between labor market earnings and educational attainment.

Since the benefits of the ChalleNGe program largely accrue in the future, whereas the costs of operating the program largely accrue in the present, PDV net benefits of the program decline rapidly as the assumed social discount rate rises. But the discount rate would have to be over 6.4 percent—more than twice that used in most cost-benefit analyses of social programs—for PDV costs to outweigh PDV benefits.

The benefit calculations are also sensitive to the way in which the empirical relationship between earnings and education is modeled. Assuming a social discount rate of 3 percent, the most conservative empirical model, which assumes that

ChalleNGe admission has no effect on four-year college degree attainment, yields a benefit-cost ratio of 1.54. Benefit-cost ratios across all empirical models tested ranged between 1.54 and 4.98.

### Estimated Return on Investment Supports Continued Investment in ChalleNGe

Under baseline assumptions, this cost-benefit analysis suggests that continued operation of existing ChalleNGe sites will yield substantial net benefits to program participants and society at large. This quantitative finding supports public investment in the ChalleNGe program as currently operated and targeted. Two further considerations bolster this support. First, educational attainment likely yields benefits to individuals and society that are not fully captured in the outcomes considered in the RAND study. Second, the estimated return on investment in the ChalleNGe program is considerably higher than that estimated for other rigorously evaluated programs that seek to alter the life course of disadvantaged youth and young adults.

The extent to which these cost-benefit estimates lend support to proposals to expand the ChalleNGe program to serve more youth depends on whether the estimated program costs and benefits are generalizable to future applicant cohorts. This seems a reasonable assumption, provided that the program expansion targets a similarly situated population of high school dropouts. ■

### PDV Costs and Benefits of the ChalleNGe Program

Item	PDV Benefit per Admittee (\$2010)
<b>A. Costs</b>	
Operating costs	-\$11,633
Opportunity costs	-\$2,058
Deadweight loss of taxation	-\$1,745
Total costs	-\$15,436
<b>B. Benefits</b>	
Lifetime earnings	\$43,514
Cost of education	-\$4,860
Social welfare dependency	\$249
Reduced criminal activity	\$662
Service to the community	\$423
Deadweight loss of taxation	\$997
Total benefits	\$40,985
<b>C. Cost-benefit comparison</b>	
Net benefits	\$25,549
Benefit-cost ratio	2.66
Return on investment	166%
NOTE: Estimates assume a social discount rate of 3 percent.	

This research brief describes research conducted by RAND Labor and Population and the RAND National Defense Research Institute and documented in *A Cost-Benefit Analysis of the National Guard Youth ChalleNGe Program*, by Francisco Perez-Arce, Louay Constant, David S. Loughran, and Lynn A. Karoly, TR-1193-NGYF, 2012, 65 pp., \$20, ISBN: 978-08330-6030-3 (available at [http://www.rand.org/publications/technical\\_reports/TR1193.html](http://www.rand.org/publications/technical_reports/TR1193.html)). The RAND Corporation is a nonprofit institution that helps improve policy and decisionmaking through research and analysis. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors. RAND® is a registered trademark.

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