

Post-Release Substance Abuse Treatment for Criminal Offenders: A Cost-Effectiveness Analysis

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Introduction

- Currently more than 2 million individuals incarcerated in prisons or jails in the U.S. (BJS, 2003)
- Estimated 600,000 inmates were released in 2001
 - 2/3 expected to return to prison for new offenses or parole violations (Travis, et al., 2001)
- Over 70% of federal and state inmates reported past drug use (BJS, 1999)
- How prepared is society for prisoner reentry?
- Potential economic importance of post-release treatment and socialization programs

Introduction (cont.)

- Perform a cost-effectiveness analysis of the CREST work release TC and aftercare programs
- First study to consider cost and effectiveness of post-release treatment in work release setting
- Primary research questions
 - How much did the CREST work release TC and aftercare programs cost?
 - Was the number of days reincarcerated over follow-up significantly different across study conditions?
 - Was CREST work release cost-effective relative to standard work release?
 - Did the additional investment in aftercare prove cost-effective?

CREST Outreach Center

- Established in 1991 with funding from NIDA
- Part of a three stage substance abuse treatment continuum for Delaware offenders (in-prison, work release, aftercare)
- Coeducational, six-month TC
- Aftercare began in 1996
- Aftercare is a 6-month program that offers weekly counseling and drug testing

Data

- Data provided by original follow-up evaluations (P.I. Inciardi from Univ. of DE)
- Data correspond to years 1997-1998
- Eligibility
 - Within 18-24 months of release
 - History of substance abuse
 - No sexual offenses or arson charges
- Inmates that were eligible for work release and had been classified as needing treatment were randomly assigned to CREST work release or standard work release

Data (cont.)

- N=836
- Sample sizes, by study conditions:
 1. All CREST work release (N=587)
 - 161 came from the in-prison program (KEY)
 - 426 CREST participants came directly from general population
 2. CREST work release only (N=378)
 3. CREST work release plus aftercare (N=209)
 4. Comparison (N=249)

Overview of Methods

- Cost-Effectiveness Analysis (CEA)
- Framed from the perspective of the Delaware Department of Corrections
- One outcome is used to express treatment effectiveness (days incarcerated over follow-up)
- Treatment cost was estimated using the Drug Abuse Treatment Cost Analysis Program (DATCAP)

Cost-Effectiveness Analysis

- Treatment cost
 - Direct costs associated with treatment provision, excluding the value of donated or subsidized resources
 - Focused on incremental costs associated with CREST programs (additional costs above standard work release costs)
- Treatment effectiveness
 - Number of days incarcerated over the 18-month follow-up period
 - Reincarceration for both new offenses and probation violations
 - This is a principle concern of the Delaware Department of Corrections

Cost-effectiveness analysis (cont.)

- Cost-effectiveness calculations

- Compares the incremental cost and incremental effectiveness between 2 or more study conditions:

$$\frac{C_x - C_y}{E_x - E_y} = \frac{IC_{xy}}{IE_{xy}} = ICER_{xy}$$

- $ICER_{xy}$ indicates the marginal cost of achieving one fewer incarceration day in study condition y relative to study condition x

Summary of Table 1: Variable Means, by Study Condition

- Significant differences across study groups: age, ethnicity, graduating from in-prison treatment (KEY), number of follow-up days incarcerated, and program costs
- CREST participants had 74.39 days reincarcerated
 - CREST work release only had 91.96 days reincarcerated
 - CREST work release plus aftercare had 42.60 days reincarcerated
- Comparison had 104.20 days reincarcerated
- CREST work release only participants had greatest average lifetime arrests (11.29)

Summary of Table 2: Average Utilization and Cost of CREST Work Release and Aftercare

- Estimated cost per day in CREST work release : \$11.68
- Estimated cost per day in aftercare: \$2.72
- Average total cost for All CREST: \$1,937
 - Average length of stay 154.28 days
- Average total cost for CREST work release only: \$1,604
 - Average length of stay 137.33 days
- Average total cost for CREST work release + aftercare: \$2,539
 - Average length of stay 184.92 days in CREST work release and 139.33 days in aftercare

Summary of Table 3: Cost-Effectiveness Analysis Results

- Comparison vs. All CREST participants
 - ICER = \$65, the cost per avoided incarceration day under CREST
 - 95% bootstrapped confidence interval [43 – 169]
- CREST work release only vs. CREST + aftercare
 - ICER = \$19 per avoided incarceration day
 - 95% bootstrapped confidence interval [14 – 28]

Table 3: Cost-Effectiveness Analysis

Study Condition	Treatment Cost (\$)	Days Incarcerated During Follow-up	
Comparison Group	0.00	104.16 [88.82; 120.90]	—
All CREST Participants	1,937 [1,876; 1,996]	74.39 [65.30; 82.52]	—
CREST Work Release Only Participants	1,604 [1,529; 1,671]	91.96 [79.90; 102.70]	—
CREST + Aftercare Participants	2,539 [2,475; 2,599]	42.60 [30.71; 55.32]	—
Cost-Effectiveness Comparison	Incremental Treatment Cost (\$)	Incremental Days Incarcerated	Incremental Cost-Effectiveness Ratio (\$)
Comparison Group vs. All CREST Participants	1,937*** [1,871; 2,000]	29.77*** [11.67; 46.00]	65.06 [42.51; 169.14]
CREST Work Release Only vs. CREST + Aftercare	935*** [844; 1,039]	49.36*** [32.16; 65.00]	18.94 [14.24; 28.07]

Discussion

- Involvement in CREST reduced reincarceration relative to standard work release
- Cost per avoided incarceration day for CREST slightly higher than average daily cost of incarceration (\$65 vs. \$57)
 - But cannot statistically conclude CREST not cost-effective with confidence interval of \$42 to \$169
- In addition to reduced reincarceration, what else is CREST buying?
 - Employment, improved family and community relationships, reduced drug use?
- Is it possible CREST group had inflated number of reincarceration days due to increased scrutiny by probation officers?

Discussion (cont.)

- Selection bias within CREST intent-to-treat subgroups
 - Participation in aftercare was voluntary
 - Only “policy” lever the DOC could control was whether an individual entered standard work release or CREST work release
- Efficacy vs. Effectiveness
 - Efficacy: can it work?
 - Effectiveness: does it work?

Conclusion

- First economic evaluation of the CREST work release TC and aftercare programs
- CREST work release cost \$1,937 for average participant and reduced reincarceration days by 29% (30 fewer days) relative to standard work release
- Additional investment in aftercare of \$935 per client led to 43% less reincarceration (49 fewer days) than CREST work release only participants
- Results resonate with recent assessments of corrections-based treatment programs
- Future analyses will consider the long-term returns to these programs in the context of a benefit-cost analysis

References

- Travis, J., Solomon, A.L., and Waul, M. (2001). *From prison to home: The dimensions and consequences of prisoner reentry.* Washington, DC: The Urban Institute, Justice Policy Center
- U.S. Department of Justice, Bureau of Justice Statistics website:
<http://www.ojp.usdoj.gov/bjs>