



Seattle's law enforcement assisted diversion (LEAD): program effects on criminal justice and legal system utilization and costs

Susan E. Collins^{1,2} · Heather S. Lonczak¹ · Seema L. Clifasefi¹ 

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Abstract

Objectives We evaluated a prebooking law enforcement assisted diversion (LEAD) program (i.e., initial diversion from the criminal justice system paired with harm-reduction case management and legal assistance to individuals with repeated, low-level drug or prostitution offenses) on criminal justice and legal system utilization and associated costs.

Methods We used a nonequivalent-groups longitudinal quasi-experimental field trial design in which participants received either the prebooking law enforcement assisted diversion (LEAD) program or the comparison condition (i.e., booking and prosecution as usual). We compared outcomes for LEAD ($n = 202$) versus comparison ($n = 114$) participants on criminal justice and legal system utilization and associated costs.

Results Subsequent to evaluation entry, LEAD participants had 1.4 fewer average yearly jail bookings, spent about 41 fewer days in jail per year, and had 88% lower odds of prison incarceration relative to comparison participants. LEAD participants also showed significant pre-to-post reductions in legal costs ($-\$2100$), whereas comparison participants showed cost increases ($+\$5961$).

Conclusions LEAD was associated with statistically significant reductions in criminal justice and legal system utilization and associated costs and represents a promising alternative to the criminal justice system for repeated, low-level drug and prostitution offenders. LEAD is well positioned to positively impact criminal justice policy.

Keywords Law enforcement assisted diversion · Criminal justice · Legal system · Harm reduction

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✉ Susan E. Collins
collinss@uw.edu

Extended author information available on the last page of the article

In 2015, 6.7 million people, or 2.7% of the US population, were under supervision within US adult correctional systems (Kaeble and Glaze 2016). Drug offenders accounted for almost half of all federal inmates (Carson and Anderson 2016), and prostitution-related offenses accounted for 31,362 arrests (Federal Bureau of Investigation 2017). The disproportionate burden that prosecution and incarceration of drug and prostitution offenders places on the criminal justice and legal systems translates into high costs. For example, \$9.2 billion in federal resources were requested in 2018 to support domestic drug law enforcement efforts (Office of National Drug Control Policy 2017). There is, however, little evidence to suggest that the current system of prosecution and incarceration results in improved public safety, reduced drug use, or decreased recidivism (Drug Policy Alliance 2014; National Research Council 2014; Walmsley 2013; Wormith 2002). Instead, many offenders cycle in and out of jail so frequently, this phenomenon is referred to as a “revolving door” (Warner and Kramer 2009). In response to this long-standing problem, policymakers have been seeking alternatives to prosecution and incarceration (Aos et al. 2011; Drake et al. 2009).

Various types of diversion programs have been implemented to address the needs of individuals with high levels of criminal recidivism, many of whom have co-occurring psychiatric disorders and other disabilities (Hayhurst et al. 2015; Lattimore et al. 2003; Sirotych 2009). These programs typically include diversion from criminal prosecution and incarceration to social services and support. Recent systematic reviews of such programs have indicated mixed findings regarding their effectiveness and cost-effectiveness. Specifically, evaluations of diversion programs to date have shown some evidence of improving drug outcomes for participants but no evidence that they reduce recidivism or reduce overall costs to the criminal justice and legal systems (Hayhurst et al. 2015; Sirotych 2009). No research to date, however, has examined the effects of prebooking diversion programs that incorporate a harm-reduction approach instead of an abstinence-based approach that requires sobriety and drug treatment as terms of program participation and success. Further, diversion programs cited in the literature have typically involved people with serious mental illness instead of higher-functioning drug users.

The Law Enforcement Assisted Diversion (LEAD) program, which was introduced to reduce recidivism among low-level drug and prostitution offenders in King County, Washington, fills that existing gap in diversion programs. LEAD comprises three primary components: an initial prebooking diversion, harm-reduction case management, and ongoing legal assistance and coordination. Because Seattle’s LEAD is the first prebooking, harm-reduction diversion program for drug and prostitution offenders in the USA, evaluation is needed to inform policymakers and other key stakeholders of its impact. To this end, the present evaluation was conducted to test the effectiveness of LEAD compared to the “system-as-usual” (i.e., booking and prosecution) in reducing publicly funded legal and criminal justice service utilization and associated costs (i.e., prosecution, public defense, jail, prison) prior and subsequent to evaluation entry.

Method

Participants

This evaluation included 316 adults in Seattle, WA, who were suspected of recent violations of the uniform controlled substances act (VUCSA) or prostitution offenses (please see online Technical [Appendix](#) for more details).

LEAD program description

LEAD comprises three primary components. First, after arrest and prior to booking, potential participants were offered a one-time diversion from the criminal justice and legal systems to the LEAD program. Next, officers introduced interested individuals to a case manager who conducted an informed consent process and began provision of time-unlimited, harm-reduction-oriented case management. Harm-reduction case management entailed a low-barrier approach to connecting participants to services fulfilling participants' stated goals and basic needs (e.g., shelter; food; clothing; housing; vocational services; medical, psychiatric or substance-use treatment). Participants were not required to attain abstinence or attend treatment or any other services to maintain standing in the program. Finally, the prosecuting attorney's office, program leads, and case managers engaged in higher-level coordination of subsequent legal system involvement to maximize LEAD participants' and community health and safety (see Technical [Appendix](#) for more detail).

Group allocation

Seattle Police Department officer shifts for participating squads (i.e., day and night bike patrol and anticrime squads who made the most drug arrests in the department within the Belltown and adjacent neighborhoods in Seattle's West Precinct) were initially randomized to be either LEAD or comparison group (i.e., system-as-usual) shifts. Eligible individuals were allocated to those conditions if they were arrested during the respective shifts ($N=260$). Second, a pathway for social contacts (i.e., known drug or prostitution recidivists suspected of recent drug or prostitution activity) to enter into the LEAD program was deemed necessary from a policy and policing standpoint ($N=56$). Because they were all subject to the same inclusion criteria (i.e., suspicion of drug or prostitution activity in the neighborhood), LEAD participants recruited as social contacts or via arrest were believed to be drawn from the same population, which was confirmed in prior analyses (Collins et al. 2017). Finally, after the evaluation began, operational partners recognized that there was a limited number of potential participants. Over time, most of these individuals were approached for LEAD involvement, which left a dwindling number of individuals available for inclusion in the comparison group. Thus, to accommodate the need for an adequate and comparable comparison group, new geographical areas (in addition to comparison-group-only shifts) were added to the evaluation. Overall, 203 individuals were allocated to LEAD, and 115 individuals were allocated to the comparison condition. At the time of referral, 146 of the LEAD participants were under arrest, and 57

entered the evaluation as social contacts. Two participants from the overarching study ($N=318$) were removed for the cost analyses presented in this manuscript, resulting in a sample size of 316. These individuals died within the first 6 months of the postevaluation, which would otherwise bias cost estimates.

Evaluation design

Given the real-world constraints on group allocation, this evaluation represents a nonequivalent-groups longitudinal quasi-experimental field trial design. According to federal standards, nonrandomized designs are consistent with the early intervention development and evaluation exemplified by the LEAD program (Rounsaville et al. 2001). Thus, this design was deemed adequate for this initial evaluation.

Measures

Sociodemographic and program data were obtained from the LEAD case management team and from the Seattle Police Department LEAD records. Data on charges were extracted by the King County Prosecuting Attorney's office from the FBI's National Crime Information Center (NCIC) and were given to the evaluation team for analysis. These included criminal charges that occurred during the LEAD evaluation time frame: The pre-entry window comprised charges accrued between October 1, 2009, through individual participants' entry into the evaluation, and the post-entry window comprised charges accrued on the day of participants' entry into the evaluation through July 31, 2014. Charges were collapsed for a given day to represent felony and misdemeanor cases that would have been processed through the legal system.

As indicated by the Public Defender Association, defense costs associated with misdemeanor and felony charges was estimated as 1/400th and 1/100th of the full-time equivalent (FTE) of a public defender, respectively. According to estimations provided by the Department of Public Defense Deputy Director, full cost of an attorney was estimated to be \$215,156 per year (including associated support staff and indirect costs); thus, misdemeanors were assigned a cost of \$538, and felonies were assigned a cost of \$2152. Given the relative parity of attorney staffing and costs between public defense and prosecution, the costs of the King County Prosecutor and Seattle City Attorney, as relevant, were conservatively estimated to be equal to those of the public defense costs for both misdemeanors and felonies.

Data on jail bookings, days spent in jail, and use of supplementary jail services (i.e., medical, psychiatric, and one-on-one guarding) were compiled by Looking Glass Analytics using data from the King County Department of Adult and Juvenile Detention record system. Jail service costs were contract rates paid by the City of Seattle. Incarceration dates for prison placements were provided by the Washington State Department of Corrections, and prison costs were estimated using average daily bed cost by institution.

LEAD program costs came from three primary sources, including (a) monthly expense reports obtained from Evergreen Treatment Services' REACH homeless outreach program detailing LEAD personnel and operating costs as well as costs associated with LEAD client assistance, (b) annual salary and benefit reports provided by the King County Prosecutor's Office based on the fixed costs associated with review

and coordination of LEAD participants' nondiverted cases, and (c) annual salary and benefit reports provided by the Public Defender Association associated with fixed costs of LEAD project management and legal services to LEAD participants.

Data management and analysis plan

LEAD program costs LEAD costs were estimated over the pilot evaluation timeframe (i.e., first 29 months of operation). Additionally, LEAD program records provided the percentage breakdown of client assistance costs from the overall total. It should be noted that first 7 months of REACH client assistance costs are not included in the overall cost breakdown because these data were not categorized in recordkeeping until month 8 of the pilot.

Exploratory data analyses and preparation Using SPSS 19 and Stata 13, analyses were conducted to describe the overall evaluation sample. LEAD costs were calculated by summing REACH case management costs (e.g., LEAD personnel, operating expenses, and client assistance) and LEAD-related prosecution and defense costs, dividing by the number of LEAD participants participating in the program each month, and then multiplying by 12 to create an estimated average yearly cost for each individual participating in LEAD.

Primary analyses Ordinary least squares and logistic regression models were used to test group effects (i.e., LEAD vs system-as-usual comparison) on pre- to post-evaluation-entry changes on average yearly criminal justice and legal system utilization and cost outcomes. Utilization outcomes included yearly average number of bookings, jail days, prison days (dichotomized due to rarity), and legal cases (felonies and misdemeanors). Criminal justice and legal system cost outcomes were average, yearly estimated costs associated with felony and misdemeanor charges (i.e., prosecution and public defense) as well as jail (i.e., bookings, jail days, supplementary guarding, psychiatric and medical services) and prison time.

Alphas were set to $p = .05$, and confidence intervals were set to 95%. Propensity score weighting was used to estimate average treatment effects for treated individuals and thereby account for group imbalances that can result from nonrandomized designs (Guo and Fraser 2015). More information on group imbalance, propensity score weighting, and balance tests are available in the Technical [Appendix](#). Also of note, we conducted analyses both as the program was conducted (i.e., including social contacts) and including only participants on randomized shifts. Because both sets of analyses indicated the same pattern of findings, we provide findings from the full sample in this report.

Results

Overall sample description

Participants ($N = 316$) had an average age of 40.17 ($SD = 11.85$) years and were predominantly male (34% female; $n = 109$). In police records, 60% were identified as

African-American, 26% as European American, 4% as American Indian/Alaska Native, 4% as Multiracial, 3% as Hispanic/Latino/a, 2% as Asian American, and 1% as “Other.” LEAD group participants were older than those in the comparison group, and there were more female and fewer African-American participants in the LEAD versus comparison groups. These initial group differences were successfully balanced using propensity scores (see Technical Appendix and Table 1 for raw descriptive statistics for the pre- to post-evaluation periods).

LEAD program costs

LEAD program costs averaged \$899 per participant per month or \$10,787 per year. As the program became more efficient, however, costs decreased further; the average monthly cost per participant was \$532 in month 29 of the evaluation. More detailed program cost breakdowns are shown in the Technical Appendix.

LEAD effects on criminal justice and legal system utilization and costs

Jail outcomes The omnibus model test for group effects on pre- to post-evaluation changes in average yearly jail bookings was significant, $F(1, 314) = 30.69$, $p < .001$, $R^2 = .10$. In contrast to comparison participants, LEAD participants had 1.43 fewer jail bookings on average per year subsequent to their program entry ($B = -1.43$, $SE = .26$, $p < .001$).

The model testing group effects on jail days were significant, $F(1, 314) = 26.66$, $p < .001$, $R^2 = .11$. In contrast to comparison participants, LEAD participants showed a significant reduction in jail days on average per year subsequent to program entry ($B = -40.60$, $SE = 7.86$, $p < .001$).

Prison incarceration The omnibus model test for prison incarceration was significant, $Wald \chi^2(2, N = 316) = 12.72$, $p = .002$. In contrast to comparison participants, LEAD participants showed lower odds of incarceration in prison subsequent to LEAD involvement ($OR = .12$, $robust SE = .07$, $p < .001$).

Table 1 Raw descriptive statistics for primary outcomes over the evaluation

Variables	LEAD group ($n = 202$)		Comparison group ($n = 114$)	
	Pre	Post	Pre	Post
Jail bookings ^a	1.65 (1.77)	1.19 (1.79)	1.36 (1.79)	2.27 (1.80)
Jail days ^a	32.44 (41.02)	22.84 (45.48)	24.87 (42.52)	52.51 (57.82)
Prison incarceration ^b	6.93%	1.98%	6.14%	13.16%
Number of misdemeanors ^a	.59 (.86)	.46 (.85)	.60 (.90)	.60 (1.10)
Number of felonies ^a	.21 (.31)	.17 (.42)	.21 (.33)	.56 (.53)
Overall cost of legal and criminal justice services ^a	6863 (7978)	4763 (8242)	5734 (8222)	11,695 (10,551)

^a Mean (standard deviation) per year

^b Mean per year was dichotomized to indicate values greater than 0

Number of misdemeanor and felony cases The model testing changes in the number of misdemeanor cases prior and subsequent to evaluation entry were not statistically significant ($p > .24$). When we considered group differences for average yearly felony cases, however, the omnibus model was significant, $F(1, 314) = 38.26$, $p < .001$, $R^2 = .13$. The group parameter indicated that LEAD participants showed a significant reduction in the average number of felony cases per year ($B = -.42$, $SE = .07$, $p < .001$).

Costs associated with criminal justice and legal system utilization The overall cost model was significant, $F(1, 314) = 40.83$, $p < .001$, $R^2 = .15$. Taking the comparison group into account, LEAD participants showed a significant reduction in average yearly costs subsequent to program entry ($B = -8.95$, $SE = 1.40$, $p < .001$).

Discussion

LEAD program costs

LEAD program costs (\$899/month) were within the range of another program offering housing and supportive services to homeless individuals in King County (e.g., single-site Housing First) (Larimer et al. 2009). Analysis of LEAD expenditures indicated the average monthly cost per participant decreased over time. This decrease occurred as the program moved past its initial start-up phase, recruited greater numbers of participants, became more efficient in client assistance spending, and benefited from Medicaid expansion due to the Affordable Care Act.

Of note, these analyses reflect the cost of LEAD as implemented in King County, WA, with a specific priority population. Thus, cost findings may not be directly generalizable to other communities. For example, in this program, 56% of all client assistance dollars went towards shelter and housing costs, which reflects the high prevalence of homelessness in this community's priority population as well as the high cost of King County's limited housing stock. Thus, various factors (e.g., priority population characteristics, communities' ability to provide permanent versus temporary housing, rental/housing market values, salary ranges dependent on cost of living, extent of Medicaid coverage for services) should be taken into consideration when interpreting these findings and projecting costs of LEAD implementation.

LEAD effects on criminal justice and legal system utilization and costs

Although there was no statistically significant LEAD effect on number of misdemeanor cases, LEAD participants showed significant decreases across average yearly felony cases, King County jail bookings, jail days, and Washington State prison incarcerations. In contrast, system-as-usual comparison participants showed increases across these utilization variables. These group differences translated into both statistically significant and operationally meaningful LEAD effects on costs associated with criminal justice and legal system utilization.

These positive findings are likely due to the low-barrier, harm-reduction features of LEAD. Additionally, all LEAD participants received ongoing, proactive case

management that supports fulfillment of basic needs, including housing stability, job attainment, and enrollment in drug and alcohol treatment. Further, LEAD participants' case managers coordinated with prosecutors to ensure that nondiverted cases were managed to support and not compromise LEAD intervention plans.

Other potential explanations for these findings should be explored. First, there were statistically significant increases in the comparison group's criminal justice and legal system utilization subsequent to evaluation entry. There were various policy changes during the LEAD evaluation time period, which could have affected both the LEAD and comparison groups' number of arrests and charges and thereby resulting jail time, prison days, and legal cases. It is therefore possible that more focused enforcement—not increased criminal activity—was responsible for increases across utilization outcomes in the comparison group. These larger, systemic changes, however, would not account for the LEAD group's drop in utilization, which would have been expected to reflect the same environmental conditions as the comparison group. That said, some participants in the control group were selected from outside the original catchment area; thus, the comparison group may have been subject to enforcement or other geographically based conditions the LEAD group did not experience.

Another potential explanation for these findings is that officers made intentional decisions to avoid arresting LEAD participants, which would have impacted subsequent criminal justice and legal system utilization and associated costs. This explanation, however, is not highly probable. Only approximately 40 of 1300 police officers were involved in LEAD, and few officers outside of the LEAD squads could have been aware of participants' group assignments: There were neither department-wide communications about the program nor flags in police records that would signal LEAD participation. Thus, we are confident the observed LEAD effects are not primarily due to intentional differences in decision-making by police officers.

Limitations

This evaluation's limitations should be noted. First, given real-world implementation realities, the originally planned randomization schema was relaxed, and a nonequivalent-groups longitudinal quasi-experimental field trial design was employed in its place. To increase confidence in the causal impact of LEAD versus the system-as-usual comparison condition, both methodological and statistical approaches were used to balance the comparison and LEAD groups. For example, LEAD officers were trained on the application of inclusion/exclusion criteria, and they made a systematic effort to identify qualifying LEAD and comparison participants using the same criteria. Further, there was no penalty to officers for excluding individuals from the evaluation based on the inclusion/exclusion criteria. LEAD squads were also consistent over the course of the evaluation for both comparison and LEAD groups; thus, the same officers were responsible for assessing all participants' inclusion/exclusion criteria during the evaluation. Finally, we reduced the influence of potential selection bias using propensity score weighting, which is a statistical technique designed to ensure greater balance across groups and thereby decrease bias due to potentially confounding variables. Although not a panacea (e.g., heterogeneity in participants across precincts exists), these methodological and statistical measures were used to achieve greater group comparability.

Second, descriptive analyses indicated some significant baseline differences between LEAD and comparison groups. Specifically, the LEAD group comprised more female and older participants, and the comparison condition comprised a higher proportion of African-Americans. These preexisting differences in sociodemographic composition of the various areas involved in the study are well-documented; thus, the observed imbalance is more likely due to preexisting factors rather than officer behavior within the LEAD evaluation period. Fortunately, these known preexisting factors were successfully balanced by the propensity scores.

Conclusions and future directions

Findings indicated positive effects of the LEAD program on reducing average yearly criminal justice and legal system utilization and associated costs. The limitations of the current evaluation were ameliorated using both methodological and statistical approaches, which increased our confidence that the LEAD effects were due to the program itself and not because of other potentially confounding factors. Although this program evaluation and its findings are limited to this specific program implementation and its geographic and sociodemographic features, LEAD appears promising as an alternative to the criminal justice system as usual.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflicts of interest.

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Susan E. Collins , PhD, is an Associate Professor in the Department of Psychiatry and Behavioral Sciences at the University of Washington – Harborview Medical Center and Codirector of the Harm Reduction Research and Treatment (HaRRT) Center.

Heather S. Lonczak , PhD, is a clinical psychologist in Seattle, WA.

Seema L. Clifasefi , PhD, MSW, is an Associate Professor in the Department of Psychiatry and Behavioral Sciences at the University of Washington – Harborview Medical Center and Codirector of the HaRRT Center.

Affiliations

Susan E. Collins^{1,2} · Heather S. Lonczak¹ · Seema L. Clifasefi¹

Heather S. Lonczak
hzak@uw.edu

Seema L. Clifasefi
seemac@uw.edu

¹ Harm Reduction Research and Treatment Center, Department of Psychiatry and Behavioral Sciences, University of Washington – Harborview Medical Center, 325 Ninth Ave, Box 359911, Seattle, WA 98104, USA

² University of Washington – Harborview Medical Center, 325 Ninth Ave, Box 359911, Seattle, WA 98195, USA