# Annual Performance Report on LEAD - Bernalillo County (2022)

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## Report Overview

In this year-end report of LEAD – Bernalillo County for 2022, we provide an overview of statistics on LEAD – Bernalillo County program implementation and preliminary program outcomes in 2022. Specifically, we review statistics on the number of unique individuals who were referred to and enrolled in LEAD in 2022, whether demographic differences existed in enrollment rates, officers' degree of use of warm handoff referral mechanisms to link referrals to case managers and how use of the warm handoff correlates with enrollment success, the amount of time officers' spend on scene during a LEAD referral relative to a formal arrest, a review of the five most commonly diverted charges of LEAD arrest diversion referrals, the degree of officer participation in making arrest diversions, the scope of LEAD training, descriptive characteristics of enrolled participants (e.g., sociodemographic traits; housing safety and security; substance use and frequency of substance use), the scope and predictors of how often participants' engaged with their case managers each month, the type and degree of harm reduction services participants started, a preliminary review of whether case volume and charge counts changed following LEAD enrollment, whether substance use frequency changed between enrollment and the first quarter of program enrollment, and whether participants' self-reported quality of life changed between enrollment and the first quarter of program enrollment. We conclude by describing some data quality issues we identified over the course of the year related to missing data.

## LEAD Referrals and Enrollment Rate

In 2022, 241 referrals were made to LEAD – Bernalillo County for an average of 20 referrals per month and a median of 18 referrals per month (see Figure 1). 56% of referrals occurred through social referral pathways by community partners (i.e., through community partners such as the Albuquerque Community Safety Department, Mobile Criss Teams, or internally through case management outreach). 40% of referrals occurred through arrest diversion pathways by the Albuquerque Police Department (APD) [accounting for 91% of all arrest diversion referrals] and Bernalillo County Sheriff's Office (BSCO) [accounting for 9% of all arrest diversion referrals], and 4% occurred through social referrals by partnering law enforcement agencies (see Table 1). Referrals to the LEAD program neither increased nor decreased in a predictable fashion over the course of the year per the results of a bivariate ordinary least squares regression predicting referral count as a function of month (p-value = 0.40).

**Figure 1**. *Count of Number of LEAD Referrals by Month*



Data Source: SmartSheet Enrollment and Referral Data. N = 241 referrals.
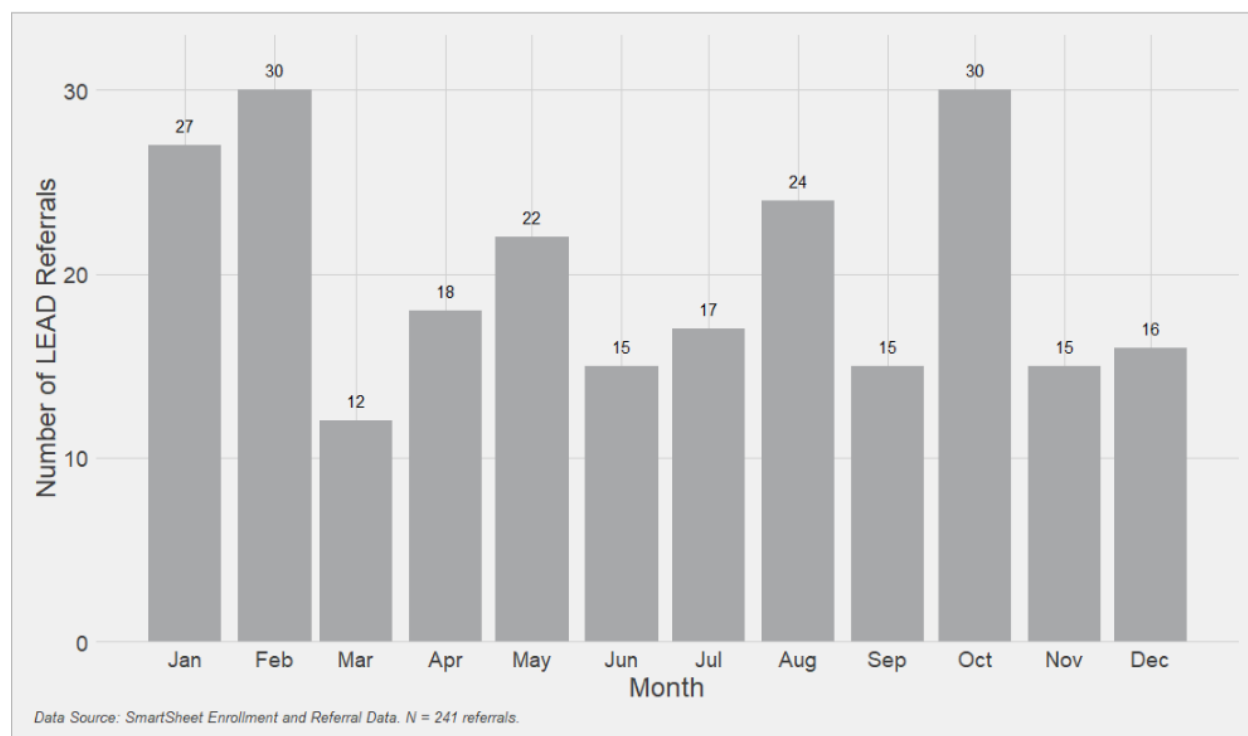
39% of individuals referred to LEAD subsequently enrolled ($n$ = 148) (see Table 2). It is unclear whether LEAD – Bernalillo County's enrollment rate is significantly different than enrollment rates at other sites [e.g., as one point of comparison, a 2023 evaluation of LEAD – North Carolina by Duke University found an enrollment rate of 50% (Allison et al., 2023)]. The most common reason for non-enrollment was that individuals who were referred to the program missed the enrollment deadline which varied from two weeks following the initial referral date for arrest diversion referrals to four weeks following the initial referral date for social community referrals. The failure of a plurality of individuals to meet the enrollment deadline was a joint function of (1) the low prevalence of the use of warm handoffs by officers for arrest diversion referrals (see Table 3 and Table 4 for added context) and (2) case managers' low consistent contact volume with individuals referred to the program following completion of enrollment paperwork. A series of explanations could account for the low engagement levels such as case managers' outreach volume, case managers' caseload volumes, participants' housing transiency which would make referred individuals difficult to physically locate for follow-up streets-based intensive case management, low motivation levels of referred participants to participate in the program, and the consistency of referred individuals' access to reliable phone or Internet services following enrollment which constrains participants' capacity to engage in reciprocal interactions with their assigned case managers. We will provide an overview of the scope of case management engagement later in the present report and discuss how some of these alternate explanations fare when analyzed statistically.

**Table 1**. *Count of LEAD Referrals by Referral Type and Month*

| Month | Arrest Diversion | Social | Social LEO | Count |
|---|---|---|---|---|
| January | 10 | 17 | 0 | 27 |
| February | 10 | 19 | 1 | 30 |
| March | 4 | 8 | 0 | 12 |
| April | 5 | 12 | 1 | 18 |
| May | 10 | 10 | 2 | 22 |
| June | 4 | 10 | 1 | 15 |
| July | 11 | 5 | 1 | 17 |
| August | 11 | 13 | 0 | 24 |
| September | 4 | 10 | 1 | 15 |
| October | 11 | 17 | 2 | 30 |
| November | 5 | 10 | 0 | 15 |
| December | 11 | 5 | 0 | 16 |
| Yearly Total | 96 (40%) | 136 (56%) | 9 (4%) | 241 |

From Table 3, we observe that individuals referred to LEAD through law enforcement versus through community partnerships or internal case management outreach efforts had considerably lower enrollment rates. We used a chi-square test of independence to examine the relationship between referral type and the enrollment. The relationship between these variables was significant, $X^2$ (1, $N$ = 84) = 50.77, $p$ = 0.00. This suggests that individuals referred to LEAD by social referral were significantly more likely to enroll in LEAD than individuals referred through either the arrest diversion or social law enforcement referral pathways. This finding contrasts with the results of the 2023 evaluation of LEAD – North Carolina which found results in the opposite direction, specifically that individuals referred to LEAD by arrest diversion enrolled 79% of the time versus 41% for social referrals (Allison et al., 2023).

While there could be alternate explanations, one explanation for the disparity in enrollment rates centers on the low volume of warm handoffs used by officers to link referrals to case managers directly (see Table 4). Warm handoffs were used in 16% of all arrest diversion referrals. When warm handoffs were used by officers, 67% of referred individuals enrolled. When warm handoffs were not used by officers, only 15% of referred individuals enrolled. The difference in enrollment rate was statistically significant per results of a two-proportions z-test ($p$ = 0.00).

**Table 2**. *LEAD Enrollment Status by Month*

| Month | Enrolled in LEAD | Missed Deadline | Ineligible | Declined | Incarcerated | Count |
|---|---|---|---|---|---|---|
| January | 9 | 14 | 4 | 0 | 0 | 27 |
| February | 16 | 12 | 2 | 0 | 0 | 30 |
| March | 8 | 2 | 2 | 0 | 0 | 12 |
| April | 12 | 4 | 2 | 0 | 0 | 18 |
| May | 8 | 7 | 4 | 3 | 0 | 22 |
| June | 9 | 4 | 2 | 0 | 0 | 15 |
| July | 2 | 10 | 4 | 0 | 1 | 17 |
| August | 8 | 12 | 4 | 0 | 0 | 24 |
| September | 6 | 7 | 2 | 0 | 0 | 15 |
| October | 7 | 13 | 7 | 3 | 0 | 30 |
| November | 5 | 5 | 1 | 0 | 0 | 15 |
| December | 3 | 0 | 1 | 0 | 0 | 16 |
| Yearly Total | 93 (39%) | 90 (37%) | 35 (15%) | 6 (2%) | 1 (0%) | 241 |

**Table 3**. *More Individuals Enrolled in LEAD When Referred by Social Referrals*

| Referral Type | Enrolled in LEAD |
|---|---|
| Arrest Diversion | 22 (26%) |
| Social Referral | 68 (52%) |
| Social LEO | 3 (33%) |
| Total | 93 (39%) |

**Table 4**. *When Warm Handoffs Were Used by LEOs, Individuals Enrolled in LEAD at Significantly Higher Rates*

| Warm Handoff Used? | Enrolled in LEAD | Total |
|---|---|---|
| Used | 10 (67%) | 15 |
| Not Used | 12 (15%) | 81 |
| Total | 22 | 96 |

While officers are trained in the use of warm handoffs, there are a few potential explanations for the low rate of warm handoffs. First, officer training volume in 2022 was comparatively lower than training volume in 2021 both in terms of the number of officers who were trained and the total count of officer trainings at APD and BCSO. To this point, in 2022, 588 individuals received LEAD training in contrast to 442 individuals who received such training in 2021. However, in 2022 there were 19 community agency trainings, 8 law enforcement trainings (i.e., 4 BCSO trainings, 1 APD training), and 2 public safety trainings whereas in 2021, there were 7 community agency trainings and 31 law enforcement trainings. The switch in training concentration away from law

enforcement agencies and toward community partnering agencies reflected changes in the broader strategic program direction.

Another potential explanation for the low rate of warm handoff use relates to concerns over the amount of time warm handoffs might take, specifically with respect to the perceived amount of time it takes officers to drive prospective program participants to the DBHS' CARE Campus given the geographic scale of Albuquerque. Speaking indirectly to this point, one APD officer in the December 2021 survey of officers completed as part of [CARA's process evaluation of LEAD stated](#):

> I liked the idea at the start. But after no follow up on noncompliance or the DA coming down and *expecting me to relocate and transport the offender to the CARE campus* rather than issue a warrant for their arrest, I no longer have faith in the program and do not see it as an effective means of diversion.  – APD Officer

A review of the computer-assisted dispatch (CAD) data on the time-on-scene incident durations of the 88 arrest diversion referrals that had associated incident duration data logged in 2022 suggests that, on average, officers spent 54 minutes on scene for LEAD referrals and a median of 36 minutes on scene for LEAD referrals. The median is the more appropriate statistic to use for making inferences about officer time on scene as it excludes the distorting effects of including excessively long or short incident durations in its calculation. Notably, incident duration is inclusive of not only direct time an officer physically spends on the scene but also transport time and time spent completing associated paperwork.

While not directly comparable, we also analyzed a random sample of 52 CAD records for behavioral health related calls for service that BCSO received in 2022 as part of an unrelated evaluation. Data from this analysis suggests that officers typically spent an average of 41 minutes on scene responding to behavioral health calls where MCTs were not dispatched and a median of 29 minutes on scene. While there is not strong statistical grounding to make comparative inferences since different call-types for LEAD-related calls might necessitate different response time durations than the call-types for generalized behavioral health issues and while we only reviewed data from BCSO and not from APD, this data is suggestive that calls where LEAD referrals occur do not take appreciably more time to clear than otherwise similar calls. We aim to extend this analysis by comparing the amount of time it takes officers to make a LEAD referral against the amount of time it takes officers at APD, on average, to clear a narcotics CFS where an arrest occurred in 2022. To this end, In January and February 2022, we requested data from APD for a stratified random sample of narcotics CFS resulting in arrest in 2022 and, once received, will assess whether there are meaningful statistical differences in incident duration times for 2022.

**Table 5.** *Most Arrest Diversion Referrals Came Through APD[1]*

| Law Enforcement Agency | # of LEAD Arrest Diversion Referrals |
|---|---|
| Albuquerque Police Department (APD) | 87 (91%) |
| Bernalillo County Sherriff's Office (BCSO) | 8 (8%) |
| Total | 95 |

Of the 96 arrest diversion referrals made in 2022, 23 distinct officers made at least one arrest diversion referral. However, of officers who did refer to LEAD in 2022, the median number of referrals was one per year. One officer at APD was responsible for 50.2% of all arrest diversion referrals for the year ($n = 50$)[2]. As noted in CARA's process evaluation from March 2022, while low-levels of participation in the LEAD program by officers is not a necessary precondition for program success[3] (i.e., < 5% of officers in LEAD – Seattle referred participants to the LEAD - Seattle program), the high density of referrals within a narrow subset of officers makes the longer-term sustainability of the arrest-diversion referral pathway to LEAD – Bernalillo County vulnerable.

### Descriptive Characteristics of LEAD Referrals and Enrolled Participants

Of the 96 arrest diversion referrals made in 2022, the five most diverted charges were explicitly related to substance use, typically either to possession of a controlled substance or related paraphernalia (see Table 6). Notably, despite low level property crimes committed to secure money for illicit drugs, prostitution, and truancy, vagrancy, and loitering being relevant inclusionary crimes encoded in LEAD – Bernalillo County policy and mentioned in LEAD officer trainings as relevant inclusionary criteria, none of the arrest diversion referrals from 2022 were diverted on these charges. It is unclear why this was the case, though speculatively, the non-referral of these cases may be explainable by agency-specific procedural guidelines surrounding non-enforcement of these specific ordinances, low agency staffing levels, the difficulty of making discretionary determinations in field (for example, officers not being able to determine whether a property crime was committed specifically for the purpose of securing money for use on illicit drugs), or some alternate explanation.

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[1] One arrest diversion referral was missing an associated law enforcement agency index.

[2] Data derived from NetSmart CareManager, filtering by Assessments and LEAD Client Information.

[3] The reason why there may not be a correlation between the count of unique officers and program success is twofold: (1) if a program has a few program champions within a department, departments do not necessarily need a large volume of officers referring to have high enrollment counts and (2) the scope of officer referrals is uncorrelated with program outcomes once participants are enrolled unless the volume of referrals is excessive for ICM caseloads (i.e., once enrolled, the scope of case management engagement is more predictive of positive outcomes) so whether referrals come from a small or large number of officers is irrelevant to the success of the program in achieving specific outcomes once enrolled.

**Table 6**. *Most Common Diverted Charges in 2022*

| Diverted Charge | Number & % of Diverted Charges |
|---|---|
| Possession of a Controlled Substance | 52 (54%) |
| Possession of a Controlled Substance + Paraphernalia | 20 (21%) |
| Possession of Paraphernalia | 6 (6%) |
| Conspiracy to Commit Possession of Dangerous Drugs | 4 (4%) |
| Conspiracy to Commit Possession of Paraphernalia | 4 (4%) |

In 2022 as in previous years of the program in Bernalillo County, most LEAD referrals were male (59%; $n = 142$) and a plurality Hispanic (39%; $n = 94$) (see Table 7). We explored whether enrollment rates in 2022 varied as a function of race-ethnicity and sex (see Tables 8 – 10). The difference in enrollment percentage between white and non-white referrals was not statistically significant (p-value = 0.55). Similarly, the difference in the enrollment percentage between male and female referrals was not statistically significant (p-value = 0.29). There were not differential patterns of enrollment success unique to a specific race-ethnicity or gender in 2022.

**Table 7**. *Gender by Race Among LEAD Referrals*

| | Male | Female | Non-Binary | Transgender | Total |
|---|---|---|---|---|---|
| Hispanic | 56 | 38 | 0 | 0 | 94 (39%) |
| White | 50 | 28 | 2 | 1 | 81 (34%) |
| Native American | 16 | 13 | 0 | 0 | 29 (12%) |
| Black | 15 | 4 | 0 | 0 | 19 (8%) |
| Other | 3 | 7 | 0 | 0 | 10 (4%) |
| Multi-racial | 1 | 3 | 0 | 0 | 4 (2%) |
| Total | 142 (59%) | 94 (39%) | 2 (1%) | 1 (0%) | 239 |

**Table 8**. *Race by Enrollment Status Among LEAD Referrals[4]*

|  | Enrolled in LEAD | Missed Deadline | Ineligible | Declined | Incarcerated | Count |
|---|---|---|---|---|---|---|
| Hispanic | 33 | 39 | 18 | 2 | 0 | 92 |
| White | 33 | 29 | 9 | 4 | 1 | 76 |
| Native American | 13 | 9 | 4 | 0 | 0 | 26 |
| Black | 8 | 7 | 2 | 0 | 0 | 17 |
| Other | 1 | 6 | 2 | 1 | 0 | 10 |
| Yearly Total | 92 | 90 | 35 | 8 | 1 | 226 |

**Table 9**. *Enrollment by Race*

| Race | Enrolled in LEAD |
|---|---|
| Hispanic | 33 (36%) |
| White | 33 (43%) |
| Native American | 13 (50%) |
| Black | 8 (47%) |
| Other | 1 (10%) |
| Yearly Total | 92 (39%) |

**Table 10**. *Enrollment by Gender*

| Gender | Enrolled in LEAD |
|---|---|
| Male | 49 (37%) |
| Female | 41 (45%) |
| Yearly Total | 90 |

We also evaluated other descriptive characteristics of program enrollees at the point of program intake, specifically focusing on participants' housing stability and safety, participants' employment status prior to enrollment, participants' self-reported quality of life prior to enrollment, participants' use of social and health services in the 30 days prior to enrollment, participants' overdose history, participants' substance use, and frequency of substance use prior to the point of enrollment. We present descriptive statistics on these characteristics in Tables 11 – 19 which reveal that LEAD – Bernalillo County is broadly servicing its intended target population.

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[4] Data is a subset of the full sample of 241 referrals for whom race-ethnicity data and enrollment data is available.

**Table 11**. *Most Participants Had Insecure Housing at Intake*

| Housing Status at Intake | Count & Percentage |
|---|---|
| Has Stable, Consistent, Adequate Place to Live | 16 (17%) |
| Does Not Have Stable, Consistent, Adequate Place to Live | 76 (83%) |

**Table 12**. *Most Participants Were Housed in Unsafe Areas in the 30 Days Prior to Enrollment*

| Housing Location at Intake | Count & Percentage |
|---|---|
| Unsheltered – Outside | 38 (41%) |
| Unsheltered – Encampment (Not Organized) | 18 (20%) |
| Shelter | 11 (12%) |
| Owned or Rented House | 10 (11%) |
| Family or Friends' Home | 8 (9%) |
| Hotel/Motel | 6 (7%) |
| Car or Other Covered Vehicle | 1 (1%) |
| Unsheltered Encampment – Organized | 0 (0%) |
| Transitional Housing | 0 (0%) |
| Total | 92 |

**Table 13**. *Most Participants Were Unemployed and Not Actively Seeking Employment Opportunities at Enrollment*

| Employment Status | Count & Percentage |
|---|---|
| Unemployed – Not Looking for Work | 57 (61%) |
| Unemployment – Looking for Work | 28 (30%) |
| Employed Part-Time | 6 (7%) |
| Employed Full-Time | 2 (2%) |
| Total | 93 |

**Table 14**. *Most Participants Self-Reported Suboptimal Quality of Life at Enrollment*

| Quality of Life | Count & Percentage |
|---|---|
| Terrible | 23 (25%) |
| Very Poor | 13 (14%) |
| Poor | 23 (25%) |
| Fair | 15 (16%) |
| Good | 13 (14%) |
| Very Good | 4 (4%) |
| Excellent | 1 (1%) |
| Total | 92 |

**Table 15**. *Most Participants Self-Reported Not Receiving Services Prior to Enrollment*

| Did Participant Receive Service? | Count & Percentage |
|---|---|
| No Services Received | 56 (60%) |
| Services Received | 37 (40%) |

**Table 16**. *Most Participants Self-Reported Not Having Had an Overdose Prior to Enrolling*

| Did Participant Have Overdose? | Count & Percentage |
|---|---|
| No Overdose | 58 (63%) |
| Overdose | 33 (36%%) |

**Table 17**. *Most Participants Self-Reported Having Used Substances in Prior 30 Days*

| Did Participant Use Substances? | Count & Percentage |
|---|---|
| Substances Not Used | 20 (22%) |
| Substances Used | 72 (78%) |

**Table 18**. *Top Five Used Substances Among Participants Prior to Enrollment and Median Use Frequency in Prior 30 Days*

| Substance | Count & Percentage | Median Use Frequency |
|---|---|---|
| Methamphetamine | 49 (53%) | 20 days |
| Cannabis | 42 (46%) | 20 days |
| Fentanyl | 37 (40%) | 30 days |
| Alcohol | 29 (32%) | 12 days |
| Heroin | 10 (11%) | 30 days |

**Table 19**. *Count of Number of Different Substances Used in Prior 30 Days*

| Number of Substances Used | Count & Percentage |
|---|---|
| 0 | 21 (23%) |
| 1 | 15 (16%) |
| 2 | 23 (25%) |
| 3 | 20 (22%) |
| 4 | 6 (6%) |
| 5+ | 8 (9%) |

## Participant Engagement Levels with LEAD

As noted in [CARA's process evaluation of LEAD completed in March 2022](#), levels of engagement between case managers and program participants were comparatively lower in 2022 in relation to other sites' reported engagement levels and continued to remain low throughout the remainder of 2022. Specifically, across all completed monthly

records, participants averaged 2.4 encounters with their case managers per month; the median encounter count was 2 encounters per month. Less than 3% of all monthly records in 2022 indicated a participant had five or more encounters with their case managers in at least one month, which is the benchmark the state-COSSAP evaluation team has used to define whether a participant received intensive case management. Moreover, only eight unique participants with a completed monthly form had at least one month where they had more than two encounter days with their case managers, and only one participant had more than one month with five or more encounter days. Another way of assessing engagement indirectly comes from an analysis of the proportion of LEAD participants who enrolled in 2022 who had at least one quarterly data collection form submitted. Only 19% of participants ($n$ = 18) who enrolled in 2022 had at least one quarterly form submitted; when excluding cases of enrollments after September 2022, only ($n$ = 16) had at least one quarterly form submitted. Given these engagement levels, it is worth exploring which factors predict participant engagement in the program.

To assess which factors predict case management engagement, we merged data collected at the point of program enrollment with data collected monthly following enrollment, matching on participant ID, to see whether participants' degree of engagement in the LEAD program (i.e., the number of two-way interactions between participants and their case managers in a month) varied as a function of participant-level characteristics at intake and organizational-characteristics at the level of case-management services, where this data existed[5]. To assess the influence of participant baseline characteristics (e.g., participant gender, race-ethnicity, housing safety, employment status, quality of life, overdose history, and substance use frequency) and organizational factors (e.g., assigned case manager; number of attempted monthly outreaches to the participant) on the level of case management engagement, we ran a multivariate generalized linear model which included time fixed-effects to adjust for potential attrition[6].

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[5] This data was collected as part of the COSSAP multi-site award in New Mexico funding LEAD programs at six sites throughout the state of New Mexico. When we mention

[6] Unfortunately, we were unable to run models which included fixed-effects at the individual-level to account for repeated within-participant measurements, as standard errors were inestimable due to the degrees of freedom that were reduced given the high unique participant-count. Thus, the model does not adjust for unobserved within-participant variation and results should be tentatively interpreted accordingly.

**Figure 2**. *Most LEAD Participants-Months Were Months Where Participants Had Fewer Than Five Encounters with Case Managers in 2022[7]*
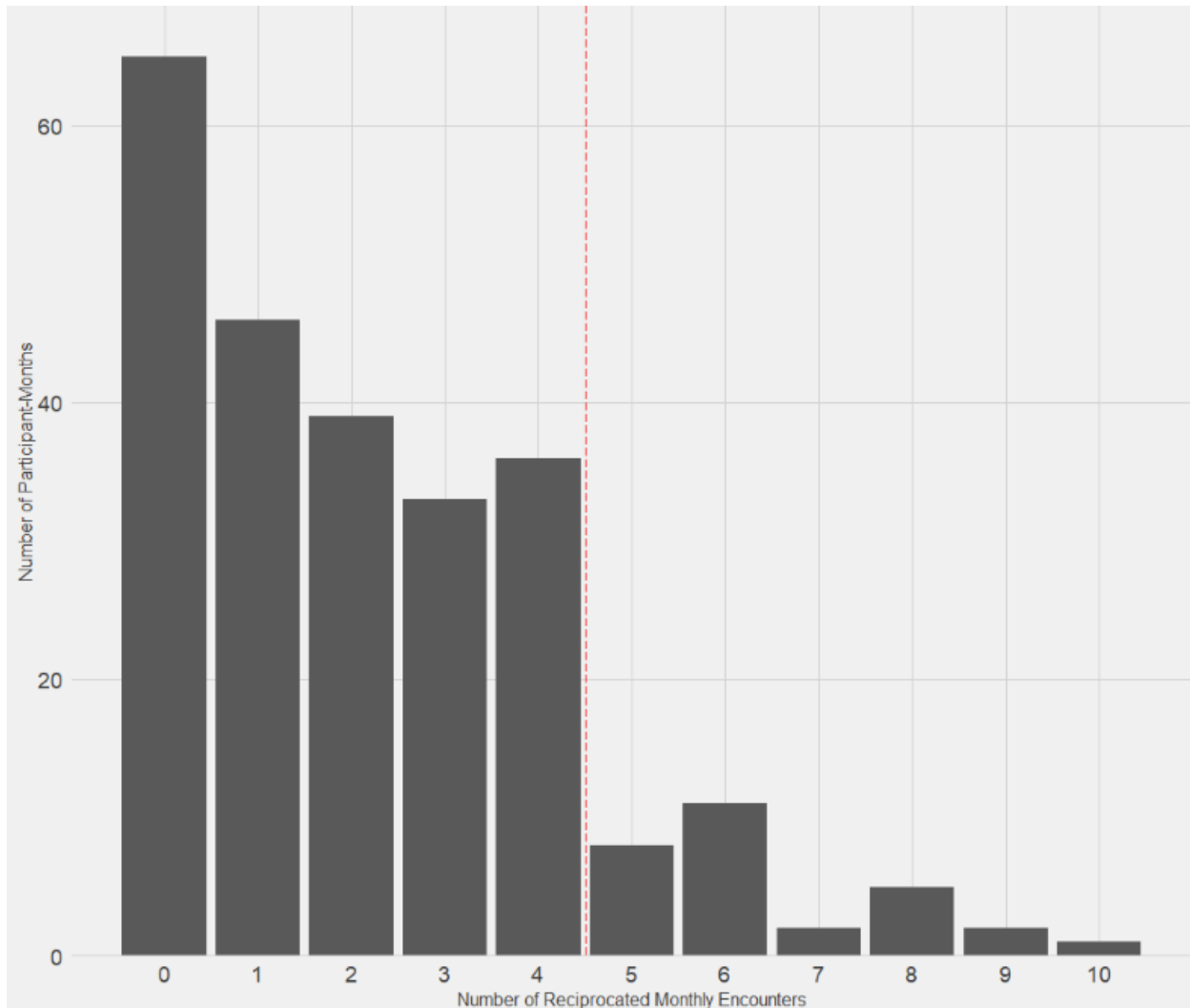


We want to highlight that the following analysis excludes some important factors which may contribute to levels of engagement rates and cross-site variation in engagement rates. For instance, the present analysis excludes data on cross-site factors at the organizational and case management-levels level which may explain variance in encounter rates (e.g. the quality of case management training, which would vary at the site-level; the degree of attempted outreach is imprecisely measured as a binary variable indicating whether a case manager attempted to engage a participant five or more times in a given month) and other theoretically-relevant individual-level variables (e.g., prior incarceration status) which were unaccounted for due to data and time constraints. Due to sample size constraints, we were unable to introduce fixed-effects at the individual-level due to the inestimability of standard errors, which are necessary for computing

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[7] The dashed red line defines the difference between participant-months where intensive case management did or did not occur using the COSSAP definition of five or more encounters per month as the cutpoint.

statistical significance. However, by controlling for assigned case managers and attempted outreach counts, even if imprecisely measured, we were able to account for some level of attempted contacts and within-site variation across case managers in terms of training quality, caseloads, and unique case-load properties [e.g., the case manager categorical variable significantly correlated with polysubstance use, i.e., some case managers worked with participants that had higher levels of polysubstance use than others, which could account for cross-case manager variance in successful encounter rates] within Bernalillo County.

We caution that the following analysis should be viewed as preliminary for three additional reasons. First, the analysis does not consider data from prior program periods, so it is unclear how generalizable the results are across different time periods as factors related to program engagement levels may have varied in outcome-relevant ways across time (e.g., pre-2022; post-2022). Second, the analysis is strictly correlational (i.e., while the analysis reveals significant relationships between some variables and engagement, the analysis cannot answer the question as to whether a statistically significant variable *causes* the outcome of lower engagement levels). Third, it is possible that unobserved factors at the individual and site-levels may account for meaningful variance in engagement counts within and between LEAD – Bernalillo County and other sites where LEAD has been implemented. Thus, the potential problem of omitted variable bias is a possibility which may bias coefficient estimates. Having noted these caveats, these results could be helpful for identifying program participants that have the highest attrition risk at intake (Lappan et al., 2020) and by contributing to the existing peer-reviewed literature on the relationship between factors, such as substance use, and program retention and attrition (Bedard-Gilligan et al., 2018; Dixon et al., 2016; Kopetz et al., 2013; McKay 2016; Klag and O'Callahan 2010).

We conducted a multivariate regression to better understand which factors predict case management engagement[8].We rescaled all categorical variables as follows [e.g., Reference Groups: gender = "Male", race = "Hispanic", housing safety = "Unsafe (e.g., living outside, in a non-organized encampment, or in a car)", employment status = "Employed", quality of life = "Very Terrible", overdose history = "None", substance use = "Had used substances in the previous 30 days prior to enrollment."] We ran one model which includes variables controlling for the frequency of specific substance use (Model 1).

We present the results of the multivariate regression in Table 20. From Model 1, we note that after excluding cases where categorical variables achieved artificial levels of statistical significance levels due to small cell size (e.g., Gender: Non-Binary, Race: Multi-Racial) and after statistically controlling for the whole set of predictor variables, having safe housing conditions (relative to unsafe housing conditions), self-reporting a

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[8] Specifically, we conducted a Poisson regression given that the dependent variable (i.e., case management encounter counts) is a type of count data. An overdispersion test suggested the primacy of the Poisson model over a negative binomial model ($\alpha$ coefficient = 0.99; p-value < 0.01).

"Good" quality of life at enrollment (relative to self-reporting a "Terrible" quality of life), being unemployed and actively searching for a job (relative to being employed full-time), and self-reporting having overdosed at least one time prior to enrollment all significantly and positively predicted the number of reciprocated two-way encounters participants had with their case managers. The only variables which were negatively and significantly associated with the number of successful case management encounters were frequency of fentanyl use in the 30 days pre-enrollment and the number of months following enrollment (i.e., the fixed effect for time), the latter of which suggests that engagement in the program falls off the further from enrollment a participant is.

Situating some of these findings in in the literature, it is worth noting that these findings are consistent with existing empirical work which demonstrates that housing safety correlates with housing transiency, meaning that it is more likely that individuals who live in safe housing locations can be successfully located in the field by case managers and thus have a higher likelihood of being able to engage in the program than a participant who was unsafely housed, for instance (Booth 1999; Ferguson et al., 2014). Similarly, the finding that increased frequency of fentanyl use, prior to enrollment, predicts independent reductions in encounter counts, notably after statistically controlling for polysubstance use and the frequency of use of four other commonly consumed substances among set whole set of predictor variables, is also consistent with prior empirical work. For instance, that the frequency of fentanyl use independently predicts reduced engagement is a finding which speaks to the unique neuropharmacological and motivational power of fentanyl in relation to other substances (Comer and Cahill 2019; Kelly 2021) and is consistent with prior empirical work demonstrating relationships between various types of substance use disorders and treatment adherence and retention (Bedard-Gilligan et al., 2018; Dixon et al., 2016; Kopetz et al., 2013; McKay 2016; Klag and O'Callahan 2010).

It is important to consider whether these findings matter from an applied perspective to see how changes in the significant variables predict raw encounter counts (i.e., to assess the substantive significance of these findings). To this point, since there was not much variability in encounter counts (i.e., 61% of participants had fewer than two encounters with their case managers, on average, per month), despite achieving statistical significance, the practical difference in encounter counts based on these variables was generally substantively trivial for most predictors. Stated differently, the difference in encounter rates between one level of a predictor variable and the next level of the predictor variable was generally minimal (i.e., < 1 encounter/month difference) for the levels which attained statistical significance. Table 21 identifies the predicted encounter counts for each variable, after setting all other regressors constant at their most frequently observed values (i.e., which represents the most "typical" LEAD participant) in the dataset using predicted count totals estimated from Model 1.

**Table 20**. *Which Factors Predicted Reciprocal Engagement with Case Managers?*

| Variable | Model 1 |
|---|---|
| Housing Situation is Safe (Relative to Unsafe) | 0.37*** |
| Unemployed – Looking for Work (Relative to Fully Employed) | 0.67* |
| Good Quality of Life (Relative to Terrible Quality of Life) | 0.53** |
| Whether a Participant Overdosed Prior to Intake | 0.24*** |
| Number of Days Fentanyl Was Used in 30 Days Pre-Enrollment | -0.02** |
| Months Following Enrollment | -0.06** |
| Constant | -0.84 |
| Observations | 236 |

Note: *p<0.1; **p<0.05; ***p<0.01

**Table 21**. *While Statistically Significant, Most of the Substantive Effects of Statistically Significant Predictors on Monthly Encounter Counts Were Trivial*

| Statistically Significant Predictor | Predicted Encounter Count |
|---|---|
| Housing: Unsafe | 1.16 |
| Housing: Safe | 1.68 |
| QOL: Terrible | 1.07 |
| QOL: Good | 1.82 |
| Employment Status: Full Time | 0.59 |
| Employment Status: Unemployed Looking for Job | 1.16 |
| Lifetime Overdoses: 0 | 1.02 |
| Lifetime Overdoses: 1+ | 1.66 |
| Fentanyl Frequency: 0 Days | 1.17 |
| Fentanyl Frequency: 30 days | 0.57 |
| Not Polysubstance User | 1.02 |
| Polysubstance User | 0.78 |
| Time Since Enrollment: Month 1 | 1.02 |
| Time Since Enrollment: Month 3 | 0.91 |

## Harm Reduction Services Provided and Other Service Referrals

A central facet of LEAD program implementation is the connection of program participants to harm-reduction services. This facet of implementation is an important keystone of program design intended to reduce participants' degree of use of more harmful substances gradually by engaging participants in related programs [e.g., medication assisted treatment (MAT)]. If a participant repeatedly engages with a harm

reduction service provider, it is reasoned that, in tandem with intensive case management, participants will gradually reduce the consumption of more harmful substances and/or consume substances using safe substance use best-practices (e.g., not using substances alone; not sharing needles for injections). As a result of reductions in the degree of harmful substance use, other positive outcomes are expected to follow, although over a longer timeframe (e.g., reduced ER use; reduced criminal justice system involvement; reduced OD volume).

In meetings with the DBHS LEAD team in 2022, we raised some concerns surrounding the low monthly counts of harm reduction services offered to participants and referrals. In an ideal version of program implementation, the LEAD program is effective at generating longer term outcomes (i.e., recidivism reductions; OD reductions) by a combination of high-frequency, intensive streets-based case management complemented with external referrals to harm-reduction services (e.g., referrals to MAT – Methadone programs) and repeated participant engagement with these external providers to ensure treatment continuity. Thus, it is important to consider which specific types of services LEAD participants are referred to and understand what engagement looks like at those. To this end, we present the most frequently started services among LEAD participants in 2022 in Table 23 in descending order of frequency.

**Table 23**. *The Most Commonly Started Services Among LEAD Participants in 2022*

|  | Count | Percentage |
|---|---|---|
| Housing Programs | 31 | 15.2% |
| Therapy | 28 | 13.8% |
| Inpatient – SUD Treatment | 25 | 12.3% |
| Other Medical Services | 17 | 8.3% |
| Alcohol Treatment | 5 | 2.5% |

Per a review of the 203 unique active LEAD participants with logged service data in 2022, 72% of LEAD – Bernalillo County participants did not start any services in 2022, inclusive of alcohol treatment programs, housing programs, outpatient and inpatient substance use disorder treatment programs, medication assisted treatment (methadone and suboxone) programs, primary healthcare, or therapy. The most common program started were housing programs; however, only 15% of participants started a housing program. Participant initialization of programs related directly to substance use was comparatively minimal: specifically, only 12% of participants started participating in an inpatient SUD program in 2022. Only 4% of participants ($n = 8$) started MAT – Methadone in 2022. Only 2% of participants ($n = 4$) started MAT – Suboxone services in 2022.

As a point of comparison, Duke University's 2023 report on the North Carolina LEAD cross-site evaluation found that, "Medication-assisted treatment (MAT) utilization rates increased at all sites. In the year before LEAD, 3% of enrollees had a MAT visit, with an average rate of 3.7 visits per person. In the year after LEAD, 12% of enrollees had a MAT visit, averaging 72.5 visits per person" (Allison et al., 2023). Similarly, the

report notes, "68% of participants received substance use treatment, 47% received mental health counseling, 25% received employment assistance, and 18% received housing assistance" (Allison et al., 2023).

The low volume of service initialization elevates joint concerns about (1) data quality issues if it is the case that data is being entered inaccurately resulting in chronic underreporting of services participants start, and/or (2) the extent to which LEAD – Bernalillo County can link program participants to services if the data entered is accurate. Whether intended longer-term program behavioral outcomes (i.e., reduced recidivism rates; reductions in harmful substance use patterns) are realized hinges nontrivially on whether service referrals and connections to such groups are established and maintained consistently over time.

## Preliminary Outcomes – Recidivism

We also wanted to explore criminal justice involvement between the two-year post-intervention period relative to the two-year pre-intervention period. To this end, we used data from the New Mexico Courts database as a proxy for arrest data to identify differences in the number of cases filed, the total number of charges filed, and the total number of drug-related charges filed between the pre-intervention and post-intervention periods.

As we needed a two-year post-intervention period, this meant that we could only examine recidivism outcomes of participants who completed intakes and enrolled in the program before January 21, 2021. Only 43 participants could be uniquely identified based on name and age in the New Mexico Courts database who had completed a LEAD – Bernalillo County intake prior to January 21, 2023. We present the results of the paired sample t-tests in Table 24 below.

**Table 24**. *Comparison of Average Case and Charge Counts Before and After Enrolling in LEAD*

|  | Pre- Period | Post- Period | Difference |
|---|---|---|---|
| Total Number of Criminal Cases Filed | 1.68 | 1.40 | -0.28 |
| Total Number of Charges | 2.75 | 2.13 | -0.63 |
| Total Number of Drug-Related Charges | 0.85 | 0.70 | -0.15 |

Note: *p<0.1; **p<0.05; ***p<0.01

Results of a series of paired samples t-tests reveal there were not statistically significant differences in the number of cases filed against LEAD participants, the number of charges filed against LEAD participants, or the number of drug-related charges filed against LEAD participants within the sample, though the direction of the effects is consistent with theoretical expectations (i.e., that LEAD enrollment would have a recidivism-reducing effect, or that charges filed in the post-period are lower than in the pre-period).

We caution against extracting strong conclusions from recidivism data because (1) the sample size was relatively small which increases the likelihood of artificially finding statistical significance where it does not actually exist, (2) the sample from which this data is derived consists of participants who enrolled in LEAD – Bernalillo County prior to key programmatic changes which may correlate with changes in recidivism (e.g., the hiring of a program manager in March 2021; receipt of the COSSAP grant in September 2021), (3) the bivariate nature of the data may obscure important variability in the effect of LEAD enrollment on recidivism outcomes (most obviously, the impact of consistent, frequent engagement with a case manager on subsequent criminal justice interactions), and (4) we do not have a reliable way to assess whether a given LEAD participant remained in the community for the entire pre-intervention or post-intervention periods.

We aim to complete a statistically-powered analysis of the recidivism data using a matched comparison group using COSSAP data to be collected in the fall of 2023 as part of CARA's outcome evaluation of the program. While the results presented here are in a direction consistent with outcome variables observed in other LEAD sites where the program has been successfully implemented (i.e., the finding that the count of cases and charges fell between the pre-intervention and post-intervention periods), we do want to reiterate that this analysis on its own is insufficient to make meaningful determinations relating to the true effect of LEAD – Bernalillo County on recidivism outcomes since theoretically-central variables - most notably, the intensity and frequency of case management service delivered – are unaccounted for in this bivariate comparison. As part of the outcome evaluation, we will assess this question more rigorously by merging criminal justice system data directly on arrests, bookings, and charges with participant-level data stored internally on the NetSmart CareManager database.

## Preliminary Outcomes – Quality of Life and Substance Use

We also explored whether there were any statistically and substantively meaningful changes in self-reported quality of life and the frequency of substance use of program participants using quarterly data collected as part of the COSSAP grant. To this end, we merged data from the quarterly forms with data from the baseline and enrollment form, matching by ID, and conducted a series of paired samples t-tests to evaluate changes between enrollment and the end of the first quarter of enrollment for a subset of LEAD participants who enrolled in 2022 and who had completed quarterly forms ($n = 19$). Notably, this analysis is limited due to a combination of (1) survivorship bias, which implies that participants who were still actively engaged in the program through one quarter of enrollment may differ in some systematic way from participants who disengage from the program prior to the end of the first quarter in a way which correlates with finding positive programmatic effects, and (2) the bivariate scope of the analysis. We aim to engage in more rigorous analysis of QOL and substance use data in our subsequent outcome evaluation.

From Table 25, we note there was a statistically significant increase in self-reported quality of life between enrollment and the end of the first quarter using a seven-

point Likert scale where 1 = "Very Terrible" and 7 = "Excellent" quality of life. Additionally, of the 26 unique participants who had recorded quarterly data in 2022, 54% ($n$ = 14) experienced improvements in quality of life, 23% reported no change in quality of life ($n$ = 6), and 23% reported experiencing reductions in quality of life ($n$ = 6).

**Table 25**. *Moderate Increase in Self-Reported QOL Between Baseline and Q1 (n = 26)*

|  | Baseline | Q1 | Difference |
|---|---|---|---|
| Quality of Life | 3.34 | 3.96 | +0.61** |

Note: *p<0.1; **p<0.05; ***p<0.01

From a qualitative perspective, below is a sampling of some of case notes for the subset of participants who self-reported improvements in QOL between enrollment and the end of their first quarter of program enrollment:

**Table 26**. *Comments About Improvements in QOL Between Enrollment and The End of the First Quarter of Program Enrollment*

| Pre-Enrollment QOL | Q1 QOL | Comment |
|---|---|---|
| 2 – Very Poor | 6 – Very Good | "I was in jail when I heard about program, and it has changed my life. I didn't think you guys would help me and you have." |
| 3 – Poor | 6 – Very Good | "I'm actually happier…I talk to my kids more." |
| 5 – Good | 7 - Excellent | "I am now employed and clean with a place to live." |

From Table 27, at the bivariate-level using paired samples t-tests, we found there were not statistically significant changes in the frequency of substance use between baseline and the first quarter of program enrollment for the subset of 26 participants who enrolled in 2022 for whom quarterly data was collected. Notably, the 2.4-day reduction in the frequency of days with alcohol consumption approached marginal significance at conventional levels (p-value = 0.10). It is important to note the nature and scope of harm reduction is often gradual and discontinuous (Fentress et al., 2021); that is, even following a quarter of program enrollment, it may not be reasonable to anticipate any statistically significant changes in substance use patterns, even within participants who are actively engaged with the program. Further, an analysis of change in substance use frequency does not reveal whether participants' have incorporated any safe-substance use practices, nor does it address the magnitude of use (i.e., amount of a substance used on a given day). Thus, the present analysis which does not reveal any appreciable differences in substance use frequency, while a descriptive benchmark, is insufficient to reveal the adoption of harm reduction more generally among the program's serviced population.

**Table 27**. *Differences in Frequency of Substance Use Between Enrollment and Quarter 1*

| Substance | Average # Days Used in Month Before Enrollment | Average # Days Used in Month Before Q1 | Difference |
|---|---|---|---|
| Methamphetamine | 6.2 | 7.8 | + 1.6 |
| Fentanyl | 3.3 | 5.0 | + 1.7 |
| Alcohol | 7.2 | 4.8 | - 2.4 |
| Heroin | 0.0 | 0.0 | - 0.0 |
| Cannabis | 5.1 | 7.5 | + 2.4 |

Note: *p<0.1; **p<0.05; ***p<0.01

## Missing Data

Finally, we wanted to comment on an overarching data quality issue observed within the data collected in 2022, primarily centering on data collected under the purview of the COSSAP expansion plan award. Of the 122 participants who had at least one completed monthly client services form in 2022, inclusive of 29 participants who enrolled in LEAD prior to 2022 and the 93 participants who enrolled in 2022, we identified that approximately 19% of program participants had at least one month of missing monthly data where monthly data should have been collected ($n$ = 23). Of the subset of 23 participants with at least one month of missing data, 35% had at least one missing monthly form in the period from September 2022 – December 2022, a period during which the "inactive client" status guidance had been updated and provided to the Bernalillo County team, guidance which advised the Bernalillo County team to continue outreach to participants and submitting monthly forms for participant – even if no contact occurred within a given month - through six months following no contact before labelling a participant as inactive. One meaningful implication of the data missingness – assuming the missingness of monthly forms was a function of case managers not having contact with participants in each month – is that the estimates of consistent encounter counts provided in the present report overstate the degree of successful two-way interactions between participants and their case managers.

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