Intensive Outpatient Clinic Criminal Justice Impact Evaluation

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Executive Summary

The Intensive Outpatient Clinic (IOC) at the University of Utah provides comprehensive healthcare services to high-need Medicaid beneficiaries who frequently utilize emergency medical services or experience multiple chronic health conditions. This executive summary presents key findings and implications from an evaluation of the clinic's impact on criminal justice outcomes.

Study Overview and Methodology

This evaluation examined whether IOC participation influences criminal justice metrics. The study compared 103 IOC participants to a matched control group of Medicaid beneficiaries not enrolled in the IOC. Data sources included IOC records, Salt Lake County Jail records, Medicaid records, and public data on COVID-19 case severity.

The methodology involved:

- *Data Integration*: The initial phase combined Medicaid claims data (April 2020-March 2024), Salt Lake County Jail booking data (2009-present), and IOC program data through probabilistic record linkage.
- *Principal Component Analysis (PCA)*: PCA reduced the dimensionality of Medicaid variables while preserving approximately 70% of variance in just three components that captured: 1) healthcare system engagement, 2) chronic disease management patterns, and 3) cost efficiency of healthcare utilization.
- *Covariate Balancing Propensity Score (CBPS)*: CBPS was used to create comparable treatment and control groups by simultaneously optimizing treatment prediction and covariate balance. This method achieved excellent balance across all covariates with all standardized mean differences well below 0.10, and the largest at 0.04.
- *Model Selection*: The model selection process compared multiple distributional forms (Negative Binomial, Zero-inflated Negative Binomial, Hurdle Negative Binomial, Zero-inflated Hurdle Negative Binomial, and Zero-inflated Beta Binomial) for outcome variables using Akaike Information Criterion (AIC) to select the best-fitting model for each.
- *Diagnostics*: Model validation included QQ plots, zero-inflation tests, dispersion tests, and outlier identification to ensure appropriate model fit.

Key Findings

Although positive findings below are tempered somewhat by the low base rates of criminal justice contact (see full report), the evaluation revealed substantial reductions in criminal

justice involvement among IOC patients (predicted values are extrapolated to the current IOC population size of 307).

- **The treatment group had 71% fewer arrests than the control group** (predicted 41 vs. 138, statistically significant, $p < 0.001$).
- **The treatment group had 50% fewer days in jail than the control group** (predicted 2,664 vs. 5,338, marginally significant, $p = 0.074$)
- **The treatment group had a 73% reduction in maximum crime severity relative to the control group** (predicted 1 [Infraction] vs. 2 [class C misdemeanor], statistically significant, $p < 0.001$)

Key Limitations

Several limitations should be considered when interpreting results:

- *Short Observation Period*: Owing to limitations of historical Medicaid data, the follow-up period was relatively short for the criminal justice outcomes. It is impossible to know whether the observed effect would be maintained, reduced, or augmented over a longer follow-up period.
- *Limited Sample*: The analysis included only 103 of 307 IOC participants due to Medicaid data constraints, which might raise questions about generalizability to the full IOC population.
- *Pandemic Effects*: While the study included a variable accounting for COVID-19 case rates, the pandemic dramatically affected both healthcare utilization and criminal justice operations in ways that may not have been fully captured.
- *Unobserved Confounding*: Despite sophisticated matching methods, the non-randomized design cannot eliminate potential selection bias from unmeasured factors that influence both treatment participation and outcomes. Here, unmeasured confounder refer to hidden factors the study did not capture that might alter a person's likelihood to receive treatment at the IOC and their eventual outcomes. For example, if more motivated patients are more likely to enroll in the IOC, their better outcomes could stem from their unmeasured motivation rather than the treatment itself.
- *Treatment Heterogeneity*: Because researchers did not receive IOC care records from University of Utah Health Plans (UUHP), the study design could not capture variations in IOC implementation or dosage that could affect outcomes.
- *Limited Criminal Justice Metrics*: Reliance solely on jail data may miss other important criminal justice predictors as well as outcomes such as Failure to Appear (FTA) for court appearances, court convictions, or probation/parole violations.

Methodological Strengths

Limitations not withstanding, the study utilized several strong methodological and statistical techniques that enhance confidence in its findings:

1. The CBPS methodology achieved excellent balance across all covariates, with all standardized mean differences well below 0.10. This indicates that, on observed/known confounding variables, the weighted control and treatment groups were similar, strengthening the assertion that differences between groups were meaningful.
2. The large effect sizes (particularly the 70.9% reduction in arrests) would require very strong unobserved confounders to be completely negate the findings, which increases confidence in the benefits of the intervention.
3. Consistency of positive outcomes across three related but distinct criminal justice outcomes strengthens confidence in the findings.

Summary

While acknowledging the inherent limitations of observational studies and quasi-experimental approaches, the large effect sizes, consistency across outcomes, and practical significance of the findings, all serve as compelling reasons to further examine IOC's effectiveness at reducing criminal justice contact. This could be expanded to include Utah Court and Bureau of Criminal Identification (BCI) data to test the robustness of criminal justice findings, but to also consider additional confounders (i.e., unmeasured variables that could affect findings).