

# Reducing the Burden of Mental Illness on the Criminal Justice System: Evidence from Light-Touch Outreach

Mary Kate Batistich, William N. Evans and David C. Phillips\*

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## Abstract

One quarter of people in jail have a serious mental illness (SMI); we study a county in a multi-state area that screens all inmates to identify those with one. Immediately after jail exit, county staff attempt to contact and connect these individuals to a mental healthcare provider, making successful connections in one in four cases. As outreach began on a specific date and residents of neighboring counties are ineligible for outreach, we compare residents and non-residents exiting the same jail over time in a difference-in-differences design. When the program begins, 180-day recidivism rates fall by 11 percentage points more for eligible residents than for would-be-eligible non-residents. Measured effects at one year are consistent with a persistent impact over time. We also find suggestive evidence that recidivism effects are larger for people without a history of mental healthcare.

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\*Batistich: University of Notre Dame (e-mail: mbatisti@nd.edu). Evans: University of Notre Dame (e-mail: wevans1@nd.edu). Phillips: University of Notre Dame (e-mail: david.phillips.184@nd.edu). Emily Merola and Grace Ortuzar provided fantastic research assistance. This research was supported by the University of Notre Dame's Wilson Sheehan Lab for Economic Opportunities (LEO). We also appreciate the cooperation and help of Johnson County, KS, especially Chris Schneweis and Robert Sullivan. We are grateful for help with data from staff and contractors of Johnson County, Jackson County, and Wyandotte County, especially Josh Austin, Lucas Castilleja, John Mensendike, Rob MacDougall, Bradley Pace, Jin Yao, and Steve Yoder. Any remaining errors are the responsibility of the authors.

# 1 Introduction

Over the past few decades, mental illness and its prevalence in the criminal justice system have challenged both the health profession and public safety. An estimated one fourth of people in jails and one seventh of people in prisons have some serious mental illness (SMI), rates three to five times the rate in the general population (Bronson and Berzofsky, 2017). When the definition of mental illness is broadened to include more minor conditions, incidence rates are in excess of 50% for the incarcerated (James and Glaze, 2006). This problem has roots in a number of different trends, including the increasing fraction of the population with a mental health condition, mass supervision by the criminal justice system, and the de-institutionalization of treatment of mental illness. The result is that many people describe the criminal justice system as the modern alternative to mental hospitals of old. Roth (2018) argues that corrections facilities “... have become the nation’s de facto mental healthcare providers, although they are hopelessly ill-equipped for the job.”

The mental health crisis in the correctional system has led many communities to consider ways to diminish the harm the justice system has on those with mental illness or ways to reduce criminal behavior for those with mental illness. These alternatives are as diverse as mental health courts and “housing first” models that subsidize housing for some homeless groups. This paper estimates the impact of a very different, low-cost intervention where agents reach out by phone and connect people to existing mental health services in their community. The intervention takes place in a mostly suburban county on the southwestern side of Kansas City, Missouri. With over 600,000 residents, it is the largest county in Kansas and contains the second largest city in the Kansas City metro area (Overland Park).

In November 2016, Johnson County started conducting a Brief Jail Mental Health Screen (BJMHS) to assess whether detainees in jail may have SMI. The BJMHS is a validated tool to identify SMI, including schizophrenia, bipolar disorder, and major depression (Steadman et al., 2005). The BJMHS is offered to all who book at Johnson County Jail. Starting in March 2017, if the detainee’s responses to the survey indicate SMI and they live in Johnson County, they are referred to the Johnson County Mental Health Center’s (MHC) after-hours team for outreach. The

goal of the outreach is to improve health and reduce recidivism by encouraging the participants to re-establish ties with their mental health provider or to find them one immediately upon exiting jail.

In this environment, we use a difference-in-differences strategy to measure the extent to which this light-touch mental health outreach intervention connects exiting inmates with mental health services and reduces recidivism rates within a fixed time after release. Of eligible people exiting the jail, the mental health outreach team attempts to contact 94%, makes contact with 44%, and successfully connects 27% to mental health services. Half of successful connections are to Johnson County’s publicly funded Mental Health Center, where an active patient typically receives 2.5 hours of services within 2 weeks of jail release and 26.5 hours of services within one year. We define eligibility as being identified for outreach on the BJMHS (“screening positive”), having Johnson County residence, and exiting jail after the outreach intervention is launched. The fact that a sizable portion of Johnson County Jail detainees originate outside Johnson County and are thus ineligible for the county mental health services means a potential comparison group is available. In our primary specification, we limit the sample to people who screen positive and measure the impact of eligibility for outreach on outcomes using a difference-in-differences approach across time and county of residence.

We find evidence that light-tough mental health outreach reduced recidivism. After the outreach program was launched, the proportion of people re-booked into jail within 60 days of release falls by 9.5 percentage points more for Johnson County residents than non-residents, among those who are identified through the screen. This effect grows to 11.4 percentage points at 180 days, most of which persists through one year after release. In a placebo test, we do not see a corresponding decline in recidivism for Johnson County residents who screen negative. We find evidence that outreach has larger effects on recidivism for people who report symptoms of SMI but have no history of mental healthcare, which supports the hypothesis that access to care is causing the reduction in criminal behavior.

Our results add to a relatively small but rapidly growing literature on the effects of mental

health and cognition interventions on crime. Much of the economics literature focuses on broad measures of access to healthcare rather than particular interventions. Deza et al. (2022) show that crime decreased when the number of mental health offices in a county increased, while Bondurant et al. (2018) found similar results for substance abuse treatment facilities. Expansions in Medicaid coverage brought about by waivers (Wen et al., 2017) or the Affordable Care Act (Vogler, 2020) have been shown to reduce crime. Jácome (2020) found that arrests increased among low-income childless males as they age out of Medicaid at age 19 and all the results are driven by those with a history of mental illness.

Contributions from both criminology and economics provide evidence on a variety of interventions addressing mental illness before, during, or after incarceration, but these tend to be more intensive interventions. The economics literature has focused heavily on psychological interventions, like behavioral therapy (Heller et al., 2017; Blattman et al., 2023; Arbour, 2021), or multi-dimensional changes in jail environment (Cunningham et al., 2024; Alsan et al., 2024). The criminology literature includes studies on diverting people from arrest toward social services (Collins et al., 2017), active intensive case management at re-entry (Morrissey et al., 2007; Cusack et al., 2010), and diverting people into mental health courts (McNiel and Binder, 2007; Steadman et al., 2011; Aldigé Hiday et al., 2016). Peters et al. (2017) provide a useful review of the evidence in criminology. Our paper adds to these literatures by focusing on a light-touch, low-cost intervention that works within the structure of the existing criminal justice system and thus may be broadly applicable to a wide variety of locations.

## **2 Background**

### **2.1 The Mental Health Crisis in Corrections**

The current situation surrounding SMI in the criminal justice system takes root in three distinct trends. The first is the declining state of mental health in the country. The National Drug Use and Health Survey notes that the fraction of the population that has experienced any mental illness in

the previous year increased from 17.7% in 2008 to 20.6% in 2019. Those with SMI increased by 41% over that same period, from 3.7 to 5.2%. The second trend is the rise in mass incarceration. In 1970, there were 196,000 adults in US prisons (Langan, 1988), but now there are 1.47 million people in prison, with another 738,000 in jails and 4.4 million under community supervision, i.e. parole and probation (Maruschak and Minton, 2020). A third trend has been the de-institutionalization of those with SMI. In 1955, there were about 559,000 beds in dedicated mental hospitals for those with SMI (Mechanic and Aiken, 1987; Mechanic and Rochefort, 1990), or about one bed for every 300 people in the country. By 1980, the supply of beds had fallen to about 100,000 or one bed for every 2,300 people. Today, that number is 80,000, or 1 bed per 4,300.<sup>1</sup>

As a result of these trends, a large share of criminal justice interactions involve mental illness. One in ten calls for police service involves someone with SMI, and given these encounters, one in three people transported to emergency rooms for psychiatric reasons are taken there by police (Fuller et al., 2015). Estimates of the fraction of people in prisons and jails with an SMI range from one-sixth to more than one-half (Fazel and Danesh, 2002; Steadman et al., 2009; Bronson and Berzofsky, 2017; Romano, 2017; Winerip and Schwirtz, 2014; Al-Rousan et al., 2017; James and Glaze, 2006), far more than the rate of 5.2% for adults in the general population.<sup>2</sup> Torrey et al. (2010) estimates that there are three times as many people with SMI in prisons than in hospitals.

Using corrections to respond to mental illness can have significant costs for the individuals involved and society. Despite their need, people with mental illness tend to have a difficult time getting appropriate treatment while incarcerated. In one large-scale survey, more than 50% of prison inmates taking medications for a mental health condition at the time of incarceration were not receiving those medications inside (Reingle Gonzalez and Connell, 2014). A Bureau of Justice Statistics report found that of those incarcerated with mental illness, only one in three in prisons and one in six in jails report receiving mental healthcare since admission (James and Glaze, 2006). Inmates with mental illness also have substantially higher recidivism rates in some studies (Bales et al., 2017), particularly when mental illness co-occurs alongside substance use disorder (Wilson

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<sup>1</sup>Source: <https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/NMHSS-2018.pdf>

<sup>2</sup>Source: <https://www.nimh.nih.gov/health/statistics/mental-illness.shtml>

et al., 2011; Zgoba et al., 2020). This situation points to a need to identify interventions that can provide mental healthcare to people in the criminal justice system and test whether they effectively reduce recidivism.

## **2.2 The Johnson County Mental Health Outreach Intervention**

We study the intersection of mental health and criminal justice policy in Johnson County, Kansas, a suburban portion of the Kansas City Metro area. The Kansas City Metropolitan Statistical Area is similar to the entire United States. According to 2016-2019 5-year American Community Survey estimates (Ruggles et al., 2021), it has a median household income of \$66,632 with 9% of residents identifying as Hispanic and 12% as Black. Johnson County is the largest county in Kansas and the second most populous county in the metro area. It has greater median income (\$89,087) and somewhat lower representation of Hispanic (8%) and Black (5%) residents than the metro area as a whole.

Johnson County provides a particularly useful location to examine the state of mental health in jails as they screen all entering inmates for SMI.<sup>3</sup> Since November 2016, the Johnson County Jail assessment team completes the BJMHS with each entering inmate as part of the booking process. This tool asks eight simple questions to identify inmates with SMI, including six questions about symptoms of SMI (schizophrenia, bipolar disorder, and major depression) and two questions about past use of medication and inpatient mental healthcare. People are identified as good candidates for referral to mental health services if they answer “yes” to at least two questions about symptoms or at least on of the questions about prior mental healthcare. We reproduce the screen questions in Appendix Figure A.1. See Steadman et al. (2005) for more details on this tool.

Johnson County incarcerates people with mental illness in a similar manner to the rest of the country. Between November 2016 and November 2018, the mental health screen identifies 25% of people passing through Johnson County jail as candidates for referral to mental health services. The same mental health screen identifies 11% of inmates in four jails in Maryland and New York as

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<sup>3</sup>A small number of inmates refuse the screening.

having mental illness during an earlier time frame (Steadman et al., 2005). Table 1 shows average characteristics for inmates qualifying for a referral based on the screening, compared to a nationally representative sample of people in jail with mental illness.<sup>4</sup> Column 2 displays statistics for those qualifying as having SMI based on their responses to the BJMHS, whether by presently exhibiting symptoms or by reporting prior mental healthcare. Columns 3 is perhaps more directly comparable to the national sample because it only include those who qualify for outreach on the BJMHS by presently exhibiting two or more symptoms (by responding “yes” to at least two of questions 1 through 6). The overall severity of mental illness appears similar to national numbers: 49% of people screening for SMI, and 42% of those presently exhibiting symptoms, in Johnson County Jail have been hospitalized previously due to mental or emotional health, compared to 43% nationally. Jail inmates with a mental illness in Johnson County and nationally also have similar age and marital status. They differ on a few dimensions. In Johnson County, such inmates are more likely to be female, White, and currently taking mental health medication.

The intervention we study is directed toward exiting jail inmates who are identified through the screen for SMI and other acute psychiatric problems and who normally reside in Johnson County. The program requires being identified for outreach using the BJMHS, as measured at the time of booking. The residency requirement eliminates inmates of other counties, mostly residents of Jackson County, MO and Wyandotte County, KS, which border Johnson County. Figure 1 shows counts of jail inmates screening positive in the three-county area according to zip code tabulation area (ZCTA) of residence. In our main analysis sample, 67% of inmates are residents of Johnson County. The remaining 33% are split among Jackson County (20%) and Wyandotte County (13%).

The staff of Johnson County immediately attempt to contact eligible people exiting Johnson County Jail to connect them with a specific mental healthcare resource. Figure 2 gives a sense of how quickly staff contact exiting inmates. The navy bars show the number of days between exiting the jail and the first contact attempt. The gold bars show time lapse until contact is actually made. Most contact happens within 1 day of release. Staff make up to three attempts. If phone outreach

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<sup>4</sup>We take nationwide estimates for jail inmates meeting the threshold for serious psychological distress from Bronson and Berzofsky (2017), based on the 2011-12 National Inmate Survey.

is unsuccessful and the person is identified as likely having a particularly SMI,<sup>5</sup> the County’s Mobile Crisis Response Team attempts to make contact in-person.

If the team successfully makes contact either by phone or in person, they attempt to connect that person to the most appropriate mental healthcare resource. These resources are tailored to the client’s situation and as such can vary considerably. The most common successful outcomes are referrals to sites of the county-funded MHC. The MHC largely operates through initial walk-in assessments which then lead to outpatient care, including both therapy and medication. Less frequently, it provides inpatient care in emergency situations. Outreach also connects many people to private providers, often reconnecting the person to their past mental healthcare provider. In other cases, the client declines services. We quantify the frequency of different referrals and the extent of healthcare use more precisely in Section 4. Since our sample period, Johnson County has also used the BJMHS screening to connect people to mental healthcare while still in jail, but during our sample it was only used for post-release outreach.

Of note, Johnson County has somewhat more extensive mental healthcare services than the average county. According to 2018 Census County Business Patterns data, Johnson County had 105 mental health offices in 2018, or 1.74 per 10,000 residents. That value is about 50% more than the values for both the Kansas City metro area (1.13) and the United States as a whole (1.16).<sup>6</sup> Since we study an intervention that aims to connect exiting jail inmates with existing mental healthcare resources, the availability of mental healthcare is almost certainly a complementary input. Studying such an intervention in a place with a relatively well-developed network of mental healthcare providers and available supply allows us to abstract from the concern that the outreach program will not be able to connect clients to available, appropriate resources.

Contacting people is relatively low cost. The average eligible person in our data receives 1.41 contact attempts; 98% are by phone and 2% in person. Consultations with the outreach team

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<sup>5</sup>This is defined as answering yes to 4 or more screening questions or being identified as high risk via chart review.

<sup>6</sup>We follow Deza et al. (2022) and count the number of establishments that are offices of mental health physicians or non-physician practitioners. Access to the highest level care is more similar in Johnson County, with .38 mental health physician offices per 10,000 people in Johnson County compared to 0.33 in the United States. Greater mental healthcare access comes mostly from non-physician practitioners.



indicate that the average phone contact averages 4 minutes while an in-person contact lasts much longer, roughly 25 minutes per attempt, mostly due to driving time. Altogether, the contact team spends an average of 5 minutes on each eligible person. Johnson County estimates a cost of \$2.85 per minute for staff time, supervisory time, and overhead required to attempt to contact someone. Therefore, the cost per eligible person of attempted contact is about \$15. Of course, this number does not include the cost of mental health services received after contact, which we discuss below. However, the cost of contacting eligible people itself is quite low.

## 3 Empirical Strategy

### 3.1 Data

Our data begin with several years of jail booking data. At times, we refer to a “long sample”, which is the largest sample for which we observe recidivism outcomes. The long sample is the set of individuals booking at the Johnson County Jail for the first time from January 1, 2014 and released on or before November 30, 2018. We link each person in this sample to past and future jail bookings in Johnson County Jail and the jails in two adjacent counties, Wyandotte County, KS and Jackson County, MO. In all three counties, we observe all bookings from January 1, 2013 through November 30, 2019, or more than three full years before the intervention plus one full year after the latest release date in this long sample. We obtained this data directly from each of the counties.

The Johnson County sample is connected to their full bookings record through a unique identification number assigned in Johnson County’s record system. To connect the individuals to their bookings records in the other two counties, we link based on personally identifying information: the last four digits of social security number and date of birth for Wyandotte County, and first and last name, and date of birth for Jackson County.<sup>7</sup>

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<sup>7</sup>For Wyandotte county, we match exactly on last four digits of social security number and date of birth. For Jackson County, we use the *matchit* command in Stata to calculate similarity scores for a string of first name, last name, and date of birth, and keep matches with similarity scores at or above 94 percent, the minimum score to avoid multiple matches. Match rates are as follows. We have 57,819 unique IDs in the raw Johnson County data; 32,059 unique IDs in the Wyandotte County data, which we match to 9,077 Johnson IDs (16%); and 35,777 unique IDs in

The county jail bookings allow us to track local arrests. We define recidivism as any jail booking within the determined time frame (e.g., 60, 180, or 360 days) that is not associated with the same set of charges. This exclusion ensures that we are not including returns to serve a sentence for the same crime as the original booking.<sup>8</sup> Note that our recidivism measure captures parole violations.

One limitation of our data is that we are not able to see whether someone was arrested outside the three counties. We thus limit our sample to people who live in the three-county area at time of their booking in Johnson County. We also do not observe state prison bookings. However, as prison inmates generally serve pre-trial time in the county jail, we would typically observe these bookings in our data.

We refine the Johnson County booking data to obtain our analysis sample by only taking the first booking for any individual once the intervention is launched. This is to remove any bias associated with repeated treatment affecting the composition of the sample. The long sample includes 54,988 observations. For our primary analysis, we restrict the long sample to a narrower time period when the BJMHS was launched so that we can observe BJMHS scores. We define our “main sample” as the subset of people in the long sample who took the BJMHS and screened positive for follow-up services. Because the BJMHS was not administered until November 2016, this sample necessarily has a shorter pre-period before the outreach intervention begins. We also eliminate from our main sample individuals who are coded as not having a plausible phone number and who exit jail to either work release or a state institution. This is because these individuals are unlikely to be contacted for follow-up. Our main sample has 3,920 observations.

Table 2 describes baseline characteristics of the different samples of inmates, by county of residence.<sup>9</sup> Columns (1) and (2) show the long sample while columns (5) and (6) show the main sample. The first column shows that 32% of non-Johnson County residents in the long sample are female. For the subsample who entered on or after November 1, 2017, the BJMHS was administered and we

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the Jackson County data, which we match to 6,896 Johnson IDs (12%).

<sup>8</sup>We estimate the program’s effects on returns to Johnson County jail for the same charges in Appendix Table A.8. As expected we do not detect any effect, implying that this program did not influence the outcomes of the present case.

<sup>9</sup>We define county of residence based on zip code. We consider any zip code that is at least partially located in Johnson County as Johnson County.

can separate characteristics between those who screen negative and those who screen positive for follow-up. We show these characteristics in columns (3) through (6). The inmates testing positive are less likely to be male, Black, Hispanic, employed, and residents of other counties.<sup>10</sup> However, they are similar on age and prior criminal history.

Figures 3a. and b. show the raw monthly contact attempt rates and rates of connection to care through the outreach team. We see high rates of connection to care for Johnson County residents in the post period. Contact attempt rates are near 100%. We also see persistently positive monthly rates of connection to care for Johnson County residents in the months after the program begins. Rates of connection to care are lower than contact attempt rates due to cases of unsuccessful contact (e.g., due to bad contact information) as well as some clients refusing assistance. These figures confirm that the outreach program successfully began operating in March 2017 and continued through our analysis period ending in November 2018.

### 3.2 Identification Strategy

We seek to test the effect of the mental health outreach program on recidivism. Individuals screening positive for SMI when they enter jail are only eligible for the program if they are Johnson County residents. Hence, our main identification strategy is a difference-in-differences estimation comparing SMI positive in-county to out-of-county residents as the outreach program is launched. Specifically, our structural estimation of interest is:

$$Y_{ijt} = \beta_0 + \beta_1 * Post_t * JC_j + \beta_2 * JC_j + \beta_3 * Post_t + \mathbf{X}_{ijt} * \gamma + \epsilon_{ijt} \quad (1)$$

$Y_{ijt}$  is an outcome, such as a dummy for whether the person recidivated within 360 days of release, for person  $i$  in county  $j$  released from jail in month  $t$ . We include separate indicators for Johnson County resident ( $JC_j$ ) and being released after the mental health outreach intervention began ( $Post_t$ ). The coefficient of interest is on the term for eligibility for outreach, which is the interaction of indicators

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<sup>10</sup>Sex is reported as male or female. We combine race and ethnicity into four categories: non-Hispanic White, non-Hispanic Black, Hispanic, and Other. In practice, all observations in our sample fall into one of the first three race-ethnicity categories.

for the post period and Johnson County residence. We also include a set of demographic controls represented by  $X_{ijt}$ . These controls are the first nine characteristics listed in Table 2 plus an indicator for having a disability.

Figure 1 shows the three-county area on which we focus our attention. Our approach relies on the assumption that the Johnson County Jail inmates who test positive for SMI but reside outside of Johnson County provide a reasonable counterfactual for their counterparts residing in Johnson County. These two groups are similar on many dimensions. As shown in columns (5) and (6) of Table 2, 41% of the Johnson County residents in our main sample are female, compared to 46% of residents of the neighboring counties. They are also similar in age, employment history, and time spent in jail after the booking. On the other hand, Johnson County residents are less likely to be Black.

Because county of residence correlates with some demographic characteristics, the analysis below will test whether non-residents provide a good counterfactual in several ways. First, we will show that, in our main sample, Johnson County residents and non-residents show similar time trends in recidivism prior to the start of mental health outreach. Second, we will both confirm parallel pre-trends and estimate treatment effects in the “long sample” shown in columns (1) and (2) of Table 2. While we cannot condition on screening positive for SMI in that sample, it does provide a much longer pre-period in which to test for parallel trends. Third, we will estimate placebo treatment effects among people who screen negative for SMI, using the sample from columns (3) and (4) of Table 2. Finally, we will estimate specifications limiting attention to individuals residing in ZCTAs on the borders between Johnson and Wyandotte/Jackson Counties.<sup>11</sup> Limiting attention to the border reduces the sample size to about one-quarter of our main sample but generates groups that are more similar in racial composition.

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<sup>11</sup>See Appendix Figure A.2 for a map showing the ZCTAs included in the border sample.

## 4 Results

### 4.1 Effects on Use of Mental Healthcare

Figure 3 displays time series for a variety of outcomes for Johnson County and non-Johnson County residents. We first consider how well the program connects people to mental healthcare. Figure 3 illustrates that the rates at which the program connects people to mental healthcare increase sharply at the onset of the program in March 2017 and for residents of Johnson County. Figure 3b. shows that Johnson County residents are successfully connected to care about one-third of the rate of contact attempts.

The mental health outreach intervention attempts to contact nearly all eligible people and successfully connects one-quarter to one-third of them with mental health treatment. Table 3 reports the estimates using our difference-in-differences specification with controls for demographics and criminal history. At the onset of the program, attempts to contact exiting inmates who screened positive increase by 95 percentage points more for Johnson County residents than for non-residents. Successfully contacting people with SMI who have recently been incarcerated is nontrivial. Contact information may be invalid or out of date, and people may choose to ignore contact attempts. Still, Johnson County’s outreach effort lead the rate of making contact to increase by 43 percentage points. When contact is made, some respondents will accept services and others refuse. We find that the program increases the rate at which people are connected by the program to mental healthcare by 27 percentage points. The bulk of these connections, 52%, are to the publicly-funded Johnson County Mental Health Center (MHC) with the remainder being mostly re-establishing pre-existing relationships with private providers.

Descriptive data from the MHC corroborate that outreach clients initiated services there at higher rates. Table 4 summarizes healthcare use at the MHC by Johnson County residents. The first row shows the rate at which members of the sample enroll as new clients at the MHC within 14 days of exiting jail. Column (1) shows that, prior to the start of mental health outreach, 5.6% of Johnson County residents who exited the jail after testing positive on the BJMHS enrolled as

new clients at the MHC within 14 days. This rate was 7.8% after outreach started, an increase of 2.2 percentage points, or 39%. This difference is statistically significant at the 10% level. The second row shows that the fraction of people receiving any services from the MHC increases by 2.8 percentage points, indicating that increased use of services largely comes from new client enrollment. MHC services are not available to residents of other counties, so we can only make these types of simple pre-post comparisons and cannot use our main empirical strategy comparing residents to non-residents. However, columns (6) and (7) show rates of new client enrollment for people who tested negative on the BJMHS and show flat trends in enrollment over time. Also, columns (3) to (5) show that new MHC enrollments largely originate from the clients that outreach workers said were referred to the MHC; 17.7% of people with an outreach disposition indicating a connection to the MHC enroll as new MHC clients, compared to 6.3% of people with failed outreach and 5.5% with other successful outreach outcomes (e.g. connection to private providers).

Altogether, these data indicate that jail-based outreach increased enrollment of new clients at the MHC, but determining the magnitude of the overall increase in healthcare use is difficult. First, county data exclude many forms of healthcare, including private healthcare which the outreach data suggests is the primary option for roughly half of the sample. Second, analysis of MHC data has to focus on a narrow time horizon. People who exit the jail just prior to the start of outreach then receive outreach after their next jail booking. As shown in Appendix Table A.1, any pre-post gap in healthcare enrollment narrows within 1 year. Both of these factors suggest that the increase in healthcare uptake caused by outreach is larger than the 2.8 percentage point gap we can observe in MHC data, though certainly also lower than the 27 percentage point gap observed in outreach team contact logs.

The MHC data also quantify the extent of healthcare services that clients receive, which are extensive but varied. The MHC provides outpatient counseling, medication, and inpatient beds for psychiatric crises. This variety of services mean that most patients use repeated services. As shown in column (4) of Table 4, among clients who were connected to the MHC by mental health outreach and who use any services, the client receives on average 152 minutes of service in the 14

days after exiting jail, though with a standard deviation twice as large. Similarly, Appendix Table A.1 shows that within 1 year, the client has received on average 1,591 minutes, or 26.5 hours, of services with similar variation around the mean. On average, one hour of service at the MHC costs \$185.36, leading to a cost within the first year of about \$4,915 for someone treated at the MHC.

The total cost of mental health outreach depends on the extent of healthcare use outside the available data. The results above indicate that outreach increases take-up of mental healthcare by somewhere between 2.8 and 27 percentage points, yielding healthcare costs increasing by \$138 to \$1,332. As an intermediate position, we assume that phone calls connecting people to private healthcare yield a similar take-up rate as connections to the MHC. Since successful outreach calls that lead to the MHC are about 52% of total successful calls, overall healthcare take-up increases by twice the MHC rate, or 5.4 percentage points, implying an increase of \$263 per call. About 2.8 percentage points, or \$138, of this increase occurs at the MHC, where half is charged to Medicaid and half is funded by Johnson County after non-payment. Any additional costs are external to the Johnson County government and likely split between Medicaid and private providers, though this split is difficult to quantify.

## 4.2 Effects on Recidivism

The time series in Figures 3c. and d. report 60- and 360-day recidivism rates, respectively, for the main sample. Recidivism rates are similar for Johnson County and non-Johnson County residents released prior to March 2017. However, after the start of outreach, recidivism rates tend to be lower for Johnson County residents. Since the pre-period is short for the main sample, Figures 3e. and f. show trends for a longer time horizon using our long sample. The recidivism decline at the start of mental health outreach is more muted because we cannot exclude people without SMI in this longer sample, and, therefore, the Johnson County trends include people ineligible for the intervention.

Table 5 shows difference-in-differences, intent-to-treat estimates of the effect of being eligible for outreach on recidivism. Column (1) shows estimates for recidivism within 30 days of release. We see a 6.5 percentage point decrease, compared to a baseline of 7.0% for non-Johnson county

residents (and 12.8% for Johnson County residents). This effect is statistically significant at the 5% level. Columns (2) through (5) show estimates for recidivism within 60, 90, 180, and 360 days, respectively. We see a decrease in 180-day recidivism by 11.4 percentage points, coming from a baseline of 31%. We interpret this 11.4 percentage point estimate, which is statistically significant at the 1% level, as the effect of being eligible for outreach on recidivism. Since the program attempts to contact nearly all eligible people, the intent-to-treat effect also measures the return to attempting to make contact. In column (5) we see that most of this recidivism effect persists through 360 days. These effects are large in magnitude. Of inmates who are Johnson County residents and exit the jail prior to March 2017, 40.5% are re-booked within 180 days. The intent-to-treat effect of 11.4 percentage points that we measure is thus 28% of the base rate. While the standard error grows slowly across the columns, the point estimates remain relatively stable. These results suggest that, in most cases, mental health outreach does not simply delay jail bookings but instead persistently reduces contact with the criminal justice system.

The magnitude of these effects are similar to the most successful interventions targeted to people exiting incarceration. For example, one of the studies in Heller et al. (2017) reports the results of providing group cognitive behavioral therapy to juveniles in Chicago who are incarcerated prior to trial. Juveniles incarcerated pre-trial are by definition younger than our sample and have typically been charged with more severe crimes than people in local adult jail, but the high turnover in this setting is similar to adults in jail charged with minor crimes. The cognitive behavioral therapy program, which cost \$60 per person, reduced the probability of being readmitted within one year by 17 percentage points. Our results are of similar magnitude, though of course with a confidence interval that also admits smaller but still meaningful effects.

We do not directly estimate a treatment-on-the-treated effect, such as by replacing our regressor of interest with an indicator for being treated, because that model would exclude any effects of mental health outreach beyond the direct connection to a mental healthcare appointment. Such effects may exist if contact influences mental health directly or leads the person to follow-up later on their own. If we assumed the entire effect operates through assistance in setting up an appointment



and use Table 3 as a first stage, then successfully setting up a plan for treatment would reduce recidivism by 42 percentage points ( $0.114/0.27$ ), i.e. by 100%. Because of the context and the magnitude of the effects, we conclude that there must be other channels that the call has an effect other than directly through appointments.

### 4.3 Placebo Test

As a placebo test, we estimate Equation 1 on the sample of people who took the BJMHS but did not screen positive. Because they do not qualify for outreach, we do not expect there to be changes in this group’s recidivism rates once the intervention begins. We show the results in Table 6. The results are consistent with similar changes in recidivism over time for Johnson County residents relative to non-Johnson County residents in this placebo sample. For 60-day recidivism, we find that the coefficient on the post period interacted with Johnson County resident is -1.1 percentage points with a standard error of 1.7. While the signs are negative across all time horizons, magnitudes are small relative to baseline means, and no effects are statistically significant at conventional levels.<sup>12</sup>

### 4.4 Additional Robustness Checks

In our Empirical Appendix we include additional robustness checks for our findings. First, we show that our results remain unchanged if we use the “long sample” with an extended pre-period, as described in columns (1) and (2) of Table 2. Since Johnson County did not conduct the BJMHS prior to November 2016, this sample necessarily includes both people who would screen positive for SMI and those who would screen negative. Since people screening negative are ineligible for outreach, a simple difference-in-differences would underestimate the effect of eligibility. So, in this sample we estimate a 2SLS model, using the Johnson County-post period interaction as an instrument for being eligible. Appendix Tables A.3 shows the first stage, Table A.4 shows the

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<sup>12</sup>In Appendix Table A.2, we estimate a triple-difference specification across geography, time, and SMI screen status. The sample includes both those screening positive and those screening negative for SMI. By construction, these estimates are the difference between our main results in Table 5 and those in Table 6 and indicate similar treatment effects on recidivism.

treatment effects on outreach activity, and Table A.5 shows the treatment effects on recidivism, which are very similar to those from our main specification.

If we limit attention to people residing near county borders, we also measure treatment effects on recidivism consistent with our main results. Table A.6 shows these results for both the long sample and the main sample. The estimated effects have the same sign as the main results and are of similar magnitudes. Due to the smaller sample, they are less precisely estimated. For example, for a 180-day time horizon, we estimate that recidivism falls by 15.7 percentage points more for Johnson County residents than for non-residents (column 5), and the 95% confidence interval for this estimate includes the full-sample estimate of 11.4 percentage points (Table 5).

The results in our preferred specification are also robust to a fully saturated model including ZCTA and month-year fixed effects; see Appendix Table A.7 for these results. We also estimate an event-study model where we estimate the marginal effect by month relative to February 2017, the month before the intervention began. We show these results in Figure 4. We also estimate an event-study model using our long sample, where we estimate the marginal effect by quarter relative to November 2016 through February 2017, the quarter before the intervention began. We show the results in Appendix Figure A.3. While power is lost by having separate coefficients for each quarter interaction, point estimates shift from neutral to negative in the post period.

## 5 Heterogeneity

### 5.1 Heterogeneity by Prior Mental Healthcare

The program we study directs outreach to people with and without a history of using mental healthcare. Recall from above that the BJMHS identifies people to refer to mental healthcare based on either stated symptoms or a history of mental health medication or inpatient care.<sup>13</sup> We can divide the sample into those who qualify for outreach based on a history of care versus those who have symptoms but no history of care.

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<sup>13</sup>See also the survey in Appendix Figure A.1.

Outreach is more effective at connecting people with a prior history of care to mental health treatment. Table 7 shows the estimates for outreach outcomes, split by whether the person answered “yes” to a history of using inpatient care or medication for mental health, i.e. question 7 or 8 on the BJMHS. The program attempts to contact people with and without a history of mental healthcare at similar rates, 94% and 95%, respectively. Program staff make a successful contact at about the same rate for both groups (43% vs. 45%). However, the rates at which those contacts lead to concrete plans for mental healthcare differ considerably. Among those with a history of mental healthcare, the program connects 28% to services, but only connects 17% of those who have no history of care. Most of this difference results from the program more frequently re-connecting the former group to an existing healthcare relationship and from the latter being more likely to refuse services. Table 8 shows the likelihood of different treatment outcomes among qualifying Johnson County residents in the post period. Panel A separates the eight outcomes qualifying as treated, while Panel B separates the five outcomes qualifying as not treated. We see that, upon receiving the outreach call, those with prior mental healthcare are particularly likely to connect to an existing private provider or schedule an appointment with the JCMHC (column 1). On the other hand, rates of planning to make use of the County’s walk-in intake are similar. Finally, they are also less likely to decline care upon outreach.

While connecting people with no history of mental healthcare to services is more difficult, their recidivism rates actually respond more elastically. Table 9 splits out treatment effects on recidivism by history of mental healthcare use. For example recall that, as shown in column (1), recidivism within 60-days of release falls by 9.5 percentage points for the full sample. Column (2) shows that this value is similar for those with a history of mental healthcare. For those with no history of mental healthcare, column (3) shows this effect is nearly twice as large. These differences only grow with the longer time horizon in columns (4)-(9). The sample of people with untreated mental illness is small, only 465 of the 3,920 observations in our sample. This small sample makes the estimated effects quite noisy, so we use caution in interpreting the large point estimates. However, the results suggest that connecting people who are exiting jail with untreated mental illness to services, while

difficult to do successfully, has very high returns.

## 5.2 Other Heterogeneity

We explore heterogeneity by gender, race, charge type, and symptoms reported. We show our results along with a 95% confidence interval for 180-day recidivism in Figure 5. We see that the recidivism impacts are stronger for men and racial minorities, although we cannot reject the null that they are the same. While there is a difference in racial makeup between Johnson County and non-Johnson County residents, the results by race reassure us that this difference is not driving our results. We also consider individuals with more serious offense types, which we define as having any charge that falls in Group A according to the National Incident-Based Reporting System (NIBRS).<sup>14</sup> We find that those without more serious offense types respond more strongly to the program. We also explore heterogeneity by symptoms reported. The results provide suggestive evidence that those reporting present symptoms of schizophrenia, bipolar disorder or major depression have steeper reductions in 180-day recidivism relative to those who do not exhibit any current symptoms.

We also estimate effects on outreach outcomes within these same subgroups, finding that the likelihood of an outreach attempt or of a successful contact does not vary greatly across groups. For the full set of regression results including outreach outcomes and recidivism across different time horizons, see Appendix Tables A.9 and A.10.

## 6 Discussion and Conclusion

As the criminal justice system struggles to deal with the high rates of mental illness among the jail and prison populations, this study finds that low-cost mental health outreach to exiting jail inmates can reduce recidivism. We study an intervention conducted by Johnson County, KS, based on the Brief Jail Mental Health Screen (BJMHS). Agents immediately call exiting inmates who screen positive for serious mental illness (SMI) to match them with appropriate mental healthcare.

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<sup>14</sup>These offenses include assault, theft, and other offenses.

Outreach successfully connects one quarter of eligible people to mental health services. Since this service is only provided to Johnson County residents and many inmates come from neighboring counties, we evaluate the effectiveness of mental health outreach by comparing residents to non-residents over time. Recidivism within 60 days of release falls by 9.5 percentage points more for residents than non-residents after the introduction of mental health outreach. Most of this effect persists for at least one year after release. We observe larger effects for those with an SMI but without a prior history of mental healthcare.

A formal cost-benefit analysis would require us to estimate the impact of the brief intervention on both healthcare costs and health status. Measuring healthcare costs would require medical claims data and measuring health status would require survey measures or greater statistical power to detect changes in, for example, mortality. We do not have such data in the present context, so measuring these effects of this type of intervention is an important area for future research.

However, we can observe healthcare provided in Johnson County at its publicly-supported Mental Health Center (MHC). This data does not cover care outside of Johnson County or at private providers, but we can use it to roughly estimate additional healthcare costs. As discussed above, our best estimate from these data are that each outreach attempt yields about \$263 of additional healthcare costs, though limited data mean that reasonable assumptions could make this estimate range from \$138 to \$1,332. As discussed above, the marginal cost to the county of staffing the mental health outreach itself is low, about \$15 for one case. A best rough estimate of the unit cost is thus \$278 per outreach case, \$84 of which is incurred by Johnson County ( $\$15 + 0.5 * \$138 + 0 * \$125$ ) and \$194 by Medicaid and private healthcare providers ( $0.5 * \$138 + 1 * \$125$ ). Alternatively, if every outreach call logged as successful leads to externally-funded healthcare of similar cost to that of the Mental Health Center, then the program costs \$1,347 per outreach case with the additional cost coming from outside Johnson County.

Our impact estimate and the rough cost data available suggest mental health outreach will compare favorably with other criminal justice interventions for people with mental illness and may even pay for itself. Outreach reduces jail bookings by 0.114 within 6 months and 0.079 within 12

months. Even taking the smaller 12-month estimate, one averted jail booking costs about \$3,517 in outreach and healthcare costs. At the high end of healthcare use, average costs only rise to \$17,040 per jail booking averted. Johnson County’s own cost-benefit ratio is somewhat different since some of both healthcare costs and recidivism may be incurred elsewhere. Depending on whether we assume recidivism reductions are fully within Johnson County versus split evenly with other counties (see Appendix Table A.11), the county’s internal cost ranges from \$1,063 to \$2,127 per booking averted. All of these values are considerably lower than other mental health interventions. For example, the MacArthur Mental Health Court Study found that mental health courts spend about \$25,000 per arrest averted.<sup>15</sup>

Reduced public expenditures on jailing also largely offset these costs by themselves. The average jail stay in our sample is 9.3 days at a cost of \$1,628, reducing the total cost per averted arrest to \$1,890 and accounting for roughly all of Johnson County’s costs. While we cannot provide a full cost-benefit analysis, both public safety and the welfare of those with mental illness are of great value, and our results provide a first suggestion that mental health outreach can be a cost-effective option.

More generally, our results show that more cooperation between criminal justice and healthcare systems can help stop the cycle of incarcerating people with mental illness. Because of the expansion of the criminal justice system over the past few decades, local jails lock up large numbers of people with mental illness, with huge human costs. However, this situation also means that local jails have the ability to identify people who need mental healthcare. The criminal justice system has already paid the large fixed cost of finding people and screening for mental illness; connecting these people to mental healthcare is then relatively inexpensive. To work, mental health outreach from jails likely requires sufficient capacity in the local mental healthcare system. But given this context, mental health outreach through jails can break the cycle of arrest and incarceration of people with mental illness.

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<sup>15</sup>Arrests declined by 0.2 per year (Steadman et al., 2011) at a cost of about \$5,000 per year (Steadman et al., 2014).

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## 7 Tables and Figures

Table 1: Characteristics of People in Jail with Mental Illness, Nation versus Johnson County

	National	Johnson County Jail	
		All	Presently
		Qualified	Symptomatic
	(1)	(2)	(3)
% Ever Hospitalized	43.1	49.1	42.1
Mean Age	33.7	33.7	34.3
% Married	20.2	20.4	18.9
% with Current Prescriptions	25.7	66.3	41.6
% Female	15.6	42.5	38.2
% White	40.0	74.4	63.4
% Black	28.1	21.5	31.1
% Hispanic	19.5	4.0	5.3
Observations		3,920	1,066

*Notes:* Column (1) shows values for jail inmates with serious psychological distress from the 2011-2012 National Inmate Survey, as reported in Bronson and Berzofsky (2017). The other two columns show Johnson County bookings data for people who screen positive on the BJMHS. Column (2) shows all such bookings after the start of the BJMHS. Column (3) shows a subset of column (2) by restricting to those who are presently exhibiting two or more symptoms (by responding “yes” to at least two of questions 1 through 6).

Table 2: Summary Statistics  
Mean and (Standard Deviation)

	Sample After BJMHS Launch					
	Long Sample		Screen Negative (Placebo Sample)		Screen Positive (Main Sample)	
	Non-JoCo (1)	JoCo (2)	Non-JoCo (3)	JoCo (4)	Non-JoCo (5)	JoCo (6)
Female	0.32 (0.47)	0.27 (0.45)	0.31 (0.46)	0.24 (0.43)	0.46 (0.50)	0.41 (0.49)
Age	31.8 (10.1)	32.7 (11.3)	31.4 (9.9)	33.3 (11.5)	33.5 (11.2)	33.8 (11.7)
Black	0.49 (0.50)	0.17 (0.38)	0.54 (0.50)	0.20 (0.40)	0.38 (0.49)	0.13 (0.34)
Hispanic	0.09 (0.29)	0.09 (0.28)	0.10 (0.30)	0.10 (0.29)	0.04 (0.19)	0.04 (0.20)
Married	0.16 (0.36)	0.20 (0.40)	0.15 (0.36)	0.22 (0.42)	0.16 (0.37)	0.22 (0.42)
Disabled	0.01 (0.08)	0.01 (0.09)	0.00 (0.05)	0.00 (0.06)	0.02 (0.12)	0.01 (0.12)
Employed	0.57 (0.50)	0.58 (0.49)	0.63 (0.48)	0.65 (0.48)	0.51 (0.50)	0.53 (0.50)
Any Arrest Past Year	0.44 (0.50)	0.37 (0.48)	0.33 (0.47)	0.21 (0.41)	0.36 (0.48)	0.22 (0.41)
Any Arrest in Past 60 Days	0.20 (0.40)	0.11 (0.31)	0.16 (0.37)	0.04 (0.20)	0.17 (0.38)	0.05 (0.22)
Time in Jail in Days	15.8 (52.8)	15.2 (51.9)	8.2 (30.1)	7.1 (27.3)	11.5 (34.5)	10.0 (34.8)
Serious Offense	0.28 (0.45)	0.40 (0.49)	0.28 (0.45)	0.41 (0.49)	0.34 (0.47)	0.49 (0.50)
Observations	21,097	33,891	5,219	6,414	1,312	2,608

Notes: Columns (1)-(2) show summary statistics for our “Long Sample” of individuals booked the Johnson County jail for the first time on or after January 1, 2014, and released on or before November 30, 2018. Columns (3)-(6) show the subset of this long sample of those who took the BJMHS which was administered to all entering inmates starting November 2016. Further details on the data sample and treatment can be found in Section 3.1 .

Table 3: Effect of Eligibility on Outreach Activity, Difference-in-Difference Estimates, Main Sample

	Attempted Contact (1)	Made Contact (2)	Connected to Care (3)	Connected to Care at MHC (4)
Post period x JC resident	0.936 (0.006)	0.433 (0.011)	0.271 (0.010)	0.141 (0.008)
JC resident	-0.000 (0.002)	-0.003 (0.004)	-0.004 (0.004)	0.003 (0.003)
Post period	0.004 (0.002)	0.007 (0.003)	0.005 (0.002)	0.002 (0.002)
Demographic Controls	Yes	Yes	Yes	Yes
Criminal History Controls	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.875	0.271	0.150	0.074
Observations	3,920	3,920	3,920	3,920

*Notes:* The sample is limited to the main sample of bookings after BJMHS launch in November 2016 who screen positive on the BJMHS. Each column shows the results of a separate regression estimated by OLS. The outcomes are dummies coded using contact logs for the mental health outreach team. See Table 8 for detailed sub-categories. Heteroskedasticity robust standard errors are in parentheses. Each regression includes indicators for female, Black, and Hispanic, employment status, and disability status, as well as controls for age, length of time in jail during current booking, an indicator for any bookings in 2013, the year before the start of the long sample, and the count of bookings in 2013.

Table 4: Rates of MHC Use By JoCo Residents Before and After Outreach Launch, 14 Days After Release

	Screened Positive					Screened Negative		T-Test P-Val. Cols. 1-2 (8)
	Pre (1)	Post				Pre (6)	Post (7)	
		All (2)	Not Connected (3)	Connected to MHC (4)	Other Care (5)			
Enrolled in JCMHC Services	0.056 (0.23)	0.078 (0.27)	0.063 (0.24)	0.177 (0.38)	0.055 (0.23)	0.011 (0.10)	0.013 (0.11)	0.089
Received Services	0.161 (0.37)	0.189 (0.39)	0.130 (0.34)	0.590 (0.49)	0.084 (0.28)	0.025 (0.16)	0.024 (0.15)	0.144
Number of Services Received, when > 0	3.827 (6.19)	3.556 (4.17)	2.678 (2.44)	4.706 (5.47)	2.304 (1.49)	3.025 (3.68)	3.629 (4.19)	0.627
Minutes of Services Received, when > 0	158.938 (280.25)	111.692 (256.09)	81.594 (235.75)	151.761 (287.03)	62.870 (59.33)	92.105 (84.45)	115.821 (148.70)	0.137
Observations	502	2106	1533	300	273	1617	6199	

*Notes:* This table shows rates of enrollments and services at the Johnson County Mental Health Center from their internal records. Outcomes are measured during the 14 days following release. Standard deviations are in parentheses. The sample in Columns 1-5 includes the set of Johnson County residents who screened positive on the BJMHS and were included in the regression sample. Columns 6-7 include the set of Johnson County residents who screened negative on the BJMHS. The columns are separated by the outreach results reported by the MHC's outreach team, such as what is analyzed in Table A.4. The sample is a little bigger than Column 4 of Table 2 (7,816 vs. 6,414) because it also includes those who were not included in the main regression sample (specifically, those who had implausible phone numbers or who were transferred to a state institution or work release). Column 8 reports the p-value of a t-test testing whether Columns (1) and (2) are statistically different.

Table 5: Effect of Eligibility on Recidivism, Difference-in-Difference Estimates, Main Sample Screening Positive

	30 Days (1)	60 Days (2)	90 Days (3)	180 Days (4)	360 Days (5)
Post period x JC resident	-0.065 (0.025)	-0.095 (0.032)	-0.128 (0.036)	-0.114 (0.042)	-0.079 (0.045)
JC resident	0.058 (0.023)	0.082 (0.030)	0.112 (0.033)	0.097 (0.039)	0.052 (0.041)
Post period	0.016 (0.019)	0.014 (0.026)	0.028 (0.029)	0.005 (0.035)	-0.026 (0.038)
Non-JC sample mean, pre-period	0.070	0.136	0.173	0.308	0.467
Adjusted R <sup>2</sup>	0.014	0.025	0.036	0.047	0.052
Observations	3,920	3,920	3,920	3,920	3,920

*Notes:* The sample is limited to the main sample of bookings after BJMHS launch in November 2016 who screen positive on the BJMHS. Each column shows the results of a separate OLS regression. The outcome is a dummy for whether the person was booked in Johnson, Jackson, or Wyandotte County Jails between release from Johnson County Jail and the listed number of days later. Heteroskedasticity robust standard errors are in parentheses. Each regression includes indicators for female, Black, and Hispanic, employment status, and disability status, as well as controls for age, length of time in jail during current booking, an indicator for any bookings in 2013, the year before the start of the long sample, and the count of bookings in 2013.

Table 6: Effect of Intervention on Recidivism, Difference-in-Difference Estimates, Placebo Sample Screening Negative

	30 Days (1)	60 Days (2)	90 Days (3)	180 Days (4)	360 Days (5)
Post period x JC resident	-0.004 (0.013)	-0.011 (0.017)	-0.024 (0.019)	-0.024 (0.023)	-0.040 (0.025)
JC resident	-0.010 (0.012)	-0.011 (0.016)	-0.006 (0.018)	-0.004 (0.021)	0.012 (0.023)
Post period	-0.007 (0.010)	-0.012 (0.013)	-0.016 (0.015)	-0.032 (0.017)	-0.044 (0.019)
Non-JC sample mean, pre-period	0.135	0.135	0.135	0.298	0.432
Adjusted R <sup>2</sup>	0.010	0.016	0.024	0.035	0.048
Observations	11,633	11,633	11,633	11,633	11,633

*Notes:* The sample is limited to the placebo sample of bookings after BJMHS launch in November 2016 who screen negative on the BJMHS and are thus ineligible for outreach. Each column shows the results of a separate regression estimated by OLS. The outcome is a dummy for whether the person was booked in Johnson, Jackson, or Wyandotte County Jails between release from Johnson County Jail and the listed number of days later. Heteroskedasticity robust standard errors are in parentheses. Each regression includes indicators for female, Black, and Hispanic, employment status, and disability status, as well as controls for age, length of time in jail during current booking, an indicator for any bookings in 2013, the year before the start of the long sample, and the count of bookings in 2013.

Table 7: Effect of Eligibility on Outreach Activity, by Prior Mental Healthcare, Main Sample

	Attempted Contact			Made Contact			Connected to Care		
	All (1)	Prior Healthcare (2)	No Prior Healthcare (3)	All (4)	Prior Healthcare (5)	No Prior Healthcare (6)	All (7)	Prior Healthcare (8)	No Prior Healthcare (9)
Post period x JC resident	0.936 (0.006)	0.935 (0.006)	0.948 (0.018)	0.433 (0.011)	0.433 (0.012)	0.446 (0.037)	0.271 (0.010)	0.284 (0.011)	0.167 (0.028)
JC resident	-0.000 (0.002)	-0.000 (0.002)	-0.003 (0.014)	-0.003 (0.004)	-0.002 (0.005)	-0.008 (0.021)	-0.004 (0.004)	-0.004 (0.004)	0.001 (0.016)
Post period	0.004 (0.002)	0.005 (0.003)	-0.007 (0.009)	0.007 (0.003)	0.006 (0.003)	0.005 (0.014)	0.005 (0.002)	0.004 (0.003)	0.010 (0.009)
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Criminal History Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.875	0.871	0.904	0.271	0.267	0.302	0.150	0.156	0.084
Observations	3,920	3,455	465	3,920	3,455	465	3,920	3,455	465

*Notes:* The sample is limited to the main sample of bookings after BJMHS launch in November 2016 who screen positive on the BJMHS. Each column shows the results of a separate regression estimated by OLS. In the other columns, we split the sample by whether the person has a history of using inpatient care or medication for mental health, based on questions 7 and 8 of the BJMS. The outcomes are dummies coded using contact logs for the mental health outreach team. See Table 8 for detailed sub-categories. Heteroskedasticity robust standard errors are in parentheses. Each regression includes indicators for female, Black, and Hispanic, employment status, and disability status, as well as controls for age, length of time in jail during current booking, an indicator for any bookings in 2013, the year before the start of the long sample, and the count of bookings in 2013.

Table 8: Prevalence of Detailed Outreach Outcome Categories, Relative Difference for Those with Prior Mental Healthcare, Main Sample

	Prior Care vs. Not		No Prior Care	Total in	
	Difference	Std. error	Share in Category	Category	Observations
	(1)	(2)	(3)	(4)	(5)
<i>Panel A. Connected to Care</i>					
Substance abuse treatment	-0.000	0.004	0.004	11	2,106
Adult residential center	0.005	0.005	0.004	20	2,106
Court-ordered treatment	-0.001	0.005	0.004	9	2,106
Going to hospital	0.005	0.002	0.000	7	2,106
Medical appt. scheduled	0.010	0.003	0.000	19	2,106
Will schedule medical appt.	0.038	0.011	0.013	123	2,106
Will come for intake	-0.007	0.020	0.084	158	2,106
Has private provider	0.061	0.017	0.049	226	2,106
<i>Panel B. Not Connected to Care</i>					
Declined	-0.091	0.032	0.271	394	2,106
No response	0.024	0.036	0.400	874	2,106
Phone not working	-0.003	0.021	0.098	188	2,106
Jail or prison	0.008	0.003	0.000	13	2,106
Other, N/A	-0.031	0.013	0.040	30	2,106

*Notes:* The sample restricts our main sample to people eligible for mental health outreach, i.e. Johnson County residents in the post period. The outcomes are dummies coded using contact logs for the mental health outreach team. Panel A shows the detailed categories from the data that we categorize as successful connections to mental healthcare; Panel B shows those categorized as unsuccessful. Column (1) shows the difference in the probability of these outcome categories between people with prior history of mental healthcare versus not, as measured by questions 7 and 8 of the BJMHS. We estimate the difference by OLS using a regression of an outcome category dummy on an indicator for history of prior mental healthcare with heteroskedasticity robust standard errors and controls for indicators for female, Black, and Hispanic, employment status, and disability status, as well as controls for age, length of time in jail during current booking, an indicator for any bookings in 2013, the year before the start of the long sample, and the count of bookings in 2013. Column (3) reports the mean dependent variable for Johnson County residents in the post period who qualify for outreach but have not indicated prior mental healthcare. “Total in Category” in Column (4) reports the sum of observations in the sample who had the outcome category.

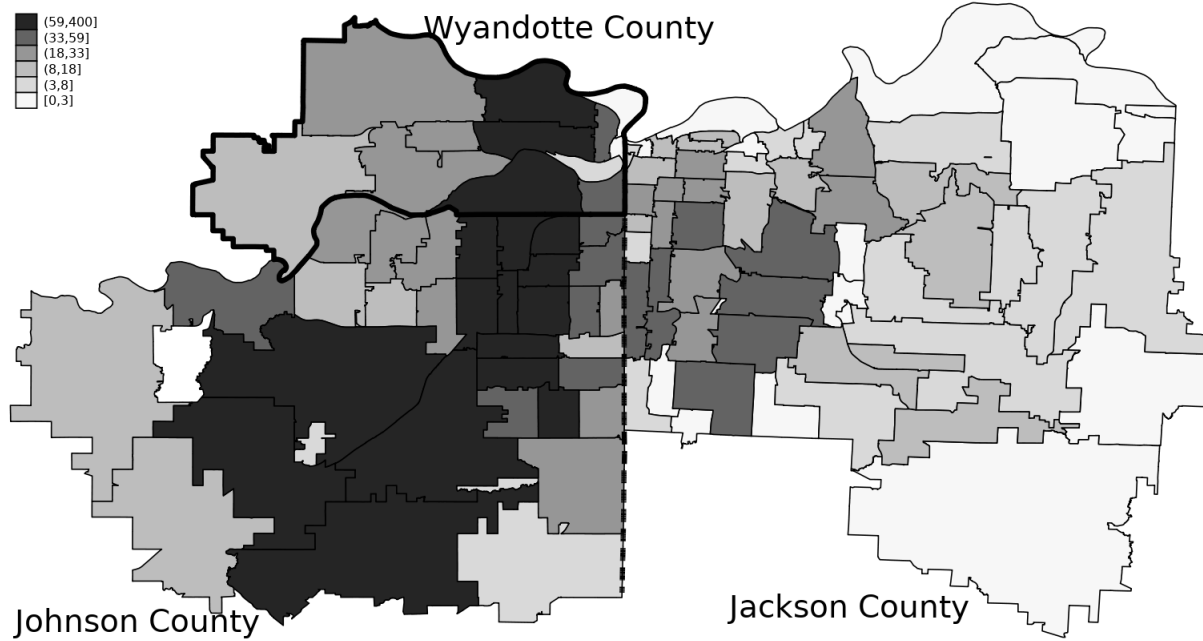


Table 9: Effects of Eligibility on Recidivism, by Prior Mental Healthcare, Main Sample

	60 Days			180 Days			360 Days		
	All (1)	Prior Healthcare (2)	No Prior Healthcare (3)	All (4)	Prior Healthcare (5)	No Prior Healthcare (6)	All (7)	Prior Healthcare (8)	No Prior Healthcare (9)
Post period x JC resident	-0.095 (0.032)	-0.091 (0.034)	-0.170 (0.114)	-0.114 (0.042)	-0.100 (0.045)	-0.251 (0.133)	-0.079 (0.045)	-0.064 (0.047)	-0.236 (0.133)
JC resident	0.082 (0.030)	0.080 (0.031)	0.131 (0.111)	0.097 (0.039)	0.092 (0.041)	0.172 (0.127)	0.052 (0.041)	0.044 (0.043)	0.150 (0.126)
Post period	0.014 (0.026)	0.023 (0.027)	-0.044 (0.084)	0.005 (0.035)	0.004 (0.038)	0.005 (0.103)	-0.026 (0.038)	-0.028 (0.040)	0.002 (0.106)
Non-JC sample mean, pre-period	0.136	0.130	0.182	0.308	0.307	0.318	0.467	0.469	0.455
Adjusted R <sup>2</sup>	0.025	0.020	0.070	0.047	0.040	0.097	0.052	0.047	0.092
Observations	3,920	3,455	465	3,920	3,455	465	3,920	3,455	465

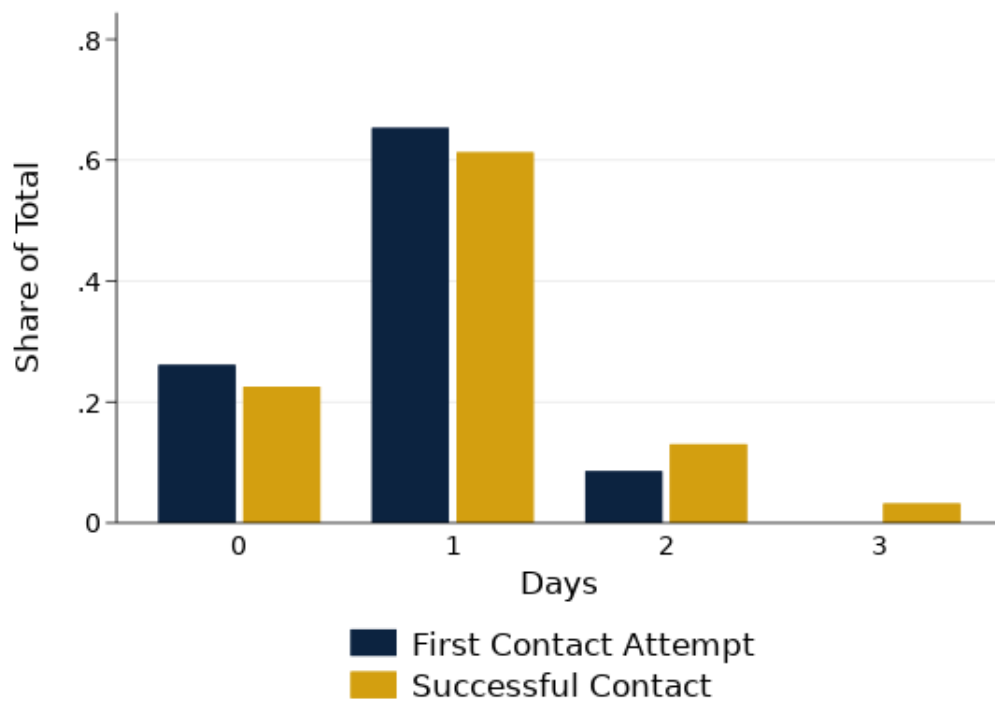
*Notes:* The sample is limited to the main sample of bookings after BJMHS launch in November 2016 who screen positive on the BJMHS. Each column shows the results of a separate regression estimated by OLS. In the other columns, we split the sample by whether the person has a history of using inpatient care or medication for mental health, based on questions 7 and 8 of the BJMS. The outcome is a dummy for whether the person was booked in Johnson, Jackson, or Wyandotte County Jails between release from Johnson County Jail and the listed number of days later. Heteroskedasticity robust standard errors are in parentheses. Each regression includes indicators for female, Black, and Hispanic, employment status, and disability status, as well as controls for age, length of time in jail during current booking, an indicator for any bookings in 2013, the year before the start of the long sample, and the count of bookings in 2013.

Figure 1: Counts of Johnson County Jail Inmates with SMI by ZCTA



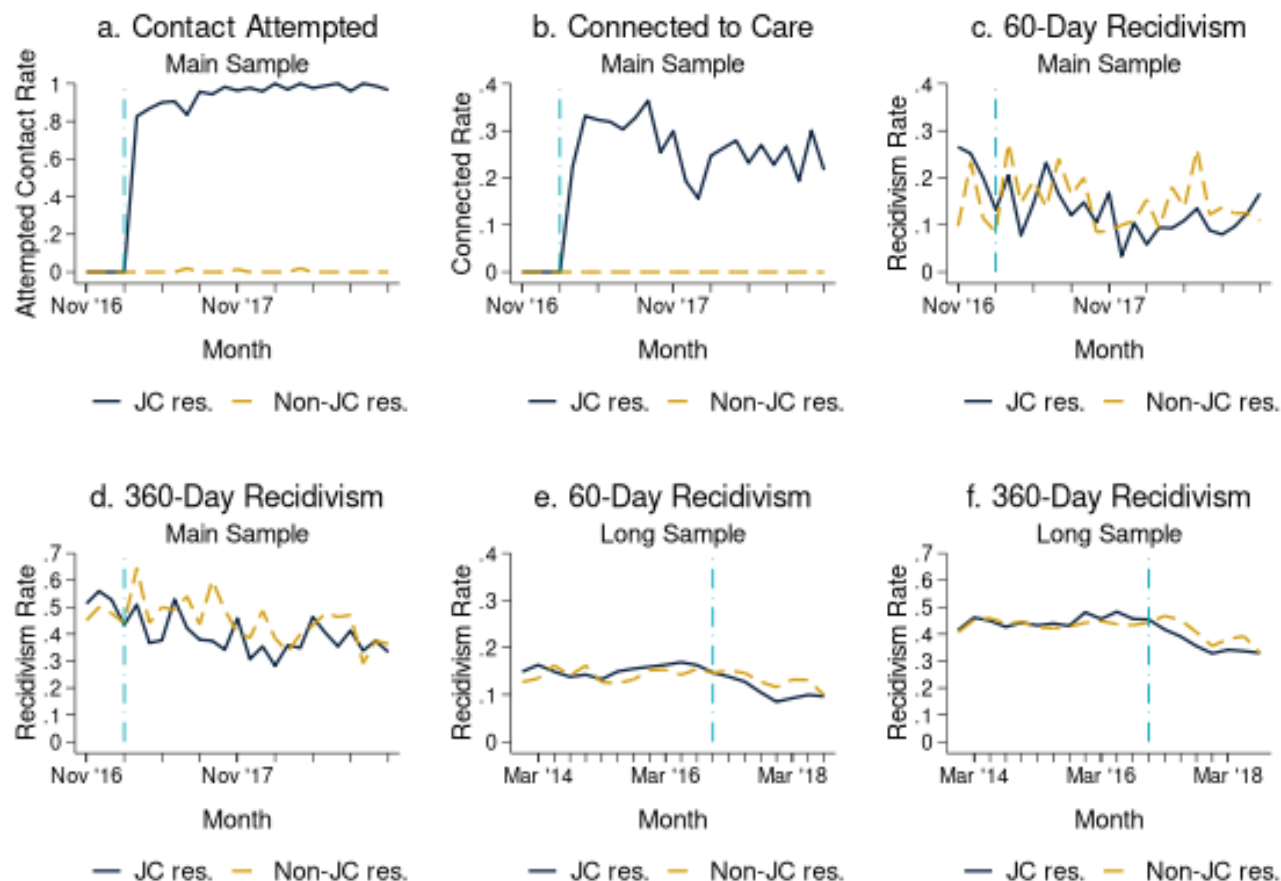
*Notes:* The map shows counts of observations in our analysis sample of individuals who took the BJMHS and screened positive. Wyandotte County, KS is outlined in a thick border while the border between Johnson County, KS and Jackson County, MO is shown by a dashed line. Darker colors represent ZCTAs with more observations. Note that this is a map of ZCTAs which, at the county borders, may spill into neighboring counties.

Figure 2: Days Until Outreach Attempt and Contact Made



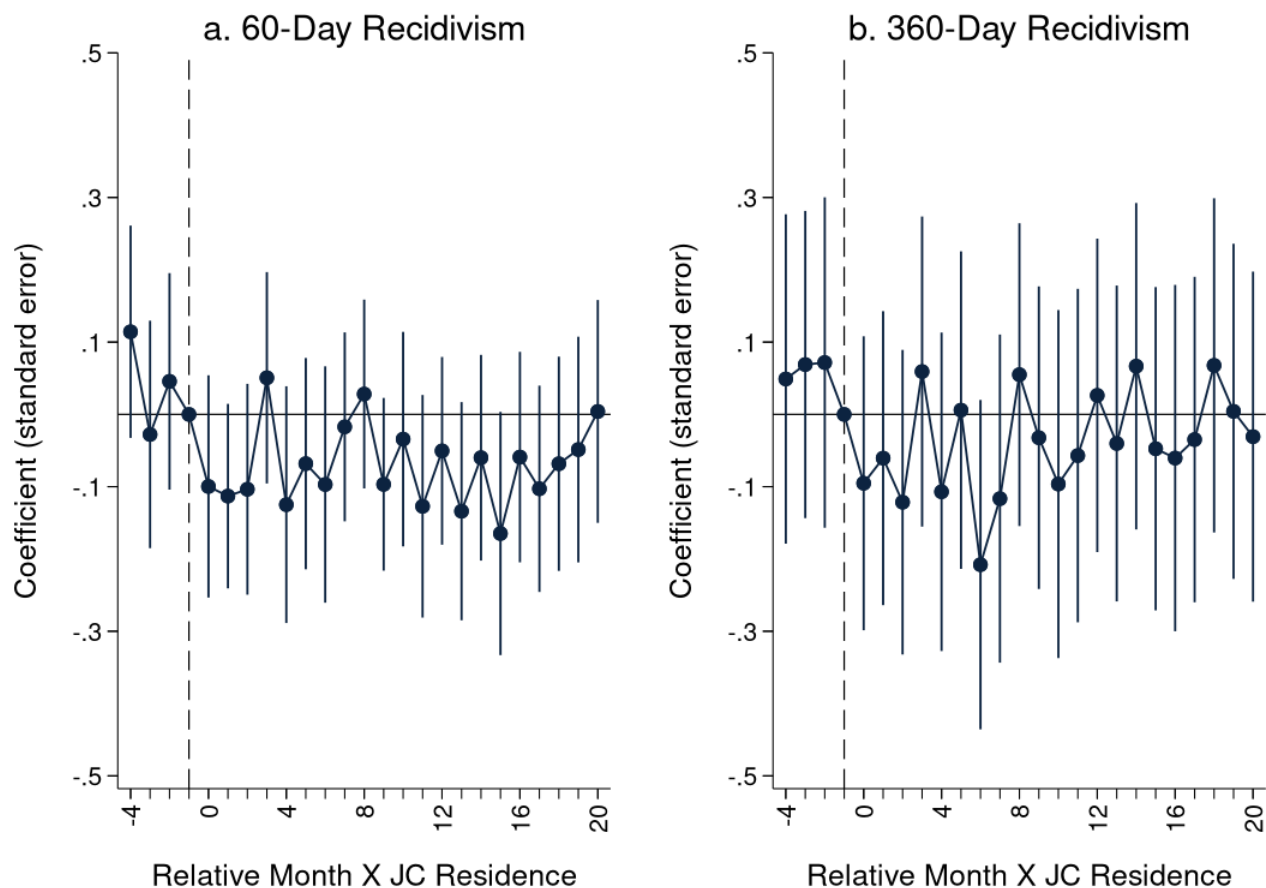
*Notes:* We measure duration as the difference between release date from Johnson County Jail and contact dates from contact logs of the mental health outreach team. We winsorize contact dates at the 2nd and 98th percentile to correct for apparent data entry errors.

Figure 3: Outreach Rates and Recidivism, by Month of Release and County of Residence, Long Sample



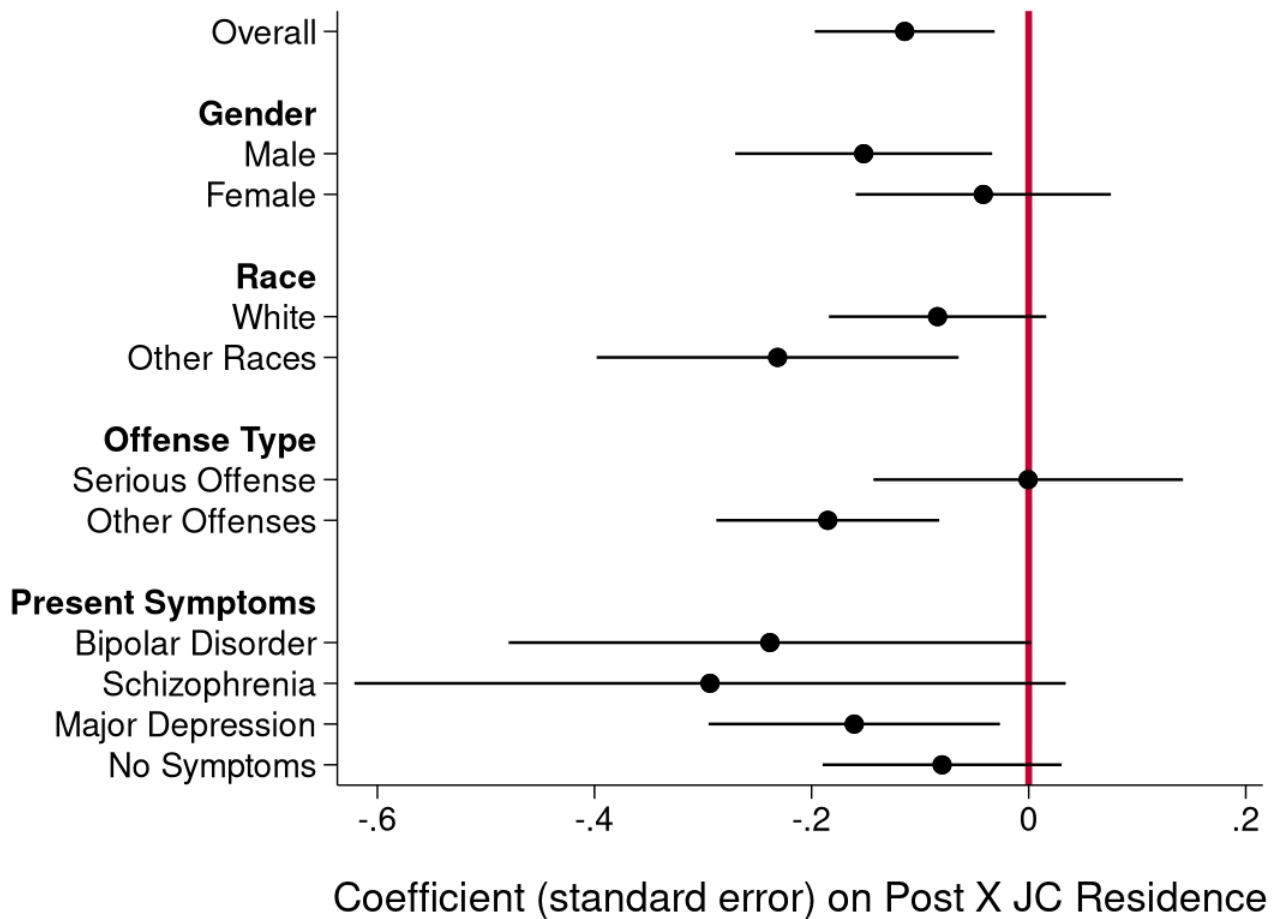
*Notes:* The outcomes in (a) and (b) are dummies coded using contact logs for the mental health outreach team for our main sample. See Table 8 for detailed sub-categories. The outcomes in (c) and (d) are recidivism rates, defined by indicators for whether an individual was booked in Johnson, Jackson, or Wyandotte County Jails between release from Johnson County Jail and the listed number of days later, for our main sample. In panels (e) and (f) we show the recidivism rates by quarter for the long sample. Each observation in the trend lines shows an average for people released from Johnson County Jail in a given month, by county of residence. Each observation in the trend lines shows an average for people released from Johnson County Jail in a given month, by county of residence. The vertical line marks the beginning of the outreach intervention in March 2017.

Figure 4: Coefficients from Event Study Specifications of Month Relative to Program Launch Interacted with Johnson County Residence



*Notes:* The sample in this figure is our main sample. The horizontal axis indicates month relative to the launch of the outreach program in March 2017, where month 0 is March 2017. Each figure plots regression coefficients from an event study specification comparing Johnson County residents to non-residents exiting the Johnson County jail by quarter. Each regression includes indicators for female, Black, and Hispanic, employment status, and disability status, as well as controls for age, length of time in jail during current booking, an indicator for any bookings in 2013, the year before the start of the long sample, and the count of bookings in 2013. Vertical bars represent 95 percent confidence intervals, with heteroskedasticity robust standard errors.

Figure 5: Effect of Eligibility on 180-Day Recidivism, by Sub-Group, Main Sample



*Notes:* The estimate shown is the coefficient of post period interacted with Johnson County resident along with a 95% confidence interval. Each regression includes indicators for female, Black, and Hispanic, employment status, and disability status, as well as controls for age, length of time in jail during current booking, an indicator for any bookings in 2013, the year before the start of the long sample, and the count of bookings in 2013. We define Serious Offense to include a booking with any charge falling under Group A offenses according to the National Incident-Based Reporting System (NIBRS). The sample for Schizophrenia (Bipolar Disorder; Major Depression) includes all those who screen positive on the BJMHS and who respond “yes” to question 1 or 2 (4; 3, 5 or 6). Individuals may fall under multiple categories. Those who screen positive through question 7 or 8 but do not report any current symptoms are classified as “None”. For the full regression results, including outreach outcomes and recidivism over other time horizons, see Appendix Tables A.9 and A.10.

## 8 Empirical Appendix

Table A.1: Rates of MHC Use By JoCo Residents Before and After Outreach Launch, 360 Days After Release

	Screened Positive					Screened Negative		T-Test P-Val. Cols. 1-2 (8)
	Pre (1)	Post				Pre (6)	Post (7)	
		All (2)	Not Connected (3)	Connected to MHC (4)	Other Care (5)			
Enrolled in JCMHC Services	0.215 (0.41)	0.217 (0.41)	0.196 (0.40)	0.333 (0.47)	0.209 (0.41)	0.096 (0.30)	0.080 (0.27)	0.909
Received Services	0.343 (0.48)	0.322 (0.47)	0.266 (0.44)	0.683 (0.47)	0.242 (0.43)	0.111 (0.31)	0.091 (0.29)	0.385
Number of Services Received, when > 0	34.407 (49.34)	27.809 (44.71)	22.157 (39.39)	42.541 (55.13)	16.985 (24.45)	15.682 (19.05)	18.222 (26.50)	0.091
Minutes of Services Received, when > 0	1272.228 (2011.72)	1001.638 (1989.03)	767.805 (1682.10)	1591.151 (2568.36)	609.000 (1103.79)	556.983 (864.91)	616.975 (1115.07)	0.113
Observations	502	2106	1533	300	273	1617	6199	

*Notes:* This table shows rates of enrollments and services at the Johnson County Mental Health Center from their internal records. Outcomes are measured during the 360 days following release. The sample in Columns 1-5 includes the set of Johnson County residents who screened positive on the BJMHS and were included in the regression sample. Columns 6-7 include the set of Johnson County residents who screened negative on the BJMHS. The columns are separated by the outreach results reported by the MHC's outreach team, such as what is analyzed in Table A.4. The sample is a little bigger than Column 4 of Table 2 (7,816 vs. 6,414) because it also includes those who were not included in the main regression sample (specifically, those who had implausible phone numbers or who were transferred to a state institution or work release). Column 8 reports the p-value of a t-test testing whether Columns (1) and (2) are statistically different.



Table A.2: Effect of Intervention on Recidivism, Triple Difference Estimates

	30 Days (1)	60 Days (2)	90 Days (3)	180 Days (4)	360 Days (5)
BJMJS pos. X Post X JC res.	-0.061 (0.028)	-0.084 (0.036)	-0.104 (0.041)	-0.092 (0.048)	-0.038 (0.051)
BJMJS pos. X Pos	0.022 (0.022)	0.026 (0.029)	0.043 (0.032)	0.037 (0.039)	0.019 (0.042)
BJMJS pos. X JC res.	0.061 (0.026)	0.083 (0.034)	0.105 (0.037)	0.080 (0.044)	0.020 (0.047)
Post period x JC resident	-0.004 (0.013)	-0.010 (0.017)	-0.023 (0.019)	-0.023 (0.023)	-0.040 (0.025)
JC resident	-0.008 (0.012)	-0.009 (0.016)	-0.003 (0.018)	0.002 (0.021)	0.017 (0.023)
Post period	-0.006 (0.010)	-0.012 (0.013)	-0.016 (0.015)	-0.031 (0.017)	-0.044 (0.019)
BJMHS positive	-0.010 (0.020)	-0.007 (0.027)	-0.019 (0.030)	-0.001 (0.036)	0.029 (0.039)
Non-JC sample mean, pre-period	0.135	0.135	0.135	0.300	0.440
Adjusted R <sup>2</sup>	0.012	0.020	0.028	0.039	0.050
Observations	15,553	15,553	15,553	15,553	15,553

*Notes:* The sample includes the main sample of bookings after BJMHS launch in November 2016 who screen positive on the BJMHS as well as those who do not screen positive. Each column shows the results of a separate regression estimated by OLS. The outcome is a dummy for whether the person was booked in Johnson, Jackson, or Wyandotte County Jails between release from Johnson County Jail and the listed number of days later. Heteroskedasticity robust standard errors are in parentheses. Each regression includes indicators for female, Black, and Hispanic, employment status, and disability status, as well as controls for age, length of time in jail during current booking, an indicator for any bookings in 2013, the year before the start of the long sample, and the count of bookings in 2013.

Table A.3: First Stage, Long Sample

	No Controls (1)	Full Controls (2)
Post period x JC resident	0.262 (0.005)	0.261 (0.005)
JC resident	-0.000 (.)	-0.003 (0.001)
Post period	-0.000 (.)	0.001 (0.000)
Adjusted R <sup>2</sup>	0.230	0.236
Observations	54,988	54,988

*Notes:* Each column shows the results of a separate regression estimated by OLS on the long sample, which covers bookings starting on January 1, 2014 and includes people regardless of SMI screening status. The coefficient for Post period x JC resident shows the impact of the interaction of these indicators on eligibility for outreach among the JC resident group in the post period (which is an interaction of indicators for post period, JC resident, and eligible). Heteroskedasticity robust standard errors are in parentheses. Column (1) has no controls other than indicators for post period and Johnson County residence. Column (2) includes indicators for female, Black, and Hispanic, employment status, and disability status, as well as controls for age, length of time in jail during current booking, an indicator for any bookings in 2013, the year before the start of the long sample, and the count of bookings in 2013. Standard errors are zero for Johnson County resident and Post period in column (1) because these groups (Johnson County resident in the pre-period, and non-Johnson County resident in the post period) are never eligible. Adjusted for controls, these values aren't exactly zero, so we report non-zero standard errors.

Table A.4: Effect of Eligibility on Outreach Activity, 2SLS Estimates, Long Sample

	Attempted Contact (1)	Made Contact (2)	Connected to Care (3)	Connected to Care at MHC (4)
Post period x JC resident x Positive	0.913 (0.006)	0.418 (0.010)	0.260 (0.009)	0.135 (0.007)
JC resident	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
Post period	0.001 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Non-JC sample mean, pre-period	0.000	0.000	0.000	0.000
Adjusted R <sup>2</sup>	0.910	0.408	0.253	0.131
Observations	54,988	54,988	54,988	54,988

*Notes:* Each column shows the results of a separate regression estimated by 2SLS that uses the interaction of county of residence and the post period as an instrument. The outcomes are dummies coded using contact logs for the mental health outreach team. See Table 8 for detailed sub-categories. Heteroskedasticity robust standard errors are in parentheses. Each regression includes indicators for female, Black, and Hispanic, employment status, and disability status, as well as controls for age, length of time in jail during current booking, an indicator for any bookings in the lagged year before the screening intervention, and the number of bookings in that lagged year.

Table A.5: Effect of Eligibility on Recidivism, 2SLS Estimates, Long Sample

	30 Days (1)	60 Days (2)	90 Days (3)	180 Days (4)	360 Days (5)
Post period x JC resident x Positive	-0.048 (0.019)	-0.097 (0.025)	-0.129 (0.028)	-0.138 (0.033)	-0.154 (0.036)
JC resident	-0.000 (0.003)	0.008 (0.004)	0.009 (0.004)	0.012 (0.005)	0.014 (0.005)
Post period	-0.001 (0.004)	0.001 (0.005)	-0.003 (0.006)	-0.012 (0.007)	-0.007 (0.007)
Non-JC sample mean, pre-period	0.085	0.144	0.199	0.316	0.438
Adjusted R <sup>2</sup>	0.016	0.027	0.036	0.052	0.061
Observations	54,988	54,988	54,988	54,988	54,988

*Notes:* The long sample covers bookings starting on January 1, 2014 and includes people regardless of SMI screening status. Each column shows the results of a separate regression estimated by 2SLS that uses the interaction of county of residence and the post period as an instrument. The outcome is a dummy for whether the person was booked in Johnson, Jackson, or Wyandotte County Jails between release from Johnson County Jail and the listed number of days later. Heteroskedasticity robust standard errors are in parentheses. Each regression includes indicators for female, Black, and Hispanic, employment status, and disability status, as well as controls for age, length of time in jail during current booking, an indicator for any bookings in 2013, the year before the start of the long sample, and the count of bookings in 2013.

Table A.6: Effect of Eligibility on Recidivism, Border Sample

	Long Sample (2SLS)			Main Sample (Dif-in-Dif)		
	60 Days (1)	180 Days (2)	360 Days (3)	60 Days (4)	180 Days (5)	360 Days (6)
Post period x JC resident x Positive	-0.057 (0.050)	-0.128 (0.066)	-0.071 (0.072)			
Post period x JC resident				-0.076 (0.059)	-0.157 (0.086)	-0.118 (0.095)
JC resident	0.013 (0.008)	0.006 (0.010)	0.006 (0.011)	0.065 (0.053)	0.124 (0.078)	0.073 (0.086)
Post period	-0.007 (0.012)	-0.021 (0.015)	-0.029 (0.016)	0.058 (0.047)	0.093 (0.072)	0.051 (0.080)
Non-JC sample mean, pre-period	0.152	0.345	0.475	0.087	0.217	0.391
Adjusted R <sup>2</sup>	0.027	0.056	0.067	0.005	0.041	0.047
Observations	12,277	12,277	12,277	849	849	849

*Notes:* Each column shows the results of a separate regression estimated by 2SLS on the long sample in columns (1)-(3) and OLS on the main sample in columns (4)-(6). The samples are restricted to people living in ZCTAs on the borders between Johnson County and either Wyandotte or Jackson Counties. The outcome is a dummy for whether the person was booked in Johnson, Jackson, or Wyandotte County Jails between release from Johnson County Jail and the listed number of days later. Heteroskedasticity robust standard errors are in parentheses. Each regression includes indicators for female, Black, and Hispanic, employment status, and disability status, as well as controls for age, length of time in jail during current booking, an indicator for any bookings in 2013, the year before the start of the long sample, and the count of bookings in 2013.

Table A.7: Effect of Eligibility on Recidivism, Fully Saturated Model, Difference-in-Difference Estimates, main sample

	Long Sample (2SLS)			Main Sample (Dif-in-Dif)		
	60 Days (1)	180 Days (2)	360 Days (3)	60 Days (4)	180 Days (5)	360 Days (6)
Post period x JC resident x Positive	-0.100 (0.025)	-0.150 (0.033)	-0.173 (0.036)			
Post period x JC resident				-0.100 (0.033)	-0.125 (0.043)	-0.092 (0.045)
JC resident	-0.018 (0.058)	-0.118 (0.072)	-0.086 (0.068)	0.010 (0.185)	0.023 (0.172)	0.124 (0.176)
Post period	0.015 (0.018)	0.007 (0.024)	0.030 (0.026)	-0.006 (0.049)	-0.015 (0.065)	-0.081 (0.067)
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes
Criminal History Controls	Yes	Yes	Yes	Yes	Yes	Yes
ZCTA FE	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Non-JC sample mean, pre-period	0.152	0.345	0.475	0.136	0.308	0.467
Adjusted R <sup>2</sup>	0.029	0.056	0.066	0.037	0.062	0.067
Observations	54,988	54,988	54,988	3,920	3,920	3,920

*Notes:* Each column shows the results of a separate regression estimated by 2SLS on the long sample in columns (1)-(3) and OLS on the main sample in columns (4)-(6). The outcome is a dummy for whether the person was booked in Johnson, Jackson, or Wyandotte County Jails between release from Johnson County Jail and the listed number of days later. Heteroskedasticity robust standard errors are in parentheses. Each regression includes indicators for month, ZCTA, female, Black, and Hispanic, employment status, and disability status, as well as controls for age, length of time in jail during current booking, an indicator for any bookings in 2013, the year before the start of the long sample, and the count of bookings in 2013.

Table A.8: Effect of Intervention on Returns to Jail for the Same Charges, Difference-in-Difference Estimates

	Long Sample (2SLS)			Main Sample (Dif-in-Dif)		
	60 Days (1)	180 Days (2)	360 Days (3)	60 Days (4)	180 Days (5)	360 Days (6)
Post period x JC resident x Positive	-0.002 (0.011)	0.037 (0.017)	0.018 (0.019)			
Post period x JC resident				-0.008 (0.015)	-0.004 (0.022)	-0.024 (0.026)
JC resident	0.004 (0.002)	0.005 (0.002)	0.007 (0.003)	0.002 (0.014)	0.017 (0.020)	0.035 (0.024)
Post period	0.004 (0.002)	-0.002 (0.003)	-0.000 (0.004)	0.006 (0.013)	0.003 (0.017)	0.002 (0.020)
Non-JC sample mean, pre-period	0.024	0.059	0.079	0.028	0.056	0.079
Adjusted R <sup>2</sup>	0.003	0.005	0.008	0.001	0.004	0.005
Observations	54,988	54,988	54,988	3,920	3,920	3,920

*Notes:* Each column shows the results of a separate regression estimated by 2SLS on the long sample in columns (1)-(3) and OLS on the main sample in columns (4)-(6). The outcome is a dummy for whether the person was booked in Johnson, Jackson, or Wyandotte County Jails between release from Johnson County Jail and the listed number of days later for charges that are identical to those for the initial booking that gets the person into our study sample. Heteroskedasticity robust standard errors are in parentheses. Each regression includes indicators for female, Black, and Hispanic, employment status, and disability status, as well as controls for age, length of time in jail during current booking, an indicator for any bookings in 2013, the year before the start of the long sample, and the count of bookings in 2013.

Table A.9: Effect of Intervention on Qualifying Individuals, Heterogeneity by Gender, Race, and Type of Charge, Main Sample

	Gender		Race/Ethnicity		Offense Type	
	Male	Female	Non-Hisp.		Serious	Other
			White	Other		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Outreach Outcomes</i>						
Attempted Contact	0.938 (0.007)	0.937 (0.009)	0.931 (0.007)	0.953 (0.011)	0.941 (0.008)	0.931 (0.008)
Made Contact	0.419 (0.015)	0.461 (0.018)	0.444 (0.013)	0.396 (0.026)	0.445 (0.017)	0.423 (0.016)
Connected to Care	0.258 (0.013)	0.292 (0.016)	0.281 (0.011)	0.235 (0.023)	0.291 (0.015)	0.242 (0.014)
<i>Recidivism</i>						
60 Days	-0.132 (0.045)	-0.047 (0.046)	-0.082 (0.038)	-0.170 (0.070)	-0.020 (0.056)	-0.147 (0.040)
Non-JC sample mean, pre-period	0.131	0.139	0.131	0.143	0.174	0.117
180 Days	-0.152 (0.060)	-0.042 (0.060)	-0.084 (0.051)	-0.231 (0.085)	-0.000 (0.073)	-0.185 (0.052)
Non-JC sample mean, pre-period	0.343	0.278	0.307	0.312	0.406	0.262
360 Days	-0.125 (0.063)	0.007 (0.064)	-0.059 (0.054)	-0.184 (0.087)	0.007 (0.076)	-0.142 (0.056)
Non-JC sample mean, pre-period	0.505	0.435	0.453	0.494	0.551	0.428
Observations	2,253	1,667	2,918	1,002	1,711	2,209

*Notes:* Each cell shows the result of a separate difference-in-differences regression estimated by OLS on the main sample. The outcome for each row is listed in the left-hand column. The estimate reported is the coefficient of post period interacted with Johnson County resident. Heteroskedasticity robust standard errors are in parentheses. Each regression includes indicators for female, Black, and Hispanic, employment status, and disability status, as well as controls for age, length of time in jail during current booking, an indicator for any bookings in the lagged year before the screening intervention, and the number of bookings in that lagged year. We define Serious Offense to include a booking with any charge falling under Group A offenses according to the National Incident-Based Reporting System (NIBRS).

Table A.10: Effect of Intervention on Qualifying Individuals, Heterogeneity by Type of Mental Illness Flagged, Main Sample

	Schizophrenia	Bipolar Disorder	Major Depression	None
	(1)	(2)	(3)	(4)
<i>Outreach Outcomes</i>				
Attempted Contact	0.911 (0.028)	0.909 (0.025)	0.930 (0.010)	0.940 (0.007)
Made Contact	0.431 (0.049)	0.421 (0.038)	0.432 (0.018)	0.431 (0.015)
Connected to Care	0.269 (0.045)	0.250 (0.033)	0.296 (0.017)	0.253 (0.013)
<i>Recidivism</i>				
60 Days	-0.139 (0.118)	-0.196 (0.092)	-0.116 (0.056)	-0.087 (0.041)
180 Days	-0.294 (0.166)	-0.238 (0.123)	-0.161 (0.068)	-0.080 (0.056)
360 Days	-0.318 (0.175)	-0.068 (0.129)	-0.081 (0.072)	-0.080 (0.060)
Observations	312	457	1,596	2,140

*Notes:* Each cell shows the result of a separate difference-in-differences regression estimated by OLS on the main sample. The different columns limit the sample to people who responded “yes” to particular questions on the BJMHS corresponding to Schizophrenia (questions 1 and 2), Bipolar Disorder (4), or Major Depression (3, 5, or 6). Individuals may fall under multiple categories. Those who screen positive through question 7 or 8 but do not report any current symptoms are classified as “None”. Otherwise, the sample is constructed from the main sample of bookings after BJMHS launch in November 2016 who screen positive on the BJMHS. The outcome for each row is listed in the left-hand column. The estimate reported is the coefficient of post period interacted with Johnson County resident. Heteroskedasticity robust standard errors are in parentheses. Each regression includes indicators for female, Black, and Hispanic, employment status, and disability status, as well as controls for age, length of time in jail during current booking, an indicator for any bookings in the lagged year before the screening intervention, and the number of bookings in that lagged year.

Table A.11: Effect of Intervention on 360-Day Recidivism by Location of Recidivism

	Long Sample (2SLS)			Main Sample (Dif-in-Dif)		
	All (1)	JC (2)	Non-JC (3)	All (4)	JC (5)	Non-JC (6)
Post period x JC resident x Positive	-0.154 (0.036)	-0.143 (0.034)	-0.006 (0.026)			
Post period x JC resident				-0.079 (0.045)	-0.035 (0.044)	-0.047 (0.033)
JC resident	0.014 (0.005)	0.108 (0.005)	-0.177 (0.004)	0.052 (0.041)	0.109 (0.041)	-0.152 (0.031)
Post period	-0.007 (0.007)	-0.014 (0.007)	0.003 (0.006)	-0.026 (0.038)	-0.069 (0.037)	0.029 (0.031)
Non-JC sample mean, pre-period	0.438	0.321	0.246	0.467	0.388	0.229
Adjusted R <sup>2</sup>	0.061	0.055	0.105	0.052	0.043	0.120
Observations	54,988	54,988	54,988	3,920	3,920	3,920

*Notes:* Each column shows the results of a separate regression estimated by 2SLS on the long sample in columns (1)-(3) and OLS on the main sample in columns (4)-(6). In columns (1) and (4), the outcome is a dummy for whether the person was booked in Johnson, Jackson, or Wyandotte County Jails within 360 days of release from Johnson County Jail. Columns (2) and (5) limit to bookings in Johnson County and columns (3) and (6) to Jackson and Wyandotte. Heteroskedasticity robust standard errors are in parentheses. Each regression includes indicators for female, Black, and Hispanic, employment status, and disability status, as well as controls for age, length of time in jail during current booking, an indicator for any bookings in 2013, the year before the start of the long sample, and the count of bookings in 2013.

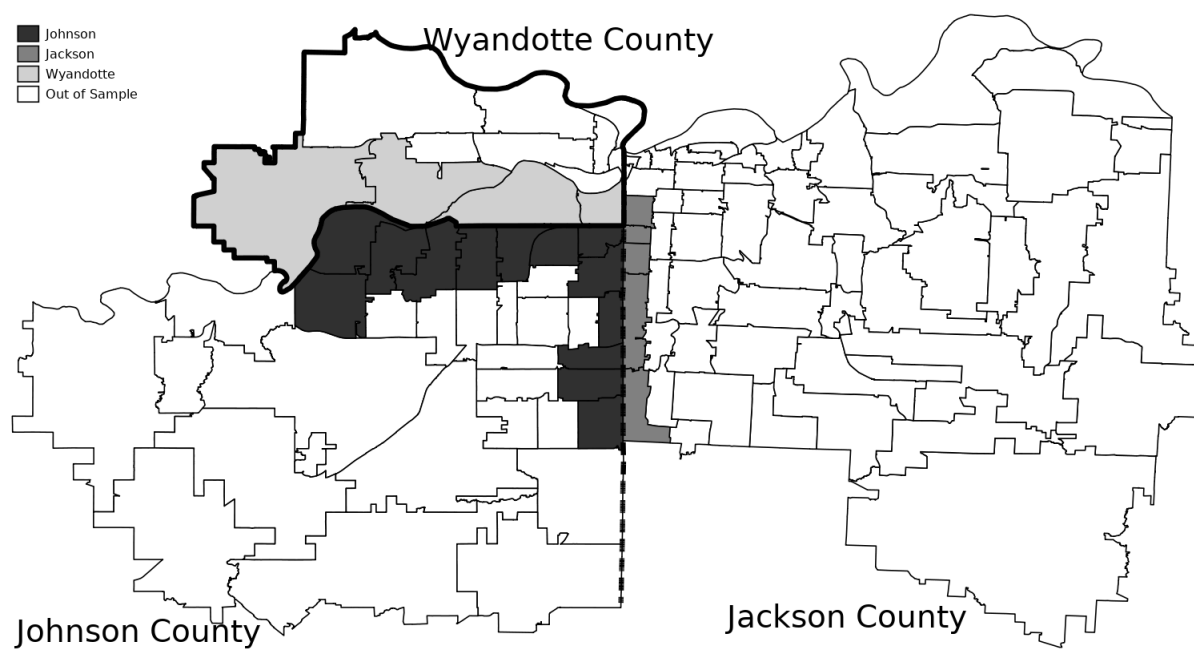


Figure A.1: Brief Jail Mental Health Screen Survey Tool

Questions	No	Yes	General Comments
1. Do you <i>currently</i> believe that someone can control your mind by putting thoughts into your head or taking thoughts out of your head?			
2. Do you <i>currently</i> feel that other people know your thoughts and can read your mind?			
3. Have you <i>currently</i> lost or gained as much as two pounds a week for several weeks without even trying?			
4. Have you or your family or friends noticed that you are <i>currently</i> much more active than you usually are?			
5. Do you <i>currently</i> feel like you have to talk or move more slowly than you usually do?			
6. Have there <i>currently</i> been a few weeks when you felt like you were useless or sinful?			
7. Are you <i>currently</i> taking any medication prescribed for you by a physician for any emotional or mental health problems?			
8. Have you <u>ever</u> been in a hospital for emotional or mental health problems?			

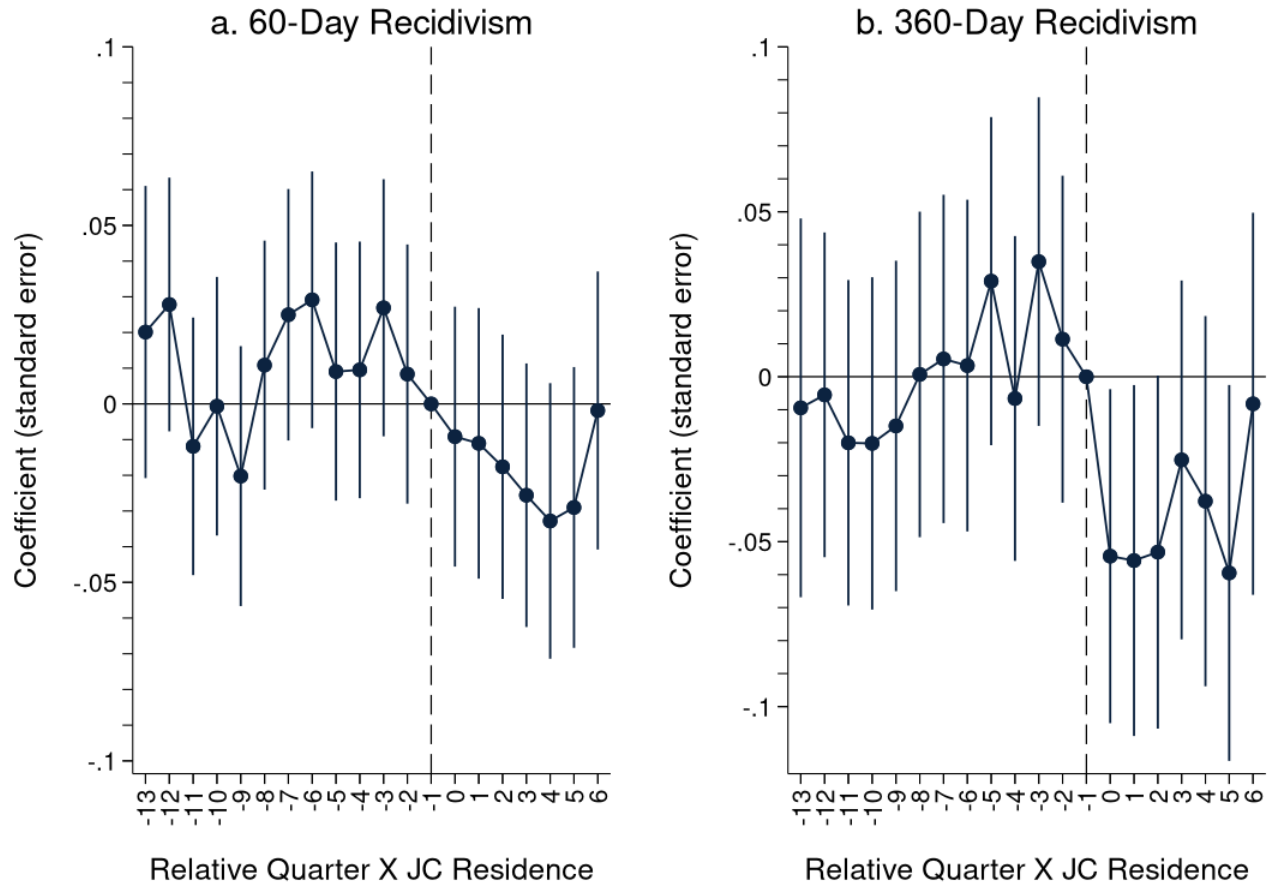
Notes: Mental Health Survey used at jail booking to identify inmates needing mental health services. See text for details.

Figure A.2: Map of Border Sample



*Notes:* Wyandotte County, KS is outlined in a thick border while the border between Johnson County, KS and Jackson County, MO is shown by a dashed line.

Figure A.3: Coefficients from Event Study Specifications of Quarter Relative to Program Launch Interacted with Johnson County Residence



*Notes:* The sample in this figure is our “long sample” of individuals booking at the Johnson County Jail for the first time from January 1, 2014 and released on or before November 30, 2018. The horizontal axis indicates quarter relative to the launch of the outreach program in March 2017, where quarter 0 is March, April and May 2017. Quarter -13 only has 2 months. Each figure plots regression coefficients from an event study specification comparing Johnson County residents to non-residents exiting the Johnson County jail by quarter. Each regression includes indicators for female, Black, and Hispanic, employment status, and disability status, as well as controls for age, length of time in jail during current booking, an indicator for any bookings in 2013, the year before the start of the long sample, and the count of bookings in 2013. Vertical bars represent 95 percent confidence intervals, with heteroskedasticity robust standard errors.