# Transition Age Youth in Jail: Mental Illness, Mental Health Classification, and Outcomes \*

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### Abstract

We provide new detailed descriptive and causal evidence on mental illness, mental health classification, and outcomes of transition age youth (ages 16 to 25) and adults in jail. The descriptive analysis shows that transition age youth have better measures of mental health than adults but that length of stay, suicide attempts in jail, and recidivism are similar. To evaluate the causal effect of mental health classifications on outcomes, we use an IV approach based on the randomization of intake clinicians. IV estimates show that having a quasi-randomly assigned worse mental health classification.

Keywords: suicide; mental illness; recidivism; time in jail; transitional age youth; instrumental variables.

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### **1** Introduction

Transition age for youth – ages 16 to 25 – is a period of emergence or worsening of mental health and of increasing interaction with the criminal justice system. As a result, a sizeable share of transition age youth in jail have serious mental health problems (Bronson and Berzofsky, 2017).<sup>1</sup> A number of outcomes are of significant policy concern for transition age youth while in jail, including length of incarceration (i.e. length of stay), suicide attempts, and upon release, recidivism. Length of stay is of concern because longer stays can impact mental health and can be criminogenic. Suicide is the leading cause of death in US jails and while most suicide attempts do not lead to death, they are an important marker of distress (Dillon, 2013; Carson and Cowhig, 2020). Recidivism is of concern because it makes it less likely that youth will successfully transition to stable employment in addition to crime's other costs. While there is sizeable literature on length of stay in jail or prison and recidivism, primarily using judge leniency designs, there is no causal literature on mental health classification and how it might relate to these policy relevant outcomes.<sup>2</sup> Further, the literature has not focused on youth despite the importance of this subpopulation.<sup>3</sup>

<sup>1</sup>Mental illnesses include many different conditions that vary in degree of severity, ranging from mild to moderate to severe. Two broad categories describe such conditions: any mental illness (AMI) and serious mental illness (SMI). AMI includes all recognized mental illnesses, while SMI is a smaller and more severe subset of AMI. More specifically, SMI is defined as a mental, behavioral, or emotional disorder resulting in serious functional impairment, which substantially interferes with or limits one or more major life activities.

<sup>2</sup>For the literature on length of stay and recidivism, see Gupta et al. (2016); Heaton et al. (2017); Dobbie et al. (2018); Leslie and Pope (2018) and the discussion in Loeffler and Nagin (2022)

<sup>3</sup>Younger individuals are also important, but it can be particularly difficult to get data on this population. An important paper in this literature is Evans Cuellar et al. (2006).

This paper addresses two questions related to mental health and outcomes in jail for youth and adults.<sup>4</sup> First, how do youth and adults compare in terms of measures of mental health and three outcomes – length of stay in jail, suicide attempts in jail, and recidivism? Second, for youth and adults, what is the causal effect of having a worse clinician determined mental health classification at intake on length of stay, suicide attempts, and recidivism? Our analysis draws on administrative data from a large urban county jail, which encompasses the universe of inmates booked in the county between 2016 and 2019. The data include a range of demographic, crime, and mental health related information.

US jails house many mentally ill individuals and use various protocols to identify and target them with assistance. In our jail, the first point of contact with mental health resources are the intake clinicians who assess each inmate within 36 hours of their arrival. After a short interview, intake clinicians write up a summary of the inmate's functioning and various risks, including a mental health needs score. We collapse the four point mental health needs score into two bins, none/mild (0) and moderate/severe (1). Inmates with moderate/severe scores who have committed misdemeanors are routed to the county's mental health docket, so this is a natural comparison and is salient to officials at the jail. Estimating the causal impact of receiving a worse classification score on inmate outcomes is complicated by two factors. First, an inmate's score is endogenously assigned to people with worse mental health outcomes in general and thus naive comparisons to inmates with even slightly lower mental health classification scores will be contaminated with both supply and demand effects. Second, the treatments attached to worse mental health scores are difficult to disentangle from one another and some are unobserved.

Our estimation strategy takes advantage of the quasi-random assignment of intake clinicians at booking to correct for selection bias associated with mental health classification scores. We measure clinician leniency using a leave-one-out residualized measure which is the average tendency of the randomized intake clinician to score inmates at booking as moderate/severe based on other

<sup>&</sup>lt;sup>4</sup>Throughout the paper, we use youth to refer to transition age youth, who are 17-25 in our study.

inmates seen at intake in the same month. This instrumental variables (IV) strategy is similar to Aizer and Doyle (2015), Dobbie et al. (2018) and other papers in criminal justice using a leniency design.<sup>5</sup>

We have three main findings. First, the descriptive analysis shows that although youth have modestly better measures of mental health at intake than adults along some dimensions, the two groups have similar outcomes. Specifically, youth are less likely to be classified as having moderate/severe mental health needs and lower rates of prior psychiatric hospitalization and medication. While youth are similar to adults in terms of suicide attempts, length of stay, and recidivism. Although direct comparisons are difficult, the evidence is consistent with youth and adults in jail having worse mental health than the general population of youth and adults.

Second, IV estimates suggest that quasi-random assignment of worse mental health classification scores for youth increases length of stay in jail, suicide attempts, and recidivism. Being classified as having moderate/severe mental health needs increases length of stay for youth jailed for misdemeanors (7.7 days) and youth jailed for felonies (54.1 days). It also increases suicide attempt rates for youth jailed for misdemeanors both overall (4.0 percentage points) and per day (0.7 more suicide attempts per day). Being classified as having moderate/severe mental health needs increases recidivism by youth jailed for misdemeanors (20.7 percentage points within 1 year and 28.3 percentage points within 2 years). In all cases, there are large increases relative to the complier means. We discuss a number of possible mechanisms in the paper, including length of stay itself, housing, mental health treatment in jail, mental health competency evaluations, and the existence of a mental health docket for misdemeanors.

<sup>5</sup>This IV approach leverages quasi random and systematic "tendencies" towards leniency among evaluators, like judges, and was first suggested by Imbens and Angrist (1994) in their seminal work on the local average treatment effect. It has been used to study the consequences of Chapter 13 bankruptcy on future financial events (Dobbie et al., 2017), pretrial detention having higher rates of guilty pleas, conviction, recidivism, and worsened labor market outcomes (Leslie and Pope, 2018; Dobbie et al., 2018; Stevenson, 2018) and more. Third, having a worse mental health classification score also leads to increases in length of stay in jail, suicide attempts, and recidivism for adults. Being classified as having moderate/severe mental health needs increases length of stay for adults jailed for felonies (22.6 days). It also increases suicide attempt rates for adult jailed for misdemeanors and felonies overall (1.8 and 1.8 percentage points ) and per day (0.4 and 0.1 more suicide attempts per day). Both the length of stay and the suicide outcomes are smaller in magnitude than comparable outcomes for youth, suggesting that the impact on the adult population is somewhat smaller. Being classified as having moderate/severe mental health needs increases recidivism by adults jailed for misdemeanors (30.8 percentage points within 1 year and 29.4 percentage points within 2 years). As with youth, in all cases there are large increases relative to the complier means.

This paper contributes to three literatures. The first is the literature on mental health of youth and adult inmates in jail. Drawing on the 2011-2012 National Inmate Survey, Bronson and Berzofsky (2017) report detailed information on mental health status of individuals in jail by demographic characteristics, including age. They find that youth in jail have similar levels of serious psychological distress to other age groups in jail.<sup>6</sup> This study builds on the literature by providing new descriptive and causal evidence on how measures of mental health relate to youth and adult outcomes, including length of stay in jail, suicide attempts, and recidivism.<sup>7</sup>

The second is the literature on length of stay and recidivism. On the policy side, the Stepping Up Initiative is focused on reducing length of stay and recidivism of mentally ill individuals in jail (NACO, 2018). This paper is closest to the subset of the literature that examines pre-trial incarceration on recidivism using quasi-random case assignment across the judges setting bail

<sup>6</sup>See also Kaba et al. (2015), who examine a large data set of individuals entering New York City jails first time.

<sup>7</sup>A sizeable related literature in economics examines the relationship between measures of mental health or access to treatment and future incarceration. See Chatterji and Cuellar (2006), Fletcher and Wolfe (2009), Anderson et al. (2015), Heller et al. (2017), Bondurant et al. (2018), Jácome (2020), and Deza et al. (2022). (Gupta et al., 2016; Heaton et al., 2017; Dobbie et al., 2018; Leslie and Pope, 2018).<sup>8</sup> The literature generally finds adverse effects of longer pre-trial incarceration on recidivism. This paper extends the literature by examining the causal effect of assessed mental health needs on length of stay and recidivism. We find that length of stay is longer for youth with worse mental health classification scores charged with misdemeanors and felonies and adults with worse mental health classification scores charged with felonies. We also find that recidivism rates are higher for youth and adults with worse mental health classification scores charged with classification scores charged with misdemeanors.

The third is the literature on suicide in prisons and jails. In a recent meta-analysis of 77 descriptive studies, Zhong et al. (2021) described the clinical, institutional, and criminological factors associated with suicide in prison. They note that psychiatric diagnosis, suicidal ideation, and single cell occupancy are potentially modifiable. Our paper contributes to this literature by examining the causal effect of assessed mental health needs on suicide attempts. We find that worse mental health classification increased overall suicide attempts and suicide attempts per day for youth charged with misdemeanors and adults charged with misdemeanors and felonies.

The paper proceeds as follows. Section 2 includes background information on mental illness in youth and details on the operations of our large urban county jail. Section 3 discusses the data and provides descriptive analysis of the mental health needs score used to construct our binary mental health classification scores. Section 4 discusses the IV and results of IV analysis of length of stay, suicide attempts, and recidivism. Section 6 discusses the policy implications of our results and the need for further work on outcomes in jail.

## 2 Background

This section begins by discussing mental illness and transition age youth. It then provides some background information on the large urban county jail and how inmates are processed. The final subsection discusses demand and supply side factors and how our leniency design allows us to estimate the effects of mental health classification on outcomes.

<sup>&</sup>lt;sup>8</sup>For a survey of this literature, see Loeffler and Nagin (2022).

#### 2.1 Mental Illness of Transition Age Youth

Transition age youth, individuals aged 16 to 25 years old, sit at the confluence of two sets of risks: both a period of emergence or worsening of mental health issues and a period of increasing interaction with the criminal justice system. This represents a delicate moment in the lives of these individuals as the worsening symptoms may lead to an arrest before they lead to the successful initiation of mental healthcare resources for treatment. We know very little about the experience of youth through this juncture because it requires access to data on mentally ill individuals within jails and that type of data is not easy to come by.

A recent global meta-analysis found one-third of individuals have their first mental disorder before age 14, with most of these being neurodevelopmental. The modal age of onset for substance use, personality, mood, and schizophrenia-spectrum and other psychotic disorders was around 20 (Solmi et al., 2021). Almost two-thirds of individuals developed their first mental disorder before age 25. The second risk is peak years of criminal activity. Peak age-crime distributions are below 25 for all crimes except gambling in the FBI UCR database (Ulmer and Steffensmeier, 2014). Further, the age-crime distributions have been trending towards younger ages. The peak-age crime distribution and trends appear to be driven by a range of biological, sociological, economic, and demographic factors.

As a result of these two sets of risk, significant numbers of youth with mental illness end up in jail. The prevalence estimates for individuals with mental illnesses within criminal justice settings are dramatically higher than the general community (Prins, 2014). Consequently, jails have become the de facto mental hospital of last resort. The concentration of mental illness within correctional justice facilities has not always been as high as it is today. Due to the US transition towards community-based mental health care while arrests, sentencing and imprisonment simultaneously grew, growing correctional populations selectively drew in more mentally ill inmates than was thought to have been the case in the early to mid-twentieth century (Western, 2006; Raphael and Stoll, 2013).

#### 2.2 Large Urban County Jail

The large urban county jail is a 3,050 bed capacity facility that services the county's detention needs, has been in operation for several decades, and is spread over two sites. It averages about 2,150 inmates per day across these sites.

Nearly everyone who is arrested and charged for a misdemeanor or felony in our county will arrive at the jail for "booking" and bail setting. Booking is the process where information about the individual is entered into police records upon arrival. Once an individual has been arrested and booked, the arresting officer will file a probable cause affidavit with the court. The affidavit is then reviewed by a judge, who also looks into the defendant's criminal history, and sets the bail. There is no set bail schedule, and the amount could be more or less depending on the judge who initially reviews the case.

Once the judge has set the bail amount, a defendant may be released from jail by personal bonds, cash bonds, lawyer-assisted bonds, or surety or bail bonds. A personal bond is a sworn agreement by the defendant that they will return to court as ordered and will comply with the conditions placed on their release. No money is required at the time of release, but the defendant is required to pay an administrative fee of the bond amount to the jail within a certain number of days of release. Defendants cannot post a personal bond themselves. Only the county's pretrial Services or an attorney may submit a request for release on personal bond to a judge. Factors influencing the availability of personal bond include residence, employment, and criminal history. Only a judge can approve release on a personal bond. In cases where the personal bond is not available, bond must be posted for the individual to be released.

Inmate mental health is evaluated within 36 hours in compliance both with the jail's own historic administrative policies as well as state-wide regulations. The formal process of booking starts with a topical mental health screening by the officer receiving the individual into residency which is then followed by an interview with a randomly assigned clinically trained clinician. Completion of the interview can take anywhere from 15 to 30 minutes depending on the inmate. Each day clinicians are alphabetized by last name and then assigned one to one to a newly booked inmate as they arrive at the facility which creates a quasi-randomization of intake clinician to inmates at booking. The purpose of the intake clinician is to screen inmates and collect information, not treat mental health problems.<sup>9</sup> These clinical workers use a structured survey questionnaire developed by the facility to assess the mental health needs of each inmate. The questionnaire also includes the Columbia Suicide Severity Rating Scale to provide the facility with information about suicide risk. A short description of the survey is contained in the appendix.

Clinicians produce a mental health score based on their interview with the inmate at booking. Based on the survey and their own subjective judgment, clinicians classify the inmate into one of four groups: 0 ("high daily functioning"), 1 ("mild functioning problems"), 2 ("moderate functioning problems") or 3 ("severe functioning problems"). For the empirical analysis, we collapse the mental health needs score into a dummy variable equal to 0 if none/mild and 1 if moderate/severe. Inmates with moderate/severe scores who have committed misdemeanors are routed to the county's mental health docket. As a result, this is a natural comparison and is salient to officials at the jail.

#### 2.3 Supply, Demand, and Empirical Design

A supply and demand conceptual framework is useful for describing the endogeneity problems in our data. Mental health is produced simultaneously by demand and supply side factors. Demand side factors are the pre-jail factors related to the person's latent mental illness and pre-treatment displays of symptoms due to their psychological condition unrelated to treatment itself. Supply factors refer to actions taken to treat a person suffering from a mental illness. Some examples are pharmacological treatments and individual or group therapy.

<sup>9</sup>Clinicians employed at the jail range in terms of work experience and credentialing. Most have masters of social work and are using their employment to obtain the hours necessary to be credentialed by state licensing boards, but intake clinicians have at times also included PhD trained psychologists as well as already licensed clinicians (e.g., LCSW, LPC). Inmates in the jail who are classified as having moderate/severe mental health needs are often treated differently than those that are not. They may work with jail staff to find effective medication, be offered individual or group therapy, or be placed in specialized housing. The judge in their case may learn that the inmate has mental health problems and that information may be used in some (unobserved) way for bonding. Their primary caregivers are often told that their loved one is likely suffering from mental health problems. If their charge is a misdemeanor, then they also become eligible to participate in the county's mental health docket.<sup>10</sup>

Correlations of inmate classification and outcomes will suffer from selection bias without a research design that can separate out supply and demand factors. To be clear, we are not examining the effect of mental illness on outcomes in this project. We are examining the effect that moderate/severe classification scores have on inmates length of stay, suicide attempts and recidivism. Since in a supply and demand framework, inmate outcomes are realized equilibrium values based both on latent mental illness factors and on any differences in treatment that those with moderate/severe scores experience while in jail.

Our empirical strategy is the classic leniency design in which we exploit quasi-random variation in mental health classifications caused by the randomly assigned clinician at booking's tendency to assign higher or lower mental health needs scores. These scores may directly or indirectly affect inmate outcomes through a variety of mechanisms.

<sup>10</sup>The (misdemeanor) mental health docket is the largest diversionary docket. There are a number of other dockets, including a substance abuse, felony mental health, and veterans' docket. Relatively few inmates are eligible for the substance abuse and felony mental health dockets, because of the stringency of the criteria. For example, for the substance abuse docket, individuals have to be nonviolent first-time offenders with addiction issues who are charged with a drug related crime. For the felony mental health docket, the felonies have to be low level, nonviolent, and related to the mental illness. Veterans have been dropped from our sample, so the inmates in our sample are not eligible.

A worse mental health classification may affect length of stay through at least four channels. Judges may set bond based on mental health classifications. Family and friend networks may make decisions about whether to post bail based on these classifications. Mental health competency hearings may be required, especially for individuals with severe mental needs. There are often extensive delays associated with these hearings. The mental health docket, which individuals charged with misdemeanors who are classified as moderate/severe are eligible for, itself often operates with delays.

A worse mental health classification may affect suicide attempts through length of stay, which can be distressing, and possibly through other channels. While we do not think that access to medication, therapy, and housing are likely to be increasing the risk of suicide attempts, we cannot rule them out as channels.

Finally, a worse mental health classification may affect recidivism through length of stay or, for inmates charged with misdemeanors, through the assignment to the county's mental health docket. A number of papers have shown a causal link between length of stay and recidivism (Loeffler and Nagin, 2022). For inmates charged with misdemeanors, the score determines whether their case gets routed to a traditional or a mental health docket.<sup>11</sup> The primary intervention that occurs at the mental health docket is dismissal of charges. In theory, dismissal is contingent upon completing a treatment regiment, but there is very little monitoring. The lack of punishment may be leading to recidivism.

<sup>11</sup>Many counties have sought to reduce the number of mentally ill offenders in jail and prison by diverting mentally ill defendants from traditional dockets into specialty dockets that in exchange for dismissing charges help connect defendants to treatment. These dockets are called mental health dockets and approximately 500 are utilized across this nation. See <a href="https://www.samhsa.gov/gains-center/mental-health-treatment-docket-locator/adults">https://www.samhsa.gov/gains-center/</a> mental-health-dockets are highly heterogeneous across US counties.

### **3** Data and Descriptive Analysis

## 3.1 Data

We use de-identified administrative data from a large urban county correctional complex ("jail") which encompasses the universe of inmates booked in the county between 2016 and 2019. These data were collected as routine mental and physical health assessments on inmates and include information on each inmate's offense type (felony, misdemeanor), demographics, and mental health.<sup>12</sup> A unique inmate ID and unique booking ID are jointly used to identify a unique inmate booking event, as well as link inmates over time. In our analyses, we focus on inmates who received a mental health assessment.<sup>13</sup>

Our main sample spans January 2016 to November 2019. It includes 79,571 inmate-booking observations, 20,430 are for youth and the remaining 59,141 are for adults. For some of the descriptive analysis, we limit the sample period. Richer data on mental health of the inmates including self reported data on psychiatric medications and hospitalization became available in July 2018. This sample includes 31,608 observations, 7,597 observations are for youth and 24,011 are for adults.<sup>14</sup>

### 3.2 Youth and Adult Characteristics

Table 1 shows that youth and adults in jail generally have similar demographic characteristics. Most inmates are male, White, and many have a prior offenses within 365 days. Although the majority of inmates are White, Black inmates are significantly over represented relative to the general population. The county as a whole is 9% Black and 34% Hispanic. Across the four columns, inmates are 25-32% Black and 24-36% Hispanic. Compared to adults in jail, youth are

<sup>13</sup>There is a small subset of people who filter in and out of the jail before they are assessed. There can be several reasons for quick release. In our conversations with jail personnel, it was their understanding that most of the time this is due to transfers or rapid bail outs for misdemeanors.

<sup>14</sup>We dropped veterans from the sample as they go into a separate docket.

<sup>&</sup>lt;sup>12</sup>Institutional review board (IRB) approval was granted from Baylor University in April 2019.

more likely to be Hispanic. The Hispanic population is growing rapidly and is on average quite young. youth who are charged with a misdemeanor are less likely to have been charged with a prior offense.

The distributions of crimes are also similar for youth and adults. 45% of youth and 47% of adults are charged with felonies and the remainder are charged with misdemeanors. Appendix Table A.1 shows that the charges are concentrated in more serious misdemeanors and lower level felonies.<sup>15</sup> Figure 1 shows the distribution of case types for all ages. Our county does not separately report misdemeanor thefts and felony thefts.

#### 3.3 Mental Illness

Initial evaluations provide three measures of mental illness: the clinician evaluation of mental health needs, Columbia Suicide Severity Rating Scale, which measures suicide risk, and self reported prior psychiatric hospitalization and use of psychiatric medication.

Appendix Table A.1 shows that youth score lower than adults for mental health needs and self reported hospitalization and medication, but were similar on suicide risk. For mental health needs, 9-11% of youth score moderate or severe, as compared to 14-20% of adults. 13-14% of youth and 17-20% of adults report prior psychiatric hospitalization. 23-24% of youth and 32% of adults report taking psychiatric medication. For suicide risk, 13-16% of youth score moderate or severe, as compared to 13-16% of adults.

Figures 2a and 2b compare scores for youth and adults in jail with data for the general population of youth and the US. It is important to emphasize that these measures come from different data sets and so are not directly comparable. In particular, jail measures of mental health needs and suicide risk are measured over shorter time frames than the survey questions, which ask about the last year.

Youth and adults in jail are more likely to be mentally ill than general public. Mental illnesses include many different conditions that vary in degree of severity, ranging from mild to moderate to

<sup>&</sup>lt;sup>15</sup>In the case of multiple charges, the analysis is for the highest charge.

severe. Two broad categories describe such conditions: any mental illness (AMI) and serious mental illness (SMI). AMI includes all recognized mental illnesses, while SMI is a smaller and more severe subset of AMI. More specifically, SMI is defined as a mental, behavioral, or emotional disorder resulting in serious functional impairment, which substantially interferes with or limits one or more major life activities. In recent years, young adults aged 18-25 years had the highest prevalence of SMI (9.7%) compared to adults aged 26-49 years (6.9%) and aged 50 and older (3.4%) (SAMHSA, 2021). If serious mental illness is roughly equivalent to scoring moderate or severe on the intake measure, then youth and adults in jail would have slightly higher measures of mental illness. If suicide ideation is roughly equivalent to scoring a moderate or severe on the suicide risk measure, then youth in jail would have higher measures of suicide ideation. These measures are likely to be quite conservative, since inmates are reporting much higher levels of psychiatric hospitalizations and medication than the general population. The psychiatric hospitalization rate for inmates is 13-20% vs 1% for the US adult population, and the use of psychiatric medication for inmates is 23-32% vs 12% for the US adult population (SAMHSA, 2021).

In Tables 2 and 3, we include descriptive regressions for mental health needs ratings for both the sample we use in our main IV analysis (Table 2) or for the last five quarters of our data where additional suicide measurements became available (Table 3). The analysis uses the following specification.

$$Score_{it} = \beta_0 + \beta_1 X_{it} + \varepsilon_{it} \tag{1}$$

where  $Score_i$ , the classification score, is a dummy indicating whether the booking clinician assigned the inmate with a mental health needs score of moderate/severe (1) versus none/mild (0),  $X_{it}$  is a vector of month-of-year fixed effects and baseline inmate characteristics and  $\varepsilon_{it}$  is an error term. Table 2 indicates that mental health needs scores are generally higher for older inmates, female inmates, non-hispanic inmates, and inmates with prior offenses.

Table 3 shows that mental health needs scores capture important features of inmate mental health. For example, suicide risk ratings have large positive and statistically significant coefficients. The omitted category is suicide risk, none. The coefficient point estimates on suicide risk

moderate/severe are larger than those on suicide risk mild. Prior psychiatric hospitalization also has positive and statistically significant coefficients in most specifications.

#### **3.4 Description of Outcomes**

During their time at the jail, Table 1 indicates that youth and adults have similar length of stay and recidivism rates. On average youth stay 8 days for a misdemeanor and 59 days for a felony, while adults stay 11 days for a misdemeanor and 58 days for a felony. For recidivation, the rate is 37% for a youth charged with a misdemeanor and 39% for a youth charged with a felony. The rates for adults are 43% and 35%.

In sum, although youth have modestly better measures of mental health at intake than adults along some dimensions, the two groups have similar outcomes in terms of suicide attempts, length of stay, and recidivism. Although direct comparisons are difficult, the evidence suggests that youth in jail have worse mental health than the general population of youth.

Table 1 reports that 0.57-0.61% of youth and 0.64-0.69% of adults attempted suicide. Our large urban county jail defines suicide attempt to include suicide attempt, expressed ideation, and other actions regardless of how effective they might be.<sup>16</sup> Note, since inmates stay for less than one month on average, these attempts are happening over a fairly short time frame. In comparison, in 2020 1.9% of 18-25 year olds and 0.4% of 26-49 year olds reported attempting suicide in the past year (SAMHSA, 2021).

From January 2018 through November 2019, we have detailed information on what jail officials considered the most serious attempts. The information from this sub-sample is summarized in Appendix Table A.2. There were 85 attempts in these data of which 30 required medical intervention at the jail and 19 required hospitalization. Similar shares of youth and adults appear in the data set and they needed medical intervention at the same rate. The most common methods

<sup>&</sup>lt;sup>16</sup>For instance, if an inmate were to wrap a towel around their neck, an officer would record this as an attempt even if it was done in jest or to get attention. In other words, determining intent is not as important to the jail, given that the downside risk of being incorrect is large.

by which inmates attempted suicide were: strangulation, banging head, hanging, and cutting. At the end of the period covered by these data, the recording of serious suicide attempts shifted to electronic medical records but these data are not yet available to our research team.

We have information about opioid and alcohol abuse withdrawal which is summarized in Appendix A.1. A very small portion of our inmates were experiencing opioid withdrawal, and proportions are approximately the same across all cross tabulations of suicide attempt and classification score. Alcohol withdrawal was more common but low between 5 and 12 percent of the sample.

Most deaths in this jail occur for white, non-Hispanic, males, which follows the major demographic. The most frequent cause of death in this corrections facility is cardiac arrest followed by suicide as shown in Figure A.2. Over our sample period there were nine cardiac deaths, two suicides, and one death each from substance toxicity, hematoma, and hypertension. The jail categorizes primary cause of deaths into three categories: (1) medical (death due to uncontrollable medical reasons), (2) psych (death due to psychiatric reasons, such as a suicide attempt) and (3) substance (deaths that could involve an overdose).<sup>17</sup> This is done to help better understand the ways in which deaths occur in this correctional facility so that the mental health team can learn from deaths that may possibly have been prevented. The most frequent primary cause of death is

<sup>17</sup>In the non-incarcerated population, it is true that many overdoses are treated as suicides, however, in this jail population, pharmaceutical drugs are carefully and strictly regulated. There are two ways in which an inmate may receive regulated medication from the prison's pharmacy: (1) in a pill packet (a "keep on person" method where they are given a week's worth of medication to self-administer each day) or (2) daily in a cup given to them by the medical staff. This jail is similar to others in that drug sharing and/or drug hoarding occurs. However, a key difference is that this jail is not allowed to provide the types of drugs in which an individual can easily overdose on. Therefore, it would take weeks to gather enough medication to overdose and most inmates are simply not there for that long or they would lose their stash due to random cell checks. To date, in this jail, no inmate has overdosed. medical, followed by psych and then substance. For this population, the two "psych" deaths were due to suicide.

#### 4 Research Design

#### 4.1 Overview

An inmate *i* remains in jail longer, attempts suicide or recidivates based on treatments given in response to his mental health needs score,  $Score_i$ . We model this using a linear equation:

$$Y_{it} = \beta_0 + \delta Score_{it} + \beta_1 X_{it} + \varepsilon_{it} \tag{2}$$

where  $Y_{it}$  is suicide attempt, length of stay, or recidivism within a year of release,  $X_{it}$  is a vector of month-of-year fixed effects and baseline inmate characteristics and  $\varepsilon_{it}$  is an error term.

Equation 2 cannot identify the causal effect of classification scores on outcomes if scores are systematically assigned to people already at an elevated risk level. Identifying the causal effect of the score requires exogenous variation which we address using instrumental variables (IV). We use the inmate's quasi-randomly assigned intake clinician subjectively assigned average classification scores as an instrument for an inmate's own classification score. Under the standard IV assumptions, we are thus able to identify the average treatment effect for complier inmates at the margin of receiving a worse classification score.

#### 4.2 Instrumental variable calculation

We construct our instrument of clinician tendency to assign worse classification scores according to Equation 3. Our instrument is the residualized, leave-one-out mean intake clinician tendency measure conditional on month-of-year fixed effects. This method is similar to the judge leniency designs used in criminal justice (Aizer and Doyle, 2015; Arnold et al., 2018). To account for trends within the county as well as to force comparisons to other inmates seen by the same clinician at that window of time, we use month-of-year fixed effects. Removing the effect of these month-of-

year fixed effects allows us to calculate the residual mental health classification score,  $\tilde{D}_{dkt}$ . We then use these residualized mental health classification scores by intake clinicians to construct the leave-one-out-mean decision of the intake clinician within a month:

$$\widetilde{Z}_{cl} = \left(\frac{1}{n_l - n_c}\right) \left(\sum_{k=0}^{n_l} \widetilde{D}_{dkt} - \sum_{k \in \{c\}} \widetilde{D}_{dkt}\right)$$
$$= \frac{1}{n_l - 1} \sum_{k \neq c}^{n_l - 1} \widetilde{D}_{dkt}$$
(3)

where  $n_l$  is the number of inmates seen by clinician c in that month. We calculate the instrument across all types, felonies and misdemeanors, separately and allow the instrument to vary across time.

# 4.3 Clinician variation

Figure 3 presents four distributions of normalized intake clinician residualized leniency measure for high scores stratified by each of our four subpopulations. Moving from left to right on each of the subfigures shows the association between the share of the sample assigned a worse mental health classification score and intake clinicians whose average tendency is to assign worse classification scores. The spread contained in the each of the histograms represents the spread of the intake clinician leave-one-out-mean for each of the subpopulations. If clinicians are randomly assigned to inmates and there is no scope for clinician subjectivity in assessing inmate functioning, there would be no variation in our instrument as all clinicians would agree. And if clinician assignment is indeed random, then the positive slope in each of the subfigures represents the causal effect of the residualized leave-one-out-mean on the inmate's own classification score.

#### 4.4 First stage

We explore this positive association between the residualized leave-one-out-mean clinician scores and an inmate's own score by estimating the following linear probability model:

$$Score_{it} = \alpha + \pi Z_{cl} + X_{it} + \varepsilon_{it} \tag{4}$$

where  $Score_{it}$  is the binary treatment variable ("classification score") indicating whether an inmate received a mental health needs score of "Moderate" or "Severe," and  $Z_{cl}$  is a vector of the residualized leave-one-out-mean clinician score,  $X_{it}$  is an array of pre-treatment inmate characteristics, including race, sex, age at booking, whether they had a prior offense in the last year, the number of offenses per booking, as well as month-of-year fixed effects, and  $\varepsilon_{it}$  is the inmate specific error term. Note that two-way clustered standard errors were calculated across both clinician and inmate dimensions. Since intake clinicians are quasi-randomly assigned, the instrument is random which gives  $\hat{\pi}$  a causal interpretation. Thus, equation 4 is a linear estimate of the effect of being assigned a clinician with a higher average classification score on all other inmates she saw that month on one's own classification score.

The first stage relationship is very strong for youth and adults across both misdemeanor and felony offenses. Table **??** shows the first stage results for misdemeanor populations. Our instrument has a standard deviation of 0.216 and we multiply that by the first stage coefficient to help interpreting the magnitudes associated with the leniency instrument. A one standard deviation change in intake clinician leniency would cause a 16 to 17 percentage point increase in youth with misdemeanors to receive worse mental health classification scores, and a 17 to 19 percentage point increase in adults with misdemeanors. The Kleibergen-Paap first stage F statistics for misdemeanors are 538 and 673 for youth and 696 to 858 for adults, which are significantly higher than commonly employed benchmarks.<sup>18</sup> Table **??** shows the same statistics for the felony cases. A one

<sup>&</sup>lt;sup>18</sup>The Kleibergen-Paap first stage F statistic is equivalent to the Olea and Pflueger (2013) effective F-statistic given our model is just identified.

standard deviation in clinician leniency caused a 19 percentage point increase in receiving a high score among youth with felonies and a 21.5 percentage point increase among adults with felonies. The effective F statistics for these two subpopulations are also very high and range from 373 to 453.

#### 4.5 Instrument validity

In this subsection, we provide evidence on two additional assumptions that must hold in order for our IV model to estimate the local average treatment effect (LATE) of inmate mental health classification scores on length of stay, suicide attempt, and recidivism after release: (1) clinician instrument must be random (independence) (2) the impact of clinician leniency on inmate mental health scores is monotonic across all inmates (monotonicity).<sup>19</sup>

Tables A.9 and A.10 provide support that the assignment of clinicians is random for youth and adults. In Table A.9, we compare the association between the inmate's classification score among youth and misdemeanors and baseline inmate covariates. Not surprisingly, individuals with worse classification scores differ along observable dimensions from those with better mental health classification scores. youth misdemeanors with worse classification scores at booking were more less likely to be Hispanic, less likely to be male, and more likely to have a prior offense. However, in column 2, we regress the residualized leave-one-out-mean intake clinician score onto the same inmate characteristics and find that the association weakens. Many coefficients become insignificant or zero and the joint significance of all covariates in the model has an F test value of 2. In the same table, columns 3 and 4, we also present randomization tests for adults with misdemeanors. The F test on the excludability of covariates fell from 33 to 4 and any detectable differences are trivial in

<sup>&</sup>lt;sup>19</sup>A third assumption, exclusion, is needed to estimate the LATE. In our context that would mean clinicians' assessment of other inmates in a month can have no effect on an inmate's outcomes except through the treatment assignment. Most of our support for this has come from extensive interviews with staffing. No plausible scenario exists to the knowledge of the staff and clinicians whereby such paths could exist even in principle.

magnitude relative to a covariate measurement (e.g., age in years). Table A.10 provides evidence for randomization for youth and adults with felonies, as well. The joint significance of covariates with respect to our instrument falls to 3 and 4 for youth and adults, respectively, and coefficients are precise zeroes or not significant at all. In Tables A.7 and A.8, we follow Aizer and Doyle (2015) and use an alternative test for randomization by showing that covariate means are balanced across the bottom, middle and top tercile of the instrument's distribution. Mean covariate values are approximately the same across the instrument distribution and when they aren't the economic significance is trivial and inconsequential given their small magnitudes.

Apart from exclusion, the final condition needed to interpret our estimates as a LATE parameter associated with the effect of higher mental health scores on outcomes is monotonicity. In this context, monotonicity means that if there are two clinicians at intake, and one tends to give worse classification scores than the other, then that clinician would weakly always do so if we could rotate the inmates to be seen by the other clinician. This not something which can be directly tested as it involves counterfactual inmate scoring by different therapists than the ones they had seen. A commonly employed indirect test is to evaluate whether the first stage estimates are non-negative for all subsamples. We present that evidence in Appendix Table A.13 using the full sample of inmates to calculate our measure of clinician leniency. All first stage coefficients are non-negative and highly significant for all subamples for youth misdemeanors and adult misdemeanors. Differences in magnitudes represent stronger roles for clinician discretion, and Black inmates are the ones with the largest magnitudes among misdemeanors. Table A.14 shows that the first stage relationship is also non-negative for all felony subsamples as well.

### 4.6 Instrumental variable modeling

We present two IV models – 2SLS and our preferred model, IVLASSO. In a just identified twostage least squares (2SLS) model, the residualized leave-one-out-mean is similar to a propensity score that absorbs information from all clinician fixed effects into a single scalar. If any of these clinician fixed effects are weak predictors of treatment assignment, then the bias of 2SLS will be centered on the bias of OLS.<sup>20</sup> Because we have many month-year fixed effects as well as baseline covariates, our preferred model is an IVLASSO model developed by Chernozhukov et al. (2015). It is robust to both many instruments and many controls. When using IVLASSO, our instrumental variables are the full vector of intake clinician fixed effects.

Instrumental variables when all assumptions hold, our model estimates the average treatment effect for the complier subpopulation. Though it is impossible to directly know which people in our data are the compliers, we can recover information about their characteristics by regressing  $X_iD_i$  on  $D_i$  using 2SLS. Appendix TablesA.5 and A.6 lists those estimates. Overall the compliers do not look very different than the overall population. They are more likely to be Black, less likely to be Hispanic, less likely to be male, and youth have more priors for misdemeanors, while adults have fewer. Other than the priors and Hispanic, the differences are small. Differences are also not typically very large for felonies.

#### 5 Results

In this section, we present evidence examining the effects of mental health scores on inmate outcomes. Tables 6 and 7 present analyses of the effect of worse mental health classification scores on the three outcomes of interest for the misdemeanor and felony subpopulations, respectively. Columns 1, 2, and 3 report the OLS, 2SLS, and IVLASSO results, respectively, for youth. Similarly, columns 4, 5, and 6 report the OLS, 2SLS, and IVLASSO results, respectively, for adults. Month-of-year fixed effects and baseline controls are included in each of the regressions as previously discussed, and we present confidence intervals based on Anderson-Rubin tests for weak

<sup>&</sup>lt;sup>20</sup>The advantage of using the residualized leave-one-out mean is that similar to the propensity score it reduces dimensionality problems associated with the instrument. Hull (2017) notes that it is typically simpler to use the just identified model with the residualized leave-one-out mean as the instrument for the treatment than to invert a multidimensional matrix in 2SLS. Alternative models that are robust to many instruments like jack-knived instrumental variables estimates (JIVE) are sometimes used instead, but JIVE is biased if there are many covariates (Kolesár et al., 2015).

instruments for the 2SLS models. We will first analyze the effects of worse mental health classification scores on length of stay and suicide attempt. Then we will conclude with a discussion of recidivism.

#### 5.1 Length of Stay

Table 6 shows that youth charged with misdemeanors who have worse mental health classification scores stay in jail for longer. Column 1 reports OLS results in which youth with worse mental health classification scores at booking remain in jail an additional 5.6 days. The 2SLS and IVLASSO estimates are only slightly larger than what we found using OLS. Conditional on baseline controls, we find that the marginal youth inmate with a worse mental health classification score stayed in jail 6 to 7.7 additional days compared to compliers. We present confidence intervals based on Anderson Rubin tests for weak instruments which get as high as 11.7 additional days in jail. Given the complier mean length of stay is 10.4 days, our IV analysis suggests the marginal inmates are spending around 3 weeks in jail.

Adults charged with misdemeanors who have worse mental health classification scores do not stay in jail for longer. Column 4 (OLS estimates) of Table 6 shows that adults with high mental health scores spend 6.5 days longer in jail. These effects are not present for the complier sub-population as shown in columns 5 and 6. Neither 2SLS nor IVLASSO find effects that large nor statistically significant.<sup>21</sup>

Table 7 shows that youth and adults charged with felonies with worse mental health classification scores also stay in jail for longer. The effect sizes for both OLS and IV estimates are substantially larger for this group than for the misdemeanor group. Column 1 (OLS estimates) show that youth with felony charges and worse classification scores remain in jail 23.2 days longer than those with better classification scores. But our IV estimates find much larger effects. Our

<sup>21</sup>The null effect for adult misdemeanors in both IV models is due to an imprecisely estimated zero effect in the reduced form equation. There is not, in other words, a strong association between the instrument and length of stay for adult misdemeanors.

IV points estimates are as high as 54 days additional days in jail and using the Anderson-Rubin confidence intervals, effects may be as large as 73.5 days. Columns 4-6 of Table 7 show that adults charged with felonies with worse mental health classification scores also stay in jail longer, but our OLS and IV results largely are the same finding adults charges with felonies and getting worse mental health scores spent 22.6 to 24.4 additional days in jail.

In analysis of length of stay by racial group, we find the effects of worse classification scores are generally similar across the three groups. See Appendix Tables A.15 for White people, A.17 for Black people, and A.19 for Hispanic people.

In sum, the results suggest that for youth charged with misdemeanors and felonies and adults charged with felonies worse classifications of mental health problems are leading to longer stays in jail.

#### 5.2 Suicide Attempt

Table 6 shows that youth charged with misdemeanors who have worse mental health classification scores are more likely to attempt suicide while in jail. The OLS estimate in column 1 shows that inmates with worse mental health classification scores at intake are 1.9 percentage points more likely to attempt suicide before exiting jail. But our IV estimates of the local average treatment effects are more than twice as large as OLS estimates and range from 4.0 to 4.6 percentage points depending on the model used.

Adults charged with misdemeanors who have worse mental health classification scores are also more likely to attempt suicide while in jail. In column 4 of Table 6, we find that adults with worse mental health classification scores are 1.2 percentage points more likely to attempt suicide attempt. Moving from OLS to the IV results (columns 5 and 6), the effects increase slightly to 1.8 to 2.1 percentage points.

In contrast to youth charged with misdemeanors, youth charged with felonies who have worse mental health classification scores are not more likely to attempt suicide while in jail. Our OLS estimate shows that youth with felonies are 1.7 percentage points more likely to attempt suicide attempt which more than doubles to 3.8 percentage points with 2SLS. But the effect shrinks to 1.5 percentage points and is not statistically significant at conventional levels when using IVLASSO.

When looking at adult felonies, we find evidence that worse mental health scores cause more suicide attempts. Our OLS estimates show that higher scores are associated with a 1.7 percentage point increase in the incidence of suicide attempt during jail. But when using IV, the causal effect ranges from 1.8 percentage points to 2.9 percentage point.

Given we find that in many cases worse mental health classification scores cause compliers to spend on average weeks to months longer time in jail, it's possible that the increase in suicide attempt is simply a mechanical function of time. That is, if an inmate has a constant suicide attempt hazard per day in jail, then suicide attempts will increase for no other reason than that you are increasing their length of stay. Thus to check whether our suicide attempt result is simply a mechanical artifact of length of stay, we re-estimate our OLS and IV models for all four subpopulations using suicide attempts per day in jail, measured as  $\frac{SA}{LOS+1}$ .<sup>22</sup>

In Table 6, worse mental health classifications increase suicide attempts per day for youth and adults charged with misdemeanors. In column 1 estimated with OLS, there is no noticeable association between worse classification scores and suicide attempts per day. But, when estimated using IV, we find that suicide attempts increase by 0.7 percentage points per day. This suggests that the effect of worse classification scores on suicide attempts is not merely a reflection of lengthening length of stay – the risk per day itself grows too. We see this too when looking at the effect on adult misdemeanors. Column 4 estimated with OLS shows that worse classification scores are associated with a 0.2 percentage point increase in suicide attempts per day, but the effect doubles to 0.4 percentage points per day in jail when using IV.

Worse mental health classifications increase suicide attempts per day for adults charged with felonies, but not youth. Though column (1) OLS estimates are positive and significant, IV estimates in column (2) and (3) are precisely estimated zeroes. Adult felony cases in which the inmate was

<sup>&</sup>lt;sup>22</sup>We add a 1 to length of stay because some individuals bond out on the day of arrival and do not spend a full day.

given a worse classification at booking, once estimated with IV, does show signs of increased distress though. OLS and IV estimates largely confirm that worse classification scores cause 0.1 percentage point increase in suicide attempts per day in jail.

In analysis of suicide and suicide per day by racial group, we find the effects of worse classification scores are generally similar across the three groups. See Appendix Tables A.15 for White people, A.17 for Black people, and A.19 for Hispanic people.

These analyses suggest that worse classification scores cause inmate distress to rise along two margins. First, by increasing their time in jail, it increases inmate suicide attempts mechanically. This is because the longer a person is in jail, the more likely they are to hurt themselves. But, we also find that worse classification scores increase inmate self harm per day in jail, suggesting that not all of the increased risk of self harm is mechanical. Every day they are there, inmates with worse classification scores face higher risks than compliers over the same days.

There are a number of possible reasons why suicide attempts and suicide attempts per day are causally higher for individuals with worse mental health classifications. One reason is that classification because of its impact on length of stay, or through medication, therapy, and housing, causes mental health to deteriorate, leading to suicide attempts. Another reason is that the same behavior is more likely to be observed because of increased supervision that comes with classification and so more likely recorded as a suicide attempt. This is less concerning than the first reason, since the only difference between the two groups is that one group's actions are labeled an attempt, while the other group's actions are not. A third reason is that the attempt is being used to achieve a goal other than death. The question is what the inmate is trying to achieve by attempting suicide and why it would differ across classifications. The food is the same throughout the jail. The most likely issue would be housing. Almost all inmates have cellmates. In cases of conflict between cellmates, the inmate could attempt suicide to achieve a switch in cellmates. But the question becomes why the label itself would differentially cause this behavior. For this to be true, it would have to be that the matches in the labeled population are worse, the jail personnel are more responsive to labeled prisoners, or both. In this case, the incentives could be different. Given that a significant number

of cases require medical treatment, it seems unlikely that the latter two reasons account for all or even most of the effect on attempted suicide. We cannot, however, rule out that the second or third reasons are playing a role in observed suicide attempts.

#### 5.3 Recidivism

Youth with misdemeanor offenses and worse mental health classification scores face higher risks of repeating offenses upon release from jail. Our OLS estimates in column 1 suggest youth with misdemeanor offenses and higher mental health scores are 5.1, 5.8 and 5.6 percentage points more like to commit a second offense when released within 1 year, 18 months and 2 years, respectively. But in columns 2-3, our IV estimates suggest that the effect sizes are larger for the marginal inmates. Our 2SLS estimates show that worse classification scores cause an 11.9, 11.3 and 12.7 percentage point increase in risks of recidivism within 1 year, 18 months and 2 years, respectively. Given the complier mean is 33.9, 39.9 and 40.8 percent re-enter jail within 1 year, 18 months and 2 years, respectively, these effects sizes nearly double in magnitude than what we found with 2SLS.

Adults with misdemeanor offenses and worse mental health classification scores also face higher risks of repeating offenses upon release from jail. Our OLS estimates show that adults with misdemeanors who have worse mental health classification scores were 15.8, 15.4 and 14.7 percentage points more likely to commit a second offense within the first year, 18 months and 2 years of release. However, the IV estimates of LATE is between 27.0 and 30.8 percentage points. It is interesting that recidivism and suicide attempt risks increases for this group but not length of stay.

For felonies, worse mental health classification scores do not translate into increased recidivism. While OLS estimates (columns 1 and 4) both show that inmates with worse mental health classification scores were roughly 2 to 3 percentage points more likely to commit a second offense within a year to two years of leaving jail, the effects are not present when using IV in any of the four models (columns 2-3; columns 5-6). It is possible that this is a mechanical result. Felonies are likely accompanied by prison sentences, unlike misdemeanors, and thus the window for which we observe recidivism (one to two years from release) could be too small to pick up the second offense.

In analysis of recidivism by racial group, the effects of worse classification scores vary across the three groups. The results for Whites are similar to our main results. Interestingly, we do not find recidivism effects for Hispanic or Black people. See Appendix Tables A.15 for White people, A.17 for Black people, and A.19 for Hispanic people.

#### 6 Conclusion

Drawing on administrative data from a large urban county jail, this paper addressed two questions. First, how do youth and adults compare in terms of mental health and three outcomes – length of stay in jail, suicide attempts in jail, and recidivism? The descriptive analysis shows that although youth have modestly better measures of mental health at intake than adults along some dimensions, youth are similar to adults in terms of suicide attempts, length of stay, and recidivism. Second, for youth and adults, what is the causal effect of having a higher clinician determined mental health needs score at intake on suicide attempts, length of stay, and recidivism? IV estimates suggest that having a worse mental health classification score may worsen a range of outcomes including length of stay in jail, suicide attempts (both at all and per day), and recidivism for youth and adults.

All three results are of significant policy interest. An important caveat is that our data come from a single large urban jail and so we cannot disentangle how much of what we find is due to the jail and how much is due to state policy. The increased length of stay is concerning. The length of the additional stays are substantial for youth charged with misdemeanors (7.7 days), for youth charged with felonies (54.1 days) and for adults charged with felonies (22.6 days). It is possible that these stays are conferring benefits on inmates, if they are receiving treatment for their mental health issues. It is also possible that these stays are harming inmates to the extent that a longer length of stay leads either to suicide attempts, recidivism, or other unobserved negative outcomes.

The increase in suicide attempt rates is also a cause for concern, given suicide is the leading cause of death in jails. It suggests that being assigned a worse mental health classification score independently places an inmate at risk of self harm. The effect size is particularly large (4.0 percentage points) for youth who are charged with misdemeanors and is substantial for adults for who are charged with misdemeanors (1.8 percentage points) and felonies (1.8 percentage points). The precise mechanisms are unclear and may vary across groups, but one thing we can say is that the higher suicide attempt hazard is not merely mechanical caused by lengthening stays. Worse classifications also increased suicide attempts per day in jail suggesting that something associated with the worse classification score is making inmates more distressed relative to compliers even for those there for the same number of days.

Finally, the increase in recidivism provides further evidence that worse mental health classifications harms inmates, including youth. The effect size is large for youth (20.7 to 28.3 percentage points) and adults (29.0 to 30.8 percentage points) who commit misdemeanors. The mechanism may be through some combination of housing, mental health treatment, longer length of stay in jail, and for inmates charged with misdemeanors, the mental health docket. Other studies have shown that length of stay is causally related to recidivism (Gupta et al., 2016; Heaton et al., 2017; Dobbie et al., 2018; Leslie and Pope, 2018). For inmates who are charged with misdemeanors and are classified as moderate/severe, the mental health docket encourages treatment and dismisses charges on completion of the treatment. The effect of mental health docket could be positive, if treatment is successful and allows the individual to avoid returning to jail; negative, if the dismissal of charges reduces deterrence; or neutral.

In light of these findings, we have three suggestions. First, given the substantial cross-clinician variation in assignment of scores, it may be worthwhile to invest in training to more carefully and consistently classify individuals' mental health needs. Second, having better residential programs for mentally ill people might allow for earlier release from jail. Without a comprehensive residential program for severely mentally ill people, we have been told by the jail that judges typically take a more conservative stance and become less likely to allow bond. Staff have observed, fur-

thermore, that when families learn an inmate has mental health problems, they may conclude jail is a safer place for them. These all suggest that jails are indeed the mental health hospitals of last resort. Third, we need more detailed evidence on what is happening to inmates in the jail to better understand how and why classification of worse mental health problems at booking are translating into worse outcomes for youth and adults.

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# 7 Tables and Figures



Figure 1: 2017-2018 Case Types in Large Urban County













Figure 3: Distribution of Clinician Leniency and First Stage

	Transition A	Age	Adults (over 25)		
	Misdemeanor, $N = 11147$	Felony, $N = 9227$	Misdemeanor, $N = 30643$	Felony, N = 27515	
Inmate characteristics					
Age at booking	21.62 (2.47)	21.51 (2.52)	39.08 (10.46)	38.62 (9.93)	
Male	0.70 (0.46)	0.81 (0.39)	0.73 (0.44)	0.78 (0.41)	
White	0.73 (0.44)	0.67 (0.47)	0.73 (0.44)	0.71 (0.46)	
Black	0.26 (0.44)	0.32 (0.47)	0.25 (0.43)	0.29 (0.45)	
Race other	0.0007 (0.0268)	0.0008 (0.0275)	0.0007 (0.0255)	0.0006 (0.0241)	
Hispanic	0.35 (0.48)	0.36 (0.48)	0.24 (0.43)	0.28 (0.45)	
Number of priors	3.04 (5.56)	4.44 (6.11)	6.07 (11.20)	4.53 (6.85)	
Mental Health Needs Rating					
None/Mild	9,289 (83%)	7,817 (85%)	22,680 (74%)	21,979 (80%)	
Moderate/Severe	1,858 (17%)	1,410 (15%)	7,963 (26%)	5,536 (20%)	
Outcomes					
LOS	8.14 (19.93)	58.56 (99.26)	11.11 (25.66)	58.84 (91.05)	
Suicide attempt (SA)	0.0057 (0.0756)	0.0061 (0.0777)	0.0064 (0.0799)	0.0069 (0.0826)	
SA/(LOS + 1)	0.0010 (0.0194)	0.0002 (0.0055)	0.0012 (0.0194)	0.0003 (0.0071)	
Recid within 1 year	0.37 (0.48)	0.39 (0.49)	0.43 (0.49)	0.35 (0.48)	
Recid within 18 months	0.42 (0.49)	0.44 (0.50)	0.46 (0.50)	0.40 (0.49)	
Recid within 2 years	0.44 (0.50)	0.47 (0.50)	0.48 (0.50)	0.42 (0.49)	

**Table 1:** Summary Statistics 2016-2019

<sup>1</sup> Mean (SD); n (%)

	Transition Age		Adults		
Sample:	Misdemeanor	Felony	Misdemeanor	Felony	
Model:	(1)	(2)	(3)	(4)	
Variables					
Age at booking	0.0006	0.0043***	0.0025***	0.0027***	
	(0.0012)	(0.0015)	(0.0003)	(0.0003)	
Male	-0.0557***	-0.0783***	-0.0660***	-0.0669***	
	(0.0076)	(0.0103)	(0.0067)	(0.0064)	
White	-0.0357	-0.0355	0.0354*	-0.0223	
	(0.0352)	(0.0446)	(0.0203)	(0.0279)	
Black	-0.0237	-0.0541	0.0441*	-0.0071	
	(0.0363)	(0.0468)	(0.0222)	(0.0285)	
Race other	0.0447	0.3204*	0.0208	-0.2212***	
	(0.1469)	(0.1762)	(0.0775)	(0.0373)	
Hispanic	-0.0433***	-0.0549***	-0.0754***	-0.0645***	
_	(0.0062)	(0.0078)	(0.0055)	(0.0060)	
Number of prior charges	0.0124***	0.0007	0.0108***	0.0064***	
	(0.0009)	(0.0005)	(0.0004)	(0.0004)	
Fixed-effects					
Month-Year	Yes	Yes	Yes	Yes	
Fit statistics					
Observations	11,147	9,227	30,643	27,515	
Outcome mean	0.1667	0.1528	0.2599	0.2012	

**Table 2:** Mental health classification descriptive regressions (IV Sample)

Notes: Each column represents a linear probability model with the binary outcome of interest being the mental health classification of moderate/severe as opposed to none/mild. Clustered (Month-Year) standard-errors are given in parentheses. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01

	Transition Age		Adults	
Sample:	Misdemeanor	Felony	Misdemeanor	Felony
Model:	(1)	(2)	(3)	(4)
Variables				
Age at booking	0.0011	0.0044***	0.0021***	0.0025***
	(0.0020)	(0.0014)	(0.0003)	(0.0004)
Male	0.0041	-0.0123	-0.0190***	-0.0160**
	(0.0075)	(0.0098)	(0.0063)	(0.0062)
White	-0.0363	-0.0089	-0.0441	-0.0150
	(0.0386)	(0.0475)	(0.0270)	(0.0282)
Black	-0.0039	-0.0197	-0.0312	0.0183
	(0.0413)	(0.0434)	(0.0301)	(0.0263)
Race other	-0.0887*	0.1101	-0.1530***	-0.1883***
	(0.0483)	(0.3513)	(0.0514)	(0.0541)
Hispanic	-0.0098	-0.0233**	-0.0351***	-0.0272***
	(0.0108)	(0.0090)	(0.0062)	(0.0084)
Number of prior charges	0.0095***	0.0009	0.0080***	0.0039***
	(0.0010)	(0.0006)	(0.0004)	(0.0005)
Suicide Risk: Mild	0.0675***	0.0454***	0.1360***	0.1207***
	(0.0120)	(0.0130)	(0.0111)	(0.0138)
Suicide Risk: Moderate/Severe	0.3383***	0.4088***	0.3849***	0.4051***
	(0.0343)	(0.0281)	(0.0232)	(0.0256)
Prior psych hospitalization	0.0600**	0.0174	0.1275***	0.0839***
	(0.0248)	(0.0242)	(0.0149)	(0.0129)
Prior psych medications	0.0212	0.0095	-0.0304***	-0.0037
	(0.0150)	(0.0137)	(0.0066)	(0.0082)
Fixed-effects				
Month-Year	Yes	Yes	Yes	Yes
Fit statistics				
Observations	3,969	3,577	11,806	11,275
Outcome mean	0.1114	0.0865	0.2027	0.1396

Notes: Each column represents a linear probability model with the binary outcome of interest being the mental health classification of moderate/severe as opposed to none/mild. Clustered (Month-Year) standard-errors are given in parentheses. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01

	Transition Age			Adults
	(1)	(2)	(3)	(4)
Z: Clinician's Leave-Out Mean Mental Health Score	0.781***	0.756***	0.971***	0.852***
	(0.034)	(0.029)	(0.033)	(0.032)
Kleibergen-Paap F	537.8973	673.0721	857.5478	695.7186
Time Fixed Effects	Yes	Yes	Yes	Yes
Baseline Controls	No	Yes	No	Yes
Observations	11.147	11.147	30.642	30.642

 Table 4: First Stage Regressions for Initial Assessment of Moderate/Severe Assessment (Misdemeanors)

Notes: We report the first stage results of a linear probability model stratified by age group. The binary outcome of interest is the initial assessment of an inmate's mental health needs being either none/low or moderate/severe. The propensity to assign the most severe score is estimated using data from other cases assigned to the clinician following the procedure described in the text. Columns (1) and (2) limit the sample to TAY whereas columns (3) and (4) limit the sample to adults. Columns (1) and (3) show the results by controlling only for month-year fixed effects, whereas Columns (2) and (4) also include the inmate baseline controls as shown in Table 1. Each column gives the corresponding clinician and inmate robust two-way clustered standard errors in parentheses. Robust (Kleibergen-Paap) first stage F is reported. Note, this is equivalent to the effective F-statistic of Montiel Olea and Pflueger (2013) in this case of a single instrument. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01

	Transition Age			Adults
	(1)	(2)	(3)	(4)
Z: Clinician's Leave-Out Mean Mental Health Score	0.884***	0.862***	0.978***	0.941***
	(0.043)	(0.045)	(0.046)	(0.048)
Kleibergen-Paap F	428.2604	372.6429	453.2788	388.1600
Time Fixed Effects	Yes	Yes	Yes	Yes
Baseline Controls	No	Yes	No	Yes
Observations	9.226	9.226	27.515	27.515

 Table 5: First Stage Regressions for Initial Assessment of Moderate/Severe Assessment (Felonies)

Notes: We report the first stage results of a linear probability model stratified by age group. The binary outcome of interest is the initial assessment of an inmate's mental health needs being either none/low or moderate/severe. The propensity to assign the most severe score is estimated using data from other cases assigned to the clinician following the procedure described in the text. Columns (1) and (2) limit the sample to TAY whereas columns (3) and (4) limit the sample to adults. Columns (1) and (3) show the results by controlling only for month-year fixed effects, whereas Columns (2) and (4) also include the inmate baseline controls as shown in Table 1. Each column gives the corresponding clinician and inmate robust two-way clustered standard errors in parentheses. Robust (Kleibergen-Paap) first stage F is reported. Note, this is equivalent to the effective F-statistic of Montiel Olea and Pflueger (2013) in this case of a single instrument. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01

		Transition Age			Adults			
	(1) OLS	(2) 2SLS	(3) IVLASSO	(4) OLS	(5) 2SLS	(6) IVLASSO		
LOS	5.649*** (0.473)	6.142** (2.972)	7.650*** (2.256)	6.510*** (0.323)	-0.122 (2.071)	1.339 (1.900)		
Suicide attempt (SA)	0.019*** (0.006)	[0.620 11.665] 0.046*** (0.011) [0.025 0.067]	0.040*** (0.013)	0.012*** (0.002)	[-3.977 3.733] 0.021*** (0.006)	0.018** (0.007)		
SA/(LOS + 1)	0.003 (0.002)	0.007*** (0.002) [0.003.0.012]	0.007*** (0.002)	0.002*** (0.000)	0.004*** (0.001) [0.001.0.007]	0.004*** (0.001)		
Recid within 1 year	0.051*** (0.012)	0.119** (0.056)	0.207** (0.103)	0.158*** (0.024)	0.297*** (0.082)	0.308*** (0.095)		
Recid within 18 months	0.058*** (0.016)	[0.016 0.222] 0.113* (0.066)	0.231* (0.131)	0.154*** (0.024)	0.273*** (0.080)	0.290*** (0.094)		
Recid within 2 years	0.056*** (0.021)	[-0.010 0.235] 0.127** (0.064) [0.009 0.246]	0.283** (0.137)	0.147*** (0.024)	$\begin{array}{c} [0.125 \ 0.421] \\ 0.270^{***} \\ (0.079) \\ [0.124 \ 0.416] \end{array}$	0.294*** (0.095)		
Time fixed effects Baseline Controls	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes		

Table 6: Effects of Initial Assessment of Moderate/Severe Assessment (Misdemeanors)

	Transition Age			Adults			
	(1)	(2)	(3)	(4)	(5)	(6)	
	OLS	2SLS	IVLASSO	OLS	2SLS	IVLASSO	
LOS	23.165***	46.830***	54.055*	23.112***	24.360**	22.628*	
	(2.548)	(14.372)	(27.763)	(1.178)	(11.134)	(12.974)	
Suicide attempt (SA)	0.017*** (0.002)	[20.135 73.525] 0.038** (0.017) [0.007 0.069]	0.015 (0.011)	0.017*** (0.002)	[3.634 45.086] 0.029*** (0.008) [0.016.0.045]	0.018* (0.009)	
SA/(LOS + 1)	0.001***	0.001	-0.000	0.001***	0.002***	0.001***	
	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)	
Recid within 1 year	0.032***	0.027	0.068	0.029***	0.053	0.094	
	(0.004)	(0.055)	(0.098)	(0.004)	(0.044)	(0.066)	
Recid within 18 months	0.030** (0.012)	[-0.074 0.129] -0.022 (0.046)	0.081 (0.110)	0.026*** (0.005)	[-0.028 0.134] 0.020 (0.041)	0.083 (0.075)	
Recid within 2 years	0.031*** (0.011)	[-0.108 0.063] -0.030 (0.053) [-0.128 0.068]	0.075 (0.121)	0.023*** (0.005)	[-0.056 0.095] 0.008 (0.038) [-0.063 0.079]	0.078 (0.077)	
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes	

 Table 7: Effects of Initial Assessment of Moderate/Severe Assessment (Felonies)

# **A** Appendix

# A.1 Description of mental health screening survey

Clinicians meet one-on-one with individuals during booking (immediate screening) or after booking (routine screening). During the 15-30 minute encounter, a wide rage of questions are asked and subsequently self-reported by the individual. Categories of the questionnaire include mental health, education and social needs, and substance use. Each question may be answered with "yes" or "no."

The mental health questions allow for the individual to provide context on past treatment they may have received, any medications take for mental health needs, their experience with depression and/or anxiety, history of self-harm, and more. For example, questions ask whether or not the individual has had treatment for mental or emotional problems, if they sometime hear voices or see things that others do not, if the individual has felt anxious or that they may lose control, as well as whether or not the individual has previously tried to harm themselves in the past.

The education and social needs questions include information on: primary language, reading ability, educational attainment, housing and job status, and more. The substance use questions focus on the type of substance the individual has utilized within the last year, as well as their approach towards substance use. The questions aim to better understand whether or not the individual has tried to end their substance use, if they are aware of any harm is may be causing to them or their life, if the substance use is causing social difficulty, and much more.

The Columbia–Suicide Severity Rating Scale (C-SSRS) is an assessment tool that evaluates suicidal ideation and behavior. The questions used in this assessment are also utilized by the jail in addition to their questionnaire. The following outcomes are C-SSRS categories and have binary responses (yes/no): Wish to be Dead; Non-specific Active Suicidal Thoughts; Active Suicidal Ideation with Any Methods (Not Plan) without Intent to Act; Active Suicidal Ideation with Some Intent to Act, without Specific Plan; Active Suicidal Ideation with Specific Plan and Intent; Preparatory Acts or Behavior; Aborted Attempt; Interrupted Attempt; Actual Attempt (non-fatal); Completed Suicide (Posner et al., 2008).



Figure A.1: Proportion of inmates with a withdrawal score

# Cause of Death (2016-2019)







(b) Primary cause of death

Figure A.2: Deaths in custody

	Transition	Age	Adults (over 25)		
	Misdemeanor, N = 3996	Felony, $N = 3585$	Misdemeanor, N = 11866	Felony, N = 11322	
Inmate characteristics					
Age at booking	21.67 (2.43)	21.45 (2.51)	38.93 (10.47)	38.28 (9.73)	
Male	0.71 (0.46)	0.81 (0.40)	0.73 (0.44)	0.78 (0.41)	
White	0.72 (0.45)	0.67 (0.47)	0.73 (0.45)	0.71 (0.45)	
Black	0.27 (0.44)	0.32 (0.47)	0.26 (0.44)	0.28 (0.45)	
Race other	0.0008 (0.0274)	0.0008 (0.0289)	0.0008 (0.0275)	0.0006 (0.0249)	
Hispanic	0.35 (0.48)	0.37 (0.48)	0.24 (0.43)	0.28 (0.45)	
Number of priors	3.62 (6.74)	5.13 (7.04)	7.32 (12.94)	5.58 (8.04)	
Mental Health Needs Rating					
None/Mild	3,551 (89%)	3,275 (91%)	9,461 (80%)	9,742 (86%)	
Moderate/Severe	445 (11%)	310 (8.6%)	2,405 (20%)	1,580 (14%)	
Suicide Risk Rating					
None	2,460 (62%)	2,302 (64%)	6,623 (56%)	6,975 (62%)	
Mild	883 (22%)	817 (23%)	3,290 (28%)	2,774 (25%)	
Moderate/Severe	626 (16%)	458 (13%)	1,893 (16%)	1,526 (14%)	
Prior hospitalization	0.14 (0.35)	0.13 (0.34)	0.19 (0.39)	0.17 (0.38)	
Prior medications	0.23 (0.42)	0.24 (0.43)	0.31 (0.46)	0.32 (0.46)	
Outcomes					
LOS	7.63 (17.75)	45.35 (67.68)	10.69 (24.30)	48.17 (67.35)	
Suicide attempt (SA)	0.0100 (0.0996)	0.0106 (0.1024)	0.0104 (0.1013)	0.0095 (0.0968)	
SA/(LOS + 1)	0.0020 (0.0265)	0.0004 (0.0073)	0.0019 (0.0251)	0.0005 (0.0086)	
Recid within 1 year	0.28 (0.45)	0.29 (0.45)	0.35 (0.48)	0.26 (0.44)	
Recid within 18 months	0.29 (0.45)	0.29 (0.46)	0.36 (0.48)	0.27 (0.44)	
Recid within 2 years	0.29 (0.45)	0.29 (0.46)	0.36 (0.48)	0.27 (0.44)	

**Table A.1:** Summary Statistics 3Q2018-4Q2019

<sup>1</sup> Mean (SD); n (%)

Characteristic	<b>Overall</b> , $N = 85$	<b>Transitional Age</b> , N = 20	<b>Adults (over 25)</b> , N = 65
Age at Booking	34 (10)	21 (2)	38 (8)
Method			
Bang head	17 (21%)	3 (15%)	14 (23%)
Cutting	7 (8.8%)	2 (10%)	5 (8.3%)
Hanging	14 (18%)	3 (15%)	11 (18%)
Strangulation	33 (41%)	12 (60%)	21 (35%)
Other	9 (11%)	0 (0%)	9 (15%)
Unknown	5	0	5
Hospitalization			
No Harm	28 (36%)	7 (39%)	21 (36%)
Jail Medical Intervention	30 (39%)	6 (33%)	24 (41%)
Hospital Intervention	19 (25%)	5 (28%)	14 (24%)
Unknown	8	2	6

 Table A.2:
 Selected examples of suicide attempts

<sup>1</sup> Mean (SD); n (%)

	Tran	sition Age		Adult
	None/Mild	Moderate/Severe	None/Mild	Moderate/Severe
Mental Health Needs				
None	0.766	0.000	0.718	0.000
Mild	0.234	0.000	0.282	0.000
Moderate	0.000	0.818	0.000	0.737
Severe	0.000	0.182	0.000	0.263
Outcomes				
LOS	6.974	13.962	9.329	16.164
Suicide attempt (SA)	0.002	0.022	0.003	0.016
SA/(LOS + 1)	0.001	0.004	0.001	0.003
Recid within 1 year	0.343	0.485	0.356	0.634
Recid within 18 months	0.389	0.546	0.392	0.666
Recid within 2 years	0.411	0.573	0.411	0.680
Inmate Characteristics				
White	0.742	0.660	0.746	0.702
Asian	0.011	0.013	0.012	0.010
Black	0.247	0.326	0.241	0.287
Race other	0.001	0.001	0.001	0.001
Hispanic	0.369	0.273	0.271	0.169
Male	0.714	0.650	0.742	0.698
Age at booking	21.583	21.811	38.536	40.621
Number of priors	2.629	5.122	4.320	11.041
Clinician Characteristics				
Clinician Male	0.147	0.165	0.161	0.194
Clinician White	0.798	0.854	0.787	0.856
Clinician Black	0.145	0.077	0.133	0.060
Clinician Hispanic	0.053	0.064	0.075	0.076
Observations	9,289	1,858	22,680	7,963

# Table A.3: Descriptive Statistics by Moderate/Severe Assessment (Misdemeanors)

	Tran	sition Age		Adult
	None/Mild	Moderate/Severe	None/Mild	Moderate/Severe
Mental Health Needs				
None	0.760	0.000	0.706	0.000
Mild	0.240	0.000	0.294	0.000
Moderate	0.000	0.844	0.000	0.839
Severe	0.000	0.156	0.000	0.161
Outcomes				
LOS	54.439	81.386	53.540	79.885
Suicide attempt (SA)	0.004	0.018	0.004	0.020
SA/(LOS + 1)	0.000	0.001	0.000	0.001
Recid within 1 year	0.380	0.457	0.333	0.424
Recid within 18 months	0.431	0.522	0.377	0.476
Recid within 2 years	0.453	0.555	0.398	0.503
Inmate Characteristics				
White	0.670	0.643	0.719	0.652
Asian	0.008	0.011	0.008	0.009
Black	0.321	0.343	0.273	0.339
Race other	0.000	0.003	0.001	0.000
Hispanic	0.377	0.271	0.300	0.189
Male	0.823	0.720	0.796	0.725
Age at booking	21.465	21.778	38.281	39.988
Number of priors	4.481	4.239	4.245	5.643
Clinician Characteristics				
Clinician Male	0.144	0.172	0.154	0.169
Clinician White	0.775	0.862	0.778	0.854
Clinician Black	0.159	0.070	0.147	0.077
Clinician Hispanic	0.063	0.066	0.071	0.065
Observations	7,817	1,410	21,979	5,536

# Table A.4: Descriptive Statistics by Moderate/Severe Assessment (Felonies)

	Transition Age	Adults
Black	0.296	0.275
	( 0.026)	( 0.026)
Race other	0.000	-0.000
	( 0.001)	( 0.001)
Hispanic	0.294	0.208
	( 0.022)	( 0.022)
Male	0.663	0.711
	(0.045)	( 0.045)
Age at booking	21.716	38.714
	(0.108)	( 0.108)
Number of priors	4.904	4.852
	(0.503)	(0.503)

 Table A.5: Complier Characteristics Moderate/Severe Assessment (Misdemeanors)

Notes: This table reports the complier mean and standard error (in parentheses) for each characteristic variable.

Table A.6: Complier Characteristics Moderate/Severe	Assessment (Felonies)
-	

	Transition Age	Adults
Black	0.331	0.289
	( 0.034)	( 0.034)
Race other	0.002	-0.000
	(0.001)	(0.001)
Hispanic	0.280	0.216
	(0.033)	( 0.033)
Male	0.738	0.767
	(0.021)	(0.021)
Age at booking	21.865	39.374
	( 0.097)	( 0.097)
Number of priors	4.394	5.027
	( 0.384)	( 0.384)

Notes: This table reports the complier mean and standard error (in parentheses) for each characteristic variable.

Transition Age Youth					
	Bottom Tercile	Middle Tercile	Top Tercile	Middle v. Bottom P-Value	Top v. Bottom P-Value
Z: Clinician's Leave-Out Mean Mental Health Score	-0.097	-0.016	0.118	(0.000)	(0.000)
Inmate Characteristics					
Asian Black Race other Hispanic Male Age at booking Number of priors Adults	0.013 0.253 0.001 0.356 0.720 21.572 2.759 Bottom Tercile	0.009 0.275 0.001 0.347 0.702 21.630 3.366 Middle Tercile	0.012 0.253 0.000 0.355 0.686 21.668 3.046 Top Tercile	(0.254) (0.152) (0.682) (0.662) (0.558) (0.358) (0.132) Middle v. Bottom	(0.832) (0.969) (0.148) (0.965) (0.237) (0.092) (0.298) Top v. Bottom P-Value
				P-Value	
Z: Clinician's Leave-Out Mean Mental Health Score	-0.097	-0.009	0.127	(0.000)	(0.000)
Inmate Characteristics					
Asian	0.011	0.012	0.012	(0.144)	(0.367)
Black	0.251	0.262	0.247	(0.062)	(0.488)
Race other	0.001	0.001	0.000	(0.347)	(0.078)
Hispanic	0.246	0.248	0.240	(0.923)	(0.646)
Male	0.744	0.725	0.723	(0.402)	(0.325)
Age at booking	38.380	39.190	39.625	(0.039)	(0.006)
Number of priors	4.920	6.355	6.864	(0.008)	(0.011)

 Table A.7: Balance of Instrument and Inmate Characteristics for Moderate/Severe Assessment (Misdemeanors)

Notes: Data is from a large county correctional complex. Time fixed effects include month-year fixed effects. Clinician and inmate two-way clustered standard errors shown in parentheses. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01

Transition Age Youth					
	Bottom Tercile	Middle Tercile	Top Tercile	Middle v. Bottom P-Value	Top v. Bottom P-Value
Z: Clinician's Leave-Out Mean Mental Health Score	-0.102	-0.033	0.108	(0.001)	(0.000)
Inmate Characteristics					
Asian	0.008	0.009	0.008	(0.876)	(0.966)
Black	0.335	0.322	0.316	(0.285)	(0.049)
Race other	0.001	0.001	0.001	(0.751)	(0.687)
Hispanic	0.353	0.366	0.363	(0.405)	(0.601)
Male	0.832	0.800	0.788	(0.160)	(0.133)
Age at booking	21.427	21.496	21.628	(0.431)	(0.001)
Number of priors	4.785	4.448	4.059	(0.040)	(0.002)
Adults					
	Bottom Tercile	Middle Tercile	Top Tercile	Middle v. Bottom P-Value	Top v. Bottom P-Value
Z: Clinician's Leave-Out Mean Mental Health Score	-0.101	-0.027	0.111	(0.001)	(0.000)
Inmate Characteristics					
Asian	0.009	0.007	0.007	(0.293)	(0.284)
Black	0.280	0.288	0.291	(0.401)	(0.298)
Race other	0.001	0.000	0.001	(0.077)	(0.860)
Hispanic	0.284	0.278	0.271	(0.497)	(0.523)
Male	0.797	0.773	0.775	(0.066)	(0.367)
Age at booking	38.220	38.555	39.084	(0.206)	(0.002)
Number of priors	4.390	4.591	4.594	(0.908)	(0.718)

Table A.8: Balance of Instrument and Inmate Characteristics for Moderate/Severe Assessment (Felonies)

Notes: Data is from a large county correctional complex. Time fixed effects include month-year fixed effects. Clinician and inmate two-way clustered standard errors shown in parentheses. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01

	Transitio	on Age	Adults		
	(1)	(2)	(3)	(4)	
	Moderate/Sever	re Z: Moder-	Moderate/Sever	e Z: Moder-	
	Assessment	ate/Severe	Assessment	ate/Severe	
	(Misde-	Assessment	(Misde-	Assessment	
	meanors)	(Misde-	meanors)	(Misde-	
		meanors)		meanors)	
Asian	0.036	0.004	-0.035	-0.001	
	(0.041)	(0.017)	(0.037)	(0.007)	
Black	0.012	-0.002	0.009	-0.003**	
	(0.014)	(0.002)	(0.010)	(0.001)	
Race other	0.080	-0.038*	-0.015	-0.020	
	(0.110)	(0.020)	(0.097)	(0.018)	
Hispanic	-0.043***	-0.004	-0.075***	-0.004	
	(0.011)	(0.004)	(0.011)	(0.003)	
Male	-0.056***	-0.012**	-0.066***	-0.011**	
	(0.014)	(0.006)	(0.011)	(0.005)	
Age at booking	0.001	0.000	0.003***	0.001***	
	(0.001)	(0.000)	(0.000)	(0.000)	
Number of priors	0.012***	0.000	0.011***	0.001***	
	(0.002)	(0.000)	(0.001)	(0.000)	
Time fixed effects	Yes	Yes	Yes	Yes	
F-test	11	2	33	4	
Observations	11147.000	11147.000	30642.000	30642.000	

 Table A.9: Test of Randomization for Moderate/Severe Assessment (Misdemeanors)

Notes: These linear probability models control for the baseline characteristics used in the instrumental variables analyses. The binary dependent variable in columns (1) and (3) is being assigned a moderate-to-severe mental illness score at initial assessment. The dependent variable in columns (2) and (4) is the propensity to assign a high or low score to inmates. Time fixed effects include month-year fixed effects. Clinician and inmate two-way clustered standard errors shown in parentheses. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01

	Transiti	on Age	Adı	ılts
	(1)	(2)	(3)	(4)
	Moderate/Seve	re Z: Moder-	Moderate/Seve	re Z: Moder-
	Assessment	ate/Severe	Assessment	ate/Severe
	(Felonies)	Assessment	(Felonies)	Assessment
		(Felonies)		(Felonies)
Asian	0.036	-0.001	0.022	-0.005
	(0.048)	(0.013)	(0.035)	(0.005)
Black	-0.019	-0.004	0.015	0.001
	(0.013)	(0.003)	(0.010)	(0.002)
Race other	0.356**	0.022	-0.199***	0.011
	(0.158)	(0.026)	(0.037)	(0.022)
Hispanic	-0.055***	-0.003	-0.064***	-0.005
	(0.014)	(0.003)	(0.010)	(0.004)
Male	-0.078***	-0.015**	-0.067***	-0.010*
	(0.017)	(0.007)	(0.009)	(0.006)
Age at booking	0.004***	0.001***	0.003***	0.001***
	(0.002)	(0.000)	(0.000)	(0.000)
Number of priors	0.001	-0.001***	0.006***	0.000
	(0.001)	(0.000)	(0.001)	(0.000)
Time fixed effects	Yes	Yes	Yes	Yes
F-test	4	3	25	4
Observations	9,226.000	9,226.000	27515.000	27515.000

Table A.10: Test of Randomization for Moderate/Severe Assessment (Felonies)

Notes: These linear probability models control for the baseline characteristics used in the instrumental variables analyses. The binary dependent variable in columns (1) and (3) is being assigned a moderate-to-severe mental illness score at initial assessment. The dependent variable in columns (2) and (4) is the propensity to assign a high or low score to inmates. Time fixed effects include month-year fixed effects. Clinician and inmate two-way clustered standard errors shown in parentheses. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01

	Transition Age	Adults
LOS	10.425	15.173
	(1.882)	(1.882)
Suicide attempt (SA)	-0.009	-0.005
	( 0.006)	( 0.006)
SA/(LOS + 1)	-0.002	-0.000
	( 0.001)	( 0.001)
Recid within 1 year	0.339	0.270
	( 0.057)	( 0.057)
Recid within 18 months	0.399	0.316
	( 0.065)	( 0.065)
Recid within 2 years	0.408	0.335
	( 0.065)	( 0.065)

 Table A.11: Complier Means Moderate/Severe Assessment (Misdemeanors)

Notes: This table reports the complier mean and standard error (in parentheses) for each dependent variable.

	Transition Age	Adults
LOS	48.454	59.589
	(15.739)	(15.739)
Suicide attempt (SA)	-0.008	-0.011
	( 0.010)	( 0.010)
SA/(LOS + 1)	0.000	-0.001
	(0.001)	( 0.001)
Recid within 1 year	0.445	0.361
	( 0.059)	( 0.059)
Recid within 18 months	0.531	0.435
	( 0.048)	( 0.048)
Recid within 2 years	0.577	0.483
	( 0.056)	( 0.056)

 Table A.12: Complier Means Moderate/Severe Assessment (Felonies)

Notes: This table reports the complier mean and standard error (in parentheses) for each dependent variable.

Transition Age						
	Male (1)	Female (2)	Black (3)	White (4)	$\frac{\text{Hispanic}}{(5)}$	
Z: Clinician's Leave-Out Mean Mental Health Score	0.735*** (0.046)	0.796*** (0.082)	0.822*** (0.062)	0.727*** (0.041)	0.630*** (0.046)	
Observations	7,841	3,306	2,897	8,118	3,930	
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	
Controls	Yes	Yes	Yes	Yes	Yes	
	A	dults				
	Male	Female	Black	White	Hispanic	
	(1)	(2)	(3)	(4)	(5)	
Z: Clinician's Leave-Out	0.848***	0.866***	0.942***	0.829***	0.735***	
Mean Mental Health Score	(0.034)	(0.070)	(0.050)	(0.047)	(0.059)	
Observations	22,380	8,262	7,762	22,498	7,502	
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	
Controls	Yes	Yes	Yes	Yes	Yes	

# Table A.13: Average Monotonicity Tests (Misdemeanors)

Transition Age						
	Male (1)	Female (2)	Black (3)	White (4)	$\frac{\text{Hispanic}}{(5)}$	
Z: Clinician's Leave-Out Mean Mental Health Score	0.800*** (0.040)	1.081*** (0.130)	0.887*** (0.108)	0.850*** (0.045)	0.672*** (0.053)	
Observations Time Fixed Effects Controls	7,449 Yes Yes	1,776 Yes Yes	2,995 Yes Yes	6,145 Yes Yes	3,328 Yes Yes	
	A	dults				
$\frac{\text{Male}}{(1)}  \frac{\text{Female}}{(2)}  \frac{\text{Black}}{(3)}  \frac{\text{White}}{(4)}  \frac{\text{Hispanic}}{(5)}$						
Z: Clinician's Leave-Out Mean Mental Health Score	0.933*** (0.039)	0.975*** (0.106)	0.916*** (0.088)	0.956*** (0.047)	0.747*** (0.052)	
Observations Time Fixed Effects Controls	21,508 Yes Yes	6,005 Yes Yes	7,873 Yes Yes	19,409 Yes Yes	7,642 Yes Yes	

# Table A.14: Average Monotonicity Tests (Felonies)

		Transition Age			Adults	
	(1) OLS	(2) 2SLS	(3) IVLASSO	(4) OLS	(5) 2SLS	(6) IVLASSO
1.05	5.209***	9.532***	8.159***	6.297***	0.332	1.846
205	(0.752)	(3.318)	(2.573)	(0.362)	(2.278)	(2.075)
		[3.372 15.693]			[-3.907 4.571]	
Suicida attampt $(SA)$	0.018***	0.043**	0.031*	0.015***	0.022***	0.018***
Suicide attempt (SA)	(0.005)	(0.019)	(0.017)	(0.002)	(0.007)	(0.007)
		[0.008 0.079]			[0.010 0.036]	
SA/(LOS + 1)	0.002*	0.006*	0.005*	0.003***	0.004**	0.005***
SA/(LOS + 1)	(0.001)	(0.003)	(0.003)	(0.000)	(0.002)	(0.001)
		[0.000 0.011]			[0.001 0.008]	
	0.055***	0.175***	0.243**	0.169***	0.311***	0.351***
Recid within 1 year	(0.018)	(0.066)	(0.116)	(0.019)	(0.094)	(0.093)
		[0.052 0.298]			[0.136 0.486]	
Desid within 10 months	0.063***	0.124	0.253*	0.168***	0.294***	0.342***
Recid within 18 months	(0.024)	(0.079)	(0.148)	(0.018)	(0.093)	(0.095)
		[-0.022 0.271]			[0.122 0.466]	
	0.063**	0.126*	0.318**	0.162***	0.286***	0.346***
Recid within 2 years	(0.031)	(0.070)	(0.149)	(0.018)	(0.092)	(0.099)
		[-0.005 0.256]			[0.115 0.457]	
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes

Table A.15: Effects of Initial Assessment of White Inmates and Moderate/Severe Assessment (Misdemeanors)

	Transition Age			Adults		
	(1) OLS	(2) 2SLS	(3) IVLASSO	(4) OLS	(5) 2SLS	(6) IVLASSO
LOS	24.121***	27.923*	28.495 (28.314)	23.927***	24.588**	23.781*
	0.017***	[-0.868 56.714]	0.027**	0.021***	[2.865 46.311]	0.021**
Suicide attempt (SA)	(0.001)	(0.013)	(0.012)	(0.002)	(0.008)	(0.009)
SA/(LOS + 1)	0.001***	$[0.016\ 0.066]$ 0.002 (0.001)	0.001	$0.001^{***}$	[0.014 0.045] 0.001*** (0.000)	0.001**
Recid within 1 year	0.029***	[-0.000 0.004] 0.094	0.142*	0.027***	[0.000 0.002] 0.056	0.121*
	(0.006)	(0.071) [-0.037 0.225]	(0.081)	(0.005)	(0.054) [-0.044 0.156]	(0.068)
Recid within 18 months	0.030* (0.017)	0.031 (0.053)	0.138 (0.120)	0.024*** (0.007)	0.027 (0.048)	0.117 (0.073)
Recid within 2 years	0.034***	[-0.066 0.129] 0.019	0.116	0.023***	[-0.061 0.116] 0.021	0.122
	(0.012)	(0.057) [-0.076 0.125]	(0.141)	(0.008)	(0.046) [-0.064 0.107]	(0.079)
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes

Table A.16: Effects of Initial Assessment of White Inmates and Moderate/Severe Assessment (Felonies)

		Transition Age			Adults	
	(1) OLS	(2) 2SLS	(3) IVLASSO	(4) OLS	(5) 2SLS	(6) IVLASSO
LOS	7.129***	-1.972	12.254***	6.797***	-1.713	0.217
	(0.492)	(5.325)	(2.690)	(1.197)	(2.800)	(2.154)
		[-12.832 6.819]			[-6.911 3.484]	
Suicida attampt $(SA)$	0.020	0.056	0.045	0.005	0.018***	0.019***
Suicide attempt (SA)	(0.013)	(0.037)	(0.029)	(0.004)	(0.003)	(0.003)
		[-0.012 0.124]			[0.011 0.023]	
$C \Lambda / (I \cap C + 1)$	0.004	0.011	0.008	0.000*	0.003*	0.004***
SA/(LOS + 1)	(0.004)	(0.008)	(0.006)	(0.000)	(0.001)	(0.001)
		[-0.004 0.027]			[0.000 0.005]	
Desid within 1 ween	0.048***	-0.001	0.176	0.126***	0.255***	0.154
Recid within I year	(0.012)	(0.098)	(0.270)	(0.039)	(0.085)	(0.125)
		[-0.183 0.181]			[0.114 0.412]	
Desid within 10 months	0.059***	0.098	0.184	0.115***	0.211**	0.130
Recid within 18 months	(0.013)	(0.097)	(0.272)	(0.041)	(0.084)	(0.120)
		[-0.080 0.277]			[0.055 0.367]	
Desid within 2 weens	0.054***	0.138	0.126	0.104***	0.218***	0.139
Recid within 2 years	(0.011)	(0.095)	(0.328)	(0.040)	(0.081)	(0.116)
	·	[-0.037 0.313]			[0.067 0.368]	
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes

Table A.17: Effects of Initial Assessment of Black Inmates and Moderate/Severe Assessment (Misdemeanors)

	Transition Age			Adults		
	(1) OLS	(2) 2SLS	(3) IVLASSO	(4) OLS	(5) 2SLS	(6) IVLASSO
LOS	24.169***	90.230***	54.176*	20.779***	25.185*	9.981
	(3.807)	(19.907)	(28.175)	(1.061)	(14.276)	(12.264)
		[57.351 130.845]			[1.467 54.485]	
Suicida attampt $(SA)$	0.018***	0.033	-0.024	0.008***	0.030***	0.014
Suicide attempt (SA)	(0.004)	(0.038)	(0.015)	(0.002)	(0.010)	(0.010)
		[-0.030 0.111]			[0.013 0.051]	
	0.000	-0.001	-0.003*	0.000***	0.003**	0.002
SA/(LOS + 1)	(0.000)	(0.002)	(0.002)	(0.000)	(0.001)	(.)
		[-0.004 0.002]			[0.001 0.006]	
~	0.025***	-0.099	-0.051	0.039***	0.056	0.030
Recid within I year	(0.004)	(0.119)	(0.223)	(0.008)	(0.043)	(0.054)
		[-0.342 0.098]			[-0.023 0.144]	
Desidentifier 19 meanths	0.017	-0.116	0.043	0.034***	0.001	-0.015
Recia within 18 months	(0.015)	(0.099)	(0.201)	(0.010)	(0.042)	(0.071)
		[-0.318 0.067]			[-0.068 0.087]	
	0.017**	-0.117	0.081	0.027***	-0.028	-0.041
Recid within 2 years	(0.007)	(0.112)	(0.240)	(0.007)	(0.040)	(0.073)
		[-0.345 0.068]			[-0.094 0.054]	
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes

Table A.18: Effects of Initial Assessment of Black Inmates and Moderate/Severe Assessment (Felonies)

		Transition Age			Adults	
	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	2SLS	IVLASSO	OLS	2SLS	IVLASSO
LOS	4.294***	10.382*	10.262**	5.627***	-9.464**	-1.736
	(1.610)	(5.945)	(5.150)	(1.176)	(4.333)	(4.741)
Suicide attempt (SA)	0.017*** (0.006)	[0.541 22.538] 0.042 (0.026) [-0.007 0.091]	0.041** (0.019)	0.010*** (0.003)	[-17.503 -1.424] 0.010 (0.008) [-0.004 0.025]	0.008 (0.007)
SA/(LOS + 1)	0.004** (0.002)	0.007 (0.005) [-0.003 0.017]	0.008* (0.005)	0.001*** (0.000)	0.001 (0.002) [-0.002.0.005]	0.001 (0.002)
Recid within 1 year	0.065***	0.255***	0.357	0.147***	0.243**	0.298*
	(0.015)	(0.093)	(0.219)	(0.032)	(0.117)	(0.155)
Recid within 18 months	0.072***	0.162	0.339	0.144***	0.226*	0.287*
	(0.021)	(0.108)	(0.290)	(0.025)	(0.125)	(0.174)
Recid within 2 years	0.067** (0.029)	[-0.037 0.361] 0.141 (0.105) [-0.054 0.335]	0.424 (0.291)	0.139*** (0.022)	[-0.006 0.458] 0.216* (0.127) [-0.020 0.452]	0.287 (0.191)
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Baseline Controls	Yes	Yes	Yes	Yes	Yes	Yes

Table A.19: Effects of Initial Assessment of Hispanic Inmates and Moderate/Severe Assessment (Misdemeanors)

	Transition Age			Adults			
	(1) OLS	(2) 2SLS	(3) IVLASSO	(4) OLS	(5) 2SLS	(6) IVLASSO	
LOS	23.761*** (7.241)	45.669 (28.311)	-63.637 (92.471)	25.101*** (1.818)	22.910 (21.399)	47.339** (22.833)	
Suicide attempt (SA)	0.013** (0.006)	[-6.648 97.986] 0.045 (0.027) [-0.000 0 101]	0.032* (0.017)	0.016*** (0.005)	[-16.823 62.643] 0.027** (0.011) [0.007.0.047]	0.016* (0.009)	
SA/(LOS + 1)	0.000 (0.000)	0.002 (0.001) [-0.000.0.005]	0.001* (0.001)	0.001*** (0.000)	0.001 (0.001) [-0.000.0.003]	0.001 (0.001)	
Recid within 1 year	0.032*** (0.008)	0.020 (0.120)	0.314* (0.186)	0.029** (0.014)	-0.019 (0.097)	0.206 (0.141)	
Recid within 18 months	0.031*** (0.004)	$[-0.202 \ 0.242]$ -0.024 (0.080) $[0.172 \ 0.122]$	0.395* (0.228)	0.027** (0.012)	-0.021 (0.088)	0.243 (0.148)	
Recid within 2 years	0.040*** (0.003)	-0.057 (0.083) [-0.210 0.095]	0.296 (0.265)	0.035*** (0.012)	-0.048 (0.077) [-0.191 0.096]	0.237 (0.164)	
Time fixed effects Baseline Controls	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	

Table A.20: Effects of Initial Assessment of Hispanic Inmates and Moderate/Severe Assessment (Felonies)