Distribution Agreement

In presenting this thesis or dissertation as a partial fulfillment of the requirements for an advanced degree from Emory University, I hereby grant to Emory University and its agents the non-exclusive license to archive, make accessible, and display my thesis or dissertation in whole or in part in all forms of media, now or hereafter known, including display on the world wide web. I understand that I may select some access restrictions as part of the online submission of this thesis or dissertation. I retain all ownership rights to the copyright of the thesis or dissertation. I also retain the right to use in future works (such as articles or books) all or part of this thesis or dissertation.

Signature:

_____ _____

Zoe Kaplan Date

Implications of ACA Medicaid Expansion on Access to Substance Use Treatment Facilities with Specialty Programs for Justice-Involved Clients

By

Zoe Kaplan
Master of Science in Public Health

Health Policy and Management

Courtney Yarbrough, PhD
Committee Chair

Peter Joski
Committee Member

Silke von Esenwein, PhD
Committee Member

Implications of ACA Medicaid Expansion on Access to Substance Use Treatment Facilities with Specialty Programs for Justice-Involved Clients

By

Zoe Kaplan

Bachelor of Arts
Colby College
2018

Thesis Committee Chair: Courtney Yarbrough, PhD

An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Science in Public Health
in Health Policy and Management
2020

Abstract

ACA Medicaid Expansion Increases Supply of Substance Use Treatment Facilities with Specialty Programs for Justice-Involved Clients
By Zoe E. Kaplan

As the United States grapples with both historically high incarceration and substance use disorder (SUD) rates, recent health insurance expansions and criminal justice (CJ) reforms offer opportunities to address dual concerns of public health and safety through increased access to evidence-based, cost-effective treatment alternatives. Specifically, clients—those exiting or diverted from the CJ system—are referred to CJ programs, which can entail mandatory treatment contracts delivered in SUD treatment facilities. While insurance expansion studies explore the impact on CJ-clients' insurance status and treatment admission rates (i.e., demand-side response), none have examined the supply-side response, which is crucial when determining access to treatment. To address this gap, this research analyzed the effect of state Medicaid expansions through the Affordable Care Act (ACA) on the likelihood of SUD facilities offering CJ programs and relevant services. It further explored whether a SUD burden moderates these effects. Two-way fixed effects, difference-in-difference logistic regressions were performed using 2013-2017 National Survey of Substance Abuse Treatment Services (N-SSATS) data to compare change in likelihood following expansion. In secondary models, an interaction term measured the moderating impact of state-level SUD burden in this relationship. While percentage of facilities offering CJ programs increases over time, when controlling for confounders, Medicaid expansion effect was not statistically significant. However, when accounting for the moderating effect, the relationship between expansion and offering a CJ program is statistically significant, varying by SUD burden level. Expansion increases a facility's probability in states with lower rates of SUD, however, is decreases in states with higher SUD rates (though not statistically significant). Although hypothetically, Medicaid expansion helped, these estimates suggest facilities in expansion states with high SUD burden may crowd justice clients out of treatment, potentially because facilities are discouraged from offering time and resource intensive CJ programs. Hence, while policy intentions may have been genuine, more targeted policies are needed to increase this population's access to treatment. This study presents numerous avenues for future research; examining long-term implications of this policy change and interactions with constructs outside this scope. Moreover, qualitative studies of justice clients' treatment accessibility will further explore barriers to patients' SUD recovery.

Implications of ACA Medicaid Expansion on Access to Substance Use Treatment Facilities with Specialty Programs for Justice-Involved Clients

By

Zoe Kaplan

Bachelor of Arts
Colby College
2018

Thesis Committee Chair: Courtney Yarbrough, PhD

A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Science in Public Health
in Health Policy and Management
2020

Contents

ACA Medicaid Expansion's Implications on Supply of Substance Use Treatment Facilities with Specialty Programs for Justice-Involved Clients

By Zoe E. Kaplan

Abstract

As the United States grapples with both historically high incarceration and substance use disorder (SUD) rates, recent health insurance expansions and criminal justice reforms offer opportunities to address the dual concerns of public health and public safety through increased access to evidence-based, cost-effective substance use treatment alternatives. Specifically, clients—who include individuals exiting or being diverted from the criminal justice system—are referred to designated criminal justice (CJ) programs, which can entail mandatory treatment contracts for care delivered in the specialty SUD treatment facilities. While insurance expansion studies have explored the impact on CJ-clients' insurance status and treatment admission rates (i.e., the demand-side response), the literature has yet to examine the supply-side response, which is crucial when determining access to treatment. To address this gap, this research analyzed the effect of state Medicaid eligibility expansions through the Patient Protection and Affordable Care Act (ACA) on the likelihood of SUD facilities offering CJ programs and other relevant services. It further explored whether a state's SUD burden moderate these effects. Two-way fixed effects, difference-in-difference logistic regressions were performed using 2013-2017 data from the National Survey of Substance Abuse Treatment Services (N-SSATS) to compare the change in likelihood of a SUD facility offering these programs following expansion. In secondary models, an interaction term measured the moderating impact of state-level SUD burden in this relationship. While the percentage of facilities offering CJ programs increases over time, when controlling for confounders, Medicaid expansion does not have a statistically

significant effect. However, this study finds that when accounting for the moderating effect of states' SUD burden, the relationship between Medicaid expansion and offering a CJ program is statistically significant, varying by SUD burden level. Medicaid expansion increases a facility's probability of offering a CJ program in states with lower rates of SUD. However, this relationship (though not statistically significant) in states with higher SUD rates. Although hypothetically, Medicaid expansion helped, these estimates suggest facilities in expansion states with high SUD burden, justice clients may be crowded out of treatment, potentially because facilities are discouraged from offering the time and resource intensive CJ programs. Hence, while policy intentions may have been genuine, additionally, potentially more targeted policies are needed to increase this population's access to treatment. This study presents numerous avenues for future research; potentially examining not only the long-term implications of this policy change, but it's interactions with constructs outside the scope of this study. Moreover, qualitative studies of justice clients' treatment accessibility will provide further insight into the barriers to patients' SUD recovery.

Chapter 1: Introduction

Across the United States, rates of substance use disorder (SUD), defined as recurring use of alcohol and/or drugs that causes significant clinical and functional impairment, have reached alarming proportions [1]. While SUD affects individuals from all backgrounds and social positions, adults incarcerated in jails and prisons experience disproportionately higher SUD rates compared to the general population. The U.S. Department of Justice reported that 53% of state and 45% of federal prisoners and about one-third of adults on probation or parole meet the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) clinical criteria

for a SUD[1] [2]. Moreover, justice-involved individuals are at a tenfold higher risk of contracting an infectious disease, such as HIV and hepatitis C, due to intravenous drug use [3]. Evidence indicates that incarceration is a drug overdose risk factor, as overdose is a leading cause of death among recently released inmates [4]. Together, a number of societal factors, such as an insufficient access to treatment, socioeconomic and demographic characteristics, and a tradition of criminalizing addiction and mental illness have created the perfect storm in which an individual with a SUD has historically been more likely to be incarcerated than to receive adequate access to treatment services [5,6].

These staggering statistics have helped shift the consensus that past criminal justice approaches to SUD are not only counterproductive but also carry a financial cost that is unsustainable. In turn, collaborations among US policy makers, public health specialists, and the criminal justice system continue to generate bipartisan initiatives that address this epidemic through legislation, policies and programs [7,8,9]. With increasing evidence supporting drug and alcohol treatment among the justice-involved community, states have begun to not only repeal mandatory drug offense penalties, but also expand and strengthen community-based correction alternatives. Due in part to these initiatives, justice-involved individuals now account for more than 40% of those enrolled in treatment programs [10]. While justice-based polices and legislation offer an alternative, a number of well-documented gaps in access to treatment remain. In 2011, lack of health insurance coverage was one of the most cited remaining barriers to SUD treatment [11]. However, the implementation of the Patient Protection and Affordable Care Act

[1] In the DSM-5, substance abuse and substance dependence have been merged into the category of substance use disorders. The severity of substance use disorders can vary widely; in the diagnosis of a SUD, the severity of an individual's SUD is qualified as mild, moderate, or severe on the basis of how many of the 11 diagnostic criteria are met. In the DSM-5, the term drug addiction is synonymous with severe substance use disorder [2].

(ACA) offered considerable opportunities to improve the access and quality of care for justice-involved clients seeking SUD treatment.

Beginning in 2014 under the ACA, new small group and Marketplace health insurance plans were required to cover mental health and SUD treatment services at parity with other medical services [12]. Potentially even more impactful was the law's expansion of eligibility for Medicaid insurance to adults with incomes at or below 138 percent of the federal poverty level. A 2012 Supreme Court decision made the law's intended nationwide Medicaid eligibility expansion optional for states [13,14]. In 2014, the first year of Medicaid expansion, twenty-seven states plus the District of Columbia (DC) opted to expand Medicaid eligibility through the ACA [15]. In subsequent years, additional states joined the list of expanders. By the final year of this study, 2017, there were thirty-one states and DC that had expanded, and nineteen had still not expanded [16].

Due to the predominantly low-income status of the SUD criminal justice population, estimates indicate that between 70-80% of these clients would be eligible for Medicaid upon release from the correctional system in Medicaid expansion states [17]. However, unaddressed barriers may partially attenuate the impact of this legislation. While Medicaid expansion has the potential to significantly increase the proportion of justice-involved clients enrolled in Medicaid, access to insurance does not necessarily reflect ability to receive treatment. Due to court- and diversion-mandated restrictions, many clients are required to enroll in facilities that offer specifically designated CJ programs [18]. However, expansion does not require facilities to implement such CJ programs. Therefore, it is important to investigate the supply side of treatment access through designated CJ programs.

This study used a national directory of all of SUD treatment facilities with state identifiers to examine whether ACA Medicaid expansion has affected the likelihood of SUD facilities offering criminal justice treatment programs. To investigate the specific effects of the ACA Medicaid expansion and control for contemporaneous state and year variations, this study conceptually framed the complex relationships using a modified version of Anderson's Behavioral Model. Analytically, it employed a two-way fixed effect, difference-in-difference econometric design with logistic regression to compare SUD facilities' offer of CJ programs before and after a state implemented Medicaid expansion. Further, it examined how a state's SUD burden may moderate this relationship between treatment services offerings and Medicaid expansion using an interaction between SUD burden and expansion status, as treatment facilities in states with a different rates of SUD may vary in their responsiveness to the policy change.

As the nation continues its push to decriminalize and divert justice-involved clients away from the criminal justice system and into community alternatives, the rates of this population seeking treatment will continue to climb [19]. Furthermore, in response to increased access to public health insurance funding, federal and state legislation has significantly reduced federal block grants to states for CJ SUD programs, historically the primary payment source or these programs [20,21]. Unfortunately, the uncertain political future of the ACA and its Medicaid expansion bring to question the need for supplementary revenue streams [22]. The results of this study can inform state policymakers and stakeholders of the extent of Medicaid expansion's impact on the supply side of SUD treatment access; specifically, the availability of CJ programs, of which are evidence-based and financially accessible. In turn, this study offers pertinent information with the potential to inform future policy discussions on the gaps in access that remain.

Chapter 2: Literature Review

2A: Introduction

As the United States grapples with both historically high incarceration and substance use disorder rates, it is critical to be familiar with past events in order to prevent history from repeating itself. The national movements to deinstitutionalize mental illness during the 1970s failed to improve mental health service quality and access, due in part to a lack of alternative community-based treatment services, resulting in reinstitutionalization through the corrections system and de facto criminalization of mental illness [23].

Similarly, the historical framing of substance use as criminal behavior rather than symptoms of chronic, relapsing disease led to high rates of substance-related incarceration and rapid growth of the number of corrections facilities rather than improvements in access to SUD care and expansion of the specialty SUD treatment system. In recent years, the US has begun to reassess this approach to SUD. Specifically, federal and state policies have shifted the focus away from incarcerating individuals with SUD and towards justice reform strategies [24].

This push to decriminalize and divert clients living with SUDs has increased the size of the population seeking specialty alternative treatment services. Thus, it is crucial to ensure that a sufficient number of accessible, community-based treatment services meet the CJ diversion-specific criteria [25]. While recent insurance expansions have aimed at addressing the financial barriers to care, follow-up studies have failed to find a statistically significant increase in justice-referred clients accessing specialty treatment [26]. Given these findings, it is crucial to examine whether barriers—such as supply of facilities with specialty CJ-referred programs—remain following the ACA and Medicaid expansion, which may continue to limit this population's access to treatment.

2B: Historical Context

The deinstitutionalization of mental illness took hold in 1955 as a policy that moved individuals with serious mental illness (SMI) out of large state institutions and into the community. Deinstitutionalization entailed unintended consequences, however, playing a significant role in a mental illness crisis. A reduction of 486,620 persons in state mental institutions during the time span of 1955 to 1994 reflects the magnitude of this movement [27]. Three key forces that drove this movement include cultural shifts with patients' rights movements, the introduction of new antipsychotic medications, and the potential to reduce the high costs associated with inpatient psychiatric treatment [28]. While deinstitutionalization varied from state to state, this movement was universally met with inadequate community-based mental health services [29]. Several lines of evidence suggest that the insufficient supply of quality community-based alternatives contributed to an increase in the size of the criminal justice population [30]. Furthermore, observations by psychiatrists and correctional staff indicated a large proportion of this newly incarcerated population suffered from SMI [31,32]. Together, studies examining this movement conclude this gap in access to community health services led to the reinstitutionalization of the SMI population in the criminal justice system [33]. As the SMI institutionalization rate steadily decreased, national stigmatization towards drugs and substance use disorder was escalating [34].

In 1971, President Richard M. Nixon's declared a War on Drugs, spurring a 40-year effort to criminalize and incarcerate individuals with SUD. These efforts increased drastically during the Reagan and Clinton administrations [35]. While supporters argued this movement aimed to stop illegal drug use, distribution, and trade by increasing and enforcing penalties for offenders; deep-rooted prejudice and racially discriminatory ideology underscored these policies. Retrospective studies indicate these approaches disproportionately targeted low-income, non-

White individuals [36,37]. In the following three decades, drastic increases in drug law enforcement spending at the federal and state levels quickly outpaced funding for treatment, prevention, and research. Drug incarceration spiked from 40,900 individuals the 1980s to 469,545 in 2015 [38]. This mass incarceration movement resulted in severe economic and societal consequences for those targeted.

Analyses indicate that past government efforts of substance interdiction and law enforcement, costing over $1.5 trillion, have not been met with reductions in illicit drug supply or drug use [39]. Additionally, substance use disorder has become a characteristic feature of the U.S. criminal justice system. Literature examining the relationship between SUD and the criminal justice system consistently documents the strong links between SUDs, criminal justice involvement, and incarceration [40,41,42]. While intervention is needed to address illegal behavior, enforcement tactics have failed to tackle the underlying problems of substance use disorder and addiction [43,44,45].

Among the high societal consequences of the War on Drugs policies are substantial economic costs. A recent report from the National Center on Addiction and Substance Abuse, a nonpartisan research and policy organization, found that adult offenders suffering from substance abuse account for approximately 80 percent of justice-related state costs [46]. The U.S. Department of Justice National Drug Intelligence Center economic impact report concluded that the cost of illicit drug use alone totaled more than $193 billion in health care costs, reduced economic productivity, and increased criminal justice expenditures. Broken down, direct and indirect costs attributable to criminal justice was estimated above $61 billion [47]. To address these high economic and societal costs, recent state and federal legislation have shifted efforts towards justice diversion tactics and evidence-based treatment.

2C: Movement towards the CJ-Reform with the decriminalization and diversion of SUD

Providers, researchers, and policymakers have increasingly refocused their efforts to establish, test, and refine evidence-based interventions to better address the systemic issues of substance use disorders within the criminal justice system [48]. Over the last two decades, Congress has passed a number of substance use-related reform policies [49]. At the state and local levels, policymakers have passed numerous drug reform measures and have taken steps to roll back mandatory sentencing [50]. This national shift away from incarceration towards treatment is driven not only by the staggering costs of incarcerating millions of nonviolent drug offenders but also by the growing societal recognition that SUD is a public health issue [51].

While justice reform and diversion are highly variable, most states and jurisdictions have adopted some form of the Sequential Intercept Model (SIM) as a crime reduction or diversion strategy [52]. The model's six "intercept points" represent potential areas at which individuals may be diverted from the justice system and towards community treatment alternatives. While jurisdiction-specific, alternative interventions may include mandatory treatment contracts that precisely define the requirements on the client to adhere to specific treatment plans and legal sanctions for noncompliance. The contracts offer rewards or incentives for specific behaviors and monitoring via drug testing. Evaluation studies have found these approaches to be less restrictive than incarceration and offer greater opportunities for rehabilitation and restoration [53,54,55]. Together, movement towards these diversion alternatives are associated with increased justice-referred entry into community-based treatment, treatment retention and substance abstinence.

The evidence supporting mandated treatment programs is extensive. Leveraging these evidence-based findings, Congress integrated the SIM into the 21st Century Cures Act (2016), which rapidly expanded SIM programs across the United States [56]. Similar to previous SIM

analyses, Bonfine & Nadler (2019) conclude that recent national initiatives and supply expansion increased demand for specialty CJ treatment programs [31-34,57,58]. With this knowledge, it is critical to understand the rehabilitation and treatment process of SUD.

2D: Treating SUD in the general population:

Treatment programs for SUD are not universal. SUD treatment options vary in terms of substance and severity. An individual's environmental, biological, and psychosocial characteristics differ significantly, and treatment is just as unique. A 2014 SAMHSA study found that, among the general population, approximately 1%—that is 3 million individuals— received SUD treatment. Roughly half received treatment for alcohol use disorder and the remaining half for illicit drug use [59]. The broad definition of SUD means that treatment takes many different forms and can be delivered in a range of settings with varying intensity. However, the goals of SUD treatment are similar to treatment for any medical condition—to reduce the major symptoms of the illness and return the patient to a state of full functioning [60]. This can be done through one or more types of behavioral interventions delivered in individual, group, and family settings. Evidence-based interventions range from psychosocial treatment to cognitive behavioral and motivational treatments. Additionally, the behavioral health community broadly recognizes that for the approximately 2.1 million individuals with opioid (e.g., prescription pain relievers, heroin) user disorder (OUD), opioid agonists, (i.e., buprenorphine and methadone) are effective, FDA-approved Medications for Opioid Use Disorder (MOUD) [61]. These medications are considered important treatment services that should be provided across all facilities that treat OUD [62]. As society becomes more aware of the prevalence and severity of SUD, efforts have been directed at expanding the existing health care system to help combat the long-term individual and societal consequences.

2E: Characteristics and Treatment of the SUD CJ-population

Many similarities exist between the SUD general population and the SUD justice system. However, SUD justice-involved clients tend to have even lower incomes, higher uninsured rates, and a wider range of health care service needs compared to the general SUD population. While the SUD-incarcerated community ranges by race and sex, those diverted to treatment are predominately male, non-Hispanic White, and aged 25 to 54 [63,64,65].[2] Knowledge and understanding of these features are key when determining the proper set of treatment services required.

The justice-referred SUD population characteristically requires more intensive treatment management compared to other SUD clients. Despite this complexity, research indicates that combining criminal justice sanctions with drug treatment can be effective in decreasing drug abuse and related crime [66,67]. As noted in the SIM, diversion programs have increasingly integrated this mandatory treatment referral approach [68]. This approach is employed across the "intercept points" (i.e., pretrial, jail, presentencing, probation, prison, parole). The key to effective processing for justice-involved clients is to provide assessments and comprehensive treatment; develop, adhere to, and monitor "treatment plans"; and implement an effective case management plan for post-release supervision and treatment [69]. Evidence strongly suggests that treatment effectiveness is substantially enhanced by adequate social support, monitoring, housing, employment and transitional and other wrap-around services, including MOUD when appropriate [70]. Referring CJ clients to treatment is an important piece, but this approach must include a number of additional services and supports that assist the client in meeting supervision requirements and avoiding future involvement in the criminal justice system.

[22] Racial and gender disparities in justice reform practices are suggested to contribute to these trends [60].

2F: SUD Treatment Facilities with Specialty CJ Programs

Research done in clinical and health services settings indicates the positive societal and economic benefits associated with movement away from incarceration and towards justice-based treatment programs in community settings. To meet the specific needs of the client while also ensuring the treatment program fulfills the correctional contract requirements, justice-related diversion programs often contract with community treatment facilities to offer specialty CJ services [71]. Broadly, these include services such as screening and assessments, detoxification, cognitive-behavioral therapy, case management, and legal assistance. While offering these additional services can be time-intensive and costly, those referred from the criminal justice system make-up approximately 40% of all treatment admissions [72]. Additionally, government financial incentives help to motivate facilities to offer these specialty services [73]. Despite the wide-spread support of diversion programs, evidence suggests this approach has faced significant barriers. McCaig and Burt (2015) found that Miami police officers trained in SUD justice diversion were forced to redirect patients to the ED due to lack of outpatient SUD treatment capacity [74]. Financial constraints further limit diversion programs' ability to attend to the needs of this highly vulnerable population. Financial and capacity limitations have resulted in an on-going struggle for long-term success of justice diversion programs [75].

2G: Cost-savings compared to incarceration

The national opioid epidemic has captured the attention of the public as well as local, state and federal leaders. The decades of research illustrating the effectiveness of SUD treatment in reducing substance use and recidivism [76,77] further promotes the need for increased access to SUD treatment for justice-involved individuals [78]. In addition, when comparing the costs of SUD treatment with associated monetary benefits, there was a seven-to-one return on investments, primarily due to reduced costs of crime and increased employment earnings [79].

California was one of the first states to shift the pendulum in criminal justice policy when Proposition 36 was passed in November of 2000. This act mandated that those entering the justice system for drug-related crimes were eligible to enter probation with mandatory substance use treatment instead of a prison sentence. While the initial fixed costs to set up this program were substantial, this approach has been projected to save the state over $150 million per year [54]. In addition to the projected long-term societal savings, the cost of treatment alone is significantly less than incarceration. Depending on the types of services offered, monthly client treatment costs range from as low as $2,500 for basic drug court treatment to as high as $10,425 for residential treatment. In comparison, incarceration averages $27,985 per participant per year [80]. Despite the potential savings of diversion and treatment, these alternative services still come at a steep price.

2H: Barriers and Limitations to Access

Although economists project long-term economic and social benefits of using diversion and treatment services, past research indicates a historic lack of access to treatment. For justice-referred clients, treatment is still is expensive. Compared to the general SUD population, justice-referred clients are disproportionately from low-income backgrounds and lack health insurance [81], leaving the majority to rely on financial assistance for treatment [82]. Furthermore, based on the term of their correctional treatment contract, these individuals often require additional, costly services [57]. Historically, the justice-system has been the primary payer of diversion treatment, either through direct coverage or indirectly through financial incentives to facilities [83][3]. For a facility to receive specialty government funding, they must coordinate with the

[3] These financial incentives included client-appropriated subsidy financing, Local or State Substance Use Tax Earmarks. The SAMHSA Substance Abuse Prevention and Treatment Block Grant (SABG), the Edward Byrne Memorial State and Local Law Enforcement Assistance, the Program Drug Court Grant Program and other general revenues [83].

diversion program to specify how the level of care will be determined and the extent of services that will be provided, the costs entailed and the entity paying these costs. While some public facilities meet the correctional service requirements, integrating and maintaining these services is burdensome. This often leads to the justice system contracting with private facilities [84].

As the majority of treatment facilities are privately run, they maintain greater autonomy in client acceptance and treatment price. Unfortunately, facilities are often deterred from accepting justice-involved clients due to stigmatization towards the criminal justice community [85]. Additional studies indicate this population is further hindered from accessing treatment due to inadequate financial compensations. While government funding streams have helped to supplement the costs of maintaining criminal justice-referred programs and associated services; grant application is time-intensive and inconsistent funding streams often fail to cover market demand due to funding constraints and complex requirements [86]. From a profitability standpoint, serving non-criminal justice populations offers significantly higher revenue protentional, either through a cash-only basis or private health insurance [87]. Unfortunately, these factors often determine whether a facility decides to offer this specialty program and severely restricts client and service treatment coverage.

2I: Medicaid Expansion and Access to Health Services

The 2010 adoption of the Affordable Care Act (ACA) and its provisions to greatly expand Medicaid insurance coverage to low-income Americans may directly aid in reducing justice-referred treatment coverage constraints [88]. The ACA improved the affordability of SUD treatment through insurance regulation reforms implemented in 2014 that required coverage of SUD treatments, enhanced parity, and created opportunities to integrate SUD treatment with mainstream health care [89]. Additionally, SUD screening, brief intervention, and treatment, deemed Essential Health Benefits, were required to be covered under insurance plans

sold through the ACA Marketplaces. But perhaps the biggest facilitator of treatment receipt for justice-involved populations occurred through Medicaid eligibility expansion.

Initially, the ACA legislated nationwide expansion of Medicaid eligibility to adults with incomes at or below 138% of the federal poverty level (FPL), regardless of health status or criminal history. However, the 2012 Supreme Court National Federation of Independent Business v. Sebelius decision found the law's required Medicaid expansion unconstitutionally coercive of states. Although the ruling upheld the ACA overall as constitutional, it made Medicaid expansion optional rather than mandatory for states [90,91]. Many states implemented expanded Medicaid eligibility on January 1, 2014, the date originally intended by the ACA. A small number of states received waivers to expand eligibility prior to 2014 ("early expanders"); while, other states adopted expansion after 2014 ("late expanders"). As of March 31, 2017, seventeen states had not yet expanded Medicaid eligibility ("nonexpanders") [92].[4] Despite the patchwork implementation, an estimated 12 million Americans had gained health insurance through the ACA Medicaid expansion by this date [93]. By 2018, SUD treatment facilities saw a 131.7 percent increase in clients covered by Medicaid and a 46.8 percent decrease in the share of patients who were uninsured [94].

Supported by past literature and supply and demand principles, there is reason to believe that the ACA and Medicaid eligibility expansion increased the insurance coverage rates and quality, and thus increased demand for accessible health services [95,96,97]. Aletraris & Pruett found that, assuming Centers for Medicare and Medicaid Services reimbursements financially satisfy providers, this growth in coverage eligibility subsequently stimulated growth in the supply of geographically accessible health services to meet the demand for care [98]. These

[4] This is not the current number of expansion states; however, this is based on my study's data timeline.

findings imply potential benefits of Medicaid coverage expansion on substance use treatment for justice involved clients.

Characteristically, no population stands more to gain from Medicaid expansion than those involved in the justice system [99]. In 2014, the US Government Accountability Office estimated that up to 90% of justice-involved clients in expansion states would qualify for Medicaid. In contrast, only 2% of these clients would be eligible in non-expansion states [100]. As outlined in the ACA and Medicaid provisions, low income, potentially justice-involved clients in expansion states will have greater access to insurance that covers a wide range of health care services, including SUD treatment [101]. Additionally, by expanding insurance eligibility and enrolling clients into Medicaid programs, some of the cost burden shifts away from the criminal justice system and onto Centers for Medicare & Medicaid Services (CMS) and state Medicaid programs [102]. As previously noted, recent justice reform policies have redirected efforts to divert justice-involved clients to specialty SUD treatment. However, this movement faced several barriers, such as financial limitations. Medicaid expansion has been hypothesized to address this barrier with its significant reductions in prior federal and state financial constraints by expanding Medicaid eligibility to this previously ineligible population.

2J: Gap in Literature

Little is known about the effect of Medicaid expansion on the availability of SUD treatment for the justice-involved population. The few studies exploring SUD treatment have focused primarily on the impact of Medicaid expansion on SUD treatment coverage and demand-response for the general SUD population. Using the National Survey on Drug Use and Health (NSDUH), Saloner et al. (2016) document that within the first year of expansion, the percentage of uninsured SUD justice-involved clients dropped from 38 to 28%, which they speculated increased demand for services. However, upon further analysis, these changes in

coverage did not lead to dramatic increases in clients' admissions to treatment facilities. Taking these results into account, the authors further speculated a potential lack of access to facilities, which limited the ability of clients to gain admissions [103]. Additionally, the design of the Saloner et al. study prevented the authors from exploring other factors including the distribution of SUD diversion linkages.

Nevertheless, the potential impact of the ACA Medicaid expansions may also be gleaned from prior state-level insurance expansions. Zerhouni et al. (2019) note the lack of immediate increases in cancer screenings following Medicaid expansion may be due to the lag time between gaining insurance and finding a facility that can perform the screening [104]. The characteristic nature of the criminal justice population indicates more severe hindrances that potentially lengthen this lag time in access.

To date, no study has explored the specialty SUD treatment supply-side provider response to Medicaid Expansion and ongoing justice diversion for justice involved clients. While the literature on justice-diversion and SUD treatment is extensive, research has failed to examine if adequate supply of specialty treatment programs is available. While Medicaid expansion has significantly increased the justice-involved population's access to health insurance, it is crucial to examine the supply-side response to changes in the health insurance system. This study helps to investigate some of unexplored areas as well as past limitations by extending the timeframe to three years post-ACA (2017), which allows for considerable lag, and utilizing the N-SSATS, a census dataset with a low nonresponse rate that incorporates states identifiers. Together, these features facilitate the examination of supply-side capacity of the entire spread of treatment facilities across the US.

Chapter 3: Methodology

3A: Theoretical Framework

Utilizing the Anderson Behavioral Model of Health Care Utilization theory [105], this study employed the laws of supply and demand [106] to conceptualize the relationship between Medicaid expansion and the propensity of substance use disorder (SUD) treatment facilities to offer specialty criminal justice (CJ) programs. Broadly, the Andersen framework defines the contextual and individual levels for the predisposing, enabling, and need factors that affect both health care utilization and access. This paper's outcome of interest is access to care, specifically the supply of treatment providers. Therefore, Andersen model was modified to focus on factors that affect treatment facility program offer. Contextually, the state embodies a mixture of interacting predisposing, enabling and need factors, which are hypothesized to affect the supply of facilities. Similarly, the individual level (i.e. facility level) encompass these three factors, which is represented as the typology. The facility's typology is hypothesized to be indicative of a facility's decision to offer specialty programs to low-income, justice-involved populations. Utilizing this framework model, this study further employed economic principles to postulate that ACA's provision of Medicaid expansion has increased the likelihood a SUD treatment facility offers specialty CJ programs (Figure 1).

3B: Conceptual Framework

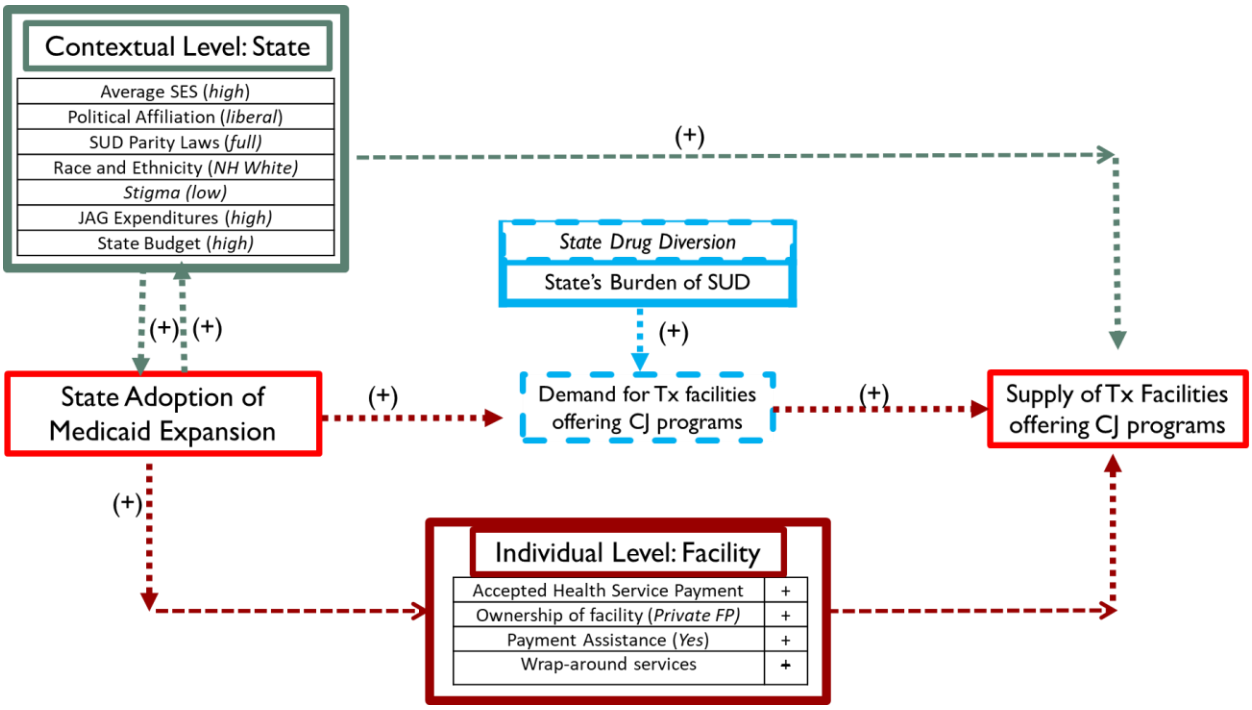


Figure 1. Conceptual Framework

Focal Relationship

This model's focal relationship utilized supply and demand principles to hypothesize that a state's adoption of Medicaid expansion is positively associated with the likelihood of a SUD treatment facilities offering CJ programs. Classic healthcare demand theory suggests that insurance expansions increase the number of clients seeking care by providing a new source of payment (i.e., lowering a potential client's out-of-pocket costs of receiving treatment) and altering the client's economic behavior [107,108]. While these expansions directly impacted individuals' financial access to health services, economic theory indicates an indirect influence the supply and capacity of services.

This study exploits the variation in the timing of Medicaid expansion offered by the Supreme Court's 2012 ruling allowing states to opt out of expanding Medicaid coverage to nearly all individuals with incomes at or below 138 percent of the Federal Poverty Level. By

examining the different start dates of expanded coverage, this study can observe changes in treatment facilitating program offerings pre- and post-expansion. Compared to general health care, it's expected the demand response to be greater for SUD treatment, specifically among justice-involved clients, where 90% of the population was previously ineligible for Medicaid [109]. Coinciding with Medicaid expansion, many states have redirected their efforts towards diversion tactics in response to their unabatingly high volume of SUD in the criminal justice system [110]. It's theorized that these efforts to divert SUD clients will increase the demand for specialty community-based CJ treatment programs that are affordable and quality-based.

On the supply side, capacity and financial constraints within the SUD treatment delivery system [111] may limit treatment providers' ability to meet increased demand for specialty services, at least in the short run. Concurrent to recent legislative funding cuts, as the set Medicaid reimbursement fees often surpass CJ-funding grants and out-of-pocket payments, expansion may further incentivize treatment facilities to offer this specialty program due to this increase in marginal revenue [112,113,114,115]. Ceteris paribus, it's hypothesized that treatment supply will eventually increase to absorb pent-up demand [116]. Supported by past insurance expansion studies, these economic forces may incentivize SUD treatment facilities to offer CJ-referred programs, as well as programs that are quality-based (i.e. offer MOUD) and affordable (i.e. accept Medicaid insurance) as they respond to increases in demand for specialty treatment and potential gains in revenue.

Demand for treatment facilities with CJ programs: A mediator of the focal relationship

Current literature indicates the hypothesized positive association between Medicaid expansion and facility supply of CJ programs is mediated through the "cost-shifting" theory of demand, specifically, criminal justice clients' demand for facilities with specialty programs will intensify the relationship between expansion and program offer [117,118]. Prior to the 2014

expansion of Medicaid eligibility, the high rates of uninsurance and lower-than-average incomes in the justice involved population forced the majority of this population to rely on federal funding and payment assistance programs. Significant time and financial costs associated with SUD diversion and treatment coverage greatly limited these systems' ability support the entire population in need of treatment. However, after expansion, enrollment of this newly eligible population into Medicaid insurance plans shifted the payment burden to CMS [119,120]. Additionally, this also led policymakers to implement major federal funding cuts for block grants, which previously acted as the main source of financing for low-income populations, with the hopes of being offset by Medicaid expansion [121]. As many of this population's treatment costs are now covered by CMS, previous access constraints may be lifted due to increased financial capacity to fund these clients. However, the concomitant decreases in state and local funds from federal block grants could attenuate these effects.

State's SUD Burden Rate and Diversion Efforts: Co-Moderators on the Demand

While Medicaid expansion may address some of the financial barriers of access, additional moderating factors are suggested to affect the strength of demand. The strength of this relationship is moderated through the state's SUD burden rate and usage of justice diversion tactics. The SUD burden rate refers to the state's rate of substance use disorder in the past year per 10,000 residents. Nationally, justice-referred clients make up roughly a third of all treatment referrals, insinuating that increased SUD burden may be linked to increased justice-referred individuals demanding treatment [122]. However, a state's usage of justice diversion tactics reflects their likelihood and/or ability to refer justice-involved clients to SUD treatment. In the US, drug treatment courts are becoming an increasingly popular method of diverting SUD offenders away from incarceration and into community-oriented settings [123,124,125]. Therefore, states with greater numbers of operational drug courts are more likely divert justice-

involved clients to specialty SUD facilities offering CJ-programs [126,127]. The influence these constructs have on the strength of the independent and mechanistic relationship indicates this variable acts as a moderator. In the case of SUD services, these interacting constructs translate to an increase in clients seeking treatment and an introduction of new payment systems, which is hypothesized increase the demand for treatment and trigger an increase in supply of specialty programs.

Facility Level Mediating Factors

The individual-level facility characteristics listed below are hypothesized to mediate the focal relationship.

Measuring a facility's acceptance of any form of health insurance payment separates out those facilities that only take self-pay clients. Insurance includes private insurance and public (e.g., Medicaid, Medicare) insurance (N-SSATS). Multiple studies have found an association between expansion and significant increases in facilities that accept insurance [128]. As the majority of CJ referred clients cannot afford to self-pay for treatment, facilities that offer specialty CJ programs are more likely to also accept some form of insurance [129,130]. Ownership of facility, represents the ownership status of a private non-profit (NP), for-profit (FP), and government facilities. The organizational structure of these facilities is representative of their different objective functions [131]. As for-profit facilities are profit-driven, studies indicate these facilities are less likely to accept Medicaid insurance and be less willing to offer specialty programs for low-income populations [132]. Therefore, this research expects Medicaid expansion to be associated with a greater supply on nonprofit facilities offering CJ programs.

Receives government funding indicates whether the facility is granted additional funding by a government entity. Facilities tailored to specialty populations and/or offering specialty programs/services apply for grants to help offset the additional costs incurred for treating these

clients [133,134]. Sommers et al. (2014) found that in Medicaid expansion states, facilities utilized federal grants to help roll justice-referred clients into Medicaid as well as cover treatment and services not covered under Medicaid [135]. Assisted financing refers to the facility's acceptance of a sliding-fee-scale and other forms of pay assistance for lower-income or uninsured individuals. As this is the primarily means of treatment payment for justice-involved populations [136], this study expects to see a positive association among facilities that utilize assisted financing and offer specialty CJ programs. Studies suggest facilities will continue to offer this form of payment for those that do not qualify for government insurance [137].

Wrap-around services help to address clients' co-occurring problems and are important components towards enhancing treatment retention and outcomes. Therefore, most justice-issued treatment contracts require facilities to offer wrap-around services including assessment, testing, transition and ancillary services. Additionally, as Medicaid's comprehensive payment system helps cover these more expensive services, expansion is associated with increased chance of SUD facilities offering wrap-around services.

Relying on findings from past studies and economic principles, facilities characterized as nonprofit or government-owned and those that receive government funding, offer assisted financing, or wrap-around services are hypothesized to be positively associated with both Medicaid expansion and CJ program offer. Facilities with these typological features will be more likely to respond to changes in demand.

Confounders to the Focal Relationship

Contextual—State-level Confounders: Supported in similar studies, these state-level characteristics are hypothesized to be confounders of the focal relationship.

State government ideology, produced by Berry et al., is a measure that represents state government officials' political ideologies (i.e., policy preferences). Studies indicate that states

with liberal-leaning elected officials to be positively associated with public healthcare expansions and receptiveness to the benefits of justice diversion [138]. The confounder socioeconomic status (SES) is defined as differential access (realized and potential) to desired resources and is traditionally divided into five subgroups education, income, and employment and insurance statuses [139]. On average, states with higher SES measures are more likely to have expanded Medicaid, however, on average, they have lower rates of SUD burden and drug crime [140]. Another confounder is race/ethnicity (R/E) composition, which refers to the shared cultural, social, and historical experiences, originating from common backgrounds that enable variations across subgroups of a population in terms of beliefs, values, and behaviors. Race is a social construct used to distinguish individuals in terms of physical markers considered to be socially significant, while ethnicity is derived from a sense of shared heritage, culture, traditions, and linguistics [141]. Literature on this topic indicates that R/E minorities are more likely to live in non-expansion states; and communities with higher density of minority populations are less likely to offer accessible SUD facilities with specialty programs [142]. Stigma, despite being an unmeasured construct, is an important confounder of this relationship. Stigma can represent a social process used to negatively differentiate "self" from "others" [143].

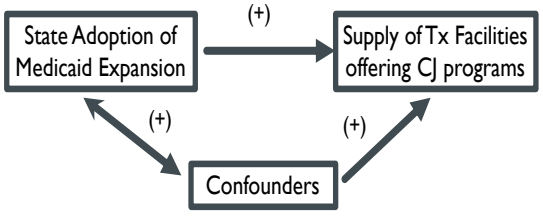
The Edward Byrne Memorial Justice Assistance Grant (JAG) award is the primary provider of federal criminal justice funding to support a range of programs including drug courts, SUD correctional programs and community treatment and drug enforcement. Within treatment facilities, most CJ programs are primarily funded through JAG awards [144]. As many states heavily relied on these federal program funds, the initial threat of withdrawing all funding if opting out of Medicaid expansions further motivated states' decision to expand. State financial capacity is measured by Gross State Product (GSP) per capita, which reflects the state's sum of

value added from all industries in the state. A literature review examining Medicaid expansion and state economies indicates that states with higher GSP's were more likely to adopt Medicaid expansion [145]. Similar to state's access to JAG funding, those with higher GSP are shown to allocate more money to support SUD treatment services, such as CJ programs [146].

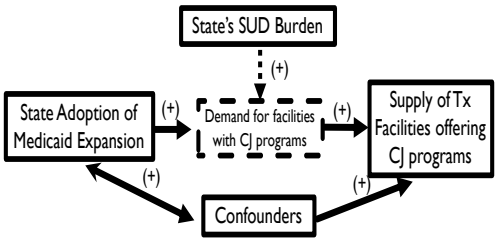
Past studies and theory hypothesize that liberal ideology, high SES and low Black Hispanic, reduced stigma, higher JAG awards and GSP to be positively associated with Medicaid expansion and SUD facilities offering CJ programs.

3C: Hypotheses

H1: Adoption of ACA Medicaid Expansion is positively associated with the likelihood of SUD facilities offering specialty CJ programs after controlling for state and facility-level factors



H2: The positive association between ACA Medicaid Expansion and supply of facilities is greater for states with a greater SUD burden



3D: Data Description

This study used 2013-2017 data from the National Survey of Substance Abuse Treatment Services (N-SSATS) merged with state-level data from the National Survey on Drug Use and Health (NSDUH), the Census Bureau American Fact Finder [147], the Edward Byrne Memorial Justice Assistance Grant (JAG) Program [148], the Annual Survey of State and Local Government Finances (ASSLGF) [149] and the Citizen and Government Ideology Data [150]. Utilizing these data sources, this study estimated the impact of a state's expansion of Medicaid

eligibility (Kaiser Family Foundation (KFF) [151]) on the likelihood of SUD treatment facilities to provide CJ programs from the N-SSATS [152] while controlling for measurable confounders.

The dependent variable and facility-level variables were measured using the N-SSATS, which is an annual survey of all public and private specialty SUD treatment facilities known to the Substance Abuse and Mental Health Services Administration (SAMHSA). Facility settings include hospital, outpatient, residential /rehabilitation, detoxification and halfway houses. To enhance response rates, the survey is issued by mail, phone, or a web-based questionnaire and completed by a facility staff member. Over 15,000 facilities are surveyed annually with an average response rate of 91% [153].

The independent variable of interest—Medicaid expansion—was measured using data from the Kaiser Family Foundation (KFF). Following the Sommers et al. classification (2015), this constructed variable indicated year relative to expansion, with the year prior to expansion as the reference year. Non-expansion states were coded as 0 for all indicator timeframes [154,155].

This study hypothesizes that the magnitude of the effect of Medicaid expansion on the outcomes will vary based on the degree of SUD in a state. Gathered from the National Survey on Drug Use and Health (NSDUH), the states' substance use disorder rate proxied for the demand of individuals seeking SUD treatment. NSDUH is an annual survey of the U.S. civilian, non-institutionalized population ages 12. The publicly available State Estimate Data Reports, which are annually reported as a two-year combined dataset collected on a rolling basis (i.e. 2012-2013), provide prevalence estimates by state. This variable measured the strength of the unmeasured mechanism, demand for specialty CJ treatment programs.

3E: Measures

Construct	Role in Model	Measure	Relationship to DV
State's Adoption of Medicaid Expansion	Independent Variable	Categorical variable indicating period they did/did not expand: *Medicaid, never, early, 2014 or late expansion*	IV
		Dichotomous variable indicating whether the state ever implemented Medicaid expansion	
Outpatient SUD Tx Facilities offering CJ-referred programs	Dependent Variable	Dichotomous variable whether facility offers program specifically tailored for CJ clients (other than DUI/DWI)	NA
Demand for Tx facilities with CJ programs	Mediator	Unmeasured	+
Drug Diversion Efforts and SUD Burden	Moderator	Continuous variable counting the number of Drug Courts per state	+
		Population adjusted per 100,000 of SUD burden rate per state	
Ownership status of facility	Mediator	Categorical variable for a facility's ownership status. (For-profit, non-profit, state/local/community/tribal govt, federal govt)	+
Facility offers payment assistance	Mediator	Dichotomous variable whether facility offers either a sliding scale, payment assistance or free payment program.	+
Facility accept govt funding	Mediator	Dichotomous variable whether facility accepts government funding, either through Earmark or HIS 678 Contract grants.	+
Facility accepts any form of insurance	Mediator	Dichotomous variable whether facility answers "yes" to and form or insurance payment, or "no" if only accepts cash/self-pay	+
Wrap-around Services	Mediator	Continuous variable indicating the number of assessment services offered by the facility	+
		Continuous variable of number of testing services offered	
		Continuous variable of number of transitional services	
		Continuous variable of number of testing services	
SES	Confounder	Percentage of state's education attenment level (did not graduate HS, HS graduate, some college, bachelors(+))	+/-
		State's unemployment rate, 16 and older	+/-
		State's poverty rate	-/+
		State's Median Household Income	+/-
Race/Ethnicity (R/E)	Confounder	Percentage of state's race and ethnicity distribution (Hispanic, NH white, NH Black, NH Native American, NH Asian, NH Pacific Islander, NH Other)	+
Liberal political ideology	Confounder	Continuous variable of nominate measure of state government's congressional appointed ideology measure.	+
State Budget	Confounder	Continuous variable of state's population-adjusted GSP	+
JAG Award	Confounder	Continuous variable of state's population adjusted total state and local JAG monetary award	+

3F: Constructs and Measures

Focal Relationship

This study derived the focal dependent variable—whether outpatient SUD treatment facilities offered CJ programs—from the N-SSATS survey questions**.** Facilities were coded as a 1 if they answer "yes" to "offering program specifically tailored to CJ clients." Alternatively, facilities were coded 0, if they answer "no" (N-SSATS) [156] [75]

The key independent variable of interest, ACA Medicaid expansion, was measured as a dichotomous state-year level variable equal to "1" if a facility is in a state that has already expanded Medicaid in a given year**.** Because the available N-SSATS data uses a March 31 reference date for the responses to its questionnaires, expansion states were identified as those

that implemented expansion as of March 31 of that year. This variable was hypothesized to be positively associated with the dependent variable.

Moderator

The state population-adjusted SUD rate is hypothesized to moderate the strength of the relationship between Medicaid expansion and program offerings. Obtained from the NSDUH database, this variable accounts for the differential response to Medicaid expansion by treatment programs in high and low SUD burden states, with the assumption that programs in states with a high demand for SUD treatment (i.e., states with high rates of SUD) will respond more strongly to Medicaid expansion [157].

Mediator

Facility-level characteristics.

This paper included facility-level characteristics as control variables because types of facilities may respond differently to Medicaid expansion. Ownership of facility represented a series of indicator variables [0,1] for the following categories—private for-profit organizations, private nonprofit organizations, organizations owned by state local, county or community, or tribal government. Accepts Government funding was measured as a dichotomous [0,1] indicator variable for whether the facility receives any federal, state, county or local funding and/or accepts Indian Health Service (IHS) 638 funding.

This study operationalized assisted financing using a dichotomous indicator variable for if a facility offers some type of payment assistance model, including a sliding-fee-scale or free treatment for all or some patients.

It measured the construct accepts health service payment as a dichotomous indicator variable set to 1 when the facility accepts at least one of Medicaid, Medicare, private, state and/or military health insurance.

This study operationalized the construct wrap-around services into three dichotomous "1"/"0" variables to indicate whether the facility offered assessment(s), testing, and/or transitional services. Due to the high degree of additional services needed by the justice-involved population [158], this study hypothesized providing these services was positively associated with also offering CJ programs.

Confounders

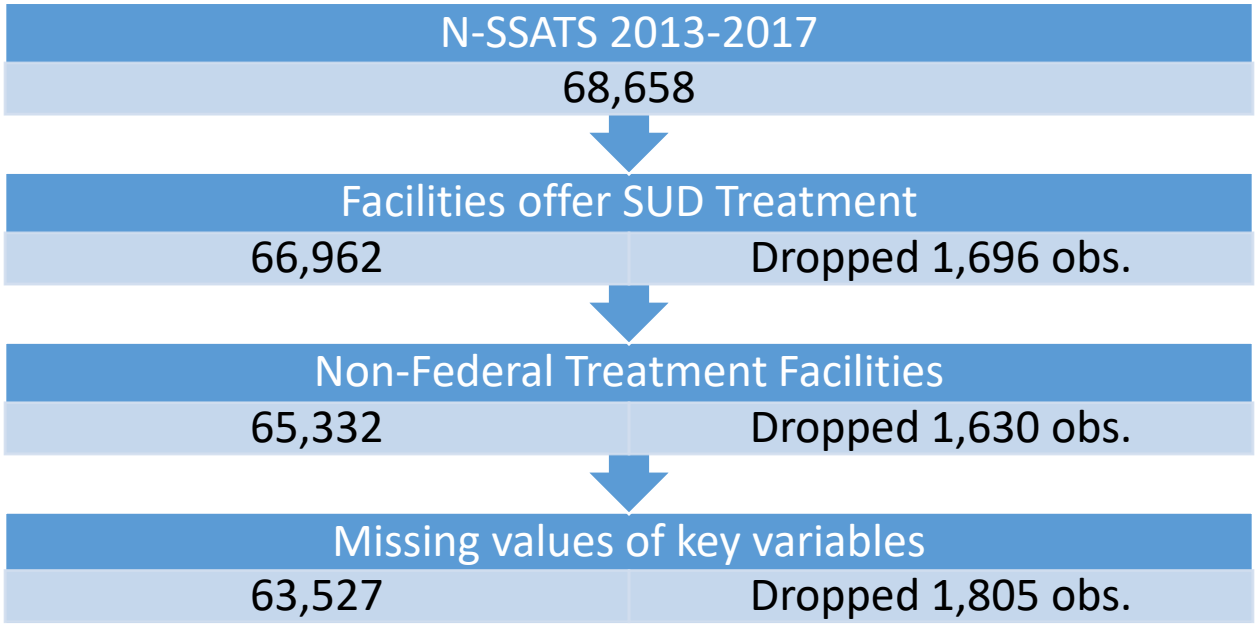
State-level characteristics.

As supported in the literature, it is important to examine state-level sociodemographic characteristics [22,55-70,77]. This study controlled for race and ethnicity (R/E), socioeconomic status (SES), and state government ideology at the state level. It measured R/E as the percent of the state population that are Hispanic, Non-Hispanic (NH) white, NH black, and NH other-race [159]. It operationalized SES into four sub-constructs, education (percents of the state population by no high school diploma, high school graduate or GED, some college, or bachelors degree or higher), unemployment rate, percent of state population with incomes below the federal poverty line and the state median household income.

This study measured State government ideology using the 50 states' nominate government official's operational ideology scores developed by Berry et al. (2010) [160]. This continuous score represents as a range of values, with the higher values associated with more liberal-leaning officials. Using the Annual Survey of State and Local Government Finances (ASSLGF) database, the annual gross state product (GSP) was measured as a continuous variable at the state-level on a

per capita basis. Similarly, the study measured Justice Assisted Grant (JAG) awards on a per capita basis for the total number of state and local JAG awards allocated across the year [161]. This state-level continuous variable represented the total number of justice-based funding a state receives.

3G: Analytic Sample



The primary sample is limited to SUD treatment facilities that provide SUD treatment services from years 2013 through 2017. Facilities that are federally run, will not be included due to their restricted access limitations. Due to inconsistency in data collection, this study did not require full data on licensing and accreditation status, which is missing for all facilities in 2014 and some facilities in each year. Additionally, the study limited its analysis to the 50 states, for which complete information on education attainment, unemployment rates, poverty rates, median household income, race/ethnicity, substance use burden, government ideology, total GSP, and JAG grant funding were available. This excluded DC and any U.S. territories. The years were limited from 2013 through 2017 in response to the potential for measurement error, due to a significant change in the survey question wording in 2013 pertaining to the outcome of interest. Because this study used secondary data that lacked personally identifiable information, the

Emory University Institutional Review Board did not consider this study human subjects research and exempted it from review.

3H: Analytic Strategy

Analyses were conducted in stata 16 using the N-SSATS survey data. A difference in differences approach using two-way fixed effects models with logistic regression examined the effect of Medicaid expansion on the likelihood of SUD treatment facilities offering criminal justice programs [162]. As a dichotomous dependent variable, the implications of this policy are measured using logistic regressions. A stepwise approach helped determine significance of the variables of interest, with the progressive addition of covariates across the four specifications. Specification 1 was the bivariate logistic regression estimating the relationship between Medicaid expansion on the likelihood of a facility offering a CJ program. Specification 2 controlled for state and facility characteristics. Specification 3, shown in Equation 1, added state and year fixed effects to the model used in Specification 2.

Equation 1 $$\Pr[CJ_{fst} = 1] = F(\beta_0 + \beta_1 \text{Expansion}_{st} + \beta_2 X_{ft} + \beta_3 Z_{st} + \delta_s + \tau_t + \varepsilon_{fst})$$

Expansion_{fst}—my key independent variable of interest—is a dichotomous measure indicating a state's Medicaid expansion status in state s and year t. X_{ft} is a vector of facility f-year characteristics (accepts health service payment, receives specialty funding, offers payment assistance, ownership, offers wrap-around services), and Z_{st} is a vector of state-year characteristics (race/ethnicity, political ideology, state budget, JAG Award, SUD rate, and socioeconomic status variables). State fixed effects, $\boldsymbol{\delta}_s$, controlled for time-invariant state characteristics such as geographic location; while, the year fixed effects, τ_t, addressed secular time trends in SUD treatment that affect the nation [163,164]. ε_{fst} is the error term.

Finally, as shown in Equation 2, Specification 4 updated Specification 3 to include an interaction between Medicaid expansion and a state-year measure of SUD burden.

Equation 2 $$\Pr[CJ_{fst} = 1] = F(\beta_0 + \beta_1 Expansion_{st} \times SUD_{st} + \beta_2 Expansion_{fst} + \beta_3 X_{ft} + \beta_4 Z_{st} + \delta_s + \tau_t + \varepsilon_{fst})$$

$Expansion_{st}$ x SUD_{st} is an interaction between a state's expansion status and its SUD rate. Based on results from Specification 4, marginal effects were calculated across a range of SUD rates to delve further into differential impact of expansion based on SUD burden.

It is important to note that as a difference-in-difference model, the treatment and control groups were assumed to reflect similar trends in the outcome variable in the period prior to expansion. This assumption was tested using data gathered for one year leading up to the actual policy implementation. The alpha level for statistical significance was set as 0.05 prior to conducting the analysis.

Chapter 4: Results

4A: Descriptive Statistics

The following tables and figures display key characteristics of the analytic sample. 63,527 treatment facilities met the analytic sample information criteria for years 2013 to 2017. Of this analytic sample, 20,513 facilities were in states that never expanded Medicaid, and 43,014 were facilities in states that expanded Medicaid at or before March 31, 2017.

Table 2 displays the analytic sample's descriptive characteristics with the identification of significant differences between expansion and non-expansion states across several key characteristics. These include facility characteristics such as those that offer a criminal justice-involved (CJ) program, medication for opioid use disorder (MOUD), ownership status, care setting, payment assistance program, insurance acceptance and federal grants. Meaningful differences are seen across state features including education status, SES, race/ethnicity, state government ideology, GSP, JAG Award and SUD burden (calculated using Pearson chi-square tests). No significant difference is shown between states' expansion status and whether they

accept Medicaid or accept Medicaid and offer CJ program. Medicaid expansion states show slightly higher rates of offering CJ program (34.4%) as well as MOUD (36.9%) compared to non-expansion states (32.5%, 33.0%). Facilities in expansion states are more likely to be private nonprofits and less likely to be for-profit organizations. Additionally, facilities in these states are more likely to offer payment assistance, accept any form of insurance, and accept federal/state funding grants. Based on state-level characteristics, facilities in expansion states have higher proportions of their population graduating from college or trade school, having insurance, being above the federal poverty line and higher median household incomes. Non-expansion states have higher proportions of non-Hispanic White and Black populations. Conversely, expansion states have higher liberal leaning government ideologies, higher GSP per capita and a greater SUD burden. The majority of these differences between the treatment (expansion states) and control (nonexpansion states) groups are statistically significant. However, the difference-in-differences framework used will subtract out these baseline differences between the groups.

4B: Descriptive Results

Figures 1.A, 1.B, 1.C, and 1.D show the percentage change in SUD treatment facilities that offer specialty services for states that never expanded, expanded prior to 2014, expanded in 2014, and expanded after 2014. As Medicaid expansion varies across time, this method displays the different outcomes of interest trends based on the state's expansion group. All four figures display semi-parallel trends in specialty programs and payment acceptance prior to 2014, and depending on the outcome of interest, a potentially significant gap between never expanded and 2014 and post 2014 expansion states. The majority of outcomes also indicate a positive upward trend across time. In figures 1.A, 1.B, 1.C, despite parallel fluctuations in the percentage change, after expansion went into effect, the gap between the 2014 and post expanders and never expanders appears to widen. This suggests expansion states see greater gains in facilities'

offering only CJ programs, only accepting Medicaid insurance and both. Figure 1.D shows that 2014 expansion states have a much greater likelihood of offering CJ programs and MOUD. While the pre-expansion trends across the four groups of states are not clearly identical, they are broadly parallel for the outcomes of interest, indicating parallel trends assumptions.

Figure 2 displays states grouped into quartiles based on their substance use disorder (SUD) rate per 100,000. SUD facilities in states with the highest SUD rates have the highest proportion of offering CJ programs, while those in the lowest quartile show the lowest proportion of offering these programs. While the three lower quartiles indicate positive trends, the highest quartile indicates a negative trend across time, the opposite trend hypothesized in the study.

4C: Logistic Regressions Results

Table 4 shows the stepwise, marginal effects regression results for the primary outcome, propensity of CJ program offer. (Coefficients from the logistic regression models are available in the Appendix). The bivariate (Specification 1) and multivariate (controlling for state- and facility-level covariates (Specification 2) specifications show that facilities in expansions states have a 2.4- and 2.0 percentage-point increase in the probability of offering a CJ program ($p<0.01$) after Medicaid expansion went into effect. However, when controlling for state and year fixed effects (Specification 3) and the interaction term (Specification 4), this effect loses statistical significance While most of the control variables in Specification 2 are also significantly associated with the likelihood of offering a CJ program, few remain significant when controlling for the variation across states and years. Measures for private for-profit ownership, offering SUD care and payment assistance services and accepting some form of insurance payment are all positively associated with offering a CJ program.

Table 5 shows the stepwise, marginal effects regression results for the secondary outcome. All four regression specifications indicate significance, however, Specification 2 is associated with a 24.1 percentage point decrease in the probability while, Specifications 1, 3, and 4, are associated with a 10.7 percentage point,16.2 percentage point - and 2.8 percentage point increase in the probability of accepting Medicaid insurance ($p<0.01$). Similar to Table 4, while most of the variables are significantly associated for the Specification 2 regression, the majority lose significance with the control of additional factors. However, private for-profit facilities, state's uninsured rate and government ideology are negatively associated with accepting Medicaid. The marginal effects for this regression indicate that the proportion of the population below the federal poverty line, GSP per capita, and facilities offering outpatient SUD care are positively associated with Medicaid acceptance.

Table 6 shows the stepwise, marginal effects regression results for the secondary outcome, offering CJ program and accepting Medicaid insurance. While Specifications 1 and 4 are significantly associated with a 0.8 percentage point - and 2.0 percentage point increase in the probability of offering a CJ program and accepting Medicaid insurance ($p<0.05$), Specifications 2 and 3 do not show statistical significance. Similar to Tables 4 and 5, while most of the variables are also significantly associated for the Specification 2 regression, the majority lose significance after controlling for state and year variations. Those that are significance indicate a negative association with private for-profit, while education, offering outpatient SUD care and payment assistance services are positively associated with offering a CJ program and accepting Medicaid insurance.

Table 7 shows the stepwise, marginal effects regression results for the secondary outcome. The bivariate (Specification 1) regression indicates that facilities in expansion states

have a 3-percentage point increase in the probability of offering a criminal justice program and medication for OUD ($p<0.01$) after Medicaid expansion went into effect. However, once outside noise is controlled for, Specification 2—covariates included— Specification 3—state and year variations—and Specification 4—moderating interaction—this effect lost statistical significance. Similar to the previous three tables, while many of the variables are also significantly associated for the Specification 2 regression, when controlling for additional noise, the majority lose significance. Private for-profit is negatively associated, while below the FPL, state government ideology, offering outpatient SUD care and payment assistance services are positively associated with offering a CJ program and MOUD.

Figures 3.A, 3.B, 3.C, and 3.D show the marginal effects of Medicaid expansion on the likelihood of different program offerings and 95% confidence intervals from Specification 4 across different levels of state SUD burden. The x-axis displays the different levels of SUD burden ranging from 6.5 percentage point to 10.5 percentage point (which is the range present in the data) and the y-axis displays the marginal effects of expansion status on offering CJ programs that are affordable and/or quality-based. Figure 3.A indicates that after controlling for all measurable covariates, the average effects and their confidence intervals trend from being positive in states with the lowest SUD burden. However, as a state's SUD rate increased, the interaction diminishes and eventually is negative (though statistically insignificant) after a SUD rate of 8.5 percentage point, indicating that in states with a high SUD burden, Medicaid expansion decreases a provider's likelihood of offering a CJ program. Conversely, Figure 3.B indicates that while the association with the interaction term, previously seen in Table 6, is positive, when investigating across burden propensity, as SUD burden increases, this does not significantly change the positive association of the focal relationship. When modeling SUD burden and

likelihood of offering affordable (accepts Medicaid reimbursement)/quality- (offers MOUD) based services, Figures 3.C and 3.D, the trend averages indicate little to no positive association. This signals that as SUD burden increases, expansion status decreases facility's likelihood of offering the criminal justice programs overall but does not affect the likelihood of both offering a CJ program and accepting Medicaid or providing MOUD. It is important to note that the broad confidence intervals indicate the majority of these assumptions are not statistically significant.

Table 8 analytically displays the four outcome regressions of Figures 3.A, 3.B, 3.C, 3.D. Significance ranges based on SUD propensity and outcomes.

Chapter 5: Discussion

This study applied variation in Medicaid eligibility generated by states' expansion decisions from 2013 to 2017 to study the effects of the ACA Medicaid expansion on supply-trends of SUD treatment facilities with specialty services. In application, a difference-in-differences approach with two-way fixed effects logistic regressions compared the likelihood of a facility offering a CJ program, accepting Medicaid, offering a CJ program and accepting Medicaid, or offering a CJ program and MOUD in expansion and non-expansion states before and after the policy was enacted (Tables 3, 4, 5, and 6). A multivariate regression with an interaction further examined the moderating effect of SUD burden (Figure 3, Table 8).

The bivariate regression (Specification 1) analyses of all 4 outcomes of interest regressions indicated that, on average, facilities in expansion states were more likely to offer these services after Medicaid expansion went into effect versus facilities in nonexpansion states. However, controlling for additional covariates diminished the significance, which indicate that additional state, facility and time factors contributed to the positive bivariate association in the focal relationship. The fourth specification included an interaction term (Tables 3, 4, 5, and 6;

Column 4). Because this regression only reported the average marginal effects of SUD burden, which is a continuous variable, an additional analysis calculated marginal effects across different levels of burden. These results reported the marginal effect of expansion varied across different levels of SUD burden as well as across different service combinations (Figure 3, Table 8). While statistical significance varied across the levels and outcomes of interest, all four outcomes suggest higher levels SUD burden may diminish the effect of Medicaid expansion on facility's likelihood of offering the specialty service.

While the trend lines (Figure 3) and the results (Table 8) indicate that increasing burden may diminish the effect of facility's offering of services, for Medicaid acceptance, the results show a positive association is maintained across all levels of burden. Specifically, Table 8 Column 2 (Medicaid acceptance), shows that at the lowest burden level, 6.5 percentage point, Medicaid expansion has a statistically significant 3.2 percentage point increase in a facility's likelihood of accepting Medicaid (0.05). In contrast, at the highest burden level, 10.5 percentage point, Medicaid expansion no longer has a statistically significant effect on facility's likelihood of accepting Medicaid.

In contrast, offering CJ programs that are affordable/quality-based, high levels of burden not only diminish but have a negative effect on the focal relationship. While most of these results are not statistically significance, the reported marginal effects for the lowest SUD burden level for CJ programs and their service combinations indicate slightly positive associations (CJ programs, 3 percentage point+; affordable CJ programs, 4.5 percentage point**; quality CJ programs, 0.1 percentage point). However, as the burden increases, this association not only diminishes but becomes negative. The results indicate that at the highest burden level, 10.5 percentage point, Medicaid expansion negatively effects the likelihood a facility offers CJ

programs (-2.2 percentage point) that are affordable (-2.7 percentage point+) or quality-based (-1.7 percentage point).

A number of potential reasons explain these results; however, Figure 2 incorporates time into the picture. While states with the highest burden, the fourth quartile, are consistently more likely to offer CJ programs, from 2013 to 2017 the trend indicates that facility likelihood diminishes. In contrast, states with lowest burden, the first quartile, initially are the least likely to offer programs. However, time trends indicate this likelihood has the sharpest increase with states in the lowest quartile. This suggests that crowd-out or prior expansion attempts may have contributed to these results.

The theory of crowd-out stems from the system capacity and cost constraints. Researchers at the Texas Council of Community Centers (2016) concluded that treatment providers in communities with high levels of serious mental illness (SMI) and substance use burden tend to have a lower health system capacity to treat the justice-involved populations. Compared to the civil (i.e. non-incarcerated) population, individuals detained by law-enforcement required more costly care and intervention services. Communities with high demand face strains on providers capacity to offer clinically appropriate care to individuals involved in the justice system, conversely cycling them back into the justice system [165]. Alternatively, areas with lower demand, had greater reductions in criminal recidivism and re-commitment, potentially as a result of less strain on providers' capacity to support the justice-involved clients [166]. Additionally, health insurance expansion analyses suggest that areas with high health burden costs are more likely to implement cost control measures. This may result in the redirecting of resources to the lower-risk, less costly populations, essentially crowding-out the more severe criminal justice communities [167]. Aligned with the findings from this study,

these analyses support the claim that areas with greater demand for treatment (for both the criminal justice and non-criminal justice Medicaid populations), may reduce treatment providers' likelihood for offering CJ programs.

Chapter 6: Conclusion

6A: Conclusions

After controlling for state- and facility-level factors, the Medicaid expansion is not significantly associated with the likelihood SUD facilities offering CJ programs, expansion has a positive effect on facility's likelihood of offering a CJ program, Medicaid, and affordable/quality-based CJ programs in states with a lower SUD burden. While the likelihood of Medicaid acceptance (irrespective of CJ program offer) slightly diminishes, it remains positive across all levels of SUD burden. Conversely, expansion's effect on the likelihood of CJ programs and additional services not only significantly diminishes but becomes negative as SUD burden level increases (Figure 3, Table 8). This could potentially be explained because facilities in states with the highest SUD burden had already established a sufficient number of CJ programs prior to expansion. As Figure 2 suggests, based on the burden propensity trend lines, prior to ACA implementation, states in the highest quartile had a greater likelihood of offering the program. While the results may sway in this direction, the literature on the effect of crowd-out on access for vulnerable populations to health services is extensive.

This study's estimates indicate that expansion increased a facility's likelihood of accepting Medicaid insurance, however inclusion of a criminal justice program diminished this probability and had a negative effect in states with a high SU burden. As noted across the research community, this may be because facilities find it more profitable to gear their efforts to the lower-risk, non-CJ Medicaid population, rather than the CJ Medicaid population

[168,169,170]. Alternatively, states with a lower SUD burden, may have a greater incentive for facilities to offer a CJ program because they don't have as many potential clients seeking treatment [171]. Researchers in Oregon performed an evaluation study of the state's IMPACTS program[5], which seeks to increase access to community-based services and support systems, as well as providing permanent housing and Medicaid enrollment services for justice-involved populations affected by SUD. They found that due to Oregon's lower than national average SUD rate, local, regional, tribal, and state stakeholders were able to invest more resources towards addressing this population's SUD needs and helping them avoid justice re-involvement [172].

Acting to further disincentive providers in expansion states with high rates of SU burden, recent policy changes potentially restructured facilities' funding framework. Prior to ACA implementation, facilities with CJ programs were predominantly funded through public revenue funds such as federal and state block grants and the criminal justice system [173]. However, between 2013 and 2015, the Office of National Drug Control Policy (ONDCP) took a concentrated effort to significantly cut these other revenue streams as a means to offset increases in public insurance funding [174,175]. While these re-allocation measures would benefit some low-income SUD populations, further analysis finds that the additional costs associated with offering a CJ program, including the required resources and experience to not only enroll and handle justice clients' Medicaid insurance and claims, but also abide by their court-mandated treatment contracts, are often not adequately met by Medicaid alone. Therefore, this study's hypothesized effect of Medicaid expansion may be minimized due to concurrent changes in other funding sources, especially in states with a high SU burden [176,177].

[5] Improving People's Access to Community-Based Treatment, Supports, and Services

6B: Limitations and Strengths

This study has several limitations. First, the N-SSATS data are self-reported by administrative and clinical directors, which may subject the data to social desirability and recall bias [178]. Further, significant alterations to the questionnaire survey in 2013, specifically the structuring of the primary dependent variable, brings into question construct measurement errors and interpretation variation. However, limiting the timeframe to include only four years of data, starting one year prior to the 2014 Medicaid expansion, may reduce this bias. Third, because the data is a repeated cross-sectional set following changes in treatment facilities over time and access states, this study was limited to examine changes in overall acceptance rates rather than analyze the types of facilities that begin to accept Medicaid during this time period.

Finally, additional factors may be associated with the decision for a treatment program to offer these specialty services. For example, the approach to analyze SUD treatment demand for, an unmeasurable variable, by employing proxy variables may not fully capture this construct. Furthermore, public access restrictions prevented the control of state variation in diversion policy, which was initially noted as an important proxy moderator for demand. These measurement limitations may bias the results towards the null, leading to estimates that are lower than the actual population parameter. Overall, this study only provides initial information about the effect of ACA Medicaid expansion on supply of treatment facilities with specialty services, and further research will be needed to observe the intermediate and longer-term effects of this policy.

In spite of these limitations, this study explores a key gap in the literature and uses a quasi-experimental design to examine the effect of ACA-related Medicaid expansion on access to criminal justice treatment programs. To date, much of the discussion surrounding these justice-involved programs and insurance expansions focuses on the diversion stakeholders and

treatment access rates. Often absent is the analysis of whether the surrounding community has the supply capacity to manage the increased demand for services that insurance expansions and diversion programs have created. The measurement period of 2013-2017 is a time period not only encompassing the height of the opioid epidemic, but also the national movement towards justice reform, with a focus on the decriminalization and diversion of SUD justice-involved clients. Due to the nature of this disproportionately uninsured population, which already make-up over a third of all treatment referrals, these clients present a perfect opportunity to gain from increased access to Medicaid insurance. Together, utilizing a national census dataset with state identifiers, this research examines the effect Medicaid expansion has had the supply of facilities with specialty programs for the justice-involved population.

6C: Policy Implications

Since public health insurance expansions aim to improve health and the affordability of health care, understanding their effect on underserved populations with a high need for treatment is critical. In theory, recent public insurance expansions should have major implications for justice-involved populations, who are disproportionately fall below 138% FPL and exhibit high rates of substance use disorders. Therefore, by tracking trends in the supply of specialty CJ treatment programs and subsequent services, these findings offer valuable insight, especially as state and federal policymakers considering modifications to the current structure of the ACA could also threaten access. While this research initially projected positive implications of Medicaid expansion, these estimates suggest that especially in states with high substance use burden, justice clients may unintendedly be crowded out of treatment. Despite the well-intentioned efforts of this policy, so far, Medicaid expansion has failed to significantly increase treatment accessibility for criminal justice clients. Evidently, if the stakeholders seek to secure this population’s access to treatment, additional, more concentrated national efforts are needed.

Districts and states have already laid the foundation, with strategies including strengthening Justice-Reinvestment Initiative (JRI) Treatment Partnerships and increasing treatment reimbursement rates. Massachusetts has leveraged it expansion of Medicaid as a funding source to pilot a public-private program that integrates JRI recommendations to strengthen care coordination between the Massachusetts Department of Correction and community behavioral health providers. Scaling up the JRI efforts to the national level can provide federal agencies the resources and support to better address the needs of the justice population, reducing recidivism and maintaining public safety.

6D: Recommendations for Further Research

This study also suggests several areas for future research. As time passes and more post-ACA Medicaid expansion data become available; it would be beneficial to continue assessing the long-term effects of the policy change. Further, an examination of the effects of additional factors that are outside the scope of this study, such justice diversion policy, facility capacity and best treatment practices, would be valuable for further understanding the role of Medicaid expansions in a complex health care environment. In this context, qualitative or mixed methods studies might be especially valuable for understanding the different barriers that justice-involved communities face when accessing SUD treatment services.

Appendix

4A: Descriptive Statistics

Table 2. Descriptive Characteristics of the Analytic Sample

	Non-Expansion	Expansion	Total
Observations	20,513	43,014	63,527
Individual Facility Level			
Justice-Involved Program**	32.5%	34.4%	33.8%
Accepts Medicaid	64.4%	64.8%	64.7%
MOUD**	33.0%	36.9%	35.7%
CJ Program & Accepts Medicaid	22.0%	22.9%	22.6%
CJ Program & offers MOUD**	8.3%	11.4%	10.4%
CJ Program & Medicaid & MOUD*	5.6%	9.1%	8.0%
Outpat'nt SUD care**	87.4%	84.3%	85.3%
Non-hosp residential SUD care**	20.4%	21.3%	21.0%
Offer payment assistance services**	70.2%	75.0%	73.4%
Accepts any insurance**	84.6%	87.6%	86.6%
Accepts Federal Funding**	48.3%	51.6%	50.5%
Ownership			
Private-for-profit org**	42.0%	32.8%	35.8%
Private non-profit org**	45.9%	58.9%	54.7%
State, local, community, Tribal, or Fed govt**	12.1%	8.3%	9.5%
Wrap-around Services			
Offers Assessments	98.7%	98.6%	98.7%
Offers Testing**	87.8%	90.2%	89.4%
Offers Transitional	98.2%	98.0%	98.0%
Offers Ancillary	99.3%	99.5%	99.4%

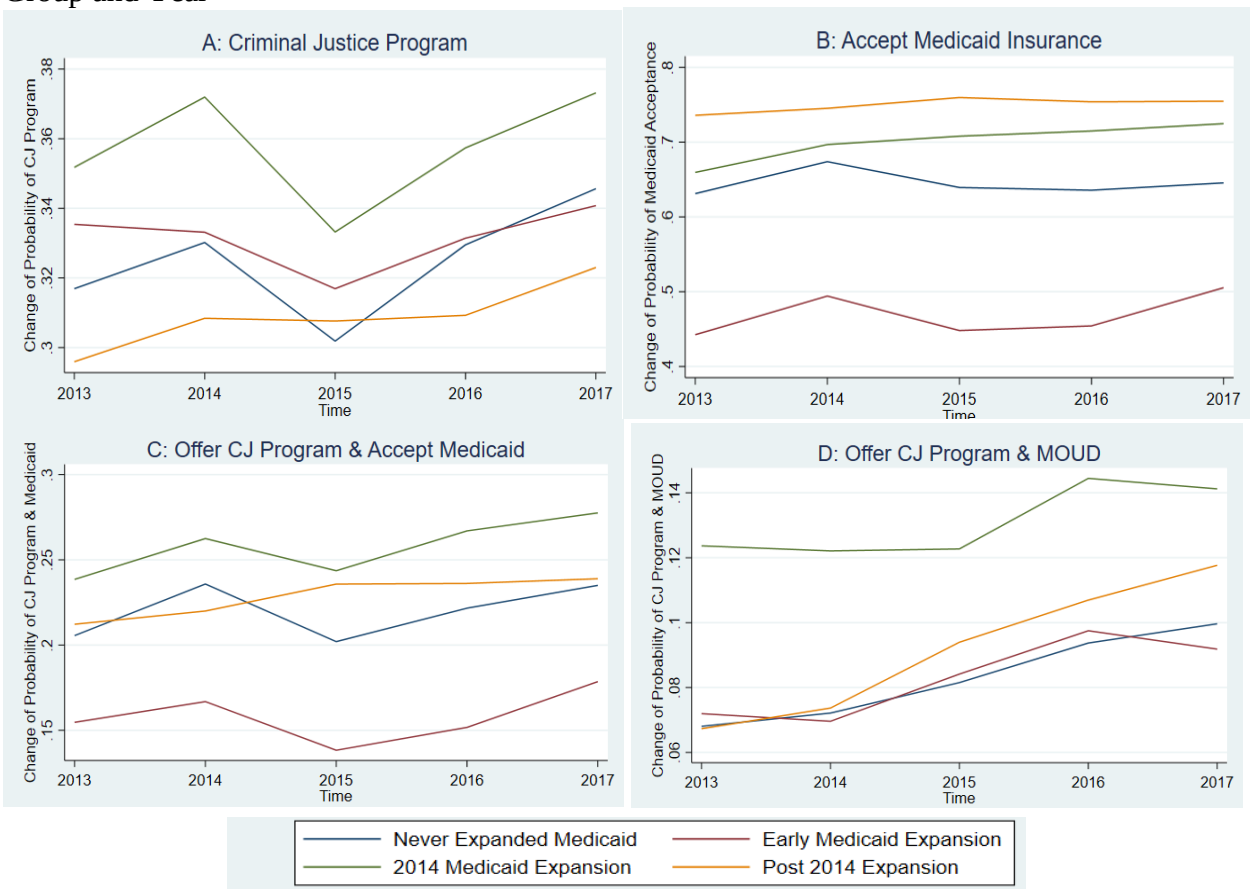
Conceptual State Level			
State Government Ideology**	27.2	52.6	44.4
State GSP per Capita**	49.3	59.3	56.1
JAG Award per Capita**	0.851	0.831	0.837
State's SUD Burden*	0.077	0.083	0.081
Education Status			
Did not graduate high school*	12.1%	12.0%	12.0%
Graduated high school**	28.5%	27.1%	27.5%
Some college or technical school*	30.5%	28.8%	29.4%
Graduated from college or technical school**	28.9%	32.1%	31.1%
Other SES variables			
Unemployment rate**	6.2	6.6	6.5
Median Household Income**	52,164.1	60,262.2	57,647.3
Un-insurance rate**	12.4	8.5	9.8
Below FPL**	15.0	13.9	14.3
Race/Ethnicity			
Hispanic**	12.8%	15.8%	14.9%
Non-Hispanic White**	67.8%	64.8%	65.8%
Non-Hispanic Black**	13.9%	9.6%	10.9%
Non-Hispanic Other, (including Multiracial)**	5.6%	9.8%	8.4%

***P<.05, **P<.01;** P-values calculated using Pearson Chi-Square test and T-Tests

4B: Descriptive Results

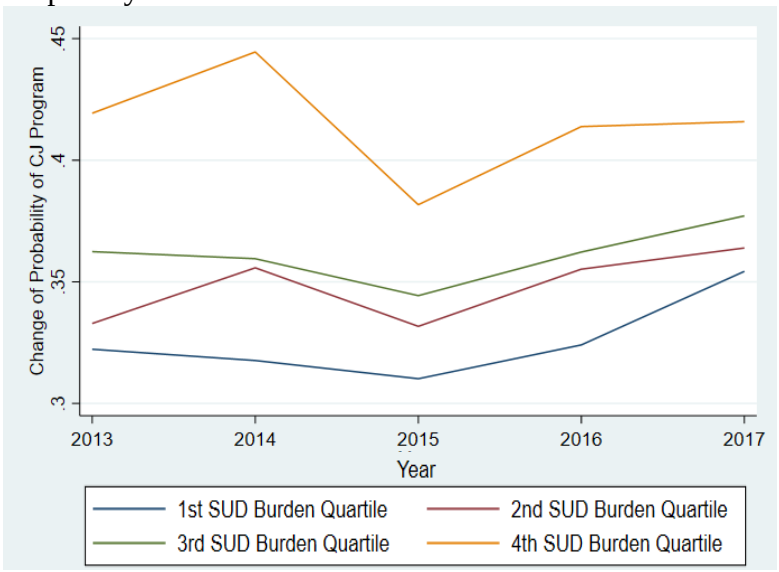
Figure 1. Changes in Proportion of Facilities offering Specialty Services by State Expansion

Group and Year



.

Figure 2. Percentage Change in SUD Facilities offering CJ programs based on State's SUD Propensity over Time



4C: Logistic Regressions

Table 3. 4-Step Hypotheses Marginal Effects Logistic Regressions of SUD Facilities with Justice-Involved Programs, 2013-2017

	Bivariate Analysis	**State + Facility Characteristics**	**Confounders + State & Year F.E.**	**Confounders +F.E. +SUD interaction**
	Bivariate Analysis	State + Facility Characteristics	Confounders + State & Year F.E.	Confounders +F.E. +SUD interaction
main				
Medicaid Expansion	0.024**	0.020**	0.036	0.013
	(6.33)	(3.24)	(0.90)	(1.41)
SUD Burden		0.497	-3.987	-0.674
		(1.33)	(-0.84)	(-0.67)
Did not graduate high school		0.073*	0.269+	0.063+
		(2.48)	(1.65)	(1.82)
Graduated high school		0.072*	0.227	0.054
		(2.46)	(1.40)	(1.57)
Some college or technical school		0.074*	0.220	0.050
		(2.51)	(1.41)	(1.52)
Graduated from college or technical school		0.078**	0.205	0.049
		(2.66)	(1.27)	(1.41)
Unemployment rate		-0.012**	-0.051	-0.011
		(-5.53)	(-1.56)	(-1.54)
Median Household Income		0.000*	0.000	0.000
		(2.20)	(0.27)	(0.31)
Un-insurance rate		0.004**	0.011	0.003
		(3.81)	(0.99)	(1.35)
Below FPL		0.008**	0.028	0.002
		(2.75)	(0.98)	(0.37)
Hispanic		-0.056**	0.001	0.009
		(-2.58)	(0.01)	(0.32)
Non-Hispanic White		-0.057**	0.005	0.009
		(-2.65)	(0.04)	(0.34)
Non-Hispanic Black		-0.059**	0.025	0.012
		(-2.71)	(0.18)	(0.42)
Non-Hispanic Other, (including Multiracial)		-0.058**	0.010	0.011
		(-2.71)	(0.08)	(0.41)
State Government Ideology		-0.000	0.002	0.000
		(-0.11)	(0.96)	(1.16)
State GSP per Capita		-0.002**	-0.003	-0.002
		(-6.69)	(-0.32)	(-0.74)
JAG Award per Capita		-0.036*	0.085	0.014
		(-2.42)	(0.32)	(0.25)
Private non-profit org		-0.032**	-0.104**	-0.022**
		(-7.05)	(-4.80)	(-4.80)
State, local, community, Tribal, or Fed govt		-0.041**	-0.166**	-0.035**

		(-5.84)	(-4.88)	(-4.89)
Outpat'nt SUD care		0.024**	0.119**	0.025**
		(4.30)	(4.47)	(4.47)
Offer payment assistance services		0.173**	0.771**	0.164**
		(36.50)	(33.46)	(34.47)
Accepts some form of Insurance Payment		-0.082**	-0.335**	-0.071**
		(-12.63)	(-10.85)	(-10.88)
Constant			-25.533	
			(-1.13)	
_				
Medicaid Expansion=1 x SUD Burden				
Year F.E.	No	No	Yes	Yes
State F.E.	No	No	Yes	Yes
Observations	63,527	63,527	63,527	63,527
R-Squared			0.040	

Table 5. 4-Step Hypotheses Marginal Effects Logistic Regressions of SUD Facilities Accepting Medicaid Insurance , 2013-2017

	Bivariate Analysis	**State + Facility Characteristics**	**Confounders + State & Year F.E.**	**Confounders +F.E. +SUD interaction**
main				
Medicaid Expansion	0.107**	-0.241**	0.162**	0.028**
	(6.33)	(-7.51)	(3.60)	(3.48)
SUD Burden		21.996**	-0.844	-0.098
		(11.47)	(-0.16)	(-0.11)
Did not graduate high school		-0.842**	0.183	0.031
		(-5.58)	(0.98)	(1.01)
Graduated high school		-0.627**	0.235	
		(-4.20)	(1.28)	
Some college or technical school		-0.726**	0.265	0.045
		(-4.85)	(1.49)	(1.51)
Graduated from college or technical school		-0.658**	0.138	0.024
		(-4.40)	(0.75)	(0.78)
Unemployment rate		-0.078**	0.001	0.000
		(-6.89)	(0.02)	(0.02)
Median Household Income		0.000**	0.000**	0.000**
		(7.17)	(3.30)	(3.31)
Un-insurance rate		-0.027**	-0.035**	-0.006*
		(-5.45)	(-2.71)	(-2.53)
Below FPL		0.254**	0.088**	0.014*
		(16.78)	(2.65)	(2.38)
Hispanic		-0.522**	0.020	0.005

		(-4.67)	(0.14)	(0.21)
Non-Hispanic White		-0.518**	0.011	0.004
		(-4.63)	(0.07)	(0.15)
Non-Hispanic Black		-0.529**	-0.017	-0.001
		(-4.73)	(-0.11)	(-0.05)
Non-Hispanic Other, (including Multiracial)		-0.553**	0.066	0.013
		(-4.95)	(0.44)	(0.51)
State Government Ideology		-0.014**	-0.004*	-0.001*
		(-14.41)	(-2.05)	(-1.98)
State GSP per Capita		0.032**	-0.027*	-0.005*
		(16.90)	(-2.36)	(-2.38)
JAG Award per Capita		0.440**	-0.549	-0.092
		(5.59)	(-1.52)	(-1.53)
Private non-profit org		1.365**	1.461**	0.243**
		(63.07)	(63.46)	(71.93)
State, local, community, Tribal, or Fed govt		1.547**	1.553**	0.258**
		(40.82)	(38.88)	(40.60)
Outpat'nt SUD care		1.099**	1.258**	0.209**
		(40.82)	(43.30)	(45.56)
Offer payment assistance services		0.724**	0.791**	0.131**
		(33.25)	(34.18)	(35.35)
Specific Program/group for criminal justice clients		0.053**	0.031	0.005
		(2.64)	(1.45)	(1.44)
Constant	-0.730**	111.744**	-26.160	
	(-58.56)	(5.44)	(-0.99)	
_				
Medicaid Expansion=1 x SUD Burden				
Year F.E.				
State F.E.				
Observations	63,527	63,527	63,527	63,527
R-Squared	0.00049	0.18	0.23	

Source: Author's analysis of all SUD treatment programs listed in the U.S. Substance Abuse and Mental Health Services Administration's (SAMHSA) National Survey of Substance Abuse Treatment Services (NSSATS)), 2009-2017. All models conducted using the logit command in Stata 16.
Notes: ADD NOTES SUCH AS ABBREVIATIONS
t-scores in parentheses
+ p<0.1, * p<0.05, ** p<0.01

Table 6. 4-Step Hypotheses Marginal Effects Logistic Regressions of SUD Facilities Offering Criminal Justice Program and Accepting Medicaid Insurance, 2013-2017

	Bivariate Analysis	State + Facility Characteristics	Confounders + State & Year F.E.	Confounders +F.E. +SUD interaction
main				
Medicaid Expansion	0.008*	0.002	0.081+	0.020*
	(2.52)	(0.34)	(1.73)	(2.52)
SUD Burden		0.981**	-4.703	-0.559
		(3.06)	(-0.88)	(-0.65)
State Government Ideology		-0.001**	-0.001	-0.000
		(-5.92)	(-0.61)	(-0.37)
State GSP per Capita		0.001*	-0.011	-0.003+
		(2.43)	(-0.99)	(-1.67)
Did not graduate high school		0.011	0.324+	0.061*
		(0.42)	(1.76)	(2.05)
Graduated high school		0.024	0.311+	0.059*
		(0.95)	(1.68)	(1.97)
Some college or technical school		0.019	0.276	0.050+
		(0.76)	(1.55)	(1.75)
Graduated from college or technical school		0.029	0.243	0.047
		(1.13)	(1.31)	(1.56)
Unemployment rate		-0.017**	-0.039	-0.006
		(-8.93)	(-1.04)	(-0.98)
Median Household Income		0.000**	0.000	0.000
		(3.30)	(1.43)	(1.50)
Un-insurance rate		0.003**	-0.004	0.001
		(3.21)	(-0.27)	(0.26)
Below FPL		0.025**	0.065*	0.005
		(9.91)	(1.98)	(0.96)
Hispanic		-0.099**	-0.117	-0.008
		(-5.36)	(-0.79)	(-0.35)
Non-Hispanic White		-0.099**	-0.097	-0.005
		(-5.37)	(-0.67)	(-0.23)
Non-Hispanic Black		-0.101**	-0.163	-0.018
		(-5.43)	(-1.05)	(-0.71)
Non-Hispanic Other, (including Multiracial)		-0.101**	-0.087	-0.002
		(-5.46)	(-0.61)	(-0.09)
JAG Award per Capita		-0.012	-0.177	-0.034
		(-0.97)	(-0.63)	(-0.75)
Private non-profit org		0.070**	0.486**	0.078**
		(17.84)	(19.66)	(19.83)
State, local, community, Tribal, or Fed govt		0.068**	0.401**	0.064**

		(11.50)	(10.68)	(10.71)
Outpat'nt SUD care		0.102**	0.639**	0.102**
		(19.37)	(19.45)	(19.59)
Offer payment assistance services		0.169**	1.014**	0.163**
		(35.93)	(34.38)	(35.05)
Constant			-21.725	
			(-0.85)	
_				
Medicaid Expansion=1 x SUD Burden				
Year F.E.				
State F.E.				
Observations	63,527	63,527	63,527	63,527
R-Squared			0.079	

Source: Author's analysis of all SUD treatment programs listed in the U.S. Substance Abuse and Mental Health Services Administration's (SAMHSA) National Survey of Substance Abuse Treatment Services (NSSATS)), 2009-2017. All models conducted using the logit command in Stata 16.
Notes: ADD NOTES SUCH AS ABBREVIATIONS
t-scores in parentheses
+ p<0.1, * p<0.05, ** p<0.01

Table 7. 4-Step Hypotheses Marginal Effects Logistic Regressions of SUD Facilities Offering Criminal Justice Programs and Medication for Opioid Use Disorder, 2013-2017

	Bivariate Analysis	**State + Facility Characteristics**	**Confounders + State & Year F.E.**	**Confounders +F.E. +SUD interaction**
main				
Medicaid Expansion	0.030**	0.002	-0.003	0.001
	(13.51)	(0.48)	(-0.04)	(0.18)
SUD Burden		0.331	-13.428	-0.898
		(1.50)	(-1.55)	(-1.50)
State Government Ideology		0.000	0.007*	0.001*
		(0.81)	(2.04)	(2.10)
State GSP per Capita		0.003**	0.001	-0.000
		(13.64)	(0.03)	(-0.16)
Did not graduate high school		-0.004	0.262	0.020
		(-0.21)	(0.89)	(0.96)
Graduated high school		0.009	0.100	0.009
		(0.55)	(0.34)	(0.42)
Some college or technical school		0.002	0.094	0.008
		(0.13)	(0.33)	(0.39)
Graduated from college or technical school		0.009	0.155	0.012

		(0.53)	(0.52)	(0.58)
Unemployment rate		-0.004**	-0.023	-0.002
		(-3.17)	(-0.38)	(-0.38)
Median Household Income		-0.000	0.000	0.000
		(-0.45)	(0.31)	(0.35)
Un-insurance rate		-0.000	0.024	0.002
		(-0.04)	(1.01)	(1.15)
Below FPL		0.010**	0.124*	0.008*
		(5.98)	(2.36)	(1.99)
Hispanic		-0.005	0.159	0.012
		(-0.39)	(0.68)	(0.75)
Non-Hispanic White		-0.006	0.194	0.015
		(-0.50)	(0.87)	(0.94)
Non-Hispanic Black		-0.006	-0.018	-0.000
		(-0.49)	(-0.08)	(-0.01)
Non-Hispanic Other, (including Multiracial)		-0.009	0.184	0.014
		(-0.67)	(0.83)	(0.92)
JAG Award per Capita		0.008	-0.147	-0.012
		(0.98)	(-0.40)	(-0.46)
Private non-profit org		0.027**	0.371**	0.026**
		(10.09)	(9.54)	(9.52)
State, local, community, Tribal, or Fed govt		0.038**	0.503**	0.035**
		(9.63)	(8.71)	(8.69)
Outpat'nt SUD care		0.026**	0.393**	0.027**
		(7.99)	(8.34)	(8.33)
Offer payment assistance services		0.041**	0.541**	0.037**
		(13.18)	(12.21)	(12.15)
Constant			-33.230	
			(-0.84)	
Medicaid Expansion=1 x SUD Burden				
Year F.E.				
State F.E.				
Observations	63,527	63,527	63,527	63,527
R-Squared			0.090	

Source: Author's analysis of all SUD treatment programs listed in the U.S. Substance Abuse and Mental Health Services Administration's (SAMHSA) National Survey of Substance Abuse Treatment Services (NSSATS)), 2009-2017. All models conducted using the logit command in Stata 16.

Notes: ADD NOTES SUCH AS ABBREVIATIONS

t-scores in parentheses

+ $p<0.1$, * $p<0.05$, ** $p<0.01$

Figure 3. Two-Way Fixed Effects Average Marginal Effect of Medicaid Expansion Status and SUD Burden on Percent of Facilities with Specialty Services

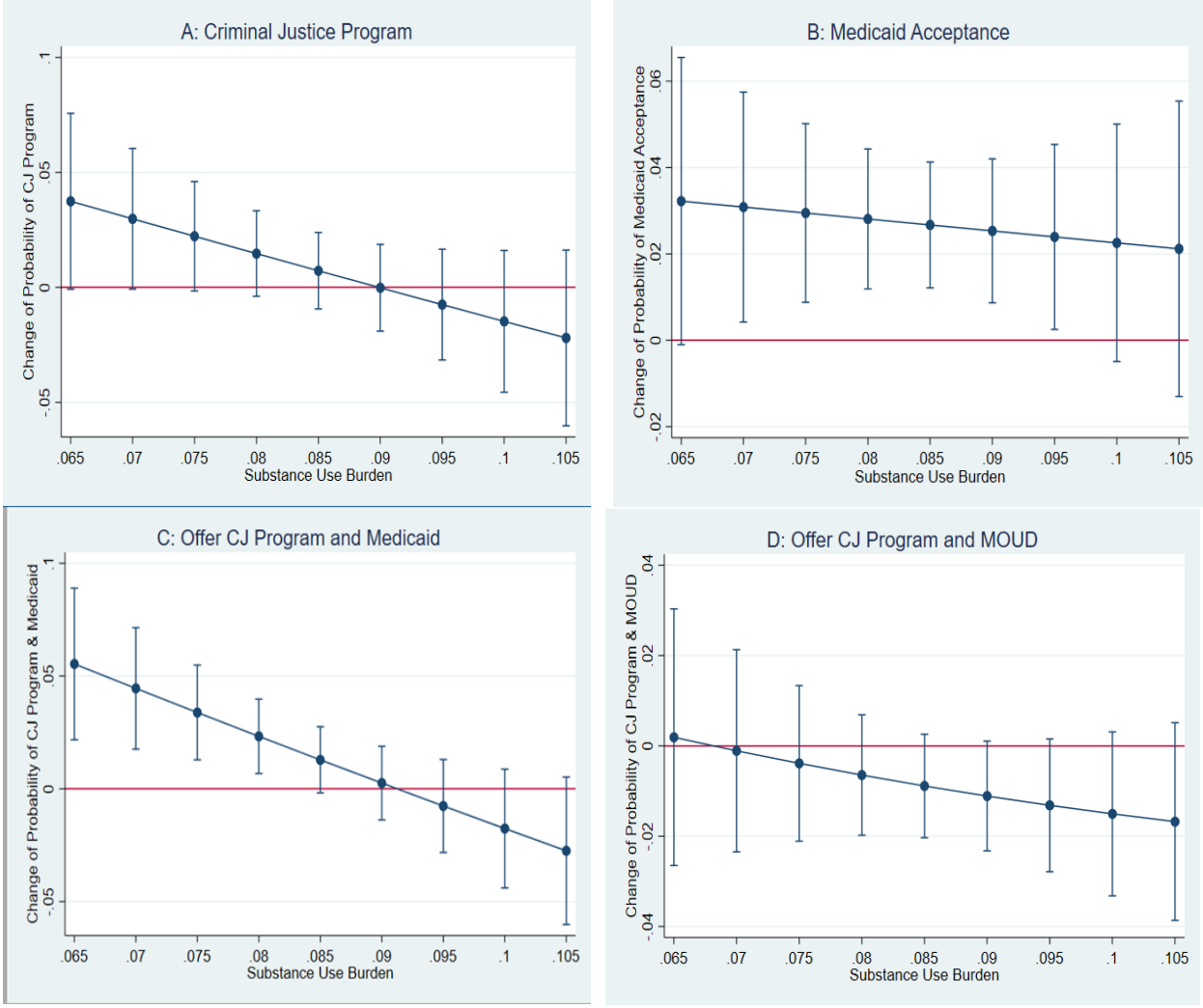


Table 8. Two-Way Fixed Effects Predicted Margins of Medicaid Expansion Status and SUD Burden on Percent of CJ Programs

	CJ Program	Medicaid Insurance	CJ Program + Medicaid	CJ Program + MOUD
1.Medicaid Expansion				
>=7%	0.030+	0.032*	0.045**	0.001
	(1.91)	(0.05)	(3.24)	(0.10)

7.50%	0.022+ (1.84)	0.031* (0.02)	0.034** (3.16)	-0.004 (-0.44)
8%	0.015 (1.55)	0.029** (0.00)	0.023** (2.76)	-0.006 (-0.95)
8.50%	0.007 (0.86)	0.028** (0.00)	0.013+ (1.72)	-0.009 (-1.52)
9%	-0.000 (-0.02)	0.027** (0.00)	0.003 (0.31)	-0.011+ (-1.79)
9.5%	-0.007 (-0.61)	0.025** (0.00)	-0.008 (-0.72)	-0.013+ (-1.75)
10%	-0.015 (-0.94)	0.024* (0.03)	-0.018 (-1.31)	-0.015 (-1.63)
10.50%	-0.022 (-1.13)	0.023 (0.11)	-0.027+ (-1.65)	-0.017 (-1.50)

+ p<0.1, * p<0.05, *

[1] Snider, J. T., Duncan, M. E., Gore, M. R., Seabury, S., Silverstein, A. R., Tebeka, M. G., & Goldman, D. P. (2019). Association between state Medicaid eligibility thresholds and deaths due to substance use disorders. *JAMA network open*, *2*(4).
[2] Fisher, C. (2014). Treating the Disease or Punishing the Criminal: Effectively Using Drug Court Sanctions to Treat Substance Use Disorder and Decrease Criminal Conduct. *Minn. L. Rev.*, *99*, 747.
[3] Rich, J. D., Beckwith, C. G., Macmadu, A., Marshall, B., Brinkley-Rubinstein, L., Amon, J. J., … Altice, F. L. (2016). Clinical care of incarcerated people with HIV, viral hepatitis, or tuberculosis. *Lancet (London, England)*, *388*(10049), 1103–1114
[4] Binswanger IA, Stern ME, Deyo RA, Heagerty PJ, Cheadle A, Elmore JG., (2007). Release from prison—a high risk of death for former inmates. *N Engl J Med*. *356* (2): 157 – 65
[5] Belenko, S., Hiller, M., & Hamilton, L. (2013). Treating substance use disorders in the criminal justice system. *Current psychiatry reports*, *15*(11), 414.
[6] CASA. (2010). Behind Bars II: Substance abuse and America's prison population. New York: The National Center on Addiction and Substance Abuse at Columbia University (CASA)
[7] Obama, B. (2016). The President's Role in Advancing Criminal Justice Reform. *Harv. L. Rev.*, *130*, 811.
[8] Cole, D. (2011). Turning the corner on mass incarceration. *Ohio St. J. Crim. L.*, *9*, 27.
[9] Eisenberg, A. K. (2016). Incarceration incentives in the decarceration era. *Vand. L. Rev.*, *69*, 71.
[10] McDonnell, M., Brookes, L., & Lurigio, A. J. (2014). The promise of healthcare reform in transforming services for jail releasees and other criminal justice populations. *Health & justice*, *2*(1), 1-9.
[11] Saloner, B., Bandara, S. N., McGinty, E. E., & Barry, C. L. (2016). Justice-involved adults with substance use disorders: coverage increased but rates of treatment did not in 2014. Health Affairs, 35(6), 1058-1066.
[12] Beronio, K., Po, R., Skopec, L., & Glied, S. (2014). Affordable Care Act will expand mental health and substance use disorder benefits and parity protections for 62 million Americans. *Mental Health*, *2*.
[13] National Federation of Independent Business v. Sebelius. (2012). 567 U.S. 519
[14] Dorn, S., Isaacs, J., Minton, S., Huber, E., Johnson, P., Buettgens, M., ... & Wulff, C. (2013). Overlapping Eligibility and Enrollment: Human Services and Health Programs Under the Affordable Care Act. Washington, DC: *Prepared by the Urban Institute for the Office of the Assistant Secretary for Planning and Evaluation [ASPE]*, Department of Health and Human Services [HHS].
[15] Smith JC, Medalia C . (2015) *Health insurance coverage in the United States: 2014* [Internet]. Washington (DC) : Census Bureau; Current Population Reports No. P60-253
[16] Kaiser Family Foundation. (2018). *Status of state action on the Medicaid expansion decision*. In K. F. Foundation (Ed.). Washington, DC.
[17] Bainbridge A. (2012). *The Affordable Care Act and criminal justice: intersections and implications*. Washington (DC) : Department of Justice
[18] Wolff, N., & Pogorzelski, W. (2005). Measuring the effectiveness of mental health courts: Challenges and recommendations. *Psychology, Public Policy, and Law*, *11*(4), 539.
[19] Harris, K. N. (2019). DIVERTED OPPORTUNITIES: GAPS IN DRUG TREATMENT FOR JUSTICE SYSTEM-INVOLVED POPULATIONS IN HARRIS COUNTY, TEXAS.
[20] Office of National Drug Control Policy. (2014). *National Drug Control budget: FY 2015 funding highlights*. Washington, DC: ONDCP.
[21] Rychtarik, R. G., Connors, G. J., Whitney, R. B., McGillicuddy, N. B., Fitterling, J. M., & Wirtz, P. W. (2000). Treatment settings for persons with alcoholism: Evidence for matching clients to inpatient versus outpatient care. *Journal of Consulting and Clinical Psychology*, *68*(2), 277.
[22] Acevedo, A., Miles, J., Panas, L., Ritter, G., Campbell, K., & Garnick, D. (2019). Disparities in criminal justice outcomes after beginning treatment for substance use disorders: the influence of race/ethnicity and place. *Journal of studies on alcohol and drugs*, *80*(2), 220-229.
[23] E. Fuller Torrey, M.D. (1997) Out of the Shadows: Confronting America's Mental Illness Crisis. New York: *John Wiley & Sons*
[24] Mauer, M. (2001). The causes and consequences of prison growth in the United States. *Punishment & Society*, *3*(1), 9-20.
[25] Burgess, L. (2006). Diversion and Transition Services in the US
[26] Saloner, B., Bandara, S. N., McGinty, E. E., & Barry, C. L. (2016). Justice-involved adults with substance use disorders: coverage increased but rates of treatment did not in 2014. Health Affairs, 35(6), 1058-1066.

[27] E. Fuller Torrey, M.D. (1997) Out of the Shadows: Confronting America's Mental Illness Crisis. New York: *John Wiley & Sons*
[28] Kessler RC, Chiu WT, Demler O, Walters EE. (2005). Prevalence, severity, and comorbidity of twelve-month DSM-IV disorders in the National Comorbidity Survey Replication (NCS-R). *Arch Gen Psychiatry*; 62(6):617-627.
[29] Abramson, M. (1972). The criminalization of mentally disordered behavior. *Journal of Hospital & Community Psychiatry*, *23*, 101-105.
[30] Saxena, S., Thornicroft, G., Knapp, M., & Whiteford, H. (2007). Resources for mental health: scarcity, inequity, and inefficiency. *The lancet*, *370*(9590), 878-889.
[31] Abramson, M. (1972). The criminalization of mentally disordered behavior. *Journal of Hospital & Community Psychiatry*, *23*, 101-105.
[32] Frank, R. G., & McGuire, T. G. (2010). Mental health treatment and criminal justice outcomes. In *Controlling crime: Strategies and tradeoffs* (pp. 167-207). University of Chicago Press.
[33] Frazier, B. D., Sung, H. E., Gideon, L., & Alfaro, K. S. (2015). The impact of prison deinstitutionalization on community treatment services. *Health & justice*, 3(1), 9. Chicago
[34] Siller, S. Deinstitutionalization, Mental Health, and Criminal Populations: How the Process of Deinstitutionalization Affected Current Incarceration Rates of the Mentally Ill.
[35] Lurigio, A. J. (2014). A Century of Losing Battles: The Costly and Ill-Advised War on Drugs in the United States.
[36] Alexander, Michelle. 2010. The New Jim Crow: Mass Incarceration in the Age of Colorblindness. New York: The New Press.
[37] Mauer, Marc. 2006. Race to Incarcerate. New York: *The New Press*
[38] Carson, E. A., & Anderson, E. (2016). *Prisoners in 2015*. (Report No. 250229). Washington, DC: U.S. Department of Justice.
[39] Robinson, M. B., & Scherlen, R. G. (2014). *Lies, damned lies, and drug war statistics: a critical analysis of claims made by the office of National Drug Control Policy*. SUNY Press.
[40] Tsai, J., & Gu, X. (2019). Utilization of addiction treatment among US adults with history of incarceration and substance use disorders. *Addiction science & clinical practice*, *14*(1), 9.
[41] CASA. (2010). Behind Bars II: Substance abuse and America's prison population. New York: The National Center on Addiction and Substance Abuse at Columbia University (CASA)
[42] Kolind, T., & Duke, K. (2016). Drugs in prisons: Exploring use, control, treatment and policy.
[43] Robinson, M. B., & Scherlen, R. G. (2014). *Lies, damned lies, and drug war statistics: a critical analysis of claims made by the office of National Drug Control Policy*. SUNY Press.
[44] Stockings, E., Hall, W. D., Lynskey, M., Morley, K. I., Reavley, N., Strang, J., & Degenhardt, L. (2016). Prevention, early intervention, harm reduction, and treatment of substance use in young people. *The Lancet Psychiatry*, *3*(3), 280-296.
[45] Shapiro, J. (2018). COMMONWEALTH Forum: Law Enforcement in the Twenty-First Century: Partnering to Combat the Opioid Overdose Epidemic. *Commonwealth*, *20*(2-3).
[46] National Center on Addiction and Substance Abuse at Columbia University (2009) *Shoveling Up II: The Impact of Substance Abuse on Federal, State and Local Budgets*. New York, N.Y.: CASA
[47] National Drug Intelligence Center. (2011). *The economic impact of the illicit drug use on American society.* Retrieved from
[48] Abreu, D., Parker, T. W., Noether, C. D., Steadman, H. J., & Case, B. (2017). Revising the paradigm for jail diversion for people with mental and substance use disorders: Intercept 0. *Behavioral sciences & the law*, *35*(5-6), 380-395.
[49] Clear, T. R., Reisig, M. D., & Cole, G. F. (2018). *American corrections*. Cengage learning.
[50] VanderWaal, C. J., Chriqui, J. F., Bishop, R. M., McBride, D. C., & Longshore, D. Y. (2006). State drug policy reform movement: The use of ballot initiatives and legislation to promote diversion to drug treatment. *Journal of Drug Issues*, *36*(3), 619-648.
[51] Tsai, J., & Gu, X. (2019). Utilization of addiction treatment among US adults with history of incarceration and substance use disorders. *Addiction science & clinical practice*, *14*(1), 9.
[52] VanderWaal, C. J., Chriqui, J. F., Bishop, R. M., McBride, D. C., & Longshore, D. Y. (2006). State drug policy reform movement: The use of ballot initiatives and legislation to promote diversion to drug treatment. *Journal of Drug Issues*, *36*(3), 619-648.
[53] Van Noordwijk, M., Leimona, B., Emerton, L., Tomich, T. P., Velarde, S. J., Kallesoe, M., ... & Swallow, B. (2007). Criteria and indicators for environmental service compensation and reward mechanisms: realistic, voluntary, conditional and pro-poor.

[54] Volkow, N. D., Poznyak, V., Saxena, S., Gerra, G., & UNODC-WHO Informal International Scientific Network. (2017). Drug use disorders: impact of a public health rather than a criminal justice approach. *World Psychiatry*, 16(2), 213-214.
[55] Hynes C, Swern A. (2013) Drug Treatment Alternative-to-Prison: Twenty-second annual report. Brooklyn, NY: *Office of the Kings County District Attorney*
[56] Hudson, B. (2016). *Justice Through Punishment?: Critique of the Justice Model of Criminal Conventions*. Macmillan International Higher Education.
[57] Bonfine, N., & Nadler, N. (2019). The Perceived Impact of Sequential Intercept Mapping on Communities Collaborating to Address Adults with Mental Illness in the Criminal Justice System. *Administration and Policy in Mental Health and Mental Health Services Research*, 1-11.
[58] Munetz, M. R., & Griffin, P. A. (2006). Use of the sequential intercept model as an approach to decriminalization of people with serious mental illness. *Psychiatric Services*, *57*(4), 544–549.
[59] Substance Abuse and Mental Health Services Administration (SAMHSA), (2014) Results from the 2013 National Survey on Drug Use and Health: Summary of National Findings. NSDUH Series H-48, HHS Publication No. (SMA) 14–4863. Substance Abuse and Mental Health Services Administration, Rockville, MD.
[60] Drake, R. E., Mercer-McFadden, C., Mueser, K. T., McHugo, G. J., & Bond, G. R. (1998). Review of integrated mental health and substance abuse treatment for patients with dual disorders. *Schizophrenia bulletin*, *24*(4), 589-608.
[61] Centers for Disease Control and Prevention (2019). Medication-Assisted Treatment for Opioid Use Disorder Study. *CDC's Response to the Opioid Epidemic*
[62] Jones, C. M., Campopiano, M., Baldwin, G., & McCance-Katz, E. (2015). National and state treatment need and capacity for opioid agonist medication-assisted treatment. *American journal of public health*, *105*(8), e55-e63.
[63] Belenko, S., Hiller, M., & Hamilton, L. (2013). Treating substance use disorders in the criminal justice system. *Current psychiatry reports*, *15*(11), 414.
[64] CASA. (2010). Behind Bars II: Substance abuse and America's prison population. New York: The National Center on Addiction and Substance Abuse at Columbia University (CASA)
[65] Scott, C. Melanie, Edwards L., Lussier L.R., Devine S, & Easton C.R. (2011). Differences in Legal Characteristics Between Caucasian and African-American Women Diverted Into Substance Abuse Treatment *Journal of the American Academy of Psychiatry and the La*w, 39 (1) 65-71
[66] Belenko, S., Hiller, M., & Hamilton, L. (2013). Treating substance use disorders in the criminal justice system. *Current psychiatry reports*, *15*(11), 414.
[67] Lapham, S. (2004). Screening and brief intervention in the criminal justice system. *Alcohol research & health: the journal of the National Institute on Alcohol Abuse and Alcoholism*, *28*(2), 85-93.
[68] Munetz, M. R., & Griffin, P. A. (2006). Use of the sequential intercept model as an approach to decriminalization of people with serious mental illness. *Psychiatric Services*, *57*(4), 544–549.
[69] Kopsie, N. (2019). *Digital Forensics and Community Supervision: Improving Technological Supervision of the Twenty-First Century Offender* (Doctoral dissertation, Utica College).
[70] Braga, A. A., Piehl, A. M., & Hureau, D. (2009). Controlling violent offenders released to the community: An evaluation of the Boston Reentry Initiative. *Journal of Research in Crime and Delinquency*, *46*(4), 411-436.
[71] Krawczyk, N., Picher, C. E., Feder, K. A., & Saloner, B. (2017). Only one in twenty justice-referred adults in specialty treatment for opioid use receive methadone or buprenorphine. Health Affairs, 36(12), 2046-2053.
[72] Hunter, J. (2010). Effective community-based chemical dependency treatment for adolescents: Matching program services with individual difference variables. State University of New York at Albany.
[73] Ministry of Justice. (2010). *Government response to the Justice Committee's report: Cutting crime: the case for justice reinvestment* (Vol. 7819). The Stationery Office.
[74] L.F. McCaig and C.W. Burt, (2005) "National Hospital Ambulatory Medical Care Survey: 2003 Emergency Department Summary," Advance Data from Vital and Health Statistics no. 358 (Hyattsville, Md.: National Center for Health Statistics
[75] California Department of Finance. (2010). *Governor's Budget 2008–2009.*
[76] Langan PA, Levin DJ. (2002) Recidivism of prisoners released in 1994. Washington, DC: Bureau of Justice Statistics, *U.S. Department of Justice*
[77] National Institute on Drug Abuse. (2012) Principles of drug abuse treatment for criminal justice populations: A research-based guide. Rockville, MD: *National Institute on Drug Abuse*
[78] Chandler, R. K., Fletcher, B. W., & Volkow, N. D. (2009). Treating drug abuse and addiction in the criminal justice system: improving public health and safety. *JAMA*, *301*(2), 183–190. doi:10.1001/jama.2008.976

[79] Ettner, S. L., Huang, D., Evans, E., Rose Ash, D., Hardy, M., Jourabchi, M., & Hser, Y. I. (2006). Benefit–cost in the California treatment outcome project: does substance abuse treatment "pay for itself"?. *Health Services Research*, *41*(1), 192-213.
[80] DeMatteo, D., Filone, S., & LaDuke, C. (2011). Methodological, ethical, and legal considerations in drug court research. *Behavioral sciences & the law*, *29*(6), 806-820.
[81] Holsinger, K., & Sexton, L. (2017). *Toward justice: Broadening the study of criminal justice*. Routledge.
[82] Anglin, M. D., Nosyk, B., Jaffe, A., Urada, D., & Evans, E. (2013). Offender diversion Into substance use disorder treatment: the economic impact of California's Proposition 36. *American journal of public health*, *103*(6), 1096-1102.
[83] Substance Abuse and Mental Health Services Administration (US); Office of the Surgeon General (US). Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health (2016). Washington (DC): *US Department of Health and Human Services. CHAPTER* 6, HEALTH CARE SYSTEMS AND SUBSTANCE USE DISORDERS.
[84] Blum, T. C., Davis, C. D., & Roman, P. M. (2014). Adopting evidence-based medically assisted treatments in substance abuse treatment organizations: roles of leadership socialization and funding streams. *Journal of health and human services administration*, *37*(1), 37.
[85] Glynn, L. H., Kendra, M. S., Timko, C., Finlay, A. K., Blodgett, J. C., Maisel, N. C., ... & Blonigen, D. M. (2016). Facilitating treatment access and engagement for justice-involved veterans with substance use disorders. *Criminal Justice Policy Review*, *27*(2), 138-163.
[86] Steadman, H. J., & Naples, M. (2005). Assessing the effectiveness of jail diversion programs for persons with serious mental illness and co-occurring substance use disorders. *Behavioral sciences & the law*, *23*(2), 163-170.
[87] Drabiak, K. (2019). Expanding Medication Assisted Treatment is Not the Answer: Flaws in the Substance Abuse Treatment Paradigm. *DePaul J. Health Care L.*, *21*, 1.
[88] Dorn, S., Isaacs, J., Minton, S., Huber, E., Johnson, P., Buettgens, M., ... & Wulff, C. (2013). Overlapping Eligibility and Enrollment: Human Services and Health Programs Under the Affordable Care Act. Washington, DC: *Prepared by the Urban Institute for the Office of the Assistant Secretary for Planning and Evaluation [ASPE]*, Department of Health and Human Services [HHS].
[89] Henry J. Kaiser Family Foundation (2015) Status of state on the Medicaid expansion decision *Menlo Park (CA)*
[90] Humphreys K, Frank RG. (2014) The Affordable Care Act will revolutionize care for substance use disorders in the United States. Addiction.;109(12):1957–1958.
[91] Warren, J. A. (2018). Defining the Opioid Crisis and the Limited Role of the Criminal Justice System Resolving It. *The University of Memphis Law Review*, 48(4), 1205-1298.
[92] Current status for each state is based on KFF tracking and analysis of state executive activity. Also see the related State Health Facts page "Status of State Action on the Medicaid Expansion Decision" for additional details.
[93] 2017 1Q Medicaid MBES Enrollment (2017) *Data.Medicaid.gov*
[94] Saloner, B., & Maclean, J. C. (2020). Specialty Substance Use Disorder Treatment Admissions Steadily Increased In The Four Years After Medicaid Expansion: Study looks at whether Medicaid expansion led to more low-income adults with substance use disorders receiving treatment. *Health Affairs*, *39*(3), 453-461.
[95] Lasser, K. E., Hanchate, A. D., McCormick, D., Walley, A. Y., Saitz, R., Lin, M. Y., & Kressin, N. R. (2018). Massachusetts Health Reform's Effect on Hospitalizations with Substance Use Disorder–Related Diagnoses. *Health services research*, *53*(3), 1727-1744.
[96] Clemans-Cope, Lisa, Victoria Lynch, Marni Epstein, and Genevieve M. Kenney. (2017) "Medicaid coverage of effective treatment for opioid use disorder." *Urban Institute*
[97] Maclean, J. C. and B. Saloner (2016). "Substance use treatment: Evidence from Massachusetts healtcare reform." Health Economics
[98] Aletraris, L., Roman, P. M., & Pruett, J. (2017). Integration of care in the implementation of the Affordable Care Act: Changes in treatment services in a national sample of centers treating substance use disorders. *Journal of psychoactive drugs*, *49*(2), 132-140.
[99] Regenstein M, Rosenbaum S. (2014). "What the affordable care Act means for people with jail stays" Health Aff. ;33(6):448–454.
[100] U.S. Government Accountability Office . (2014) Medicaid: information on inmate eligibility and federal costs for allowable services. *Washington: GAO*.
[101] Espinosa, J. F., & Regenstein, M. (2014). How the Affordable Care Act affects inmates. *Public health reports (Washington, D.C.: 1974)*, *129*(4), 369–373.
[102] Regenstein, M., & Nolan, L. (2014). Implications of the Affordable Care Act's Medicaid Expansion on Low-Income Individuals on Probation.

[103] Maclean, J. C. and B. Saloner (2016). "Substance use treatment: Evidence from Massachusetts healtcare reform." Health Economics
[104] Zerhouni, Y. A., Trinh, Q. D., Lipsitz, S., Goldberg, J., Irani, J., Bleday, R., ... & Melnitchouk, N. (2019). Effect of Medicaid Expansion on Colorectal Cancer Screening Rates. *Diseases of the Colon & Rectum*, *62*(1), 97-103.
[105] Andersen, R. M., & Davidson, P. L. (2007). Improving Access to Care in America: Individual and Contextual Indicators. In *Changing the U.S. health care system: Key issues in health services policy and management, 3rd ed.* (pp. 3-31). San Francisco, CA, US: Jossey-Bass.
[106] Gale, D. (1955). The law of supply and demand. *Mathematica scandinavica*, 155-169.
[107] Corman, H., & Grossman, M. (1985). Determinants of neonatal mortality rates in the US: A reduced form model. *Journal of Health Economics*, *4*(3), 213-236.
[108] Saloner, B., Akosa Antwi, Y., Maclean, J. C., & Cook, B. (2018). Access to health insurance and utilization of substance use disorder treatment: Evidence from the Affordable Care Act dependent coverage provision. *Health economics*, *27*(1), 50-75.
[109] Cuellar AE , Cheema J . As roughly 700,000 prisoners are released annually, about half will gain health coverage and care under federal laws . *Health Aff (Millwood)* . 2012 ; *31* (5): 931 – 8 .
[110] Horton, J. (2018). Drug War Reform: Criminal Justice, Recovery, and Holistic Community Alternatives. *Criminal Law Bulletin*, *53*.
[111] Andrews C, Abraham A, Grogan CM, Pollack HA, Bersamira C, Humphreys K, Friedmann P. (2015) Despite resources from the ACA, most states do little to help addiction treatment programs implement health care reform. *Health Affairs* **34**: 828–835.
[112] Aletraris, L., Edmond, M. B., & Roman, P. M. (2017). Insurance receipt and readiness for opportunities under the Affordable Care Act: A national survey of treatment providers for substance use disorders. *Journal of psychoactive drugs*, *49*(2), 141-150.
[113] Pollack, H. A. (2017). Dealing more effectively with problematic substance use and crime. *Crime and justice*, *46*(1), 159-200.
[114] McDonnell, M., Brookes, L., & Lurigio, A. J. (2014). The promise of healthcare reform in transforming services for jail releasees and other criminal justice populations. *Health & justice*, *2*(1), 9.
[115] Wen, H., Hockenberry, J. M., & Cummings, J. R. (2014). *The effect of substance use disorder treatment use on crime: Evidence from public insurance expansions and health insurance parity mandates* (No. w20537). National Bureau of Economic Research.
[116] Buck, J. A. (2011). The looming expansion and transformation of public substance abuse treatment under the Affordable Care Act. *Health Affairs*, *30*(8), 1402-1410.
[117] Andersen, R. M., & Davidson, P. L. (2007). Improving Access to Care in America: Individual and Contextual Indicators. In *Changing the U.S. health care system: Key issues in health services policy and management, 3rd ed.* (pp. 3-31). San Francisco, CA, US: Jossey-Bass
[118] https://www.nytimes.com/2020/01/30/health/medicaid-block-grant-trump.html
[119] Andersen, R. M., & Davidson, P. L. (2007). Improving Access to Care in America: Individual and Contextual Indicators. In *Changing the U.S. health care system: Key issues in health services policy and management, 3rd ed.* (pp. 3-31). San Francisco, CA, US: Jossey-Bass
[120] Maclean, J. C. and B. Saloner (2016). "Substance use treatment: Evidence from Massachusetts healtcare reform." Health Economics
[121] Abby Goodnough (2020). Trump Administration Unveils a Major Shift in Medicaid., *New York Times*
[122] Hunter, J. (2010). Effective community-based chemical dependency treatment for adolescents: Matching program services with individual difference variables. State University of New York at Albany.
[123] Brown RT. (2010) Systematic review of the impact of adult drug-treatment courts. Transl Res;155:263–274.
[124] Chandler RK, Fletcher BW, Volkow ND. (2009) Treating drug abuse and addiction in the criminal justice system: improving public health and safety. JAMA;301:183–190
[125] Kushel MB, Hahn JA, Evans JL, Bangsberg DR, Moss AR. (2005) Revolving doors: imprisonment among the homeless and marginally housed population. Am J Public Health;95:1747–1752.
[126] Matusow, H., Dickman, S. L., Rich, J. D., Fong, C., Dumont, D. M., Hardin, C., ... & Rosenblum, A. (2013). Medication assisted treatment in US drug courts: Results from a nationwide survey of availability, barriers and attitudes. *Journal of substance abuse treatment*, *44*(5), 473-480.
[127] Clear, T. R., Reisig, M. D., & Cole, G. F. (2018). *American corrections*. Cengage learning.
[128] Benjamin Sommers, Bethany Maylone, Robert Blendon, E. John Orav, and Arnold Epstein, "Three-Year Impacts of the Affordable Care Act: Improved Medical Care and Health Among Low-Income Adults," *Health Affairs*

[129] Benjamin Sommers, Robert Blendon, E. John Orav, and Arnold Epstein, (2016) "Changes in Utilization and Health Among Low-Income Adults After Medicaid Expansion or Expanded Private Insurance," *The Journal of the American Medical Association* 176 no. 10: 1501-1509,
[130] Alana Sharp, Austin Jones, Jennifer Sherwood, Oksana Kutsa, Brian Honermann, and Gregorio Millett, (2018) "Impact of Medicaid Expansion on Access to Opioid Analgesic Medications and Medication-Assisted Treatment," *American Journal of Public Health* 108, no. 5: 642-648,
[131] Knudsen, H. K., Abraham, A. J., & Roman, P. M. (2011). Adoption and implementation of medications in addiction treatment programs. *Journal of Addiction Medicine*, *5*(1), 21.
[132] Mojtabai, R., Mauro, C., Wall, M. M., Barry, C. L., & Olfson, M. (2019). Medication treatment for opioid use disorders in substance use treatment facilities. *Health Affairs*, *38*(1), 14-23.
[133] Office of Justice Programs (2019) *BJA's Edward Byrne Memorial Justice Assistance Grant (JAG) Program*
[134] Knight, D. K., Edwards, J. R., & Flynn, P. M. (2010). Predictors of change in the provision of services within outpatient substance abuse treatment programs. *Journal of public health management and practice*, *16*(6), 553.
[135] Somers, S. A., Nicolella, E., Hamblin, A., Heiss, C., & Brockmann, B. W. (2014). Medicaid expansion: considerations for states regarding newly eligible jail-involved individuals. *Health Affairs*, *33*(3), 455-461.
[136] Campbell, N. A., Barnes, A. R., Mandalari, A., Onifade, E., Campbell, C. A., Anderson, V. R., ... & Davidson, W. S. (2018). Disproportionate minority contact in the juvenile justice system: An investigation of ethnic disparity in program referral at disposition. *Journal of Ethnicity in Criminal Justice*, *16*(2), 77-98.
[137] Office of Justice Programs (2019) *BJA's Edward Byrne Memorial Justice Assistance Grant (JAG) Program*
[138] Berry, William D., Evan J. Ringquist, Richard C. Fording and Russell L. Hanson. 1998. "Measuring Citizen and Government Ideology in the American States, 1960-93." *American Journal of Political Science* 42:327-48.
[139] Glynn, L. H., Kendra, M. S., Timko, C., Finlay, A. K., Blodgett, J. C., Maisel, N. C., ... & Blonigen, D. M. (2016). Facilitating treatment access and engagement for justice-involved veterans with substance use disorders. *Criminal Justice Policy Review*, *27*(2), 138-163
[140] Steadman, H. J., & Naples, M. (2005). Assessing the effectiveness of jail diversion programs for persons with serious mental illness and co-occurring substance use disorders. *Behavioral sciences & the law*, *23*(2), 163-170.
[141] Dorn, S., Isaacs, J., Minton, S., Huber, E., Johnson, P., Buettgens, M., ... & Wulff, C. (2013). Overlapping Eligibility and Enrollment: Human Services and Health Programs Under the Affordable Care Act. Washington, DC: *Prepared by the Urban Institute for the Office of the Assistant Secretary for Planning and Evaluation [ASPE], Department of Health and Human Services [HHS]*.
[142] Humphreys K, Frank RG. (2014) The Affordable Care Act will revolutionize care for substance use disorders in the United States. Addiction.;109(12):1957–1958.
[143] Regenstein M, Rosenbaum S. (2014). "What the affordable care Act means for people with jail stays" Health Aff. ;33(6):448–454.
[144] Chang, J., Stucky, T., & Tynes, A. (2012). Review of Best Practices for ICJI Program Areas: Justice Assistance Grants (JAG).
[145] Snyder, L., & Rudowitz, R. (2015). Medicaid financing: how does it work and what are the implications. *Kaiser Family Foundation.*
[146] Gordon, T. (2018). Harnessing the US Intergovernmental Grant System for Place-Based Assistance in Recession and Recovery. *Place-Based Policies for Shared Economic Growth*, 123-56.
[147] United States Census Bureau (2019) *State Census Bureau American Fact*
[148] Office of Justice Programs (2019) "BJA's Edward Byrne Memorial Justice Assistance Grant (JAG) Program"
[149] United States Census Bureau (2019). "Annual Survey of State and Local Government Finances (ASSLGF) and the Citizen and Government Ideology Data"
[150] Richard C. Fording (2019) "Updated Measures of Citizen and Government Ideology"
[151] Snyder, L., & Rudowitz, R. (2015). Medicaid financing: how does it work and what are the implications. *Kaiser Family Foundation.*
[152] Substance Abuse and Mental Health Services Administration. (2018). National Survey of Substance Abuse Treatment Services (N-SSATS): 2009-2017. Data on Substance Abuse Treatment Facilities. Rockville: Substance Abuse and Mental Health Services Administration
[153] Maclean, J. C. and B. Saloner (2016). "Substance use treatment: Evidence from Massachusetts healthcare reform." Health Economics
[154] Benjamin Sommers, Robert Blendon, E. John Orav, and Arnold Epstein, (2015) "Changes in Utilization and Health Among Low-Income Adults After Medicaid Expansion or Expanded Private Insurance," *The Journal of the American Medical Association* 176 no. 10): 1501-1509,

[155] Saloner, B., Bandara, S. N., McGinty, E. E., & Barry, C. L. (2016). Justice-involved adults with substance use disorders: coverage increased but rates of treatment did not in 2014. Health Affairs, 35(6), 1058-1066.
[156] Substance Abuse and Mental Health Services Administration. (2018). National Survey of Substance Abuse Treatment Services (N-SSATS): 2009-2017. Data on Substance Abuse Treatment Facilities. Rockville: Substance Abuse and Mental Health Services Administration
[157] Substance Abuse and Mental Health Services Administration (2018). Substance use and mental health estimates from the 2017 National Survey on Drug Use and Health: overview of findings . *The NSDUH Report*
[158] Knight, D. K., Broome, K. M., Edwards, J. R., & Flynn, P. M. (2011). Supervisory turnover in outpatient substance abuse treatment. *The journal of behavioral health services & research*, *38*(1), 80-90.
[159] Knudsen, H. K. (2015). The supply of physicians waivered to prescribe buprenorphine for opioid use disorders in the United States: a state-level analysis. *Journal of studies on alcohol and drugs*, *76*(4), 644-654.
[160] Berry, W. D., Fording, R. C., Ringquist, E. J., Hanson, R. L., & Klarner, C. E. (2010). Measuring citizen and government ideology in the US states: A re-appraisal. *State Politics & Policy Quarterly*, *10*(2), 117-135.
[161] Office of Justice Programs (2019) *BJA's Edward Byrne Memorial Justice Assistance Grant (JAG) Program*
[162] Lasser, K. E., Hanchate, A. D., McCormick, D., & Kressin, N. R. (2018). Massachusetts Health Reform's Effect on Hospitalizations with Substance Use Disorder–Related Diagnoses. *Health services research*, *53*(3), 1727-1744.
[163] Lasser, K. E., Hanchate, A. D., McCormick, D., Walley, A. Y., Saitz, R., Lin, M. Y., & Kressin, N. R. (2018). Massachusetts Health Reform's Effect on Hospitalizations with Substance Use Disorder–Related Diagnoses. *Health services research*, *53*(3), 1727-1744.
[164] Buck, J. A. (2011). The looming expansion and transformation of public substance abuse treatment under the Affordable Care Act. *Health Affairs*, *30*(8), 1402-1410.
[165] Texas Council of Community Centers. (2016). The Growing Crisis in Inpatient Psychiatric Care: Forensic Crowd-out and Other Access Barriers.
[166] Kendrick, K. (2010). The Tipping Point: Prison Overcrowding Nationally, in West Virginia, and Recommendations for Reform. *W. Va. L. Rev.*, *113*, 585.
[167] Thorpe, K. "Impacts of Health Care Reform: Projections of Costs and Savings", 2005
[168] Courtemanche, C., Marton, J., Ukert, B., Yelowitz, A., & Zapata, D. (2017b). Early impacts of the Affordable Care Act on health insurance coverage in Medicaid expansion and non-expansion states. Journal of Policy Analysis and Management, 36, 178–210.
[169] Frean, M., Gruber, J., & Sommers, B. D. (2017). Premium subsidies, the mandate, and Medicaid expansion: Coverage effects of the Affordable Care Act. Journal of Health Economics,53, 72–86
[170] Courtemanche, C., Marton, J., Ukert, B., Yelowitz, A., & Zapata, D. (2018). Effects of the Affordable Care Act on health behaviors after three years. National Bureau of Economic Research
[171] "Community Treatment Providers by City," Utah Department of Human Services Substance Abuse and Mental Health, accessed December 13, 2019, https://dsamh.utah.gov/pdf/jri/Judge's%20List%20by%20City1.pdf.
[172] Hull, C., & Samuels, J. (2020). How Have States Addressed Behavioral Health Needs through the Justice Reinvestment Initiative?.
[173] Aletraris, L., Edmond, M. B., & Roman, P. M. (2017). Insurance receipt and readiness for opportunities under the Affordable Care Act: A national survey of treatment providers for substance use disorders. *Journal of psychoactive drugs*, *49*(2), 141-150.
[174] Office of National Drug Control Policy. National Drug Control Strategy: FY2014 Budget Summary. Washington, DC: White House; 2014.
[175] Pollack, H. A. (2017). Dealing more effectively with problematic substance use and crime. *Crime and justice*, *46*(1), 159-200.
[176] Aletraris, L., Edmond, M. B., & Roman, P. M. (2017). Insurance receipt and readiness for opportunities under the Affordable Care Act: A national survey of treatment providers for substance use disorders. *Journal of psychoactive drugs*, *49*(2), 141-150
[177] Zur, J., & Mojtabai, R. (2013). Medicaid expansion initiative in Massachusetts: Enrollment among substance-abusing homeless adults. *American journal of public health*, *103*(11), 2007-2013.
[178] Edmond, M. B., Aletraris, L., Roman, P. M., Fields, D. L., & Bride, B. E. (2016). The United States' Federal Parity Act and treatment of substance use disorders: Administrators' familiarity and perceptions of impact. *International Journal of Drug Policy*, *34*, 80-87.