Initial Evaluation

of

Colorado Jail Based Behavioral Health Services

July 20, 2018

Initiated and Funded by

Colorado Department of Human Services,

Office of Behavioral Health

&

Colorado Courts, Correctional Treatment Board

COLORADO
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Evaluation Team

HEALTH MANAGEMENT ASSOCIATES

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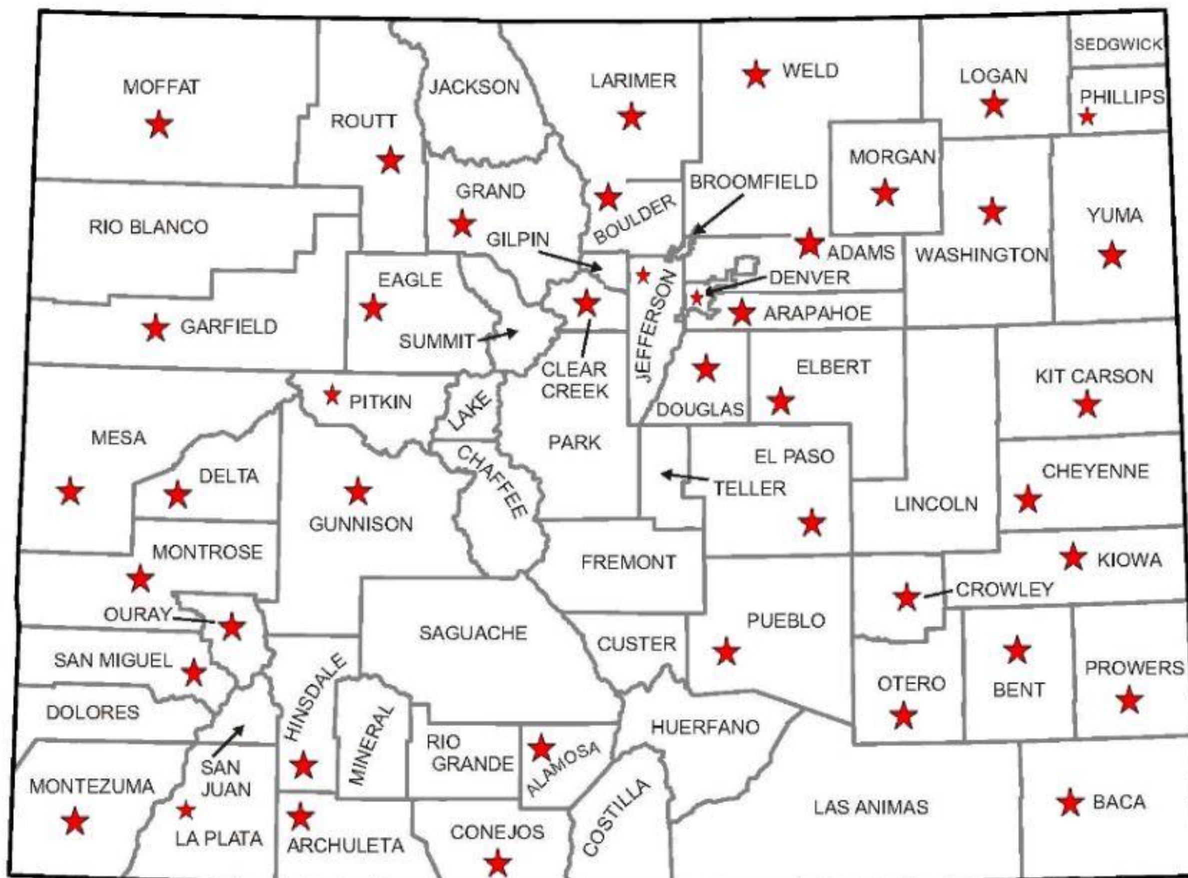
Introduction to Project

The Jail Based Behavioral Health Services (JBBS) program is administered by the Colorado Department of Human Services, Office of Behavioral Health and is funded through House Bill 10-1352 and was expanded through Senate Bill 12-163 creating the Correctional Treatment Cash Fund. The Colorado Correctional Treatment Board oversees and allocates the funds pursuant to C.R.S. 18-19-103. The JBBS program provides resources for the county jails to address the needs of individuals with substance use disorders and co-occurring mental health disorders. Initiated in 2011 with twenty- four counties, the program is in its seventh year and has grown to 45 counties across the State.



This project is an initial program evaluation of the JBBS services to examine both process elements of how the program is implemented across the counties[1] as well as to explore the outcomes and impact of the services provided. Health Management Associates (HMA) partnered with the Office of Behavioral Health (OBH) to conduct the evaluation.

About the JBBS Program

The JBBS program is designed to support County Sheriffs in providing screening, assessment and treatment for substance use disorders and co-occurring substance use and mental health disorders to adults in jail. The program provides appropriate behavioral health services to inmates while supporting

[1] Throughout this report, we refer to “counties” which is meant to refer to JBBS program counties only and is not speaking to all Colorado counties.

the continuity of care within the community after release from incarceration. Specific goals for the program include:

- ✓ Screen all inmates to identify the presence of symptoms of substance use disorders, mental health disorders, trauma, and traumatic brain injury;
- ✓ Identify inmates with active duty or veteran military status;
- ✓ Provide treatment services for individuals with substance use conditions which can include those with co-occurring mental health conditions;
  - Ensure services are culturally competent and appropriate for the population;
- ✓ Provide community transition case management services to support successful transition to the community including engagement in behavioral health services once released.

County sheriff departments (either individually or through multi-county partnerships) contract with OBH to receive funding for the services. The sheriff departments partner with licensed local community behavioral health providers to provide substance use disorder treatment and transition to community services. These providers offer direct services such as assessment, individual and group therapy within the jails as well as case management in transition planning for release. The providers also have capacity to provide free and low-cost services in the community to support ongoing community care upon release. Most programs have a combination of staff including licensed behavioral health providers, Certified Addiction Counselors, case managers, and on occasion peer specialists.

Because one of the primary goals of the program is to successfully transition individuals from jail based behavioral health services to appropriate services within the community, OBH has added performance based incentives to the program. Effective fiscal year 2016-2017, performance based incentives are paid to programs that meet or outperform benchmarks for the number of clients engaged in treatment services in the community upon release from the jail. The benchmark currently is 50% of the clients released from the program will be rated as “in treatment” or “treatment completed” at one month after release.

For more information about the JBBS program, please see the JBBS program page on the OBH website. [2]

Purpose of Evaluation

The JBBS program is a meaningful innovation to improve access to behavioral health treatment for individuals in criminal justice settings. The ultimate goal is improved behavioral health outcomes as well as reducing criminogenic risk and criminal justice recidivism for individuals with substance use conditions. There is growing evidence that criminal justice settings have increasing number of inmates with significant substance use and mental health needs and that these settings may provide a unique opportunity for initiating treatment. According to the U.S. Department of Justice, Bureau of Justice Statistics report in 2006, individuals in jail have high occurrence of mental health disorders (76%) and nearly half (49%) of jail inmates met criteria for both mental health and substance use conditions.[3] In 2017, the Bureau reported that approximately one in four (26%) jail inmates self-reported experiences that met the threshold for serious psychological distress including symptoms such as being nervous, hopeless, restless and depressed.[4] Additionally 44% of jail inmates had been told previously by a mental

[2] JBBS Program Page https://www.colorado.gov/pacific/cdhs/jail-based-behavioral-health-services
[3] Bureau of Statistics (2006)
[4] Bureau of Statistics (2017).

health professional that they had a mental disorder.[5] A report completed by Columbia University indicated that 65% of all prison and jail inmates meet the criteria for substance use addiction while only 11% receive treatment.[6]

The JBBS program is designed to address this emerging need and is a leading model of partnership between correctional and behavioral health systems to address behavioral health in correctional settings. An initiative with seven years of implementation, the JBBS program is well-established and has had adequate time to demonstrate impact. As an initial program evaluation, the overarching purpose of the evaluation was to provide information on the effectiveness of the approach at meeting key program goals. Secondary, but equally important, was for the evaluation to inform the State on funding decisions related to the program and provide recommendations on the value of specific program elements. To date, the counties have been given the freedom to design many program elements to fit the regional and specific jail needs. Although this regional individuality will remain a core feature of the program, the State is interested in whether there are elements of the program that should be standardized to improve outcomes. Evaluation of program elements included review of county screening protocols, referral processes and criteria for enrollment, specific treatment services offered in the program, and other various specific program factors.

Specifically, the evaluation was designed to provide information on:

Program Components:

- ✓ Specific program elements that drive outcomes to inform program improvements and potential standardization of program components;
- ✓ Provide information on best practice approaches within the JBBS program;
- ✓ Provide information on populations of need for potential expansion of the program; and
- ✓ Enhancements to data collection for improving capacity for future evaluations to demonstrate more direct results of the JBBS program.

Program Outcomes:

- ✓ Behavioral health outcomes as measured by utilization of behavioral health services within the community or completed treatment while incarcerated; and
- ✓ Improvements in the rate of JBBS future criminal justice involvement and recidivism.

Defining Research Areas

In order to address the central goals for the evaluation, five specific research areas were identified. In each research area there are explicit questions that the evaluation was designed to answer.[7] The methodology for the evaluation was a mixed design with qualitative and quantitative data sources (see data design and methodology below). The five research areas include:

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[5] Bureau of Statistics (2017).

[6] Center on Addiction and Substance Abuse (CASA) Columbia (2010).

[7] The questions described here were the initial set of questions created at the onset of the evaluation. There are questions listed in each research area that were not answered in the findings in the report or questions that have been adapted. This is a result of available data—not always having the data needed to answer the question or adaptation to the question based on greater understanding of the program and variables.

Target Population and Screening Protocol

Explore the current target population (individuals with substance use conditions in jail) and screening protocol that are used to identify the population. Specific research questions include:

- How do the screening protocols vary by county?
- Do different processes vary in effectiveness of identifying all individuals who fit program criteria?
- Are the screening protocols identifying the right people for enrollment in the program?
- Does the use of a behavioral health provider or booking officer conducting the JBBS screening impact rate of admission or length of stay?
- How do counties vary in the rate of individuals enrolled in the JBBS program following screening?
- Does the type of referral impact outcomes?
- Does the breadth of the referral opportunity (more referral sources) impact county level outcomes?

Expansion, Capacity and Gaps in Services

This research area explores the expansion of the JBBS program in terms of additional populations in need. Because JBBS is currently targeting individuals with substance use conditions and those with substance use conditions and a co-occurring mental health condition, there is interest in other populations of need in the jails. This research area also examines the capacity of programs to incorporate additional services, the county perception of current program gaps and needs and whether services would need to be adapted for new populations. Specific research questions include:

Capacity and Need

- What additional behavioral health needs exist in the jail populations?
- What are the current gaps in JBBS programming?
- What are the existing behavioral health challenges in the jails?
- What is the rate of positive mental health screening without a positive substance use screen?

Program Adaptation

- Would the JBBS program be effective for individuals with other behavioral health needs?
- How easily can the existing program component be adapted for other behavioral health conditions?
- How could services be adapted for meeting needs of individuals with short stays in jails such as those who are pre-sentence?

Implementation

One of the central goals for the evaluation was to explore how counties implement JBBS services. Because there are few standardized elements of the program, there was interest in understanding how implementation varied and explore whether specific program components led to more effective

outcomes. Variation in programs occurs across referral and admission protocols, treatment interventions used for substance use conditions, staffing models, case management activities and location, and coordination of services with correctional staff.[8] Specific research questions include:

- How do counties vary in their implementation of services?
- Do counties vary in the degree of engagement of evidence-based practices?
- How does the size, space and jail capacity inform program differences?
- Are there specific program elements that impact effectiveness and can those be standardized?
- Does the level of inmate criminogenic risk impact the effectiveness of the program?
- Does coordination of services between behavioral health and correctional staff impact outcomes?
- Does the degree of collaboration between JBBS behavioral health staff and correctional staff impact outcomes?
- Do counties with more training of correctional staff from JBBS behavioral health providers have better outcomes?

Outcomes of the Program

This research area explores the degree to which the JBBS program is meeting intended outcomes, including improved follow-up and engagement in community based behavioral health treatment upon release. Additionally, a major goal of the program is to reduce criminal justice recidivism by decreasing risk factors associated with substance use and behavioral health conditions. Specific research questions include:

- How effective is the JBBS program at increasing appropriate utilization of behavioral health services upon release?
- Are there differences between counties in how effective the program is at increasing utilization in behavioral health services upon release?
- How effective is the JBBS program at reducing recidivism within the JBBS population?
- Does the length of stay or “dosage” of the program impact outcomes—behavioral health or recidivism?
- Is the impact of the program impacted by individual risk score (LSI)?

[8] Throughout the report, there are references to both correctional staff and jail staff. For the purposes of this report, correctional staff is a broader group which may include individuals who may work in the jails as well as administrators, Sheriffs, and other officials who are leading county JBBS programs. Jail staff is used to refer specifically to individual staff working in the jails day to day with inmates.

Additional Needs and Resources

Another focus of the evaluation was to identify specific needs that the counties describe that could improve program effectiveness or support expansion of services to new populations. Specific research questions include:

- What other resources are needed to make the program most effective?
- What are the resources or operational changes needed to support additional services or populations?
- How can capacity be supported across counties that vary by size and capacity challenges?
- Can standardization of elements be tiered based on capacity?

Evaluation Design and Methodology

Using a mixed method approach, HMA collected and analyzed both qualitative and quantitative data as part of a rigorous design to evaluate the program. Mixed method designs also increase the likelihood of uncovering unanticipated impacts and increasing the validity and usefulness of findings. The mixed method framework systematically integrates two or more methods to facilitate greater validity of inferences and generate a more comprehensive and insightful evaluation, especially when analyzing complex initiatives having multiple components. The integration of qualitative and quantitative data is especially relevant in identifying and understanding important issues facing low income or at-risk populations, such as criminal justice population, paving the way for new discoveries and unexpected findings. While quantitative methods are well suited to measuring levels and changes in impacts, qualitative methods are more effective in understanding the processes by which an intervention instigates a series of events that ultimately result in the observed impacts. A mix of methods can provide a more comprehensive evaluation of an intervention or program.

The mixed method framework systematically integrated three methods to facilitate greater validity of inferences and generate a more comprehensive and insightful evaluation needed to sufficiently analyze the complex JBBS program having multiple and varied components. The quantitative methods were used to evaluate the extent of variation between counties' implementation of the JBBS program as well how that variation results in different outcomes and impacts, while qualitative methods were used to understand the processes and factors (e.g. available resources, population served) that influence program implementation and ultimately result in the observed impacts.

Specifically, HMA utilized both a survey of JBBS behavioral health providers and correctional staff to gather their perspective and conducted interviews with staff from a sample of counties to gather more in-depth information about the specific JBBS program elements and perceived impact. Informing the development of the survey and key informant interview guide, a scan of recent literature and best practices from other states and counties was conducted to explore not only existing data, evidence, and findings to help inform the evaluation but also to minimize the burden of new data collection on program staff.

Literature Review

The literature review can be found in Appendix A. The key questions we sought to answer in this literature review included:

- What are effective models for identification of mental illness and substance use disorder (SUD) for criminal justice populations? What evidence-based screening standards and protocols are used to accurately assess the need for mental health and SUD treatment?
- What are the existing "proven" models for treatment of mental illness, SUD and co-occurring disorder in correctional settings?
- What are the primary outcomes associated with successful behavioral health treatment programs in jails?
- What program elements are associated with an outcome of lower recidivism?

To identify sources of evidence-based practices and program elements, HMA searched online peer reviewed journal articles, located through Google Scholar. HMA also searched specifically for reviews

and meta-analyses that summarized the latest evidence. Targeted searches in journals and periodicals that focus on correctional health care, such as the Academy of Correctional Health Professionals “Insider” Newsletter were also conducted. Additionally, websites of known corrections-based behavioral health treatment programs were searched to gather insights into program elements and outcomes. HMA also reviewed current standards, such as the National Commission on Correctional Health Care (NCCHC) Accreditation Standards, as well as articles interpreting the standards in NCCHC’s magazine *CorrectCare®*.

As part of the literature review, HMA also consulted with three correctional health care experts with experience in the jail setting, who directed review of additional resources on screening tools and protocols, evidence-based behavioral health treatment practices, and articles with recommendations for smaller, more rural jails like some of those participating in the JBBS program.

Qualitative Methods

Behavioral Health Provider and Correctional Staff Survey

In January 2017, separate surveys for both behavioral health providers and correctional staff were administered. Each survey was designed with the target audience in mind (See Appendix B for Survey Instruments). For both surveys, respondents were those familiar with the specific JBBS program components for their corresponding counties. There were core questions that crossed both surveys as well as a subset of questions unique to each respondent. Both surveys explored:

1) Demographics of JBBS program (e.g. staffing, provider certifications, provider type, size of the jail),
2) Screening Protocol,
3) Services Delivered,
4) Expansion, Capacity, and Gaps in Service,
5) Perceived Program Outcomes, and
6) Additional Needs and Resources.

The surveys were conducted online and were open to program staff for approximately two months. It took approximately 20 to 30 minutes to complete. Respondents were asked to review a survey instruction sheet in advance of taking the survey so they could be informed about the kinds of questions being asked and what data they should have available to them to help answer the questions. There was a 100% response rate from participating counties and their behavioral health providers. There was a 90% response rate from participating sheriff departments. Survey data were used to evaluate the variation in program implementation across the counties and to identify key data elements where the degree of variation required further inquiry. Data were also used to begin to evaluate to what extent different program elements were impacting outcomes in transition tracking, behavioral health treatment utilization, and recidivism.

Key Informant Interviews

Qualitative data from a select number of programs was collected via semi-structured, open-ended key informant interviews. Appendix C contains the interview guide and detailed information on how programs were selected for interview. Selecting which counties to invite for a key informant interview was multi-pronged. First, using the survey responses from both the behavioral health providers and the correctional staff, key program elements were identified based on the literature review and known

evidence-based practices. For example, for the survey question "Do all individuals with a positive screen get admitted to the JBBS Program," there was an opportunity to learn from counties that answered "no" to understand more about who is admitted to the program. Each county was assessed with a "yes" or "no" to whether the survey response met the needed response to support more detailed understanding of numerous program elements impacting implementation. See Appendix C for a list of survey variables and key responses identifying a fit for interview. In addition to this assessment, OBH made recommendations regarding the programs to be interviewed based on program type. Lastly other criteria, such as ensuring diversity in jail size, program delivery model (regarding the ratio of behavioral health organizations to county jails), as well as regional location were also factored into the decision. 11 counties were identified for an interview, of which ten interviews were conducted, both with correctional staff and associated behavioral health providers were conducted in April through May 2017. Interviews lasted approximately 1.5 to two hours and were conducted over the telephone.

Typologies

Due to the extensive variation in program implementation across the counties, survey data was used to group counties, using cluster analysis, that had similar characteristics into six different typologies. The following 10 measures, selected for their importance for evaluation variables, were included in the analysis:

1. Are there behavioral health staff working in the jail that are outside of the JBBS program?
2. If there is a positive screen on one of the four JBBS screening tools, are additional (nonrequired JBBS) validated screening tools used for further screening?
3. Who provides the JBBS contract required screening to the inmate?
4. Do all individuals with a positive screen get admitted to the JBBS Program?
5. Is there a psychiatric prescriber who delivers JBBS Services?
6. In county jail with other behavioral health providers (outside of the JBBS program), is there any referral between JBBS and services offered by jail behavioral health providers?
7. Do the JBBS behavioral health providers coordinate care with jail based medical providers?
8. What services are offered in the JBBS program?
9. What evidence based treatment models are used in the JBBS programming?
10. Is there drug testing conducted upon booking?

Based on these measures, the 45 programs with survey response data[9] were grouped into six clusters. These clusters or "typologies" represent approximate groupings – programs vary within as well as between the typologies. However, the types share some commonalities that are helpful in summarizing the characteristics of the diverse programs.

For additional insight, the analysis examined how the types scored on two other measures from the survey data:

1. Average length of stay in the JBBS program
2. Average number of sessions received by JBBS participants

[9] Although the response rate was high (100% for the behavioral health staff and 93% for the behavioral health providers), there were counties without data who were not included in the typologies or other analyses.

The six typologies are defined below. Bolded text indicates the key elements that tend to drive the distinction between typologies.

1. **Jail Based Coordination** (28%). These programs take **referrals from jails, coordinate with jail-based programs, and have behavioral health staff outside the JBBS program**. A behavioral health provider generally does the screening. The services offered focus on group interactions, engagement, and transition tracking. Common therapies include moral reconation and seeking safety. The programs serve a mix of large and small counties (mean = 187,000) and have a relatively large number of behavioral health staff working in the jail (mean = 3.7). Of the six types, this one reports above average length of stay and number of sessions.
2. **Eclectic Approach** (20%). These programs **rely on a booking officer for screening, seldom use additional screenings and additional assessments after an initial positive screen, and do little referral or coordination with jails (which rarely do drug testing**). They use an eclectic set of **diverse services and therapies**. They serve a mix of large and small counties (142,000) and have an average number of behavioral health staff working at the jail (mean = 2.9). Of the five types, this one reports the next to longest stay but is only average on the number of sessions.
3. **Psychiatric Prescriber and Medication Management** (24%). These programs are **distinguished by high use of a psychiatric prescriber to deliver services**. The most common services are **crisis intervention, medication assisted treatment, and medication management. Diverse therapies are used, but mindfulness is common**. Otherwise, these programs aren't distinguished well by screening procedures, behavioral staff outside of JBBS, or working with the jail. Generally, the counties served by these programs are small (mean = 48,000), and they have a relatively small number of behavioral health staff working at the jail (mean = 2.4). The length of stay and number of sessions is below average.
4. **Long Stay and Many Sessions** (13%). These programs coordinate with jails, use a clinician or case manager for screening more often than others, and less often use additional screening after a positive screen. In terms of services, they offer groups, psychoeducation, and Narcan kits. They use multiple therapies, with thinking for change and behavioral being most common and psychoeducation, mindfulness, living in balance, and moral reconation also being used. They have the largest JBBS staff (mean = 4.1), **the longest length of stay, and the largest number of sessions;** they primarily serve the large counties of Jefferson and Weld (mean = 252,000).
5. **Coordinate Medication Services and Brief Stay** (7%). These three programs, all part of the Southeast Health Group, rely on a booking officer for screening and get referrals from jail-based behavioral health staff, but tend not to coordinate otherwise with the jails. **They collaborate with jail medical providers to provide medication management, Narcan kits, and other services**. The therapies focus on motivational enhancement, dialectical therapy, behavioral therapy, and strategies for self-improvement. They do not have behavioral health staff outside of JBBS, and do not admit all with positive screens. The three counties are quite small (mean = 9,000) and have few behavioral health staff working at the jail (mean = 1.7). Of the five types, this one reports **the shortest stay and the fewest sessions**.
6. **Residential Peer Focused** (9%). These programs do additional screening after a positive screen and get referrals from jail-based behavioral health staff but tend not to coordinate otherwise with jails. As residential centers, they offer peer services and peer therapies (plus 12-step, moral reconation, TCU, and seeking safety therapies). They use a behavioral health provider for

screening and most often admit all with a positive screen. All serve large counties (mean = 692,000), and the number of behavioral health staff working at the jail is slightly above average (mean = 3.5). Of the five types, this one reports the most sessions but below average length of stay.

Quantitative Data Collection

Three data sources were used to quantitatively evaluate the JBBS program implementation and outcomes. The three data sources included the JBBS program database which counties enter data into; behavioral health claims data representing community utilization of services;[10] and criminal justice data. A JBBS Unique ID was created for each JBBS client. This ID was the key variable to facilitate matching each individual client to their behavioral health claims data, criminal justice data, and JBBS program data.[11]

JBBS Data

All JBBS client data between FY2011/12 and FY2016/17 was provided by OBH. Client demographic data available include gender, age, behavioral health diagnosis, and county in which the client received JBBS services. Program service data variables including admission date and discharge date, screening data (e.g. date of screen, screen type, and screen result), service data (e.g. date, type of service, service duration), and transition tracking data. A full list of the data variables used in the analysis are included as Appendix D.

OBH Behavioral Health Organization (BHO) Encounter Data

To measure extent of appropriate and inappropriate treatment utilization[12] of behavioral health services after release from JBBS, OBH provided behavioral health organizations encounter data between FY2011/12 and FY2016/17. Variables used in the analysis included date of encounter, diagnoses (ICD9Code), place of service, and procedure codes. The data set did not include primary care utilization, so the evaluation was not able to explore impacts on other kinds of health care utilization (e.g. ED visits for reasons other than a behavioral health issue).

For the sake of the evaluation, “inappropriate utilization” means the services involved patient crisis and/or utilization of the emergency department. To define appropriate versus inappropriate treatment utilization, the evaluation identified procedure codes from CDHS OBH Approved Procedure Code list (effective July 1, 2017) that indicated uncontrolled substance use and mental health issues. Crisis related codes were thus identified as “inappropriate” as well as any treatment or encounter with the emergency department. All other encounters were assumed “appropriate”. Specifically, the procedures used to identify inappropriate treatment included:

- 90839 Psychotherapy for crisis

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[10] It is important to note that this excluded Medicaid claims data. The goal had been to include Medicaid claims data but this was not possible.

[11] The Office of Behavioral Health Data and Evaluation team conducted all matching of data sets for this evaluation.

[12] The terms “appropriate or inappropriate” in reference to utilization is not intended to judge or stigmatize an individual’s engagement of acute care services. The terms are commenting instead on the individual’s overall connectivity to preventative services that may reduce the need for acute care. There is recognition that for some situations engagement in acute services is the best and most appropriate use of services. However, this distinction was a method for looking at utilization patterns of the program for the purposes of evaluation.

- 90840 Psychotherapy for crisis
- H0007 Crisis
- H0030 Crisis
- H2011 Crisis
- S9485 Crisis
- 99217-99226 INPATIENT HOSPITAL/ Hospital Observation
- 99231-99236 INPATIENT HOSPITAL/ Hospital Observation
- 99238-99239 INPATIENT HOSPITAL
- 99281-99285 ED

Criminal Justice Data

To measure one-year recidivism rates among JBBS clients post their release, the Colorado Judicial Branch provided offense and arrest data for all participating JBBS counties except Denver County. Data included demographic data, such as date of birth, gender and race, as well as the following criminal justice data:

- Offense Date
- Arrest Date
- Case number
- Case filing date
- Case status
- Filed charges
- Findings/Sentence information.

The data set was limited and did not include Arrest/Citation information unless in court. To protect and maintain client privacy, all information is reported at an aggregate level for the evaluation.

The Denver Sheriff Department provided criminal justice data for Denver County JBBS clients between the time period January 1, 2009 through December 31, 2017. Similar data was provided and used, including:

- Booking begin date and end date
- Arrest date
- Offense Description
- Sentence
- Release codes

To combine these data sets, the analysis assumed the following data variables were comparable:

Recidivism[13]	Judicial Data	Denver County
Did the arrest within one year of JBBS release result in jail?	"Penalty" – if a penalty value was "jail", then "yes"	"RELEASE_CODE" – If a value for release code was "released to county", then "yes".
Did the arrest within one year of JBBS release result in prison?	"Penalty" – if a penalty value was "DOC", then "yes"	"Release Code" – If a value for release code was "Released – DOC", then "yes".

For just the Colorado Judicial Branch, analysis tracked and ranked the types of offenses to understand rate of violent and non-violent crime committee among JBBS clients as well as the extent to which alcohol and other drugs were involved in the offense.

Non-Violent Crimes	Violent Crimes
• Property crimes, such as theft, embezzlement, receipt of stolen goods, and arson of personal property • Fraud, tax crimes, other forms of white collar crime • Drug and alcohol-related crimes • Prostitution • Racketeering and gambling • Bribery • Burglary	• Homicide • Rape • Assault • Robbery • Auto theft • Larceny

[13] In some research recidivism is defined as any future arrest. This is considered the broadest definition of recidivism, however there are also challenges with using arrest as the definition. Although rearrests were explored for this evaluation, the quality of the data and concerns about over-estimation of recidivism led to a determination that it was not appropriate to use that broad of a definition. The focus instead was placed on re-incarceration which is a better fit for the JBBS program goals.

Evaluation Findings

The following section reviews overall findings as well as addresses specific questions raised in each research area.

Caution on Interpretation of Findings

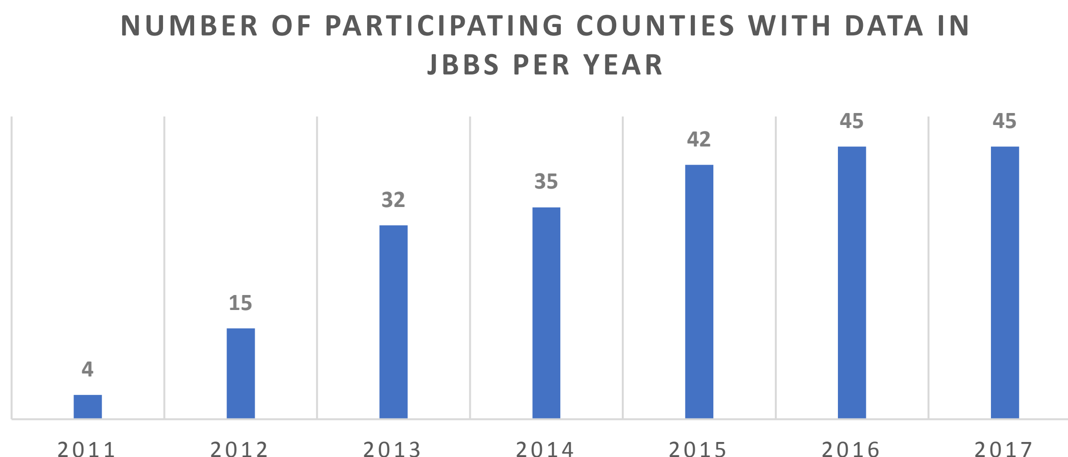
As an initial evaluation, the findings provided in this report are largely descriptive. The JBBS program is complex in the number of variables that may be meaningful to outcomes and core program effectiveness. The county programs vary significantly in implementation between counties and vary significantly in implementation of the model within county at any point in time as well as over time. For example, most of the programs have had multiple program changes since this data was collected- either in specific staffing of the model, treatments offered, program components, processes, and potentially populations. Moreover, the data sets combined for this evaluation have multiple limitations as is discussed elsewhere often making clear interpretation of the data challenging. HMA made efforts throughout to offer preliminary interpretations of the results and has included early indications of program outcomes, however these should be viewed as preliminary and limited in conclusiveness about the program. The recommendations section outlines numerous steps for future evaluations to be improved including program variables, program data and metrics, and models for evaluation focus such as recidivism and outcomes. As a result, readers are requested to be cautious in drawing conclusions from or generalizing the findings that follow. These findings need to be confirmed through additional evaluation with greater control of variables to ensure that the JBBS program and impact is thoroughly and accurately understood.

Description of JBBS Data Set

The number of counties participating in the JBBS program has grown from 24 counties in FY2011/12 to 45 counties in FY2016/17, as shown in Figure 1.[14] Because of the rise in county participation, and thus the size and number of JBBS clients, analysis was conducted to identify averages, medians, and ranges for key program elements (e.g. average number of services delivered, etc.) to manage for the changing size of the program.

[14] In 2011, there were 24 counties with 11 contracts however in the first year during implementation, data was not clearly captured for all counties which explains the data above only for 4 counties in the first year. Additionally, JBBS Data set includes data for all 45 counties. However, county participation in 2017 dropped to 44 counties. Additionally, while the program operated in fiscal years, the evaluation reports data by calendar year.

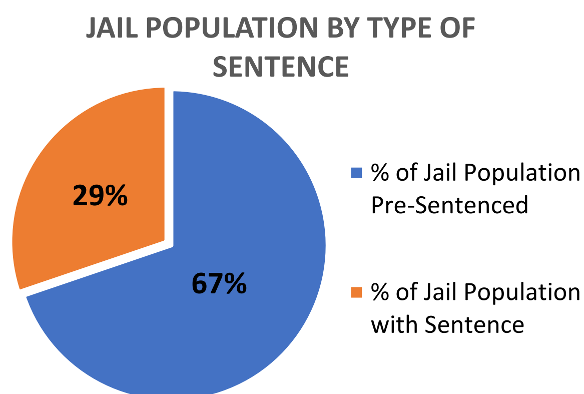
Figure 1



Description of the JBBS Client Population

Across all years, there have been 12,852 JBBS enrollees. The average age of JBBS clients[15] is 36. Many counties have an average age of approximately 32 years, with some variation to older (38 years). Males are nearly three times as common among JBBS clients as females, 72% and 28% respectively. The gender gap may be in part a result of many counties not yet offering services for women in the jails or in JBBS programming. Colorado jail demographics also indicate the majority of inmates are men.[16]

Figure 2



The jail population being served has implications for the implementation of the JBBS program. An inmate's length of stay including a known sentence is often a criterion for JBBS enrollment among many counties. Because inmates without sentences have unknown lengths of stay and may be rapidly released, many programs have focused on those with sentences. Additionally, sentencing appears to impact the extent to which JBBS behavioral health providers have time with that inmate and can determine whether services focus on treatment or case management and re-entry services. To begin to understand the jail population being served, counties were asked in the survey to provide an estimate of the overall jail population that is presentenced versus sentenced. Jails responded that on average, 67% of jail population was pre-sentenced, with a range of 6% to 100% (median of 75.5).

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[15] Throughout the report a JBBS client refers to an individual in jail receiving services within the JBBS program.

[16] Colorado Department of Corrections, Official State Web Portal. Department Statistics and Reports, available at https://www.colorado.gov/pacific/cdoc/departmental-reports-and-statistics

About 83% of clients achieve treatment goals (or successful completion of the program) from the program, a rate that has improved significantly since 2012.

Research Area 1: Target Population

Aim: To explore the current target population and screening protocols, i.e., whether the screening protocols used by the counties are effectively capturing the intended target population.

Methodology: This section included qualitative data including the survey and interviews. Knowing that the counties are required to screen for mental health, substance use, symptoms of trauma, and traumatic brain injury, the differences between counties are more process oriented. Detailed questions about screening were included in interviews as well to begin to understand what factors drive screening protocols and perceived effectives of those protocols in identifying the target population.

Question 1: How do the screening protocols vary by county?

Across all years, 21,423 inmates were screened[17] of which 69% screened positive for SUD. Of those inmates with a positive screen for SUD, 73% were admitted to JBBS. As described below, there are additional admission criteria that may prohibit an inmate with a positive SUD screen from admission to the program or they may refuse treatment. There are several ways in which screening protocols vary between counties. These are described below.

JBBS Statewide Enrollment Rate

- 21,423 inmates total screened
- 21,313 or 99% screened for SUD (excluding missing data, refusals, not screened, attempted)
- 17,411 or 69% screened positive for SUD
- 12,860 or 73% of positive SUD screens were admitted to program

Who conducts screening?

Both behavioral health providers and correctional staff were asked about who conducts the JBBS contractually required screening with the inmates. For most counties (65%), the behavioral health provider conducted the screening. For the other counties, the screening was completed by the booking officer (15%), the clinician or case worker (11%), or other staff (9%).

The time at which screening occurred also varied across counties. For many, the screening occurs at booking and is part of the medical assessment/screen within the booking process. For others, screening occurs later during the inmates' jail stay. Some sample screening protocols include:

1. All inmates are screened with a 32-question assessment at booking, assessing for mental health issues, and then seen by jail medical services within the first 24 hours of detention. If indicated

[17] The JBBS program is contractually designed for inmates to be screened for substance use, mental health, trauma, and traumatic brain injury. Often programs begin with substance use but all four are required as part of the screening process. The total number of people screened and the total positive screen are not the same because some people may not have a behavioral health need, they refused the screening, they did not complete the form, etc.

in the screening and jail medical services assessments, a nurse makes the referral to the JBBS program. Once referred to JBBS, there is a “soft intake” which takes about 1.5 hours to complete and includes all the JBBS required screenings. A longer assessment occurs once enrolled in JBBS.

2. All inmates are screened by jail staff[18] and screening information is passed on to JBBS.
3. Inmates are screened by the staff nurse and then referred to JBBS if use of alcohol and/or substances in the past year is indicated.
4. Inmates are screened by JBBS staff based on discussions with jail staff of likely candidates.

Additional screening

Behavioral health providers were asked whether they implement additional (non-JBBS required) validated screening tools for further screening. About half (52%) said they did not engage in additional screening, while 20% engaged additional screens sometimes and 28% always did. Criteria for additional screening included pending positive traumatic brain injury initial screens, length of stay of the individual in jail, and individual willingness to engage in treatment. Some counties also conducted additional screening for those eligible for JBBS to identify additional resources and services needed beyond SUD treatment. Counties reported use of a variety of additional screening tools. Those interviewed perceived benefits of additional screening as presenting an opportunity for providers to begin a discussion regarding mental health, potentially supporting refinement of a diagnosis (e.g., depression versus anxiety), informing jail medical providers who may be prescribing medication and identifying other relevant issues with the inmate.

Whether or not the counties engage additional screening tools, the counties rely on a face-to-face interview with a JBBS behavioral health licensed provider to confirm the presence of a diagnosis of SUD.

Utilization of Universal versus Criteria Based Screening Protocols

Over 12% of counties reported in the survey that they conduct universal screening, meaning behavioral health screening for every inmate entering the jail. However, interviews clarified that only two counties truly universally screen. Most counties interpreted universal screening to mean that every JBBS client received the required screening tools. In Alamosa, all inmates are screened at booking and then JBBS staff score the screen. If the inmate scores positive, JBBS staff conduct additional evaluation to ensure the individual meets all other admission criteria and discusses services with the inmates to get them enrolled. However, Alamosa and other jails face the challenge of on-going access to an inmate for treatment. Often by the time the assessment is complete, the inmate has been released or sent to another jail and is no longer available to receive services. In Kit Carson, the process is similar with all inmates being screened by jail staff and then the screening results are passed onto the JBBS program staff.

Behavioral health providers were asked in the survey to describe their experience with universal screening and additional resources needed to adapt protocols so that all inmates were screened. While counties see the merit in universal screening, there are many barriers to its successful implementation.

[18] Throughout the report, there are references to both correctional staff and jail staff. For the purposes of this report, correctional staff is a broader group which includes individuals who may work in the jails as well as administrators, Sheriffs, and other officials who are leading county JBBS programs. Jail staff is used to refer specifically to individual staff working in the jails day to day with inmates.

From the program capacity perspective, challenges include JBBS staff and resource constraints to serve all inmates who screen positive for substance use. From the jail capacity, constraints include the length of time for screening, more staffing to complete screens, space, and training booking officers to engage in assessment of behavioral health needs. Many jails also reported that the medical assessment process, which is a universal process, is effective at identifying those inmates with substance use and can make the referral to JBBS. However, this relies on strong collaboration and awareness of the JBBS program by medical staff. In addition to the resources and staff constraints with universal screening, many counties reported inmates may not be motivated to engage in screening or JBBS programming. While universal screening might identify all inmates with a SUD, the perception is that it will not result in more successful outcomes for inmates because it does not account for self-motivation. Additionally, there is a concern among some providers that they could be liable if an inmate screens positive for SUD but treatment is not feasible. Overarching themes from counties regarding universal screening include:

- Smaller jails identified less with the need for universal screening, reporting that they know many of the inmates and understand their needs.
- Many jails have tried universal screening at different points in time. For correctional staff who have limited understanding or experience with the JBBS program, universal screening may feel like a waste of time and unhelpful. The correctional staff are focused on safety and housing, not necessarily behavioral health—especially early in an inmate's detention.
- JBBS has minimal collaboration with booking services. This may be an opportunity for growth. However, JBBS may need to increase to ensure those who are screened receive services. There is also the importance of client engagement—inmates cannot be forced into services and treatment.
- An overarching and significant barrier to universal screening at booking is its effectiveness for inmates entering detention. Both correctional staff and behavioral health providers indicated concern that detainees at the booking process do not feel they are able to discuss substance use. Detainees may be intoxicated or under the influence of substances entering the jail; they may be concerned that if they indicate a need for mental health or substance use services, it will impact their criminal charges or placement in the jail; or that identification will result in vulnerability with jail staff or other inmates. As a result, even if capacity could be created in the booking process, most counties (correctional staff and behavioral health providers) felt it would not be effective at identifying individuals in need of JBBS services.

Criteria for JBBS enrollment

Approximately half of the behavioral health providers indicated that all individuals who screen positive for SUD are admitted into the JBBS program. Some who screen positive for SUD are not admitted to JBBS, based on additional admission criteria that each county defines for itself. In FY2016/17, programs defined anywhere from one to eight additional criteria for admission into the program (see Appendix E for program criteria).

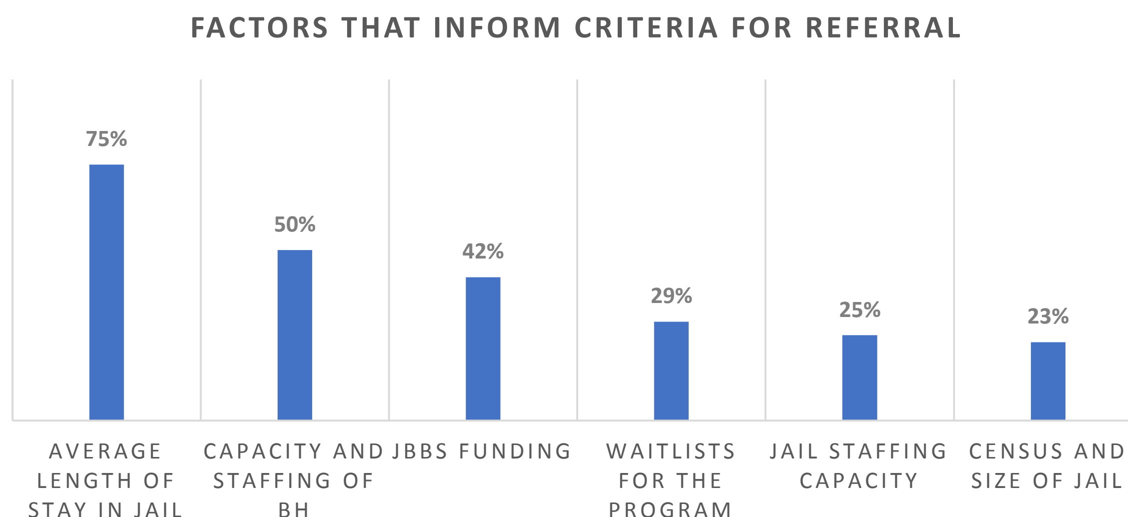
The minimum criteria (required by the State) for enrollment is that an inmate meets diagnostic criteria for a SUD. Beyond that, criteria for enrollment varies across counties. The themes that emerged from open ended responses to the survey question "*What are the criteria in your setting for program referral*?" include:

- History of abuse, including self-reported history;

- Scoring on an SUD assessment tool (e.g. SSI score of 2 or greater);
- Length of jail time, and related, whether inmate has been sentenced/post-conviction;
- Inmate willingness to engage in JBBS services;
- Dual diagnosis (Mental Health and Substance Use disorder);
- Court ordered; and
- Concern or acknowledgement from Jail Staff lending itself to a referral and admission

When asked to select which factors inform their criterial for referral, three quarters of providers responded, “average length of stay in jail;”, followed by 50% of the providers responding, “behavioral health capacity and staffing,” as shown in Figure 3.

Figure 3



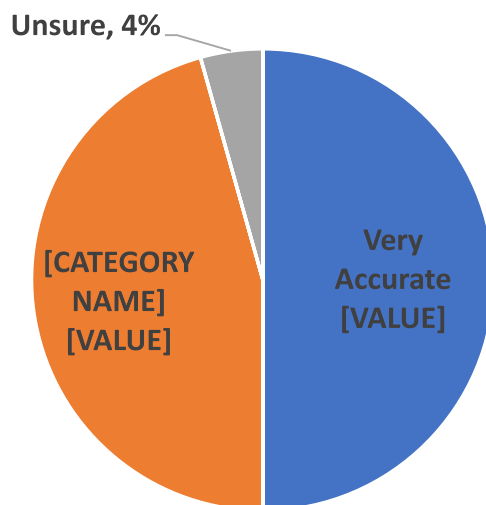
Generally, the duration of inmate sentence (setting the length of stay) was also an important criterion for many counties. The specific criteria for length of stay varied across those counties from a minimum of 15 days to 16 weeks. Many counties focus their program enrollment on the sentenced population because they know the duration of the inmate’s stay provides adequate time for treatment. Enrollment of inmates with longer stays also allows the JBBS providers to plan for a shift in services from treatment to re-entry case management as the individual approaches release. Most counties exclude inmates sentenced to the Department of Corrections, focusing JBBS services on those returning to the community to be consistent with the JBBS program design and purpose.

Question 2: Are the screening protocols and program criteria identifying the right people for the program?

Counties were asked in the survey to what degree they perceive the current JBBS screening protocol is accurately identifying individuals with SUD, as shown in Figure 4. Fifty percent perceive their protocol as

"somewhat accurate," with 4% "unsure" of their accuracy. No counties responded, "somewhat inaccurate" or "very inaccurate."

Figure 4 To what degree do you perceive the current JBBS screening protocol is accurately identifying individuals with SUD? (n=46 providers)



In interviews, counties were also asked to share their perspective on why the screenings or protocol may be inaccurate. An idea shared across several counties is the timing of the screening and whether it occurred at booking. One county reported that booking is a time in which "the inmate may be upset, intoxicated or not understand what the screen is for and may not truthfully answer or refuses [the screen]." To manage this, the county has added an option on the screen to indicate whether the inmate was intoxicated at the time of the screening to consider the degree of accuracy during scoring. Another strategy to manage this concern is adding additional admission criteria such as known history of SUD (self-reported or previously diagnosed). Some counties acknowledged that screening protocols are only as effective as the people who deliver them and the willingness of the inmate to be responsive and honest. One county specifically reported that "validity of any screen is improved on the basis of the rapport with the clinician they are working with." This indicates that if screening protocols occur too early in the inmate's detention, it may be less effective than if there is an opportunity to establish a rapport and then conduct the screening. One other thing to note is that despite the use of evidence-based tools, several counties indicated an overall concern or doubt regarding the screening tools themselves for assessing accurately whether a SUD exists.

Counties were asked on the survey whether they had evidence that some of the people that most need JBBS services are not enrolled in JBBS. The results were about equal across behavioral health providers with 33% responding that yes, they have evidence suggesting people in need are lacking services, while 35% said no and another 27% said they did not know. In part due to the jail population being on average 67% pre-sentenced, and thus have short stays or unknown stays, counties are reluctant to enroll and treat those they do not believe will be around long enough for genuine treatment. Therefore, many of these individuals are missing an opportunity at treatment or other services.

Answering this question more fully was limited for a few reasons. One of the primary limitations is that most counties do not engage in universal screening of all individuals entering the jail. There are good reasons for this decision as described above, however the lack of screening of some individuals raises the risk that individuals who need services are not identified. Evidence suggests that prevalence rates for substance use may be higher than providers initially anticipate and use of screening provides a more objective method for identifying substance use and need for treatment.[19] Additionally, there are many ways to define the "right people" for JBBS treatment because identification of substance use is not the only factor that would lead to successful completion of the program. Other individual factors such as readiness for change, motivation and commitment to treatment, and ability to be treated within the jail (in terms of jail space and JBBS capacity) are all important considerations. Lastly, ideally there would also be a method for comparing county screening rates of substance use to county wide data on substance use prevalence. This would allow some comparison between county JBBS screening rates and county substance use prevalence rates. Counties identifying the population in need of JBBS would have positive screening scores in a range that would be consistent with the prevalence rate in the county (or potentially higher based on research of higher rates of substance use in jail populations). Unfortunately, current county level data on substance use does not exist and so this comparison was not possible.

Question 3: Does JBBS program referral impact outcomes?

Overall, JBBS program referral mechanisms varied across the counties. Responses to the behavioral health provider survey question "How is a referral made to the JBBS program?" permit an assessment of the types of referral sources for the program as well as the breadth of referral sources. For some counties, there is a single referral source such as self-referral or court orders, while in other counties, referrals came from multiple sources such as jail-based medical providers, booking officers, and JBBS behavioral health staff. In many counties, self-referrals from inmates were the primary source.

Notable is that most non-JBBS behavioral health staff (behavioral health providers in the jails who are outside the JBBS program) do not appear to be making referrals to the JBBS program, except for Jefferson, Weld, and Larimer Counties. However, there are many counties that indicated "jail staff" make the referral so this may include behavioral health jail staff.

With the data available, it is not possible to understand whether self-referral led to better outcomes among inmates than those who were referred via jail or JBBS staff because JBBS data does not include client-level referral source. However, the results indicate that approximately 40% of clients were served by counties that indicated they have a self-referral process in place (as identified in the behavioral health provider survey). Additionally, the breadth of referral sources may be important with less than 3% of clients enrolled in counties that use only one referral source while 60% were served by counties that indicated two types of referral sources, and 32% were served by counties that indicated three types of referral sources. The remainder were served by organizations without data on referral sources.

[19] Fazel, S., Bains, P., & Doll H. (2006). Substance abuse and dependence in prisoners: A systematic review. *Addiction, 101*(2), 181-191.

Other factors that may influence referral rates is awareness of jail staff about the JBBS program (e.g., extent of knowledge and collaboration with JBBS behavioral health providers) and inmate awareness of the JBBS program to self-refer. For example, some jails reported that a challenge with referral is that jail staff sometimes confuse JBBS programming with other jail based mental health and/or crisis services.

Recommendations for Target Populations:

Universal Screening Pilot: One method for checking the JBBS program identification of individuals with need is to pick a few counties (preferably a mix of urban and rural and large and small jails) and conduct universal screening for a period of time (2-3 weeks). This could be done at booking or it could be done 1-2 days into the inmate stay. The goal would be to screen everyone in the jail in snap shot of time and then compare the positive results in the pilot to the JBBS program routine screening rates.

Other elements that could be piloted include trying different processes such as conducting universal screening at booking as well as at health evaluation to determine if one is more effective than another at identifying need; having some sites use a booking officer and some engaging a nurse or behavioral health provider for the initial screen to determine effectiveness; and creating a script explaining the screening so that potential inmate concerns are alleviated—in terms of how the screening will be utilized including that it will not impact criminal justice charges, time, sentence, etc.

After the pilot, examine the differences in identification of need. If the universal screening results in more identification of SUD, then it may be worth considering how to adapt the screening processes to ensure a more universal approach to identify those in need of services. This data can also inform the State on capacity and need for future funding requests. If the data is consistent with current JBBS identification, then it can be assumed that current screening processes are adequately identifying the target population.

Referral Source Tracking: To further understand whether the type of referral impacts outcomes, begin to assign a referral source per JBBS client during the initial JBBS intake or assessment process. Possible referral source options might include Self-Referral, JBBS staff, Jail Medical Staff, Jail Behavioral Health Staff, Kite, and Jail Non-Behavioral Health Staff.

A consideration for the tracking of referral source is also to continue to identify whether there is a difference in engagement levels by inmates identified via different referral sources. For example, does a program that rely primarily on self-referral have higher engagement among their enrollees because these individuals have self-motivation.

Research Area 2: Expansion of Population

Aim: To explore whether the intended target population should be expanded to include individuals with a mental health concern who do not have a substance use disorder. This includes assessing whether the program would be effective for individuals with mental health concerns who do not have an SUD and the level resources it would take to expand the program.

Methodology: Most of the data for this research area is qualitative and was harnessed from the survey and interviews with selected counties based on survey responses. Quantitative data on JBBS diagnoses was used from JBBS program data and behavioral health claims data.

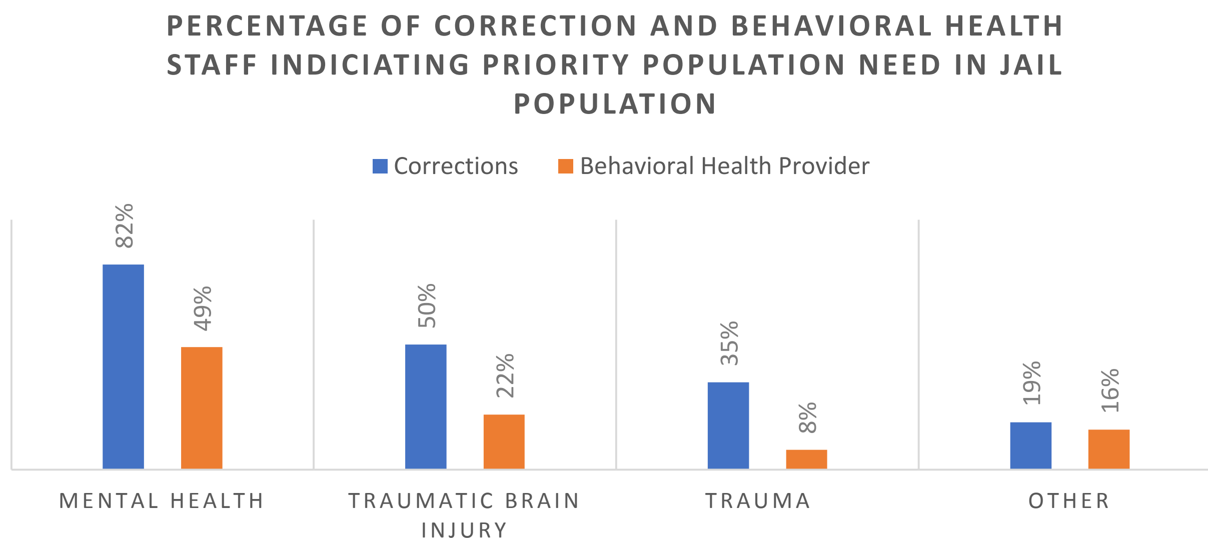
Question 1: What additional behavioral health needs exist for jail based populations?

Capacity and Need

Through both survey and interview data, behavioral health providers and correctional staff were asked to describe specific population needs that may be separate from substance use disorders. Additionally, survey and interview questions explored the challenges or changes to JBBS program capacity to meet those needs.

On the survey, both the behavioral health providers and the correctional staff indicated that mental health is a high need for the jail population. Sixty-two percent of behavioral health providers and 50% of the jail staff indicated that they turn away individuals from the JBBS program who have a mental health concern but do not meet criteria for substance use conditions. Additionally, 82% of jail staff and 49% of behavioral health providers indicated that if the program could be expanded, a priority population would be individuals with mental health concerns, as shown in Figure 5. Similarly, individuals with a history of trauma were a population of high need with 50% of jail staff and 22% of behavioral health staff indicating those with trauma as a priority population. Traumatic brain injury (TBI) was indicated as a lower priority (8% of behavioral health providers and 35% of jail staff).

Figure 5



The JBBS program data further supports these impressions. In terms of screening rates, of the 99%[20] of JBBS enrollees screened for mental health, 65% scored positive for symptoms and 26% negative with the remaining number rated inconclusive (5%) or missing data (4%). These findings vary some by county with Archuleta (10%) and La Plata (31%) standing out with the lowest mental health positive screen; El Paso next lowest (40%). Mesa, Larimer, and Clear Creek have 95% or more of individuals screening positive for mental health symptoms. There is no trend in positive screenings for mental health over the years of the JBBS program demonstrating consistency in the rate of co-occurring conditions.

Similarly, the survey impressions for TBI are consistent with screening data. Ninety-seven percent of individuals enrolled in JBBS were screened for TBI, but only 32% of the screenings are positive. It is estimated, from the most current studies, that the prevalence TBI is very common among incarcerated adults, occurring among an estimated 65% of the jail and prison population.[21] For non-incarcerated adults, it is only estimated that 8.5% have a history of TBI.[22] There is also greater variation by county for this condition with Delta and Montrose reporting less than 1% positive findings, while Boulder, Larimer, and Prowers have more than 55% positive findings. There is no trend in positive TBI screenings over the course of the JBBS program years.

Ninety-eight percent of individuals screened receive a trauma screening, with 55% being positive, 34% being negative, and the remainder being inconclusive (6%) or missing data (4%). La Plata, Denver, and Alamosa/Conejos and El Paso have the fewest positive screenings for trauma (less than 40%), and Delta, Montrose, Mesa have the most (90% or more). Over the years of the JBBS program, there is a significant upward trend in positive trauma screenings which tracks with provider and correctional staff impressions that trauma is increasing in the jail population.

Of those inmates enrolled in JBBS, the program's existing focus of substance use also has high screening rates with 97% of enrollees receiving substance use screening with 94% positive, 2% negative or inconclusive, and the remainder missing data. There is also a significant upward trend in positive substance use screens over the course of the JBBS program (although the percentage rise is small). This rate of substance use in comparison to mental health is also consistent with the national data described above in the literature review with correctional populations having higher rates of substance use while significant co-occurring mental health conditions are common. The program data suggests that only a small percentage of individuals screen positive for mental health and have a negative screen for substance use, however this data should be interpreted carefully. Of 11,892 individuals with a positive mental health screen, 497 screens were negative or inconclusive for SUD (4%). It is important to note that this number is only representative of the individuals screened (as few programs use universal screening). Many programs do not screen individuals who they perceive as "only mental health" because they would not meet the criteria for the program. As a result, the rate of mental health without substance use is likely lower than and the commentary from the behavioral health providers and the correctional staff on the importance of mental health without substance use disorders may not be captured within the existing program data.

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[20] These screening rates exclude cases in which there was no information on either screening or outcomes within the JBBS program data.

[21] Williams et al. (2010). Traumatic brain injury in a prison population: prevalence and risk for re-offending. *Brain Injury, 24*(10), 1184-8.

[22] Silver et al. (2001). The association between head injuries and psychiatric disorders: findings from the New Haven NIMH Epidemiologic Catchment Area Study, *15*, 343-53.

Most of the comments in interviews regarding population need centered around mental health needs—some indicating that they believe mental health far outweighs substance use need. Although most of the JBBS enrollees are viewed as having co-occurring challenges, the interviews highlighted the need to address inmates who have mental health conditions without the substance use diagnosis. The most common mental health need identified is the high occurrence of trauma in the jail population; particularly for women. As will be described below, the behavioral health providers had mixed views on the appropriateness of treating trauma in jails but the population's level of trauma was a highly consistent theme.

Other mental health needs included treatment for anxiety, uncontrolled bipolar disorder and, for some, psychosis or schizophrenia. For these populations, the primary challenge for the jail based services is access to psychiatric medications. One interviewee stated that 70% of the population needs psychiatric medication and believes that the inability to engage in psychiatric services contributes to JBBS clients discontinuing treatment.

Interviews also pointed towards geographic differences in population need with jails near the Fort Lyon facility in southern Colorado describing increased complexity of mental health needs in the population including increased aggression and violent behavior, and a more severe level of psychiatric illness. Other jails that receive a higher proportion of inmates with previous military background described traumatic brain injury as a growing population challenge.

Separate from mental health, interviewees also commented that a growing population need is addressing substance withdrawal and the challenges for safe withdrawal when many inmates do not tell jail or behavioral health staff what they have been using. As indicated below on the survey, 51% of behavioral health providers and 80% of correctional staff see addiction and withdrawal risk as a challenge for the jail. The risks in this realm have provided challenges with needing to send out inmates for emergency care and raising the cost and liability for the jails. Similarly, many commented on the need for greater Medication Assisted Therapy (MAT) programming in the jails and the challenges with this treatment approach with Medicaid suspended while individuals are incarcerated.

JBBS Data on Diagnosis

JBBS Program Diagnoses

Quantitative data on mental health diagnosis both in the JBBS program data and in the claims data for community based services suggest a significant amount of mental health need and some changes in the population over the years of the JBBS program.

Table 1 below lists the top 10 primary diagnoses given to individuals upon enrollment to JBBS across all years of the JBBS program as reported within the JBBS program data. Across all years, social anxiety disorder ranked the lowest (3% of total) while Alcohol Use Disorder was ranked the top diagnosis (22% of total). Stimulant Use Disorder ranks second, with 15% of the total.[23]

The next columns show the trend for each diagnosis with variation of the prevalence of each diagnosis over the years. For example, Alcohol and Stimulant use remain consistent across program years with Post-Traumatic Stress Disorder and Depression closely behind. Opioid Dependence is ranked at 8 in

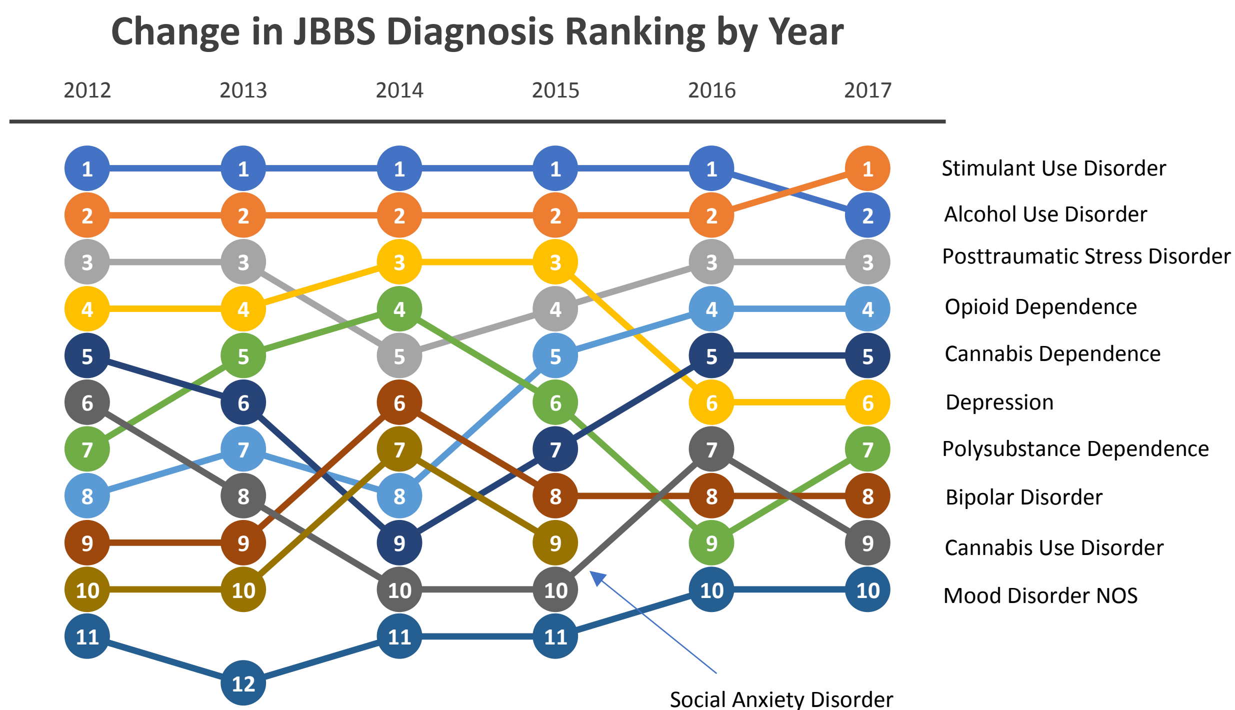
[23] Diagnosis data often does not equal 100% when examining percentages because individuals may have multiple diagnoses and thus counted more than once. This data includes diagnosis 1 and 2 which by definition means people may be counted twice.

2012 but steadily increases over the years to 4th in 2016 and 2017. Bipolar Disorder is clearly common but remains at a lower level ranked as 8th or 9th most years. Most diagnoses appear to have a stable rank or fluctuate without a clear trend, as can be seen in Figure 6.

Table 1 JBBS Diagnoses by ranking 1 to 10 (1 most common) by Year

Diagnosis	N	%	Ranking by Year						
			All	'12	'13	'14	'15	'16	'17
Alcohol Use Disorder	6580	22.0	1	1	1	1	1	1	2
Stimulant Use Disorder	4491	15.0	2	2	2	2	2	2	1
Posttraumatic Stress Disorder	2045	6.8	3	3	3	5	4	3	3
Depression	1899	6.3	4	4	4	3	3	6	6
Opioid Dependence	1440	4.8	5	8	7	8	5	4	4
Polysubstance Dependence	1397	4.7	6	7	5	4	6	9	7
Cannabis Dependence	1238	4.1	7	5	6	9	7	5	5
Bipolar Disorder	1072	3.6	8	9	9	6	8	8	8
Cannabis Use Disorder	904	3.0	9	6	8	10	10	7	9
Social Anxiety Disorder	767	2.6	10	10	10	7	9		
Mood Disorder NOS	665	2.2	11	11	12	11	11	10	10

Figure 6



Trends in diagnosis can inform population need and the type of mental health conditions seen in the JBBS program.

Behavioral Health Community Diagnoses (Claims Data)

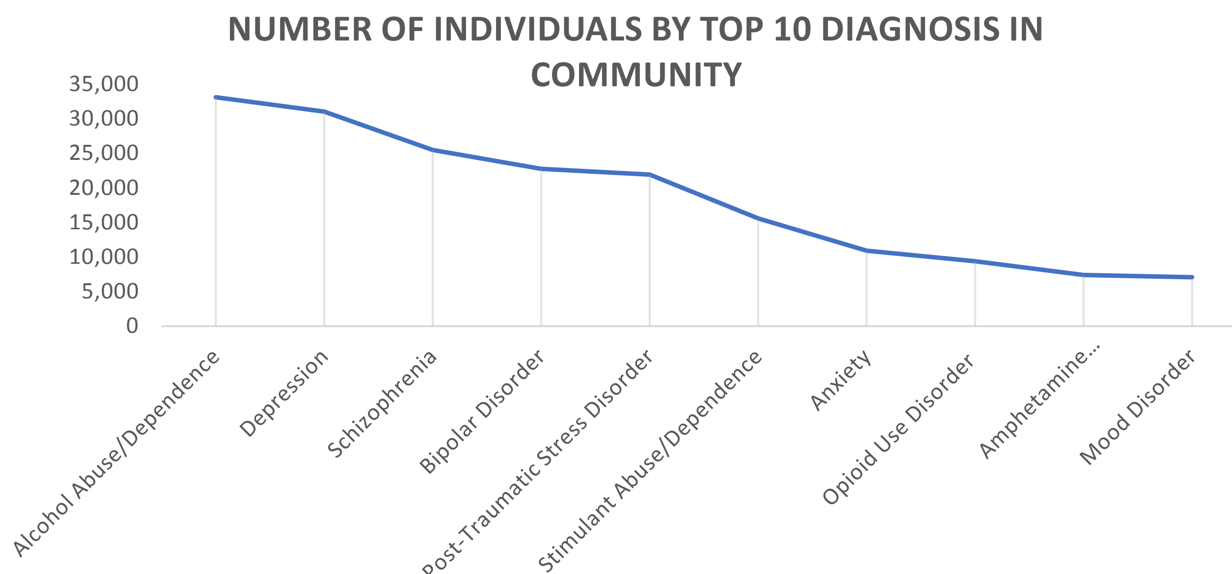
Any encounter provided in the community is required to have a diagnosis and therefore can provide some insight into the JBBS population's presentation in the community and suggest population needs. For inmates obtaining behavioral health services outside the jail, the clear majority of diagnoses given (45%, n= 167,563) are undetermined such as "encounter for observation for other suspected diseases and conditions ruled out" or "observation for other suspected mental condition." However, if you remove these from the data, there is information on the type of mental health diagnosis given for services in the community. Table 2 and Figure 7 show the top 10 diagnoses including substance use in the claims data. For the simplicity of this report, the analysis grouped specific ICD-10 codes into categories of diagnosis rather than reporting all of the diagnostic modifiers.

Table 2 Percentage and Number of Individuals by Community Diagnoses

Diagnosis in Community	Percentage and Number of Individuals[24]
Alcohol Abuse/Dependence	16% (n=33,099)
Depression	15% (n=31,014)
Schizophrenia	12% (n=25,490)
Bipolar Disorder	11% (n=22,730)
Post-Traumatic Stress Disorder	10% (n=21,914)
Stimulant Abuse/Dependence	7% (n=15,584)
Anxiety	5% (n=10,921)
Opioid Use Disorder	4% (n=9,390)
Amphetamine Abuse/Dependence	3% (n=7,390)
Mood Disorder	3% (n=7,061)

[24] Note that often diagnostic data does not equal 100% as individuals may have multiple diagnoses and thus the numbers include duplicate counts.

Figure 7



The data shows a significant number of individuals with diagnosed mental health needs. Table 3 and Figure 8 illustrate the consistency of diagnoses over time for the population with some trends in top 10 ranking. It can be presumed that this number may be even greater given the undetermined diagnoses above may also indicate mental health needs. Diagnosis of psychiatric conditions has been demonstrated to be an unreliable process for multiple reasons including provider and patient factors (such as presentation in the moment, provider training and comfort with diagnosis, etc.) and can be influenced by the "climate of healthcare" with some providers avoiding specific diagnoses to reduce payment challenges, to avoid stigma placed on the individual or for engagement, to provide a diagnosis for billing when the specific diagnosis may not yet be clear, and person-centered reasons.[25,26] Table 3 and Figure 8 demonstrate the change in community diagnosis rankings over time.

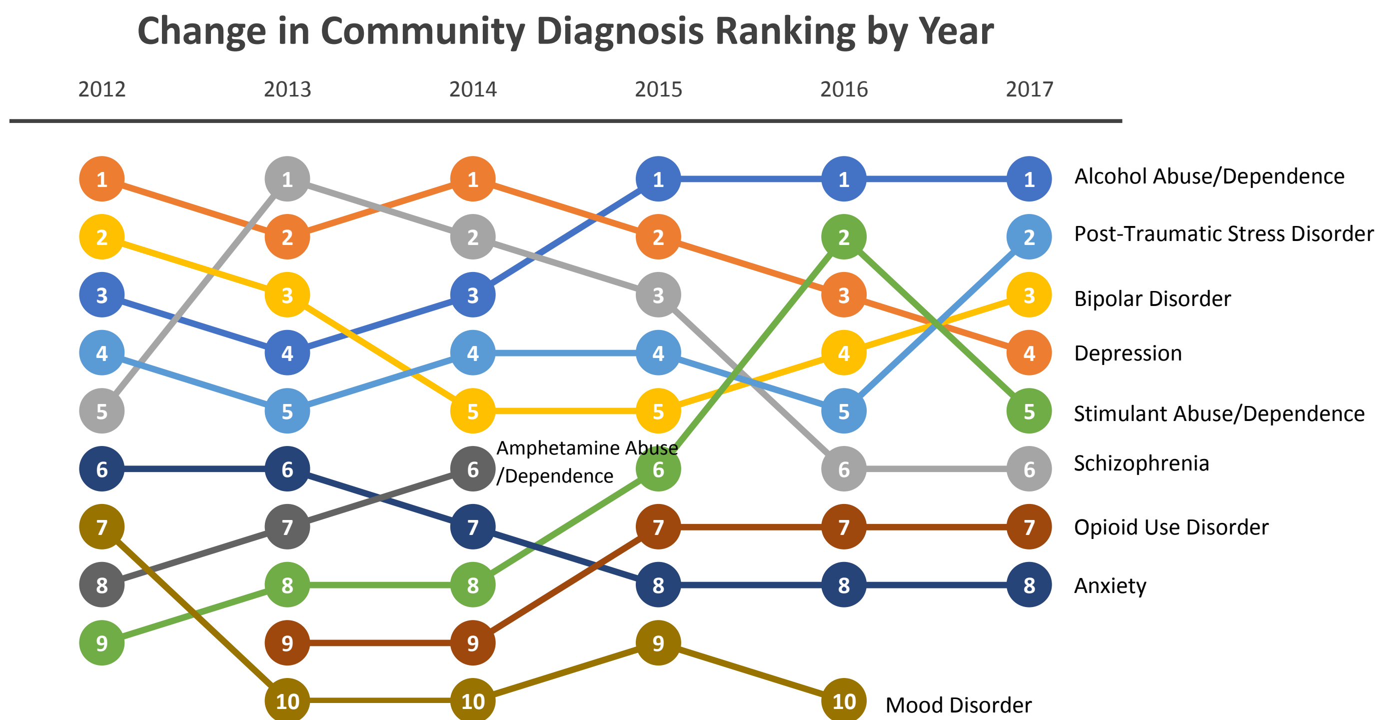
Table 3 Community Diagnoses by ranking 1 to 10 (1 most common) by Year

	N	%	Ranking by Year[27]						
			All	12	13	14	15	16	17
Alcohol Abuse/Dependence	33,099	16	1	3	4	3	1	1	1
Depression	31,014	15	2	1	2	1	2	3	4
Schizophrenia	25,490	12	3	5	1	2	3	6	6
Bipolar Disorder	22,730	11	4	2	3	5	5	4	3
Post-Traumatic Stress Disorder	21,914	10	5	4	5	4	4	5	2
Stimulant Abuse/Dependence	15,584	7	6	9	8	8	6	2	5

[25] Aboraya, A., Rankin, E., France, C., El-Missiry, A., John, C. (2006). The reliability of psychiatric diagnosis revisited: The clinician's guide to improve reliability of psychiatric diagnosis. *Psychiatry, 3*(1), 41-50.
[26] Aultman, J.M. (2016). Psychiatric diagnostic uncertainty: Challenges to patient-centered care. *American Medical Association, Journal of Ethics, 18*(6), 579-586.
[27] In 2012, drug use takes the 10th rank, in 2015, psychosis takes the 10th rank, in 2016 mood disorder takes the 10th rank, in 2017 Cannabis is 9th and Adjustment disorder is 10th.

Anxiety	10,921	5	7	6	6	7	8	8	8
Opioid Use Disorder	9,390	4	8		9	9	7	7	7
Amphetamine Abuse/Dependence	7,390	3	9	8	7	6			
Mood Disorder	7,601	3	10	7	10	10	9	10	

Figure 8



The JBBS and community based top 10 diagnoses and trends are largely consistent. The growth of Opioid Use and the prevalence of Alcohol Use, Stimulant Use and Depression have remained fairly stable. An interesting difference between community diagnosis and JBBS program diagnosis is schizophrenia with the diagnosis showing up within the top 10 in the community but not in the JBBS data. There are a few possible explanations for this difference. Often psychosis, a primary symptom of

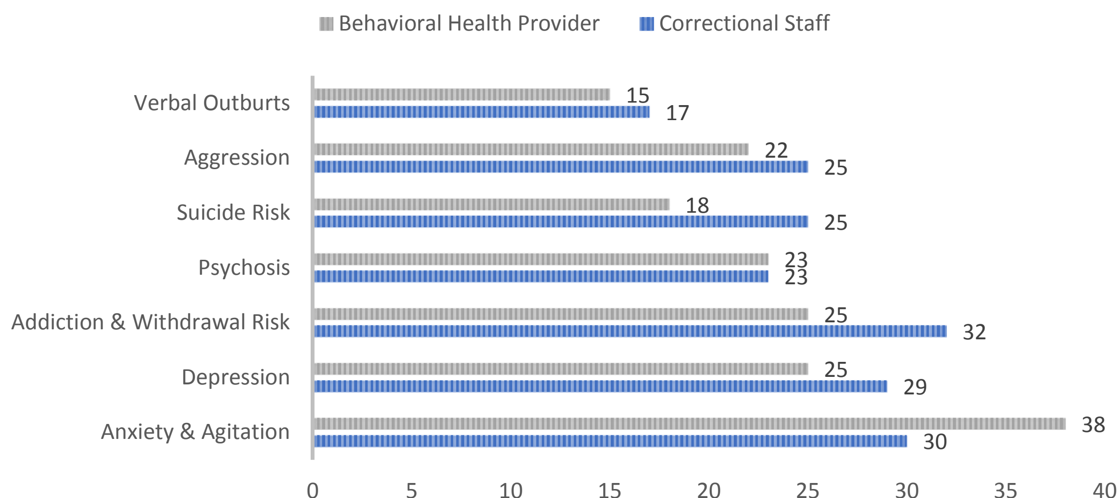
schizophrenia may be assumed to be connected to drug use or other pressures within the jail setting (especially for shorter stays) and the diagnosis of schizophrenia require more time for assessment. JBBS behavioral health providers may be identifying the psychosis but still trying to engage in differential diagnosis with substance use, Bipolar disorder and schizophrenia as potential diagnoses. Similarly, many providers believe that schizophrenia is a significant diagnosis to give to an individual and may thus choose others (e.g., psychosis, Bipolar disorder, etc.) until they have had time for the full evaluation which often includes a psychiatric evaluation (which is not a routine aspect of the JBBS program across counties). It may also be that the clarity of symptoms determining a diagnosis of schizophrenia improves once individual returns to the community.

Question 2: What are the current gaps in programming?

Challenging Behavioral Health Gaps

When counties were asked to indicate the most challenging behavioral health issues in the jail and the kinds of concerns that they want resources to address, the responses further supported the need for treating mental health and addressing high risk behaviors related to mental health or substance use. For both correctional staff and behavioral health providers, the most significant challenge was anxiety and agitation. Addiction and withdrawal risk and depression were close seconds followed by psychosis, aggressive behavior, and verbal outbursts. The risk for suicide was also indicated as a concern for both groups, however behavioral health providers rated it as a higher concern than correctional staff. Figure 9 illustrates how both groups ranked behavioral health challenges.

Figure 9



Gaps in Services

Counties also provided information on what staff perceived to be the highest priority behavioral health gaps in existing service capacity. For behavioral health providers, the services needed most were psychiatric medication management and alternatives to restrictive housing for inmates with serious mental illness. Services aimed at behavioral modification and crisis intervention, including suicidal assessment were the next ranked gaps. Evaluation of inmates was also indicated as a lower priority gap. It is important to note that the survey question for behavioral health providers did not provide an opportunity for “other” responses. However, the interview data indicated that many providers are concerned about suicidal ideation and particularly the degree to which jail staff understand suicidal ideation and proper precautions to prevent suicide. Most providers interviewed believed it would be helpful and important to expand the JBBS program to mental health treatment to include more support to jails for suicidal patients.

For corrections staff, the most significant gap was behavioral modification with evaluation being second.[28] The higher perceived need for evaluation from correctional staff may be because correctional staff are not trained to determine the inmate’s needs and thus evaluation is placed as a higher gap in the system. Psychiatric medication management and alternatives for housing inmates with serious mental illness were also ranked as common gaps. Fewer correctional staff indicated the need for crisis intervention and suicidal assessment which may be related to the finding that they did not see suicidal risk as significant of an existing need as some of the behavioral health providers. The correctional staff were provided the opportunity to offer “other” ideas on important gaps in services and specific ideas

[28] The survey question asked: “What gaps in behavioral health service capacity are the highest priority for your site to address” with options including: crisis intervention, evaluation, psychiatric medication management, behavioral modification, and alternatives to restrictive housing for inmates with SMI. Behavioral modification generally refers to approaches based in behavioral therapy such as assessment and individualized treatment focused on conditioning behavior. Evaluation was assumed to be diagnostic evaluation and ongoing assessment. However, we cannot know for sure how respondents interpreted these options when responding to the survey.

mentioned included: housing and resources for individuals after release from corrections; availability of psychiatric medications; and mental health evaluation prior to release for individuals not in the JBBS program due to program criteria.

According to interviews, many correctional staff highlighted the importance of stable housing upon release to prevent individuals from quickly returning to jail, including sober living options. When permanent housing is unavailable, individuals have a much harder time sustaining the progress they made in treatment in jail. Other limitations included the length of time that individuals must wait for Medicaid and the delay in benefits at the most critical time during the transition from jail to the community. Some suggested the need to pay for mental health treatment and rapid access to psychiatric services as core elements of success for the transition.

Correctional staff and behavioral health staff expressed similar perspectives about what needs to be included in the JBBS program. A central theme was the importance of access to psychiatric medications—both in access to care and in funding for care. Some jails such as Otero County are paying for these services within the jail to improve inmate stability and jail staff safety. Others identified the limitations in the formulary as a real barrier to adequate care for specific psychiatric needs even when they have a primary care or psychiatric provider who can prescribe.

Other services identified less often included:

- **Crisis Intervention Training** for law enforcement to improve response to individuals in the community and within the jails.
- Providers agreed that one of the potential challenges in the transition is that community behavioral health providers are not specifically trained in the **assessment or treatment of criminogenic risk factors** and that this results in improvement in behavioral health symptoms but a missed opportunity to decrease the risk for further crime. This is a sentiment raised in the literature as a reason for the lack of evidence of behavioral health treatment improving recidivism rates.[29] The behavioral health providers indicated that many community clinicians continue to have stigma, fear or a lack of understanding of the criminal justice population and that this reduces successful transitions to care for the JBBS population.
- The importance of a **team approach which includes probation, courts, and behavioral health providers to success**. JBBS is not a singular system that is responsible or able to drive outcomes. Many commented that the role of drug courts and probation officers is helping with accountability beyond the JBBS program staff or community providers. The systems joining to wrap services around the individual and improve participation in treatment is central for some individuals to obtain recovery. Drug courts also play an important role for the pre-sentence population to provide an avenue for ongoing engagement and accountability.
- **Case management for individuals** upon release and ongoing in the community and increasing the after care and wrap around focus within JBBS. Some indicated the need to add life skills and resource allocation to the teaching and skills development for inmates. Many interviewees highlighted the importance of the inmates having a clear and realistic understanding of the process upon release including appointments, immediate steps in terms of housing, and how to balance and meet expectations—particularly court mandated expectations. The role of case

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[29] Jennings, J.L. (2009). Does Assertive Community Treatment Work with Forensic Populations? Review and Recommendations. *The Open Psychiatry Journal, 3,* 13-19.

management for logistics such as bus tokens and the more significant emotional preparation for high expectations in the community is central to a successful transition for inmates.

Question 3: Would the JBBS program be effective for individuals with other behavioral health needs? And how easily can the existing program components be adapted for other behavioral health conditions?

Adaptation of JBBS Programming

Both behavioral health providers and jail based staff believed that the program could be effective for individuals with other behavioral health needs, primarily mental health conditions. This is largely because the program is already being used for populations with SUD and co-occurring mental health conditions. Many also believed that the program can be effective for treating traumatic brain injury in reducing anxiety and agitation and supporting connectivity to the community and appropriate resources.

Several behavioral health providers commented in interviews that providing mental health services would improve jail staff engagement in the JBBS program given the challenge mental health conditions pose for the jail. Adding mental health services would foster a better understanding of the JBBS program and hopefully demonstrate effectiveness in a way that may be more visible among jail staff. At the same time, other providers commented that the adaptation of the program would be dependent on the engagement of the jail, including the degree to which jail staff would be open to learn what to look for regarding inmates in need of JBBS services and to engage in greater training.

The behavioral health providers suggested that some programmatic adaptations may be needed to treat specific populations. Primarily group therapy or specific evidenced based therapies may need to be adapted to impact mental health conditions such as anxiety and depression. Trauma was a specific area in which many providers had concerns about the effectiveness and appropriateness of the current JBBS model (brief therapy within jail setting). Many feared that trauma based care in a setting that is not safe raises the potential for harm. All providers agreed that specific trauma treatments such as Eye Movement Desensitization and Reprocessing (EMDR) would not be appropriate in the jails, however focusing on skills development (e.g., Dialectical Behavioral Therapy (DBT) distress tolerance and distraction) would be effective and could support individuals with varying degrees of trauma, stress, and anxiety. The discussion also raised questions about group size, group composition and dividing inmates based on the condition that is most relevant. For example, separating women with trauma from women inmates with primary SUD conditions.

As indicated above, the most consistently noted adaptation for treating primary mental health is the need for psychiatric prescribing and medication management. Other adaptations included more support for mental health crisis situations and providing support to prevent crisis and acute needs. For both jail staff and behavioral health providers, there was concern about contractual issues in managing more psychiatric medication management with medical service contracts. Concerns generally were about cost of care, the ability to adapt vendor contracts for medical providers and access to psychiatric providers, and whether the formulary for the pharmacy would support provider recommendations.

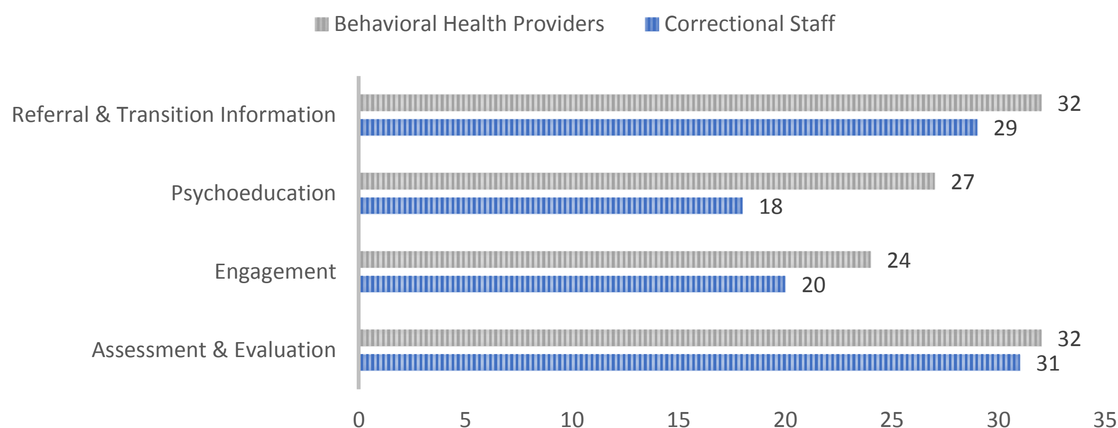
Question 4: How could services be adapted for meeting needs of individuals with short stays in jails such as those who are pre-sentence?

A specific question in the survey and interviews was how the program could be improved for those inmates with short stays and who are generally pre-sentence. Because so many JBBS programs are serving only sentenced individuals who have a minimum of 30, 60 or 90-day sentences, there is concern about those with short-stays who also tend to rotate in and out of the jails more frequently.

Behavioral health providers report that the most important services for individuals with short stays is referral and transition information to support connectivity to behavioral health providers within the community. Assessment and evaluation are important as well, however require more time which can be challenging for numerous inmates who may only be in the jails 2-3 days. Rather than focus on individualized assessment, many providers indicated that pre-sentence populations could be served by psychoeducation, education on transition, and referral sources—all of which could be delivered in a group format and people could attend for a day or two or a few weeks. Assessment and evaluation and psychoeducation about substance use were highly ranked as well. While everyone agreed engagement services are important, this kind of readiness for change work can be more time consuming. Behavioral health providers also suggested that access to housing and residential treatment in the community are needed for this population to prevent rapid cycling back to jail.

For correctional staff, the highest priority for the short stay population was assessment and evaluation with referral and transition information ranked closely behind. Engagement of the individual and psychoeducation were equally ranked as another resource needed. For some counties, all of these services are offered for individuals with short stays, while the bulk of the counties add a length of stay criteria to the JBBS program to ensure they will have contact with the individual for a reasonable period. Figure 10 illustrates priorities for short-stay populations.

Figure 10



During interviews, both behavioral health provider and correctional staff offered more detailed ideas about what is needed to engage and support individuals with brief-stays (including those who are pre-sentence) who often are in jail for only a few days and can be released with little notice. The comments are all focused on increasing services at release and post-release and highlight three specific areas of recommendations including transitions to the community and resources; housing and residential treatment; and treatment adaptations.

Transitions to the Community—Both correctional staff and behavioral health providers described the pre-sentence population in higher need for transition support to the community. Preparation for returning to the community, identifying needed resources such as bus tokens, immediate next steps for housing, and connecting them to community providers (ideally with appointments set) are the priority for their time in jail. Additionally, many believe that this population would be more likely to engage in treatment in the community if there were more services geared at bridging jail and community placement such as increasing case management time and focus on post release encounters. This would also allow for more care and identification of specific resources matched to the individual's needs. Both survey and interview data also described the importance of providing the brief-stay population with resources upon release for basic hygiene and support for 24-72 hours. The back packs[30] provided through JBBS were highly supported with many counties saying that they need more of them and more funding so that those leaving the jail receives basic resources re-entering the community.

Housing and Residential Treatment—One of the most challenging and common needs is permanent housing. Housing options was one of the most consistent themes throughout the interviews with both jail and behavioral health providers identifying limitations with community based treatment or recovery

[30] Programs have used back packs that contain important resources that are given to the inmate at release. They often include supports for hygiene, bus tokens or other transportation resources, clothing and other items to support the basic needs of an individual immediately in the community.

when an individual cannot obtain safe, sober, and long-term housing. Many commented that the pre-sentence population has an even higher need for housing support to engage in treatment and stop the cycle of moving in and out of jail. Similarly, many comments highlighted the need for residential substance use treatment facilities for some individuals in the pre-sentence population who need more significant treatment before returning to the community. Rural counties were more likely to raise this as a challenge with limited residential programming outside of the urban centers of the state.

Treatment Adaptations—Behavioral health providers recommended some modifications or adaptations to the current JBBS program to support the pre-sentence population. First and foremost was feedback about changing the process for enrollment or receiving services through JBBS as the current screening and enrollment intake are too time consuming and focus on the wrong needs for the few hours providers may have contact with an individual. Many suggested instead a "rapid intake" or no intake process with individuals being immediately placed in groups providing psychoeducation on substance use and education about resources in the community for basic needs and behavioral health services. These providers emphasized the importance of educating everyone rather than being concerned about diagnosis or evaluation as a criterion for this base of information. Providers suggested that psychoeducation focus on substance use, anger management, and basic skills training that could be delivered daily (or even multiple times a day) within the jails with larger groups trying to provide as much treatment and preparation as possible before individuals are returned to the community. Behavioral health providers described the need for seeing this as a separate part of the program with unique staffing in order to adequately serve both the pre-sentence group and individuals with sentences that can be engaged in more targeted and individualized behavioral health treatment.

Question 5: What factors have behavioral health providers found to be central to fostering ongoing engagement in community services post release?

Of central importance to the JBBS program goals is engagement of individuals to invest in treatment through completion either in the community or while in jail. An element of program adaptation may be factors that can improve individual engagement. On the survey, behavioral health providers offered their perspective on what factors they have found to be central to fostering ongoing engagement in community services post release. The top three factors included: individuals' motivation to change (85%), followed by rapport built with behavioral health provider (77%) and appointments in the community set prior to discharge (73%). Other factors that also scored with more than half the respondents endorsing them included criminal justice involvement (sentence; 58%), individual progress in jail (52%) while criminogenic risk (29%) and family support of treatment (35%), and treatment plan (27%) were rated as important but only from about a third of respondents. The lowest scoring factor was shared experience with other inmates in JBBS program (17%).

In the interviews with counties, both correctional staff and behavioral health providers were asked to describe what factors impact client success. The comments in the interviews were similar to the survey data, emphasizing the individual's motivation, JBBS case method for engagement, as well as family involvement as central themes driving success. Comments on factors impacting client success included:

- Inmate motivation;

- Explaining JBBS to inmates and focusing on available recovery support provides inmate with initial interest in participating. Once they are engaged in the groups and services, the motivation strengthens;
- Once inmates are in programs, they see that the re-entry program increases success. Additionally, when the inmate is 1-2 months from release, they join the re-entry group and start to process relationships in the community and plan for re-entry with them, and develop a detailed discharge plan down to what is important on day one, day 2 and so on;
- Collaboration with sober living has resulted in great success;
- Probation and specific requirements post release have supported engagement in services;
- Peer support and transportation to appointments;
- Stable housing;
- It is important to engage family members, which some providers are beginning during the re-entry process and through various parts of the program.

The impression that individual motivation is central to treatment success is consistent with long-standing research in substance use and behavioral health treatment generally. Research also shows that in criminal justice settings, those most in need for treatment (specifically drug treatment), are also the "most ready" to change their behavior through treatment.[31] Additionally, there is growing research on the connection between individual motivation for change and engagement in treatment and reductions in criminal justice recidivism.[32]

Question 6: What factors have behavioral health providers found to be barriers to ongoing engagement in community services post release?

Behavioral health providers were also asked in the survey what factors present barriers to ongoing engagement in treatment within the community. The results indicate the importance of basic resources addressing social determinants of health with the most responses for housing (75%) and transportation (67%) as significant barriers. At the same time, individual motivation to change (62%) was ranked equally as high as housing indicating the primacy of individual desire to engage in recovery. Similarly, to factors enhancing engagement, criminogenic risk (48%) and criminal justice involvement (sentence, 46%) were also indicated as barriers by approximately half of respondents. Family support in treatment (38%) and insurance or payment for services (29%) were also ranked as important. Interestingly, individual progress in jail was viewed as less of a barrier to engagement (23%).

The fact that some of the same factors are ranked highly for engagement and barriers to engagement makes sense—for example an individuals' criminogenic risk level can be both a factor related to engagement (low criminogenic risk) and a barrier to engagement (high criminogenic risk). Similarly, high individual motivation to change can improve engagement while low motivation for change can be a barrier to engagement.

[31] Gannoni, A. & Goldsmid, S. (2017). Readiness to change drug use and help-seeking intentions of police detainees: Findings from the DUMA program. *Trends and Issues in Crime and Criminal Justice, 520*, 1-17.
[32] Garnick, D.W., Horgan, C.M., Acevedo, A., Lee, M.T., Panas, L. et al (2014). Criminal justice outcomes after engagement in outpatient substance abuse treatment. *Journal of Substance Abuse Treatment, 46*(3), 295-305.

"Other" responses on barriers to engagement focused on the importance of addressing social determinants of health and providing basic resources upon transition to the community among others, listed below:

- The importance of meeting basic needs and our county has limited resources;
- Reentry funds need to be allocated for treatment access and continued care. Medicaid takes about a month to start payment for services and in that timeframe, follow-up rates decline. If treatment was paid for in the first month/2 months follow up would increase;
- Employment conflicts with treatment and meeting basic needs become more important than attending treatment appointments;
- Addiction; and
- Clients would like to be able to work with the same therapist once they are released to the community. This is something we used to do in Weld County (prior contract year we had the two-full time therapist meeting with clients in the community for a period of time before transferring them to another therapist) but have since had to change given the parameters of financial support from the state.

Recommendations for Expansion Population

Universal Screening Pilot—As described in the previous section, a universal screening pilot could provide important information on population need. This pilot could also inform the mental health needs of individuals who do not meet criteria for a substance use disorder to determine alternative areas of focus for the JBBS program in the future.

Cross-Training—Behavioral health providers and correctional staff have different kinds of expertise and a core strength of the JBBS program is the potential to expand knowledge, understanding, and expertise in treating a population with both behavioral health conditions and criminal attitudes and behavior. The data provided above demonstrates overall consistency in how the population's behavior and needs are viewed. However, the data also highlights opportunities for increased sophistication of correctional staff in identifying and responding to behavioral health symptoms and opportunity for increased sophistication of behavioral health providers in understanding correctional populations and behaviors such as aggression. The JBBS program could provide a formal and more standardized element of training within the program. Each county could identify training goals for both correctional and behavioral health staff and then sessions could be used throughout the year for the staff to train each other. This would likely enhance the program in multiple ways and there is evidence that this more formal multi-disciplinary team including correctional staff in treating behavioral health in correctional settings is important for improving health outcomes and increasing safety. [33]As described above, Crisis Intervention Training was identified as a specific need and this could be incorporated into county cross-training plans.

Criminogenic Risk Training—In addition to the cross-training identified above, many survey respondents commented on the lack of training and understanding of criminogenic risk among

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[33] Appelbaum, K.L., Hickey, J.M., Packer, I. (2001). The role of correctional officers in multidisciplinary mental health care in prisons. *Psychiatric Services, 52*(10), p. 1343-1347.

community based behavioral health providers. This is also consistent with literature indicating that when behavioral health providers lack this training, the impact of programming on recidivism is diminished as treatment fails to address decreasing risk. Mental health and substance use treatment for criminal justice populations continues to be a focus of research and development with specialized interventions demonstrating effectiveness. However, there is also evidence that these models reduce mental health and substance use symptoms and improve recovery and yet may not impact risk for recidivism for criminal behavior. Even Forensic Assertive Community Treatment, one of the most enriched models for criminal justice populations, has been demonstrated to improve mental health recovery and level of functioning but not impact risk for recidivism.[34] The JBBS program could pilot in specific counties a more tailored and focused training of JBBS behavioral health providers and community referral sources on working with criminal justice populations including how to target interventions to address risk factors for ongoing criminal behavior. This may be an important component of meeting the JBBS program goals and it could be another factor in improving behavioral health provider retention in working with a specific population.

Defining Trauma Treatment—The JBBS population appears to be increasingly identified with need for treatment of trauma. Providers interviewed for this evaluation had mixed views on the appropriate forms of treatment for trauma in jail settings. As a result, we recommend that JBBS spearhead a workgroup to consider a treatment protocol within JBBS for treating trauma. Creating a protocol helps to standardize care and reduces potential risk. The workgroup could be made up of trauma treatment subject matter experts, JBBS behavioral health providers, and OBH leaders.

Drug Testing Pilot—It is difficult to firmly determine (even with screening) whether the JBBS program is identifying and accurately targeting services to inmates with SUD. One method for more firmly determining the degree of SUD in a county jail is to consider a period of time where drug testing is incorporated into the booking process. This is a costly and challenging process but even in a limited period of time could provide valuable information on substance use need (unidentified), numbers on the potential risk for overdose, and be a part of a broader process for planning around overdose risk.

Pre-sentence Populations—Recommendations for pre-sentence populations will be offered at the end of the report because it crosses multiple research areas.

Traumatic Brain Injury—Although many counties did not have high population prevalence of traumatic brain injury there was some reported connection between veteran status in jails and traumatic brain injury. To better determine whether this is a true relationship, it is recommended that JBBS program data be analyzed at an individual level to determine if JBBS clients with veteran status screen positively for traumatic brain injury and the strength of this connection. This could inform counties with higher numbers of inmates with veteran status on specific program components or specific therapeutic approaches to improve their population outcomes.

Research Area 3: Implementation

Aim: Explore differences in how programs are implemented and variation in outcomes of these different programs.

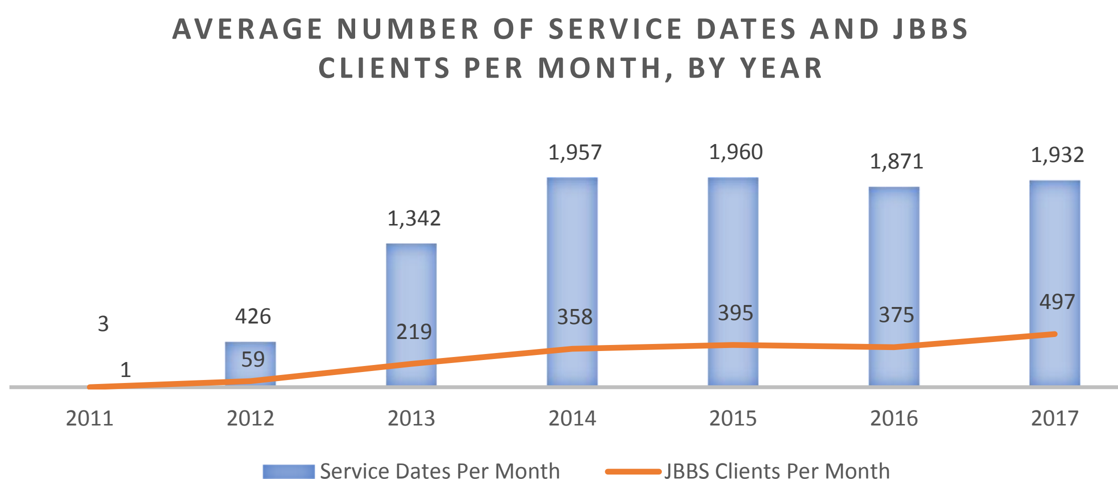
[34] Jennings, J.L. (2009). Does Assertive Community Treatment Work with Forensic Populations? Review and Recommendations. *The Open Psychiatry Journal, 3,* 13-19.

Methodology: The JBBS dataset in combination with survey data was used to assess key implementation processes and protocols, and the degree of variation across counties in implementation.

Question 1: How do counties vary in their implementation of services?

There is a total of 102,273 unique service dates[35] with 12,257 JBBS enrollees between FY2012 and FY2017, including a high of 23,515 service dates in 2015. As shown in Figure 11, since 2013, there was a 127% increase in the average number of JBBS clients served per month (from 219 clients to 496 clients per month) and a 44% increase in the average number of services date per month (from 1,342 service dates to 1,932 services dates per month). Since 2013, there was on average 1,812 service dates per month and 369 JBBS clients per month. [36]

Figure 11



The way these services are delivered varies across each county. The following program components regarding implementation processes were analyzed and are described in detail below.

1. Who delivers JBBS services?
2. Are there jail-based behavioral health staff outside of JBBS?
3. What is the length of time or wait time between a JBBS referral and screening?
4. What kind of contact occurs between the JBBS provider and the client?

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[35] In JBBS program data, anytime a client receives treatment, there is a date of service. The individual may receive multiple services on that day however one way to count the amount of services is the number of service dates in the dataset.

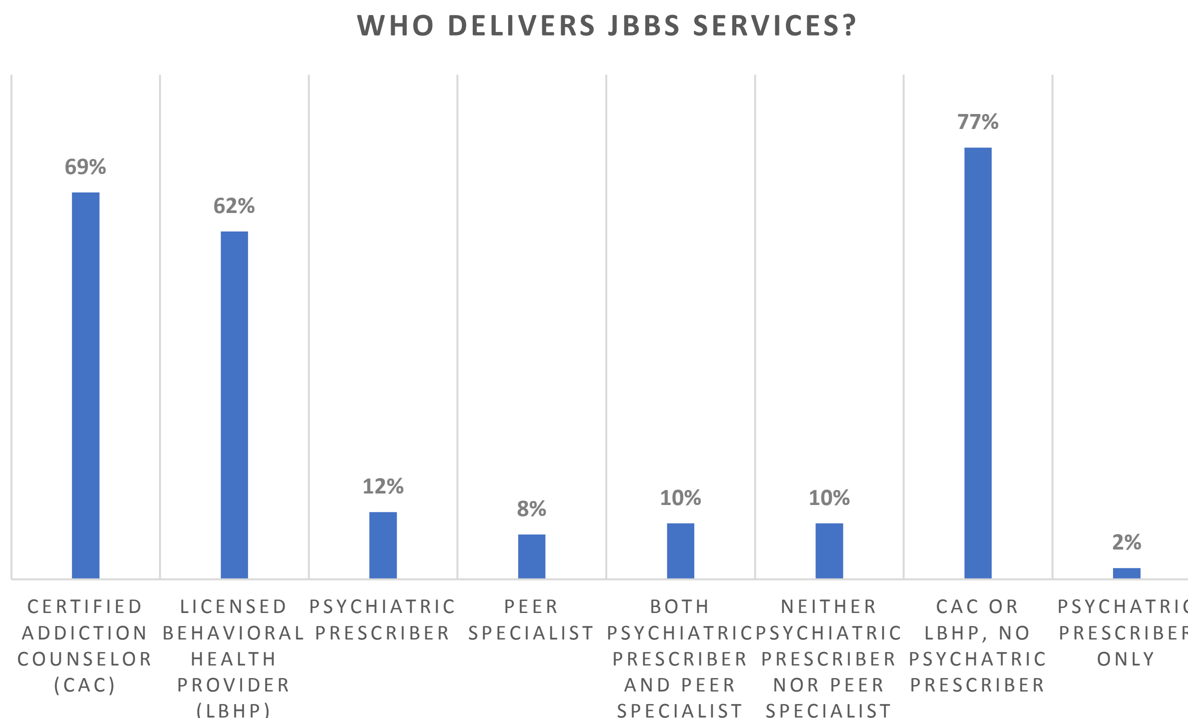
[36] The low number of service dates in 2011 and 2012 is a function of the program initial development and implementation. Contracts for programs were implemented in October 2011 so there were minimal clients enrolled in the three months between Oct 2011 and Dec 2011. For 2012, programs were still in the beginning of implementation with hiring staff. The program was expanded in July of 2013 with additional funds. Training staff in data entry has led to more consistent and accurate reporting since the program's inception and expansion.

5. Does the jail offer drug testing?
6. How much assessment, treatment, and case management does a JBBS client receive? What is the "dose" of the program delivered to clients? Specifically, dose is a combination of:
    - Number of service dates provided;
    - Duration (total minutes of each service date)
    - Number of days enrolled in JBBS (length of stay)
7. What types of services, including types of therapies, are delivered?

Who delivers JBBS services?

Although programs vary in staff make-up, most programs have a combination of licensed behavioral health providers, certified addiction counselors and case managers. Figure 12 illustrates the variation and detail of staff hired in JBBS programs.[37]

Figure 12



Are there jail-based behavioral health staff outside of JBBS?

Behavioral health providers were asked in the survey whether non-JBBS behavioral health staff exist in the jail. Twenty-seven (60%) counties indicated that there are behavioral health staff outside of JBBS in the jails. In some counties there is coordination of care between these behavioral health staff and the JBBS behavioral health providers and in some counties there is limited to no contact between them.

What is the length of time between a JBBS referral and screening?

It is important to understand the time from JBBS referral to screening date as a measure of resource capacity to engage and assess inmates quickly and get them enrolled in treatment (if needed). It is also

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[37] Respondents were asked to select all that apply and thus percentages do not add up to 100%.

important to understand this timeframe because with short stay for many inmates, the time to get enrolled in treatment and experience treatment may be limited. If more days are spent waiting to be screened, there is a missed opportunity in delivering JBBS services and reaching individuals in need. Across all counties, the median time between referral and screening is 0 days, with 53% of inmates being referred and screened the same day. The average is 4.8 days (dropping outliers below 0 and greater than 6 months). Alamos/Conejos, Montezuma, and Logan Counties have the least amount of time (with nearly all inmates referred and screened on the same day), while Prowers, Boulder, and Jefferson Counties are slowest (an average gap ranging from 13-21 days). This may be in large part the jail size with the short timeframe in jails with smaller populations while the longer time being in much larger jails with many more inmates. Another potential cause for smaller jails is having JBBS providers at the jails only a few days a week. Additionally, screening protocols may also influence this differentiation between counties. For example, in an interview Jefferson County, suggested that referrals are made to the JBBS program from inmates through self-referral as well as from counseling and mental health staff. These referrals are then put on a waitlist to be screened as a form of program capacity management. They are not screened until they are on the waitlist. Thus, the program design may explain the lag time from referral to JBBS screening.

Across all counties, a trend analysis reveals a significant increase in the wait time between referral and screening. The upward trend is strongest in Boulder, Douglas, Grand, Jefferson, and Pitkin Counties. Larimer and Mesa counties have, despite the general trend, kept the wait period unchanged. This may be a function of the growth of the program with increased referral and it may be a function of time of program. The longer a program is in existence, the more there will be long-term clients in treatment (those with longer stays) filling up spots and allowing fewer new clients to be enrolled. The combination of increased referral as the program is more known by inmates and correctional staff and the program having a stable list of clients engaged in treatment will reduce program capacity.

Some counties who have waitlists have implemented strategies to engage inmates while on the waitlist. For example, in Mesa County inmates have the opportunity to meet one-on-one with JBBS staff as well as use tablets to email JBBS staff questions. JBBS staff than work to meet with those inmates while they are on the waitlist. However, for other counties without these kinds of resources, individuals wait for treatment. Other county limitations impact the waitlist such as jail access (space for the behavioral health providers to meet clients or jail staff ability to move inmates for treatment), staffing for smaller jails where behavioral health providers can only conduct intakes one day a week, and other program capacity challenges.

Does the jail offer some drug testing?

In response to a survey question regarding whether drug testing occurs at the jail, nine counties reported they conduct some drug testing. Four counties described criteria for drug testing, including that it is handled on a case-by-case basis or that it is handled by the sheriff’s department. One county reported that work-release inmates are subject to random drug testing. Drug testing is another way to identify individuals who need substance use treatment and to provide information on the type of substances entering the jail. This may also be an important service as jails are increasingly concerned about overdose risk.

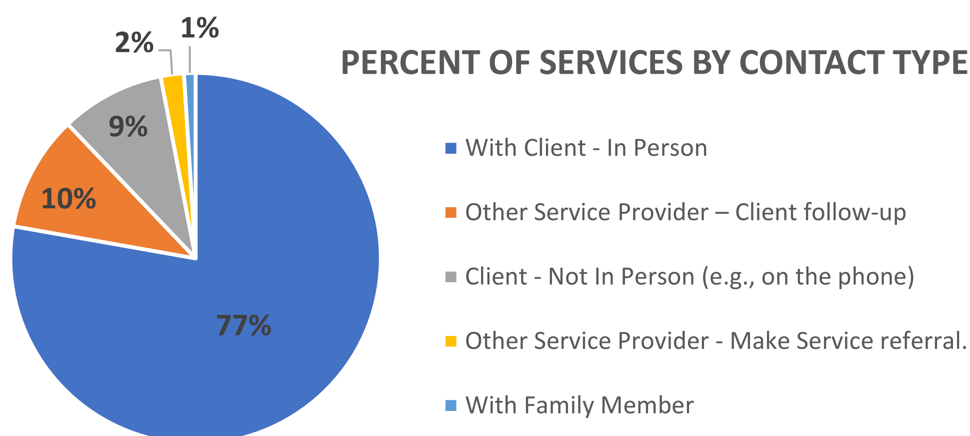
What kind of contact occurs between the JBBS provider and the client?

To begin to understand the mechanism by which the service was delivered, the evaluation analyzed a JBBS data point called “type of contact.” JBBS data provides the following types of contact:

1. With Client - In Person;
2. With Client - Not In Person (e.g., on phone);
3. With Family Member;
4. With Other Service Provider - Client Follow-Up; and
5. With Other Service Provider - Make Service Referral.

Statewide, shown in Figure 13, contact type “With Client – In Person” is by far the most common type of contact at 77% of all services with another 9% of services involving a virtual contact between the JBBS provider and the client. 10 percent of services are then offered by another service provider for the sake of a client follow-up. Just 2% of encounters are between another service provider and the client, in which a service referral is being made. One percent of encounters include a family member.

Figure 13



When looking at individual counties, data reveal that they each differ substantially in the contact they have with clients (See Appendix F for detail). For example, Crowley and Baca Counties have a higher frequency of sending clients to other service providers and Pueblo and Grand County have many contacts that are not in person. Despite variation, many counties meet exclusively in person with the client.

When examined by typology, Table 4 shows that Type 3 (Psychiatric Prescriber and Medication Management), Type 4 (Long Stay, Many Sessions), and Type 6 (Residential Peer Focused) meet in person with the client most often. Type 5 (Coordinate Medication and Short Stay) depends more on other providers and Type 1 (Jail-Based Coordination) also relies on non-personal contact. These findings support the general concept of the typologies. Services involving psychiatric prescribers and medication management as well as residential services are focused on in-person contact. Similarly, individuals with long stays and many sessions are likely to experience more face to face treatment. While the typologies focused on coordination would be offering services more consistent with non-client contact working to coordinate treatment with other providers. For short stays, there may also be greater focus on community based resource coordination and case management for connectivity which may be services that are not face to face with the client.

Table 4 Typology Analysis for Type of Service Contact

Typology	In Person	Not in Person	With Family	With Other Service Provider - Client Follow-Up	With Other Service Provider - Make Service Referral
1. Residential Peer Focused	87%	11%	1%	2%	0%
2. Long Stay, Many Sessions	86%	5%	1%	7%	1%
3. Psychiatric Prescriber and Medication Management	83%	3%	1%	11%	2%
4. Eclectic Approach	71%	7%	1%	18%	2%
5. Jail-Based Coordination	64%	15%	3%	13%	5%
6. Coordinate Medication and Short Stay	57%	3%	1%	37%	3%

How much assessment, treatment, and case management does a JBBS client receive or "dose"?

To calculate dose for any one JBBS client enrolled in JBBS, there are four variables that need to be identified. These include, per JBBS client:

- Number of service dates provided;
- Duration (total minutes of service provided during that service date); and
- Number of days enrolled in JBBS (length of stay)

Dose Element: Number of service dates per JBBS client

The JBBS data includes service dates for every JBBS client. This service date represents one day and may involve more than one service (e.g. treatment, case management, and/or assessment). While a JBBS client is enrolled in the program, on average, they experience eight dates of service.[38] 595 JBBS enrollees (4.62% of all JBBS enrollees) never had a service date during their enrollment. Overtime, the average number of service dates per client has dropped 42% from a high of seven service dates per enrollment in 2012 to 4 service dates per enrollment in 2017. Counties vary in the average number of service dates and data by county can be viewed in Appendix G.

Dose Element: Duration of Services

Duration of service is the average amount of time (in hours) each JBBS client receives during their JBBS enrollment.[39] The "Duration of Service" data point was converted from characters in hour format to minutes, i.e. from "one hour" to 60 minutes. For duration ranges, a liberal approach was taken so that the higher number was selected (i.e. "15-29 minutes" was coded as 29 minutes and "less than 15

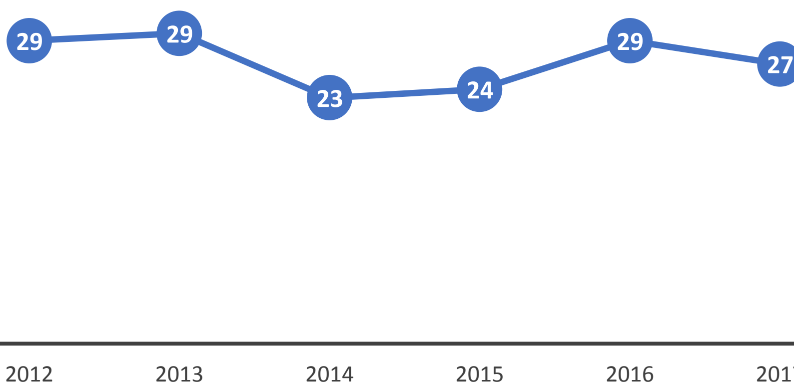
[38] There is a fair bit of variation on this metric with some counties having more or less services as an average.

[39] Group services are recorded in a separate data file and thus this section combines services in the JBBS program data and group services by type of group in a separate data file. Group duration is assumed to be two hours in duration. The data do not permit an analysis of number of services or duration of service per date of service.

minutes" was coded as 15 minutes). For group therapy, exact duration of the group was unknown and thus an assumption was applied that most groups are two hours in duration. All groups were then counted as two hours. Overall, on average, each JBBS enrollee receives 26 hours of service. The service duration ranges from less than one hour to 810 hours per JBBS enrollee.

Figure 14 below illustrates that over time, the average duration of service has remained consistent. Over the years, the range of average durations has been from 23 to 29 hours with the most recent year being at 27 hours.

Figure 14



Dose Element: Number of days enrolled in JBBS (length of stay)

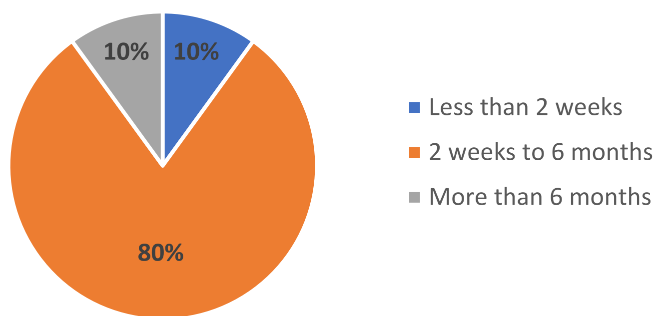
The length of stay (LOS) is a metric that may be influenced by the variation in each program's implementation of services. LOS is calculated as the number of days between JBBS program data variables "admission date" and "discharge date." If clients have longer lengths of stay, there is more opportunity for JBBS providers to engage with the client, build trust, and provide more services as well as different types of services. For those programs with shorter lengths of stay, it may be necessary to consider alternative services (such as case management and referral to community based services). A factor that may be driving the number of days enrollment in JBBS is jail sentence/length of stay as a criterion for JBBS admission. This program criteria will impact dose since some counties have a minimum LOS starting at 12 days but others require at least 12 weeks.

Research suggests that jail-based programs must be at least 90 days in length and, if the facility permits, participants should be physically separated from the general population.[40] Statewide, the average LOS in the JBBS program is 89 days or about 2.9 months (excluding a small number of outlying scores below

[40] Manatt Health. "Communities in Crisis: Local Responses to Behavioral Health Challenges". October 2017. https://www.manatt.com/Manatt/media/Media/PDF/White%20Papers/REL-Manatt-Communities-in-Crisis-10-26-FINAL.PDF

zero and above 3 years). The median LOS or "typical" LOS was lower at 62 days or 2.0 months. As shown in Figure 15, nearly all clients, about 80%, stay more than two weeks but less than six months. Only 10% stay 0 to 14 days, and only 10% stay more than six months.

Figure 15

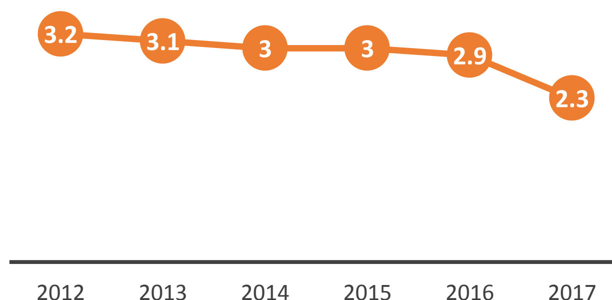


Crowley, Denver, and Otero Counties have the shortest average LOS, less than two months. Clear Creek, Jefferson, Garfield, and Kit Carson Counties have the longest average stays, more than four months. Appendix H lists the average length of stay for each county, from shortest average LOS to longest average LOS.

Throughout the duration of the JBBS program, as shown in Figure 16, there is a significant overall downward trend in the LOS statewide, with shorter stays becoming more common. By county, analysis shows that some counties differ from the average trend. Clear Creek, Elbert, Kit Carson, La Plata, Logan, and Moffat Counties show the largest declines in the length of stay, while Adams, Delta, El Paso, and Montezuma Counties have resisted the overall trend and show little change or even an increase in LOS over time.

The shorter length of stay does not appear to be a trend in jail sentences or other broader trends could be a result of the maturing of the JBBS program and the behavioral health providers increasing efficiency and trying to get to more individuals over time especially for counties with a waitlist.

Figure 16



Among the typologies, Type 5 (Coordinate Medication and Brief Stay) and Type 6 (Residential Peer Focused) has the shortest average stay (1.9-2.1 months). Table 5 below lists the average length of stay for each typology. For residential programs, the stay may be shorter in part because the individual is exposed to intensive services and thus can achieve more improvement in a shorter period of time.

Table 5. Typology for Length of Stay

Typology	LOS
1) Jail-Based Coordination	3.1
2) Eclectic Approach	3.2
3) Psychiatric Prescriber and Medication Management	3.2
4) Long Stay, Many Sessions	2.6
5) Coordinate Medication and Brief Stay	1.9
6) Residential Peer Focused	2.1

Together, these measures inform the average amount of intervention or dose is received per JBBS client. Although the length of stay is decreasing and the number of services has generally trended down, the number of services including groups has remained consistent demonstrating that individuals may be receiving more of their treatment in groups over the course of JBBS. Across the years of the program, the average duration of services is remaining similar. This ultimately means that although people may be receiving fewer services outside of group, the duration of time in treatment overall is steady. The treatment dose then has remained consistent over time in the program with individuals receiving 26 hours of service in JBBS (see Table 6 below).

The finding that length of stay across the counties is decreasing directly impact the rate of service (number of contacts) delivered as less time in jail reduces time for services. In addition, some of this data on reduction of service dates may be a function of the difference between programs early in implementation and programs being fully implemented. As programs are initiated, there is more time for providers to spent with clients because there are fewer clients overall. As the program grows and caseloads grow, behavioral health providers appear to be increasing efficiency with fewer contacts or

sessions per enrollee while delivering longer contacts to reach the same duration of services. This may also be supported by programs getting a consistent set of group therapies implemented and shifting from individual therapy to more group therapy—meaning that as JBBS enrollees are identified, they are quickly placed into groups which have the longest duration of service. Therefore, if the individual only has two contacts a week (both group), they may end up with 4 hours of services per week demonstrating that group treatment is the most efficient way to increase the hours of treatment. These shifts in service type may be particularly true as counties attempt to manage waitlists and get individuals into services more quickly. Since groups are the largest treatment type and the longest duration of service, it makes sense that the number of contacts may be decreasing while the duration is remaining consistent.

Table 6. Statewide Average Number of Services and Average Duration of Services by Year of Program

Year	Average Number of Services	Average Number of Groups Attended	Average Number Services + Groups	Average Duration of Services + Groups
2012	18.6	13.5	32.5	28.7
2013	16.9	14.0	32.1	29.4
2014	18.1	11.2	30.7	23.3
2015	16.7	11.6	30.5	24.1
2016	16.5	13.9	32.0	28.7
2017	11.2	12.8	24.9	26.5

How many services are delivered per service date?

The number of services delivered per service date represents the number of services delivered during any service date. The number of services delivered can be calculated in two ways:

1) the number of services (e.g., seeking safety group, peer group) per person over all days of service and;
2) the number of groups attended over all days of service.

The number of services per person over all days of service ranges from 0 to 1,155, with an average of 16 services per person. The number of groups attended ranges from 0 to 405, with an average of 12 groups per person. When combined, the total services ranges from 0 to 1,380, with JBBS providers reporting on average 30 types of services during an enrollee's length of time in JBBS. See Appendix I for number of services and duration by county.

Table 7 below presents the same figures by the typology. For Type 1 (Jail-Based Coordination), Type 4 (Long Stay, Many Sessions), Type 5 (Coordinate Medication and Brief Stay), the number of services far outweigh the time in treatment (duration) which is below average suggesting that the contacts are brief interventions and perhaps more focused on coordination or case management. The contact may be frequent and short. In these program types, enrollees are getting a significantly lower duration of treatment from the State average.

Type 3, Psychiatric Prescriber and Medication Management has the highest service amount, with an average amount of duration of service. This may be consistent with a focus on psychiatric medication management as these types of appointments are frequent but short in duration. Type 6 (Residential Peer Focused) has fewer services than Type 3 although still more than all other typologies and duration is much longer and considerably higher than all other typologies. As a residential program, the treatment is frequent and the duration of that treatment is most of the day which is how residential services are designed. Residential services also often combine multiple services into a single encounter such as case management and therapy. The addition of peer specialists may also mean that inmates are seen by multiple providers in each encounter and thus adding services to each service date.

Table 7. Typology for Average Number of Services and Duration

Typology	Average Number of Services	Average Number of Groups Attended	Average Number of Total Service Sessions	Average Duration of Total Service Sessions
1. Jail Based Coordination	18.2	7.9	26.6	16.6
2. Eclectic Approach	13.8	9.7	25.8	20.2
3. Psychiatric Prescriber and Medication Management	29.7	10.3	51.0	21.6
4. Long Stay, Many Sessions	19.6	3.9	27.6	8.6
5. Coordinate Medication and Brief Stay	11.3	0.0	26.2	0.6
6. Residential Peer Focused	11.0	24.7	35.4	51.0

What types of services, including types of therapies, are delivered?

According to the literature, the most helpful jail-based mental health services focus on identifying patients, performing crisis intervention, stabilizing patients, and referring patients at release.[41] Research indicates that treatment services should be evidence based and focused on developing cognitive, behavioral, social and recovery skills. For individuals with alcohol, opioid use or co-occurring mental illness, medications should be considered part of the standard of care.

The JBBS behavioral health provider survey data indicates that nearly all sites (90%+) offer intake, assessment, individual therapy, and case management, which aligns with contract expectations for JBBS services. Fewer report offering group therapy and transition tracking (75%).[42] Above and beyond program expectations, 50% of counties offer psychoeducation and activities focused on engagement

[41] Lurigio, Arthur J., Swartz, James A. (2000) Changing the Contours of the Criminal Justice System to Meet the Needs of Persons with Serious Mental Illness. Policies, Processes and Decisions of the Criminal Justice System, 3, 45-108.

[42] Transition tracking is a contract requirement for counties and is completed at a higher rate than indicated here which may be a function of the survey respondents.

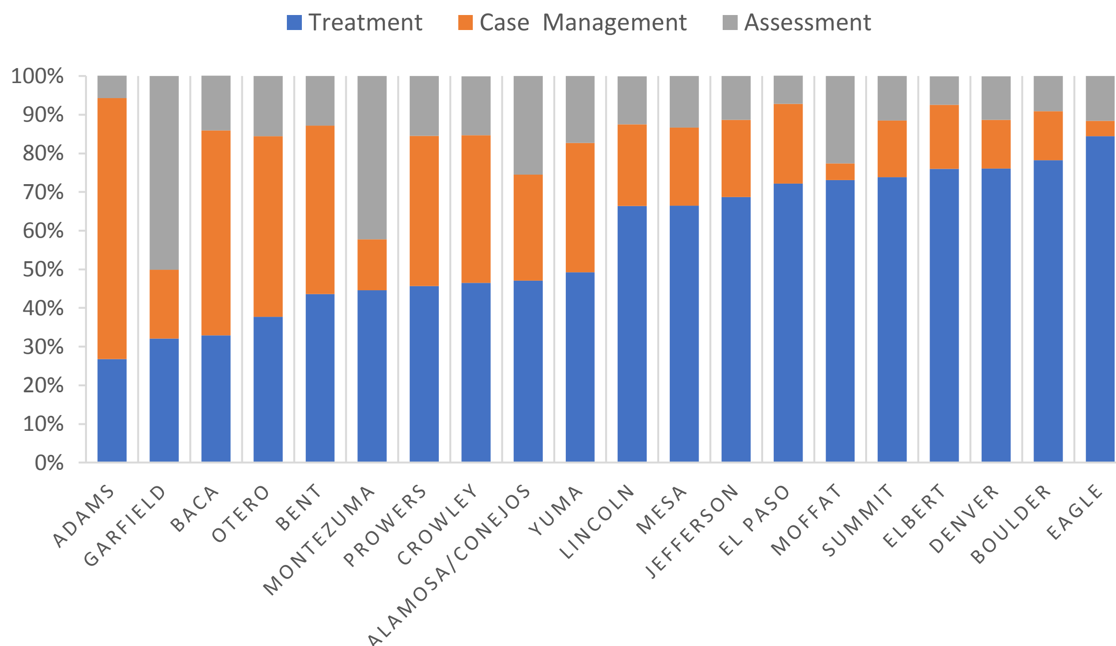
(including motivational interviewing), crisis intervention (58%) and medication management (38%). Least common (<20%) are Medication Assisted Treatment (MAT), Narcan Kits, and Peer-Led Services.

JBBS data indicate that there are 37 possible types of service being reported by each county. Not any one site offers the same set of services and/or all of these services. For the purpose of analysis, services were grouped into three categories of service, including Assessment, Treatment, and Case Management. There are 17 services considered “case management,” 18 services considered “treatment” and 3 services considered “assessment.” Appendix J describes categorizes each type of service. As mentioned earlier, the type of group is recorded in a separate data set and group is considered treatment.

The analysis supports the ongoing finding that treatment (and specifically groups) account for most of the service provided. With an average number of services of 30, about 60% of those services involve treatment (including group), 26% involve case management, and 14% involve assessment.

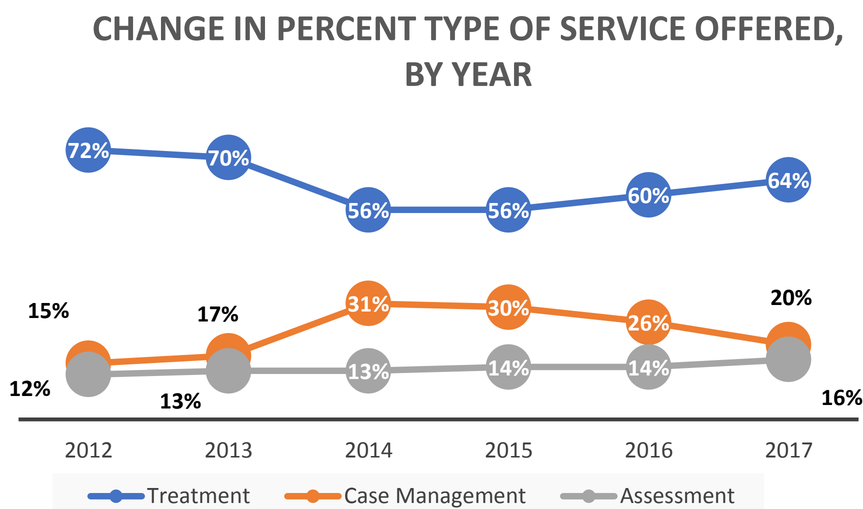
By County, there is a good deal of variation on the types of services delivered, but the data reveal that generally those agencies who provide more treatment services tend to provide fewer case management options and vice versa. In Figure 17, the 10 counties providing the most treatment services and the 10 counties providing the most case management services are shown. For example, Eagle County reports more treatment services than case management, while Adams County reports more case management services than treatment services.

Figure 17



Over time, as shown in Figure 18, analysis reveals that case management services fluctuate with a rise in these services for a few years (2014 and 2015). Assessment has remained largely consistent with highest percentage occurring in 2017 at 16% which is higher than 2012 at 12%. Treatment however, was 72% of services in 2012 and is now 64% showing a decrease in treatment. It appears that there is a close relationship between case management and treatment and as treatment drops, case management increases or vice versa.

Figure 18



The length of stay may be impacting this relationship at times or it may also be the type of client in the program at various times. As jail stays get shorter, providers may be focusing more on case management and connectivity to community providers concerned about engaging individuals in treatment rather than trying to provide treatment. This is consistent with some descriptions in the interview data as well. Table 8 shows the differences in service type by typology. There is variation between the typologies on the type of service provided. The typologies with the highest percent of treatment include Type 6 Residential Peer Focused (74%) and Type 3 Psychiatric Prescriber and Medication Management (67%). Type 2 Eclectic Approach (58%) and Type 4 Long Stay, Many Sessions (58%) also had more than half of the total service time in treatment. The lowest type for treatment was Type 5, Coordinate Medication and Brief Stay with a little over a third of services being treatment (37%). As expected, the typologies with lower treatment had higher case management services. The percentage of assessment services is largely consistent across typologies with Type 6 Residential Peer Focused being the lowest (10%) and Type 1 Jail-Based Coordination being the highest and well above the Statewide average (16%).

Table 8. Typology for Percent of JBBS Service Type

Typology	Percent of Treatment Services of Total Service Sessions (avg)	Percent of Case Management Services of Total Service Sessions (avg)	Percent of Assessment Services of Total Service Sessions (avg)
1. Jail-Based	48%	36%	16%

Coordination			
2. Eclectic Approach	58%	29%	13%
3. Psychiatric Prescriber and Medication Management	67%	20%	13%
4. Long Stay, Many Sessions	58%	28%	14%
5. Coordinate Medication and Brief Stay	37%	49%	14%
6. Residential Peer Focused	74%	16%	10%
Statewide	61%	27%	12%

Comparing the typology results for the average duration of total services and the typoology results on percentage in treatment versus care management, there are potentially interesting findings (see Table 9). For example, Type 5 (Coordinate Medication and Brief Stay) has the lowest total service duration (1.9 hours) and has the lowest percentage of services in treatment. This finding is consistent with program typologies—the services provided are more focused on case management and assessment which are likely shorter in duration. Type 4 (Long Stay, Many sessions) also has a significantly lower duration of total services (8.5 hours) than the statewide average (26 hours), however has 58% of the services in treatment settings. One potential hypothesis is that these counties rely more on individual therapy than group therapy (when each group counts for 2 hours of duration). This would explain a high percentage of treatment but a low duration. The consistency of Type 3 (Psychiatric Prescriber and Medication Management) and Type 6 (Residential Peer Focused) in higher precentage of services in treatment and highest duration is consistent.

Table 9. Typology for Number of Services, Number of Groups, and Service Duration

Typology	Average Number of Services	Average Number of Groups Attended	Average Number of Total Service Sessions	Average Duration of Total Service Sessions
1. Jail Based Coordination	18.2	7.9	26.6	16.6
2. Eclectic Approach	13.8	9.7	25.8	20.2
3. Psychiatric Prescriber and Medication Management	29.7	10.3	51.0	21.6
4. Long Stay, Many Sessions	19.6	3.9	27.6	8.6
5. Coordinate Medication and Brief Stay	11.3	0.0	26.2	0.6
6. Residential	11.0	24.7	35.4	51.0

Peer Focused				

What is the dose of services for JBBS enrollees?

As indicated above, dosage is a cumulative variable while controlling for the number of service dates for a JBBS enrollee, the duration of services and accounting for the length of stay. This variable is important because it allows examination of the intensity of services. For example, an individual could be in JBBS for 1 week and receive 5 hours of services or be in JBBS for six months and receive hours of services. Clearly these are different types of treatment and so dose takes these factors into consideration. Statewide, the average dose is 29 minutes per day and in a week 203 minutes of treatment.[43]

See Appendix J to see county variation in average dose. Denver County has the highest dose per day (77 minutes) and the highest dose per week (538 minutes). This is true even when taking into account how long the length of stay is for a JBBS client, the average time in treatment in a day is 77 minutes and in a week 537 minutes. The lowest score for dose was in Garfield county where the average dose per day is 1 minute and the average dose per week is 10 minutes. This is likely a result of being such a small county with few people and sharing behavioral health providers who are not in the jail every day.

Table 10 below presents the same dose figures by the typology. Type 6 (Residential Peer Focused) has the highest average dose among the typologies, despite having the lowest average length of stay, which makes sense due to the 24/7 treatment-based services and reliance on group therapy. Type 3 (Psychiatric prescriber and medication management) has the second highest dose at 22 minutes per day (154 minutes per week), as well as the longest average length of stay. Again, Type 3 relies heavily on frequent interaction with JBBS enrollees. Type 5 (coordinated medication and brief stay) has the lowest dose at 13 minutes per day (91 minutes per week) which is expected given it has the second shortest average length of stay.

Table 10 Average Dose and Average Length of Stay by Typology

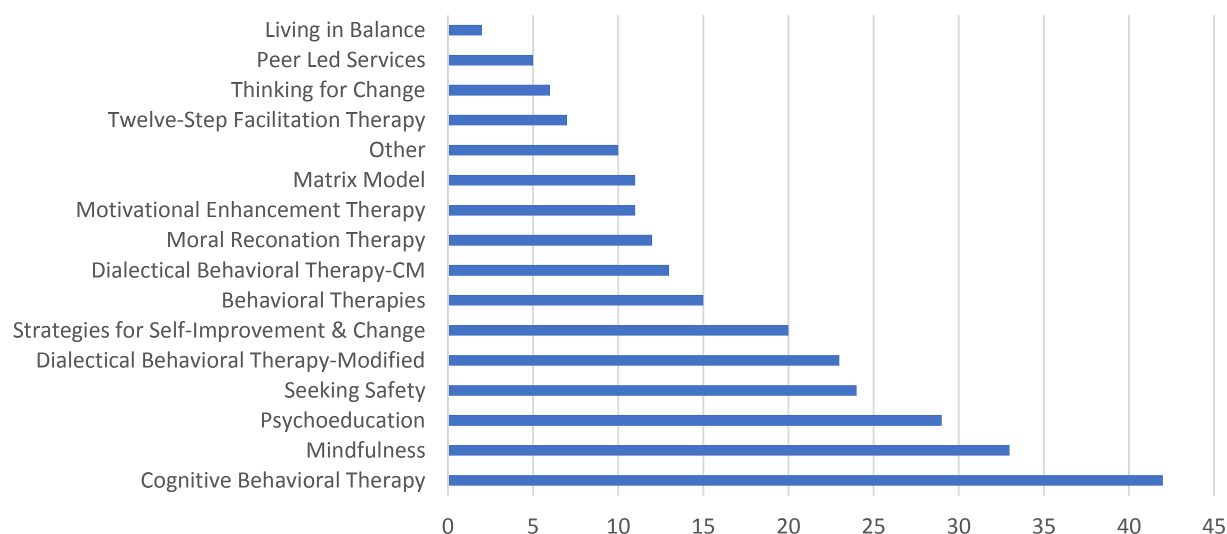
Typology	Average Dose	Average LOS (in days)
1. Jail-Based Coordination	14	106.9
2. Eclectic Approach	16	107.2
3. Psychiatric Prescriber and Medication Management	22	111.3
4. Long Stay, Many Sessions	15	99.2
5. Coordinate Medication and Brief Stay	13	87.2
6. Residential Peer Focused	57	68.8

Question 2: Do counties vary in the degree of engagement of EBP models?

[43] It was not possible to calculate an annual dose over time because the variable "number of groups attended" does not indicate the years when each group was attended.

Based on the survey data, all programs indicated use of evidence based practices for treating substance use disorders in the jails with many counties choosing specific therapies based on population need (see Figure 19). Across the programs, Cognitive Behavioral Therapies are implemented most often (88%), followed by Mindfulness (68%), Psychoeducation (60%), Seeking Safety (50%), modified Dialectical Behavioral Therapy (DBT, 48%), and Strategies for Self-Improvement and Change (42%). Other therapies are used by 20-31% of the sites (Behavioral, DBT, Matrix Model, Motivational Enhancement Therapy, Moral Reconation Therapy). The others are used by less than 15%. Some evidence based approaches such as Texas Christian University Mapping-Enhanced Counseling identified as appropriate for substance use treatment in criminal justice populations are not used by any of the counties currently.

Figure 19



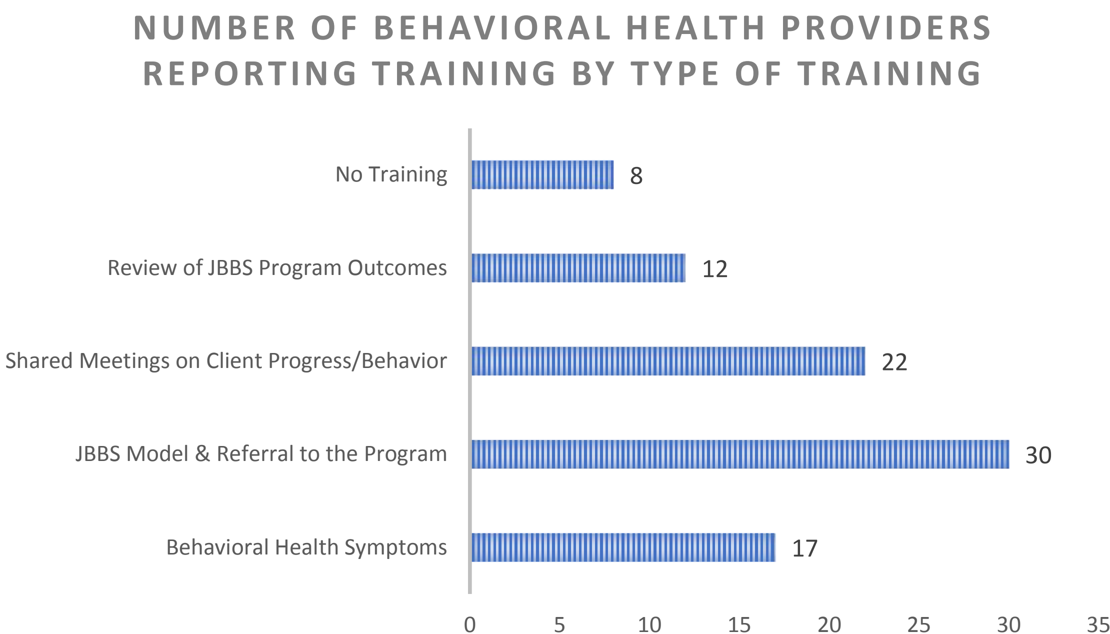
Variation between counties in specific therapies used was often more about who delivered the therapy. For example, if a case manager provided therapy, the therapy was more likely to be psychoeducation or mindfulness while if a licensed behavioral health provider delivered the service, it may be a more specific SUD treatment such as the Matrix Model. This may also vary over time as a result of staffing changes and the type of therapy offered varying with behavioral health providers' specific expertise and training on evidence based approaches.

The degree to which counties vary in their fidelity to any specific model was not captured by this analysis. Fidelity reviews require onsite evaluation and observation of implementation of the model which was not possible in this study. For this initial evaluation, the design relied on the behavioral health providers to report use of evidence based practices however differences in how providers implement these approaches and the degree to which the therapies are delivered in a manner true to their evidence base is unknown. The quality of treatment delivery may be impacting outcomes which is not accounted for in this evaluation.

Question 3: Do counties with more training between behavioral health and correctional staff have better outcomes?

Survey and interview data indicated that there was variation on the degree to which behavioral health providers engaged in training with correctional staff. Chart X below shows the number of behavioral health providers who indicated they engage in each kind of training with correctional staff in their counties. The most common activity provided by Behavioral Health staff is educating jail custody staff on the JBBS model (62% of counties), followed by shared meetings to discuss inmate progress (46%), training on behavioral symptoms (35%), and review of JBBS outcomes (25%). Related, most (67%) coordinate their care with jail-based medical providers. Only 17% do none of these, but 38% have some other type of engagement such as having ongoing conversations (see Figure 20).

Figure 20



A hypothesis was that jails with greater training of correctional staff on the JBBS program may have better outcomes. The idea being that correctional staff with more knowledge of the program may refer individuals who fit the program goals, may be better at identifying individuals in need of the program, and may be more supportive in inmates getting to treatment. A correlational analysis indicated that counties with more training between the behavioral health providers and correctional staff have a longer time between referral and screening and have greater JBBS participant treatment goal completion.

As correctional staff are trained on the JBBS program and on behavioral health symptoms, the correctional staff may be more likely to refer individuals to the program. This increase in referral will lengthen the time to screening unless program capacity is expanded at the same time. Additionally, as the correctional staff refer more individuals, they may be referring inmates who are more on the "cusp"

or edge of appropriateness for the program and thus may require more time for the behavioral health providers to conduct assessment to determine fit for the program. This in turns could result in need for additional analysis by the behavioral health providers and subsequently screening for new referrals is slowed.

The finding that successful attainment of treatment goals is related to higher rates of training is expected. As correctional staff more thoroughly understand the program and population served, it is anticipated that JBBS clients would have a more consistent experience of support in jail furthering their recovery. For example, correctional staff may be more supportive of pulling inmates for group sessions or finding alternative space for treatment when there are conflicts which ultimately improve the "dose" of the program.

Question 4: Is program variation influenced by the type of JBBS contract?

The JBBS program is delivered via three types of contracts. They are as follows:

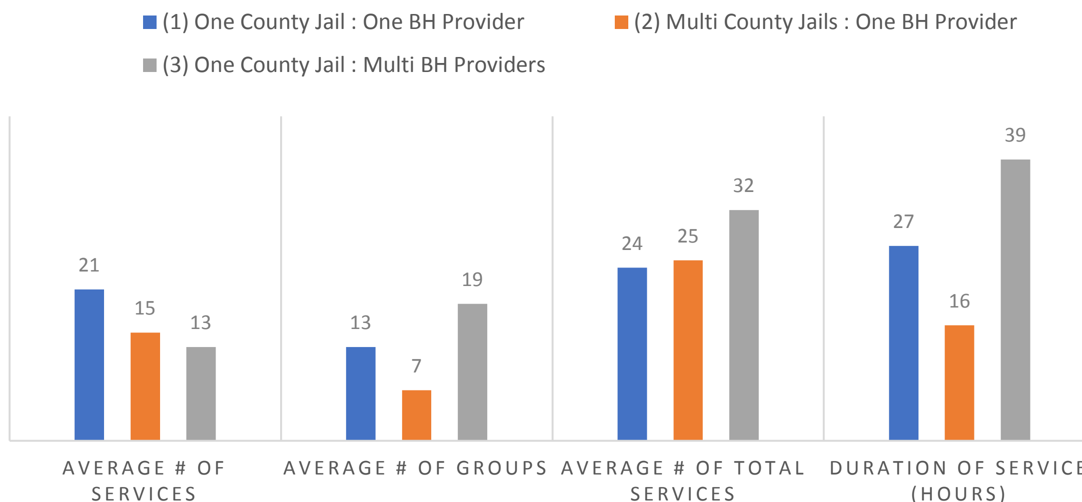
1. One county jail is served by one behavioral health (BH) provider;[44]
2. More than one county jail is served by one BH provider; and
3. One county jail is served by more than one BH provider

Analysis was conducted to understand to what extent contract model type was related to the amount of services recieved by JBBS enrollee as well as recidivism and behavioral health care utilization once back in the community. Overall, 33% of JBBS enrollees are served by Type 1, 41% served by Type 2, and 26% served by Type 3.

The model by which one county jail is served by multiple BH providers (Type 3) delivers on average more **hours of service** to JBBS clients at 39 hours per JBBS client than Type 1 at 27 hours and Type 2 at 16 hours, as shown in Figure 21. This is in part driven by number of groups delivered by Type 3, which is highest of all contract types at 19 groups per JBBS enrollee. While Type 3 has the fewest number of services (including group therapy and other services) (13) delivered per JBBS client, these counties emphasize group therapy over other services. This is in comparison to Type 1 and Type 2 which emphasizes other kinds of services over group treatment (see Figure 21).

[44] In the model contract, behavioral health provider refers to a behavioral health organization not a single provider. So multiple behavioral health providers means that multiple behavioral health organizations are working with the county jail.

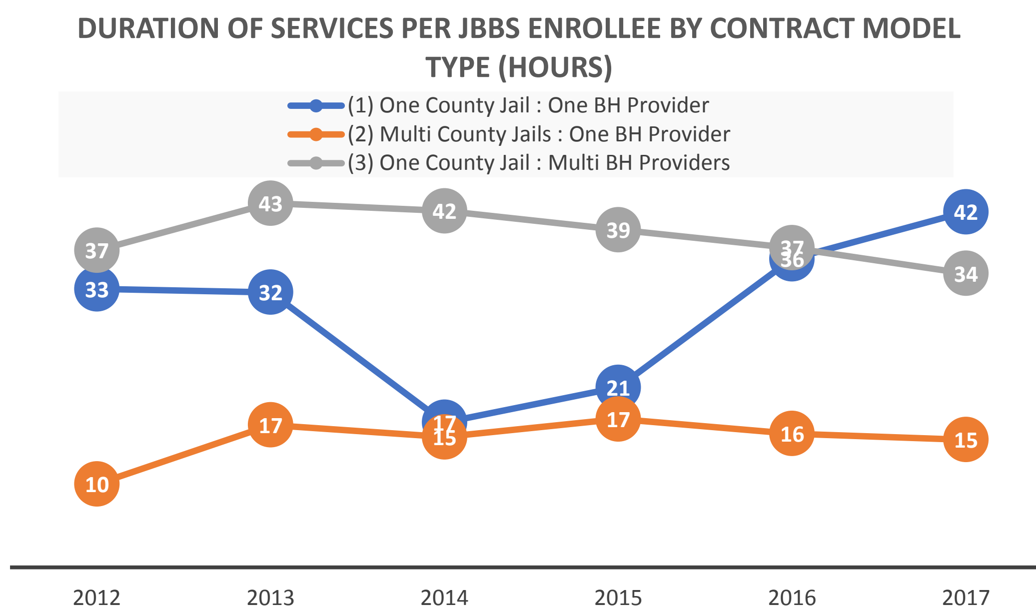
Figure 21



On average, the longest lenth of stay is 123 days for JBBS enrollees served by Type 2, followed by Type 1 at 93 days and Type 3 at 81 days. **Despite having the shortest length of stay, the total duration of services per day or "dose" enrolled in JBBS is with Type 3 at 45 minutes.** This suggests that programs where one county jail is served by multiple BH providers is effectively getting services to JBBS enrollees even with the shortest length of stay.

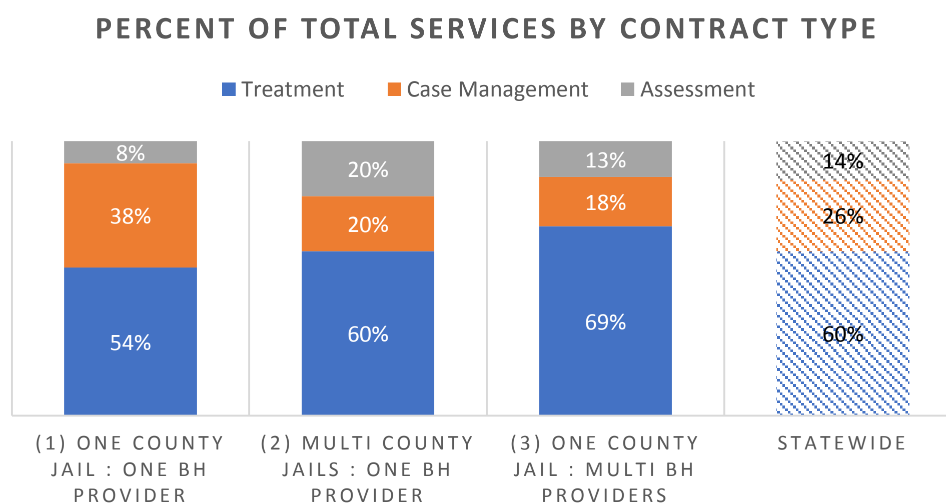
Over time, duration of services by contract model type has varied, as shown in Figure 22. For Type 3, the average duration of service is decreasing from a high of 43 hours per JBBS enrollee in 2013 to 34 hours in 2017 (a 21% change). The average duration of service for Type 2 has remained fairly steady over time and is generally increasing, from a low of 10 hours in 2012 to 15 hours in 2017 (a 50% increase). Type 1 has fluctuated over time in the average duration of service, which appears to be driven by the change in the number of groups attended. On average, Type 1 provides 13 group therepy sessions per enrollee. However, in 2014 and 2015, the average number of groups attended dipped to 8 and 10, respectively. See Appendix K for average number of groups, services, and duration by year and by contract model type.

Figure 22



Overall, as shown in Figure 23, as a percentage of all services delivered, more than 50% of services are treatment across all contract model types, followed by case management services and assessment services. For Type 3, nearly 3 out of every 4 services (69%) are treatment compared to Type 1, where just over 1 in 2 (54%) of services are treatment.

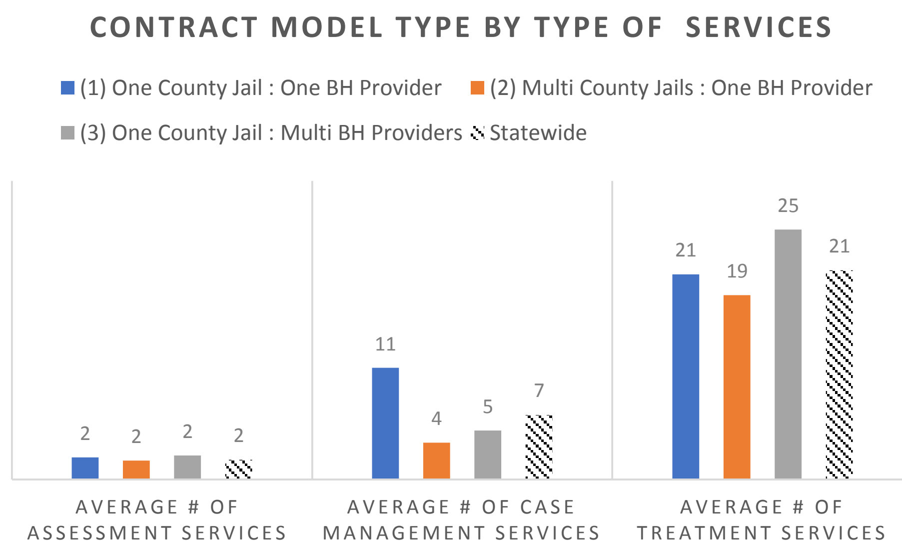
Figure 23



Each contract model type delivers, on average, two assessment services per JBBS enrollee. Where the contract models types begin to differ is in the amount of case management and treatment services delivered. Type 1 offers more than twice as many case management services than the other two contract model types. On average, Type 1 delivers 11 case management services per JBBS enrollee, where as Type 2 delivers on average 4 and Type 3 delivers on average 5 case management services per

JBBS enrollee. While all types deliver mostly treatment services as a proportion of all services, Types 2 and 3 deliver four times as many treatment services compared to case management. Moreover, Type 3 delivers more treatment services per JBBS enrollee than the program statewide average number of treatment services delivered per JBBS enrollee (see Figure 24).

Figure 24



In summary:

The type of contract model appears to impact the program in the following ways:

- Type 1 Contract Model (1 county jail, 1 behavioral health provider) provides the most case management than any other type of service, while also delivering a high number of treatment services.
- Type 2 Contract Model (Multiple county jails and one behavioral health provider) provides nearly five times as many treatment services compared to case management services. However, for both kinds of services, Type 2 is below the statewide average for each type of service. Type 2 has the longest average length of stay.
- Type 3 Contract Model (One county jail, multiple behavioral health providers) provides the most treatment services than any other type, while below average on the statewide number of case management. Type 3 has the shortest average length of stay.

Recommendations for Implementation:

JBBS Dose—A key variable for determining variation in programs and how those variations inform outcomes is the "dose" of services provided by the program. Programs vary in many factors informing dose such as service type (individual, group, case management), duration of services, provider delivering services, etc. These are the core elements of what is provided to the JBBS clients. As a result, it may be useful to more closely track these elements to ensure that the dose provided can inform future efforts to evaluate program outcomes (informing standardization of program elements). Additionally, this information may assist counties in adapting services and maximizing staffing differently so it could be a tool for counties in budget and program planning. If tracked clearly, these variables could be examined individually or together as "dose" to inform future

evaluations as well. Recommendations for adapting the measurement of dose include:

- More clearly identify the type of service provided within categories of service such as type of individual therapy, type of group therapy, and type of case management service (e.g., transportation planning versus connection to outpatient therapist);
- Track provider type delivering services;
- Mark duration of services within single session. For example, if a JBBS client receives a service which included both individual therapy and case management, track the duration for each (30-minute individual session; 15 minutes of case management for a total of 45-minute service); and
- If a pre-sentence program is created separate from the current JBBS program (see recommendations at the end), consider creating separate service and dose data metrics for pre-sentence populations.

Service Type—The findings indicate that the type of service and duration of services varies considerably across counties and program types (typologies). The variation in program implementation shapes the number of services, the type of services, and the duration of those services. The analysis could be improved by understanding in greater detail what the JBBS programs are delivering in each category and how services may be tailored to specific sub-populations within JBBS. For example, a program with more case management services may be targeting a different population than a program using high amounts of group therapy. Understanding why the programs implement the model differently could inform understanding of whether these differences are significant or whether services should be more standardized across the counties.

Program Capacity—One of the variables that is assumed to impact implementation and potentially outcomes is program capacity. Clearly, the number of individuals referred and enrolled and then the amount of service provided is directly related to program capacity. This evaluation could not examine program capacity across counties because were not able to develop an accurate caseload size. The number of staff budgeted for in each program is available but staffing changes are a recurrent part of the JBBS program with staff roles being re-defined and with turnover being a legitimate challenge. Recommend that for the future, a metric for program capacity be created that includes core elements such as: number of providers and provider type by month or quarter; number of new JBBS clients; number of ongoing JBBS clients (e.g., enrolled for more than 1 month); number of referrals to the JBBS program. These types of variables could be combined to provide a capacity score or rank which could then be used to examine changes in program need (population need and staffing need), information on the extent of individuals that meet criteria for JBBS but are not served and could inform evaluation of services provided and potential changes in services to meet demand.

Training Opportunities—As indicated elsewhere in recommendations, training between behavioral health providers and jail staff may be an important method for furthering the goals of the program and could be a component for improving outcomes. Although this evaluation focused on behavioral health training of correctional staff, recommendations have been outlined in the final recommendation section on the potential for cross-training with correctional staff enhancing behavioral health provider understanding of criminal justice populations and behaviors.

Family Involvement—The data suggest that families are rarely engaged in JBBS programming. This is often a result of distance from family members and the jails, lack of involvement of family members in inmate lives, and other common barriers (e.g., space, time and capacity of jail to support visitors).

However, there is research indicating that family involvement can be a dominant predictor of community engagement and recidivism (see Appendix A). As the JBBS program evolves, experimentation and emphasis on how to engage family members more when possible could be beneficial and could enhance program implementation.

Evidence Based Practice—This evaluation did not address the quality or fidelity of the evidence based treatments being used in the jails. Although all the programs identified using evidence based approaches, future examination of actual implementation of the therapies could provide important information about how therapeutic approaches are used, adapted, and whether specific counties have improved outcomes based on implementation of the evidence based practice. An essential element of the implementation is the actual therapy delivered and this variable was not included in this evaluation. Future efforts could examine if these programs are being implemented to fidelity; and examine the effectiveness of adaptations of the programs in a criminal justice setting; and determine if there are county variations that should be standardized to improve the overall success of the JBBS program.

Research Area 4: Outcomes

Aim: Explore the degree to which programs meet their intended outcomes, including reduced recidivism resulting in reincarceration, and increased engagement in services upon release, and the degree to which other outcomes are achieved, such as reduced problematic behaviors while in jail, increased engagement in services while in jail, or other outcomes.

Methodology: The data for this research area was primarily quantitative and came from three primary data sources including the JBBS program data; OBH encounter (claims) data on behavioral health services delivered in the community; and criminal justice data including judicial data for all counties except Denver County and Denver County criminal justice data.

Question 1: How effective are the programs at increasing engagement in services upon release?

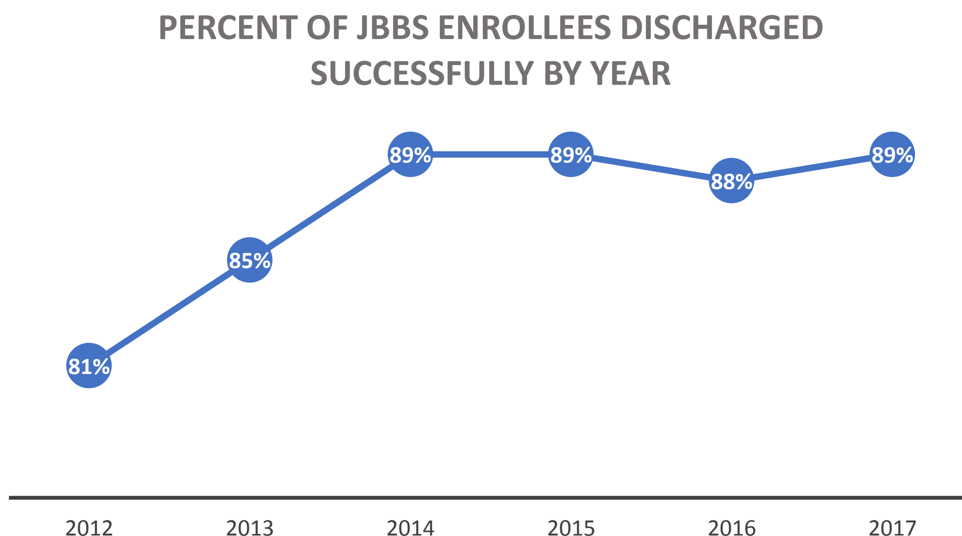
What is the rate of successful treatment and goal attainment?

The variable for JBBS discharges are broken into two categories: successful and unsuccessful. Successful discharge occurs when individuals achieve their treatment goals or successfully complete program elements up until release since JBBS clients may be released from jail prior to completion of all treatment goals. For example, if a client is transferred to another facility while they are active and engaged in treatment, this would be reported as a successful discharge. A discharge is considered unsuccessful when the client is discharged while not engaged in treatment, not following treatment recommendations or when the client is removed from the JBBS program as a result of disciplinary action.

Within the program statewide, approximately 83% of clients are discharged successfully. Figure 25 below shows a significant increase in the percentage of successful discharges over the course of the

JBBS program. Most counties similarly show an upward trend. Types 2 (Eclectic Approach) and 6 (Residential Peer Focused) have the lowest success rate (83% and 78%, respectively). The other types all have rates of 88 percent or higher.

Figure 25



Although discharge success is an important variable to determine for effectiveness of the JBBS program, the way in which data is currently collected makes the variable limited in reliability and accuracy. The findings provided above are statewide descriptive information, however should be taken as an early attempt at examining discharge success. Recommendations for how to improve the information obtained on the discharge status is included below and could support use of this variable as a program outcome.

Question 2: Does the level of criminological risk impact the effectiveness of the program?

The Level of Service Inventory-Revised (LSI-R) is a validated risk/need assessment tool which identifies problem areas in an offender's life and predicts his/her risk of recidivism.[45] In Colorado, the LSI is used in probation, community corrections, prison, and parole to develop supervision and case management plans and to determine placement in correctional programs. In some states, the LSI is used to make institutional assignments and release from institutional custody. The LSI score predicts the percent change of recidivism within one year and is based on a scale of 0 to 54, from least likely to recidivate to greater than 70% chance of recidivism.

[45] The Level of Service Inventory-Revised (LSI-R) is a quantitative survey of offender attributes and their situations relevant to level of supervision and treatment decisions. Created by Andrews, D.A. & Bonta, J. For more information, please see: https://www.mhs.com/MHS-Publicsafety?prodname=lsi-r

JBBS participants LSI scores were assessed and reported starting January 1, 2017. The total LSI scale has values ranging from 2 to 54 for participants assessed. The mean score is 29.1 (or 43% chance of recidivating within one year) and varies from 16 (or 30% chance of recidivism) in Pitkin and La Plata Counties to 36 (or 53% chance of recidivism) in Jefferson County. Type 5 (Coordinate Medication Services and Brief Stay) has clients with the highest average LSI score (40.5 or 53% chance of recidivism), and type 6 (Residential Peer Focused) has the lowest (25.7 or 40 to 43% chance of recidivism).

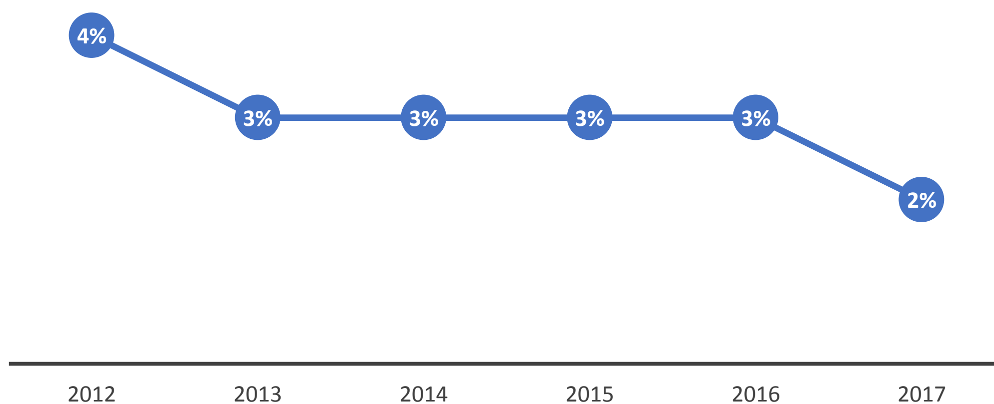
An exploration into LSI was conducted to assess whether the LSI score influenced the level of engagement in JBBS services. The total LSI is found to have little relationship to length of service, number of sessions attended, or discharge status, but it does correlate positively with a positive mental health, traumatic brain injury, or trauma screen. This could suggest that the LSI score may be another cue for providers to assess other behavioral health needs as a high score may suggest co-occurring conditions. The correlation also emphasizes the importance of treating co-occurring conditions as part of reduction of risk for recidivism.

Question 3: How effective are the programs at increasing engagement in appropriate behavioral health care (e.g. treatment) upon release?

The behavioral health encounter data includes 375,921 encounters for 8,535 unique JBBS enrollees or 66% of JBBS enrollees. Of those encounters in the community that followed a JBBS enrollee's discharge date, 3% of encounters were considered "inappropriate" utilization. Inappropriate utilization means the services involved patient crisis and/or utilization of the emergency department.[46] Overall, by year, the rate of inappropriate utilization has decreased from a high of 4% in 2012 to a low of 2% in 2017 (see Figure 26).

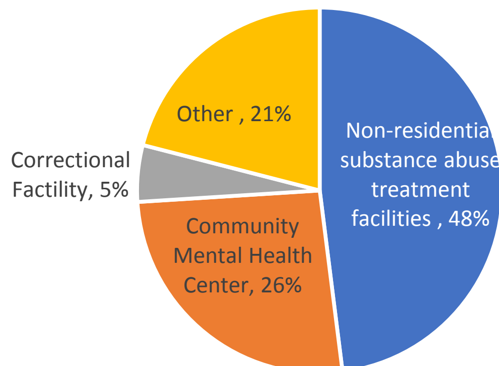
[46] The estimates on "inappropriate utilization" may be artificially low as a result of data limitations for this evaluation. Without physical health and Medicaid encounters, there may be considerable utilization that is not captured. For example, emergency department utilization for behavioral health can be coded as a physical health cause (e.g., broken bone from a fall with substance use as a 3rd or 4th diagnosis but related to the reason for the visit) and thus the utilization for acute services may be higher for JBBS clients than reported here.

Figure 26



Encounter data post JBBS release reveal that services are utilized in 29 places of service. However most services are received in just three locations. The most common place to receive behavioral health services is at non-residential substance abuse treatment facilities (48% of encounters), following by the community mental health center (26% of encounters) and a correctional facility (5% of encounters). Together, these three places of services made of 79% all encounters after leaving the JBBS program (see Figure 27).

Figure 27



The top procedures taking place in the community include alcohol or drug services involving group counseling by a clinician for 17% of all encounters, followed by group psychotherapy (other than a multiple family group) (9%), behavioral health counseling and therapy (6%). Targeted case management made up 5% of encounters. Overall the top procedures accounting for 58% of all encounters take place

in the community are provided in Table 10. The prevalence of these kinds of encounters indicate that appropriate utilization of BH is occurring in the community post JBBS.

Table 10 Percent of Encounters Post JBBS by Procedure Type

Procedure Type	Percent of Encounters Post JBBS
Alcohol and/or drug services; group counseling by a clinician	17%
Psychotherapy[47]	12%
Group psychotherapy (other than of a multiple family group)	9%
Alcohol and/or drug services; methadone administration and/or service	5%
Targeted case management	5%
Behavioral health; long-term residential (non-medical, non-acute care in a residential treatment program where stay is typically longer than 30 days)	4%
Behavioral health; short-term residential (non-hospital residential treatment program)	3%
Behavioral health outreach service (planned approach to reach a targeted population)	3%

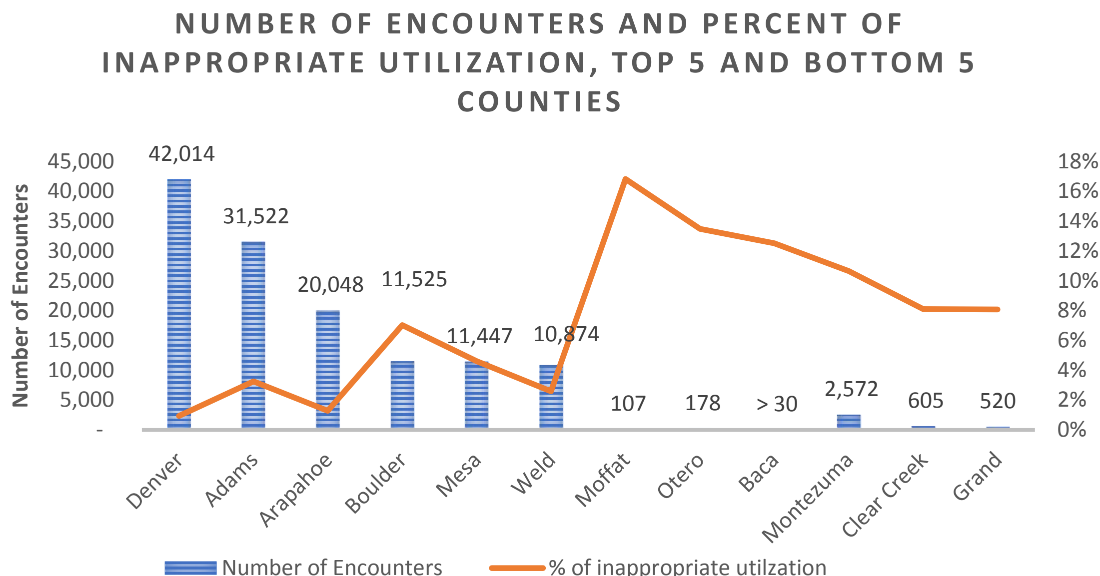
Question 4: Are there differences between counties in how effective the program is at increasing utilization in BH services upon release?

By county, the rate of inappropriate utilization varied from 0% to a high of 17%. The top five counties with inappropriate utilization were Moffatt (17%), Otero (13%), Baca (13%), and Montezuma (11%) counties. Clear Creek and Grand Counties both had utilization rates of 8%. It is important to note that, with the exception of Moffat County, the counties in the top 5 have less than 1,000 encounters since 2012 which means that rates may be skewed and not indicative of actual utilization in those counties. On the other hand, among those counties with the highest number of encounters since 2012, Denver and Arapahoe Counties both have a 1% inappropriate care utilization rate, followed by Adams and Weld Counties at 3% (see Figure 28).

Taken together, the data continues to indicate that JBBS enrollees have low inappropriate utilization in the community which is a central goal of the program. This is a positive initial finding that will need to be confirmed in future evaluations incorporating additional data such as Medicaid claims and physical health emergency department utilization.

[47] Psychotherapy includes procedure codes for "Behavioral health counseling and therapy" (6%), "psychotherapy" (3%), and "individual psychotherapy, 45 minutes" (3%).

Figure 28

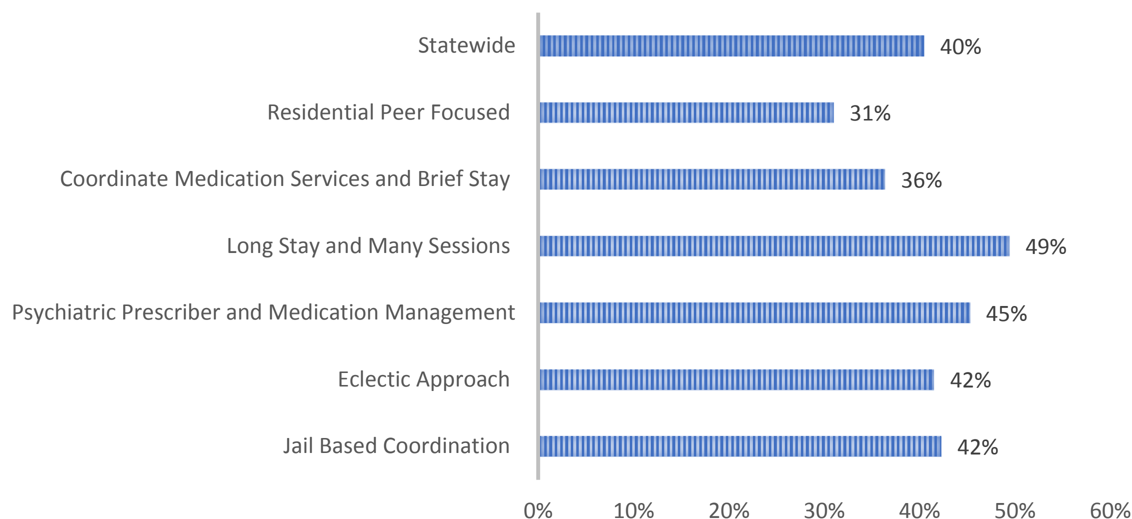


Typology Analysis

Inappropriate service utilization following release from JBBS was lowest among those counties classified as Typology 6 (residential peer focused) at 31% and those classified as Typology 6 (coordinated medication management with the jail) at 36%. Inappropriate utilization was highest among those counties who reported they experienced long stays and provided many sessions (49%).

A one-way ANOVA of inappropriate BH care utilization shows that the percent of inappropriate care differs significantly among the typologies or in other words this test confirms that there is a statistically significant association between typology and inappropriate BH care utilization. Therefore, there appears to be differences between counties in how effective the program is at increasing utilization in BH services upon release (see Figure 29). There are many potential reasons for these findings such as residential services with peers enhancing engagement of individuals in treatment or the higher treatment dose based on residential programming. Perhaps some of the program types with higher rates of utilization may be a function of the clientele served. For example, programs with more focus on psychiatric medication management may be serving a JBBS clientele with higher mental health symptoms and thus greater complexity and differences in services for community engagement. Because this evaluation was unable to control for relevant variables such as client presentation/acuity, dose, and program specifics (e.g., the specific therapies delivered), these findings are preliminary. However, these findings point to the importance of further examination especially with added treatment outcomes within the JBBS program (see recommendations at the end of this section and end of report).

Figure 29



In addition to typology, the contract model type was examined for potential differences in outcomes. The counties contracted for JBBS have varying models of contract with differences in multiple counties in the contract and multiple behavioral health providers. The analysis indicated that to some extent, differences in utilization may be driven by the contract model type. Contract Model Type 2 (more than one county jail is served by one BH provider) has the highest percentage of inappropriate BH care utilization at 47%, followed by Contract Model Type 1 (One county jail is served by one BH provider) at 39% and Contract Model Type 3 (one county jail is served by more than one BH provider) at 31%. A one-way ANOVA indicates that there is a significant association between contract model type and inappropriate BH care utilization. This may be a result of access to BH services in these counties. For county jails who shared a BH provider (Type 2) where inappropriate utilization is the highest, they tend to be rural counties and often the behavioral health provider is only in each jail part time (2-3 days a week). This is clearly different than programs with more robust staffing five days a week with greater access to behavioral health. It could also be that this model type is highlighting a lack of community based services rather than a JBBS program difference. Rural areas may create additional challenges for JBBS clients upon release such as transportation to appointments and access to the type of service needed (e.g., residential services or intensive outpatient).

Question 5: Is there a difference in recidivism rates for individuals who engage in the program while in jail and engage in services upon release, when compared to the overall recidivism rate (or to recidivism rates among a similar population)?

Judicial data from Colorado Department of Justice and Denver City and County Sheriff's department were used in an analysis of recidivism rates among JBBS participants post release from jail. Data

elements included arrest date, the law description or offense description of the crime related to that arrest date, and the penalty handed down for that date of arrest. The type of crime was coded into either violent or non-violent and whether it involved alcohol and other drugs.

The evaluation defined *recidivism* using two measures.

1. **REINCARCERATION TO JAIL** as a result of both criminal and non-criminal behavior (e.g., incarceration for certain supervision violations). Reincarceration to jail was defined in the CO Department of Justice data as any arrest resulting in a jail penalty. In the Denver Judicial data, reincarceration was defined as any penalty that indicated a release to a county jail.
2. **REINCARCERATION TO PRISON** as a result of both criminal and non-criminal behavior (e.g., incarceration for certain supervision violations). Reincarceration to prison was defined in the CO Department of Justice data as any arrest resulting in a Department of Corrections (DOC) penalty. In the Denver Judicial data, reincarceration was defined as any penalty that indicated a release to the DOC.

Using these variables, one-year recidivism rates were calculated.[48] The sample used to analyze recidivism included any JBBS participant who had criminal justice data prior to their initial JBBS enrollment date. Any criminal justice data prior to the first JBBS enrollment date was not included in the recidivism analysis. Lastly, each JBBS client included in the recidivism analysis had to have a full year of potential criminal justice data post their first JBBS discharge date. Therefore, the evaluation analyzes one-year recidivism rates for 3,912 former JBBS enrollees.

Overall, 31%of arrests among this JBBS enrollee sample resulted in a reincarceration to jail and 17% of arrests resulted in reincarceration to prison. This means that 48% of those with recidivism were reincarcerated (see Figure 30).[49]

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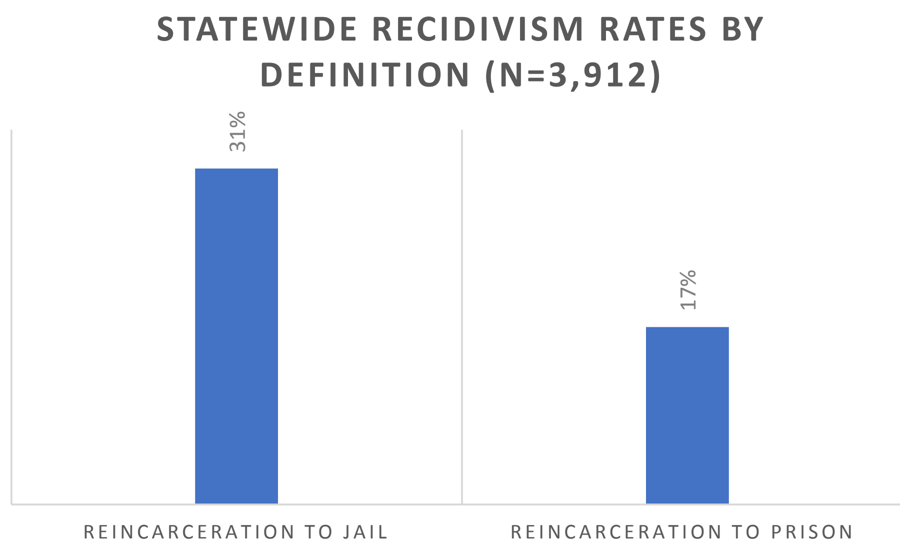
[48] A three-year recidivism rate (as often used in national studies of recidivism) was not possible due to the number of years of data available in the data set.

[49] We were unable to find comparable data on the rate recidivism in Colorado jails across the State. The Colorado Department of Corrections measures recidivism from prison (three year definition) and currently has a rate of 50%. https://www.colorado.gov/pacific/performancemanagement/reduce-recidivism-rate

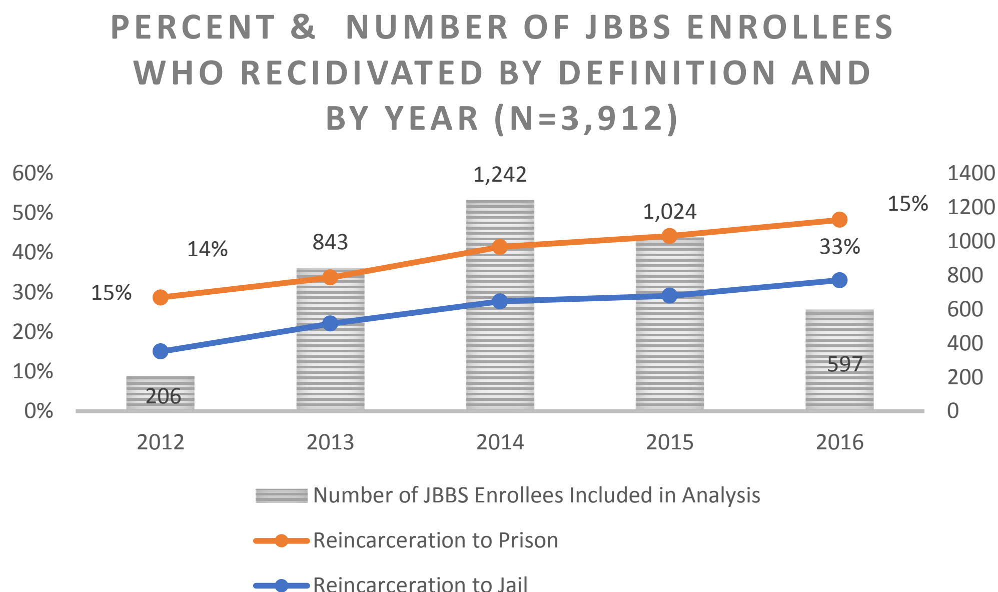
Figure 30



Over time, as shown in Figure 31, recidivism increased among JBBS enrollees. While reincarceration to prison has generally remained the same (around 15% of JBBS enrollees), reincarceration to jail has more than doubled, from 15% to 33%. This may in part be due to the increase in crime rate overall in Colorado. For the general population, the Colorado Bureau of Investigation reported that in 2016, the Colorado crime rate per 100,000 people spiked by 3.4 percent, fueled by a rise in auto thefts, rape, murder and robbery.[50] Additionally, changes in policy such as the passage of the felony drunken driving law in 2015 may be impacting incarceration rates for JBBS enrollees.[51] Determining the exact cause of these findings is difficult. Recidivism is a variable known to be impacted by numerous factors including policy changes around criminal behavior, community access to healthcare services, social determinants of health—particularly access to housing and stable employment upon release, and individual criminogenic risk among many others causes. The JBBS population is likely impacted by many of these factors and this evaluation did not control factors to identify cause of recidivism. A significant limitation with the analysis is also the relative small sample size that had criminal justice data relative to the total number of JBBS enrollees over time.

[50] Mitchell, K. 2017, July. Crime rate in Colorado increases much faster than rest of the country. *The Denver Post. Available at https://www.denverpost.com/2017/07/11/colorado-sees-big-increase-crime-10-percent-higher-murder-rate/*
[51]Ibid.

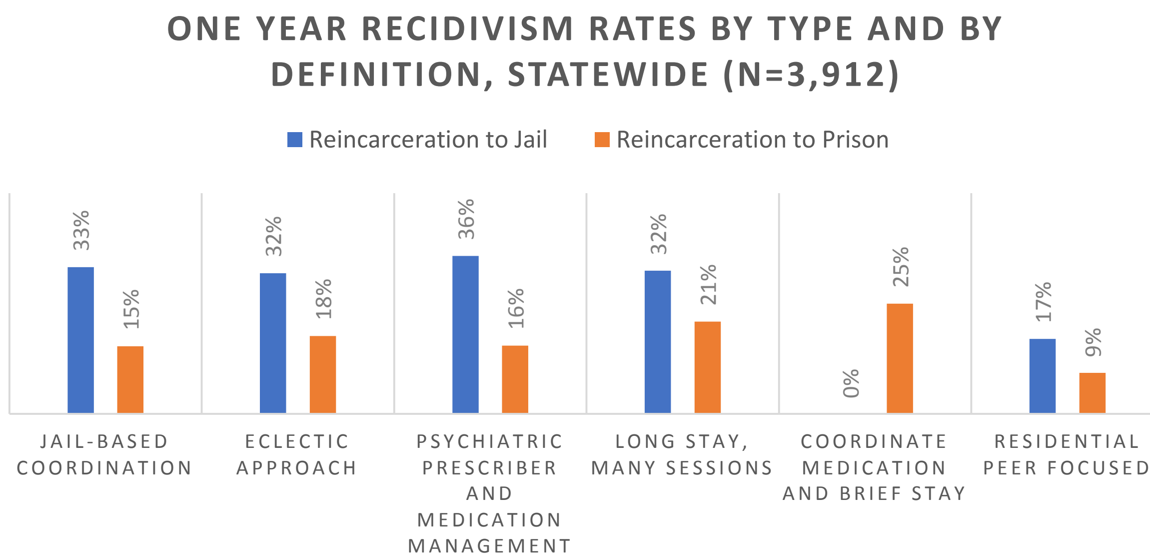
Figure 31



One-year Recidivism Rates by Typology

When assessing one-year recidivism rates by typology, findings show that Typology 6 also has the lowest frequency of recidivism resulting in jail time (17%) or prison (9%). Typology 3 (Psychiatric Prescriber and Medication) has the highest frequency of re-arrests that results in jail time at 36% and Typology 4 (Long Stay, Many Sessions) has the highest frequency of re-arrests that result in prison at 21%. A one-way ANOVA of one-year recidivism under the two definitions shows that there is a statistically significant association between typology and recidivism rate (see Figure 32), suggesting that JBBS enrollees who received services as defined by each typology have different outcomes.

Figure 32



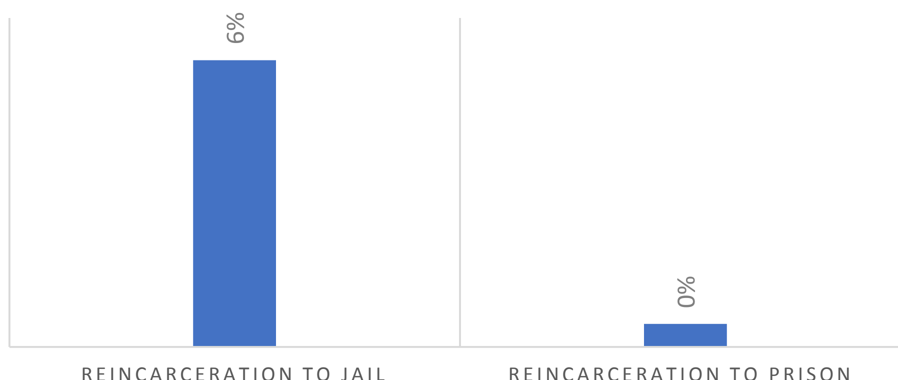
One-Year Recidivism Rate by Crime Type

An analysis of each crime was conducted to identify the extent to which crimes were violent or involved alcohol and other drugs using the crime law description provided in the Colorado Judicial data. The analysis excluded Denver County judicial data because the offense description was more varied, revealing more than 6,000 different crime types.

Crimes Involving Alcohol and Other Drugs

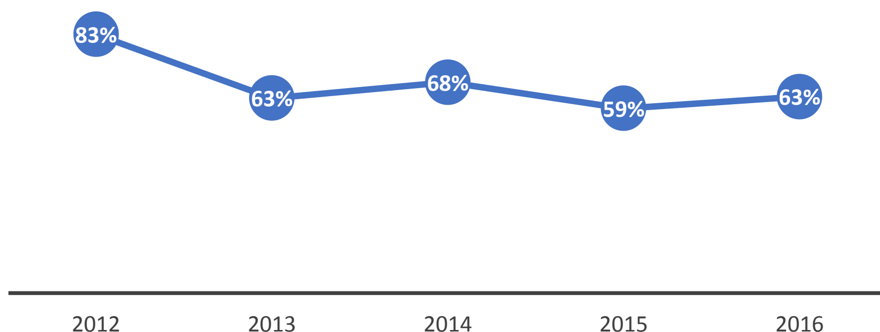
Analysis reveals that of those who were re-arrested in counties other than Denver, crime involving alcohol and other drugs accounted for 6% of those re-arrests that resulted in reincarceration to jail. None of these crimes resulted in prison (see Figure 33).

Figure 33



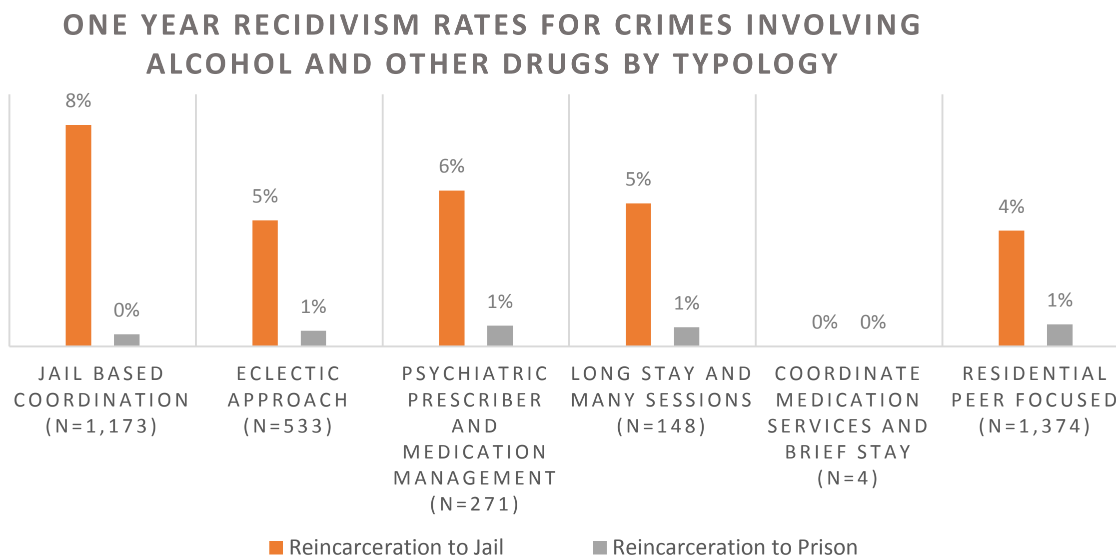
Despite the increase in recidivism resulting in jail or prison overtime among JBBS enrollees, the contribution of crimes involving alcohol and other drugs to recidivism has decreased since 2012. Recidivism has dropped 24%, from 83% of drug and alcohol related crimes resulting in jail or prison to 63% of these crimes resulting in jail or prison. This suggests that the JBBS program is treating the substance use disorder for JBBS enrollees while having little impact on their criminogenic risk factors. As stated earlier, overall crime rate in Colorado is increasing. Specifically, there are varying assessments of what is happening in the broader context on crime and drug use in Colorado, including consideration for the role the marijuana industry may play. Despite these factors, crime among JBBS enrollees involving alcohol and other drugs that result in jail or prison is decreasing.

Figure 34



A one-way ANOVA of alcohol and drug related crime resulting in prison reveals there is not a statistically significant association between typology and drug related recidivism rates; however, there is a significant association between these factors when recidivism is defined as reincarceration to jail. Drug related crime recidivism rates by typology and definition are shown in Figure 35.

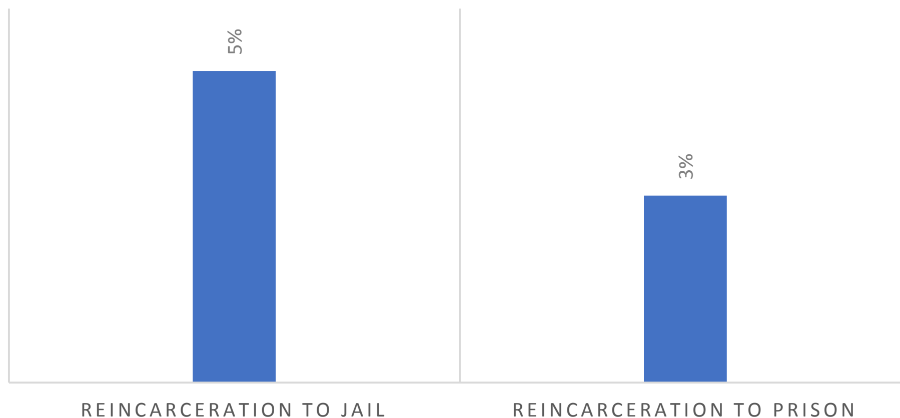
Figure 35



Violent Crime

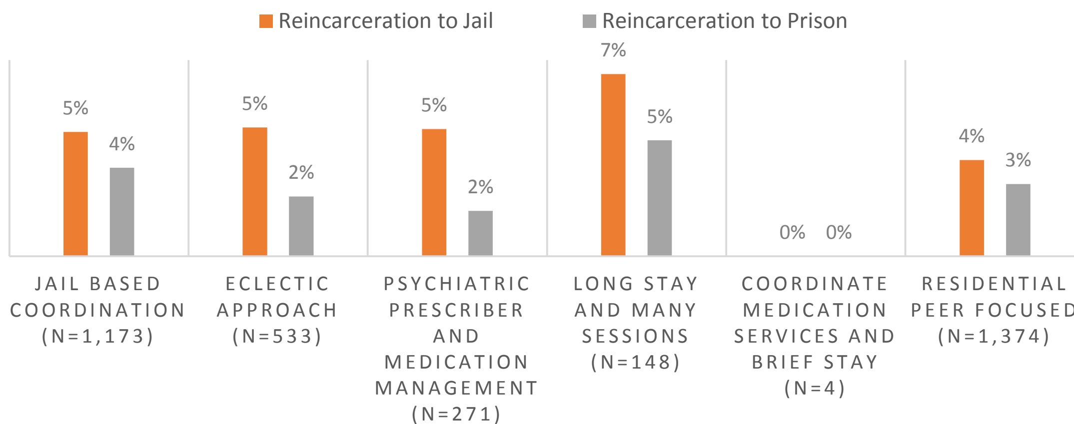
Of the JBBS enrollees that are re-arrested due to violent crime, a similar pattern is found. Figure 36 illustrates that 5% of JBBS enrollees who recidivated due to a violent crime, resulted in jail time and 3% resulted in prison.

Figure 36



A one-way ANOVA of recidivism due to violent crime under all definition shows that there is a not a statistically significant association between typology and violent crime. Recidivism rates by typology and definition of shown in Figure 37.

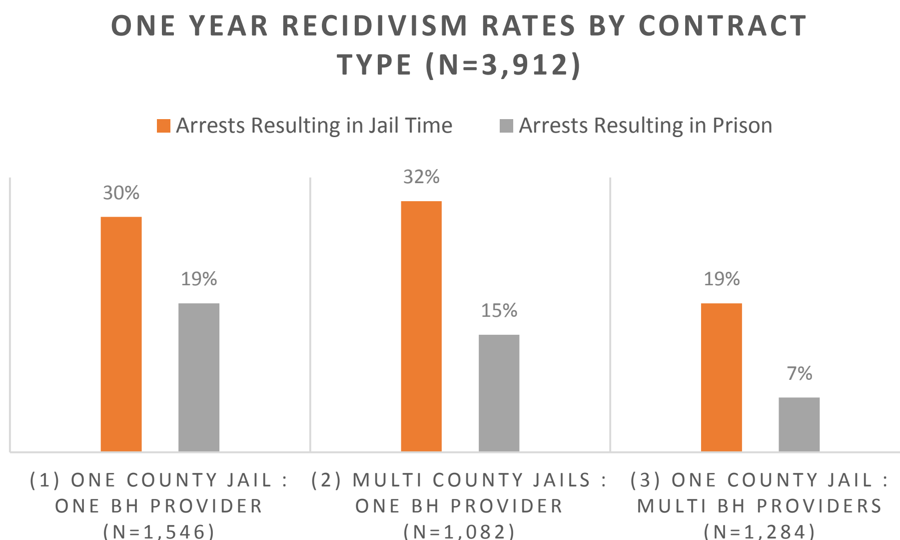
Figure 37



One Year Recidivism Rates by Contract Model Type

Figure 38 shows that one-year recidivism resulting in jail time is highest in Type 2 where 32% of JBBS enrollees return to jail, and lowest in Type 3, where 19% return to jail. For those re-arrests post JBBS that result in prison it is highest in Type 1, where 19% of JBBS enrollees recidivate, and lowest in Type 3 where 7% recidivate.

Figure 38



Overall, JBBS enrollees in contract Type 3 have the lowest rate of recidivism for crimes that result in the most severe penalties (i.e. return to jail and prison). A one-way ANOVA of recidivism under both definitions shows that there is a statistically significant association between contract model type and recidivism rate.

Recommendations for Outcomes

Track Critical Incidents—Many of the providers and correctional staff described important behavioral challenges in the jail ranging from aggression to suicidal behavior. In the survey process we asked both if they tracked critical incident data for the JBBS population and although no one did, many believed this would be an important addition to the program. Adding critical incident data to the JBBS program data or to jail based tracking information could provide important information on population need over time, JBBS program additions to target behaviors, and could potentially demonstrate that the JBBS program participants have reduced critical incidents when compared to the general jail population. This could become an important outcome.

Treatment Success—Currently the JBBS variable on treatment success has limitations and makes its use as an outcome challenging. Limitations include consistency in how providers define success and the variable is binary forcing providers to pick between successful and unsuccessful when progress may be more on a spectrum. As the model evolves, a recommendation is to develop a robust measure of treatment success that can be used as an outcome measure. This would include clarity for providers on how to rate the measure with specific benchmarks and additional options to more fully capture the progress of JBBS clients. This could include sub-ratings such as treatment completed for those who fully complete a course of treatment; significant treatment progress and referral for individuals who have made progress and will need to continue treatment in the community; minimal treatment progress and referral for individuals with either less time in the program or less progress who will need referral to the community; those who only received education and referral; and treatment termination for those who did not engage in the program or who were discharged for specific reasons. See also recommendations at the end of the report on measurement based care for tracking progress.

Changes in Criminal Behavior and Recidivism—To assess change in the rate of recidivism and the type of crimes committed, a future evaluation should consider analyzing criminal justice data at least five years prior to JBBS enrollment and at least three years post JBBS discharge date. This will permit an analysis of the criminal pattern and the extent to which JBBS influence a change in criminal behavior. Criminal behavior as it relates to both violent crime and crime involving alcohol and other drugs. It will also allow for both a one-year recidivism rate and a three year recidivism rate.

Changes in Health Care Utilization—The estimates on "inappropriate utilization" may be artificially low as a result of data limitations for this evaluation. By including physical health and Medicaid encounters in the analysis, a more realistic picture of utilization is possible. A recommendation to assess change in utilization would be to include at least five years of encounter data prior to an inmate JBBS enrollment date and at least three years following their JBBS discharge. This will permit an assessment of how utilization has changed and to what extent JBBS has influenced that change.

Research Area 5: Additional Resources

Aim: To explore the additional needs that the jails have in order to implement the program effectively.

Methodology: The data for this research area was collected through survey and interviews with both the behavioral health providers and the correctional staff. Survey data includes all counties while interviews include data only form the interviewed counties.

Question 1: What other resources are needed to make the JBBS program most effective?

Based on survey data, correctional staff (n=40) indicated that additional funding, 63%[52]) and training for correctional staff (63%) are the most pressing resources needed to make the JBBS program most effective. Standardized processes (43%) and training for behavioral health providers (35%) followed. Access to data on JBBS program participants statewide was the least common resource selected (25%). Five counties described need for other types of resources, including:

- More or larger office space;
- Transition counselor full time;
- Inclusion of other inmates with mental health needs;
- Standardized group curriculum; and
- Having a consistent and stable (lacking turnover) behavioral health provider

Additionally, correctional staff in twenty counties provided comments on what the additional funding is needed to address. About half (50% or 10 counties), said more funding was needed for transition services. Transition services include enhanced case management, more staffing and services post release, and expanded housing options and community resources such as insurance. Additional staffing and more services or programs was mentioned by approximately 20% to 25% of the counties. More

[52] This survey question provided an opportunity to check all that apply so percentages will not equal 100.

services or programs and additional staffing often related to improved capacity to serve more individuals (reduce waitlists), expansion to serve different conditions such as mental health, increasing programs (adding groups) or expansion through full time behavioral health providers in the jail. The comments provided on more training and training materials suggested a need for training on specific treatments and building on current models with resources for inmates such as workbooks or manuals (see Table 11).

Table 11 Qualitative Comments on Additional Funding and How Funds Could be Used

Comment	Percent	Count
Transition Services (including housing)	50%	10
Additional Staffing	25%	5
More Training and Training Materials	20%	4
More Services or Programs	20%	4
Medications for Inmates	5%	1
Help the Inmates	5%	1

Survey data suggests that behavioral health providers (n=49) indicated that the greatest resource needed to make the JBBS program most effective is training for correctional staff (57%). This was followed closely by additional funding (53%). Training for behavioral health providers (41%), standardized processes (39%) and access to data on JBBS program participants statewide (33%) were all endorsed by more than a third of the respondents. 'Other' were the least selected options and included more staff (19%), changes to program requirements (19%), and increased space and facilities (9%). Of those behavioral health providers who indicated that more funding is needed, the most common response for allocation of those funds was for more staffing (37%). This includes staffing for case management and therapists. Behavioral health providers desired more funding for transitional services (26%) and to provide expansion of in-jail services, such as therapist-led classes (26%).

Interview data from counties (both correctional staff and behavioral health providers) repeated similar themes with comments often centering on services in the community or enhancement to specific program components. A couple of comments that add to the information provided above include:

- **Transportation needs**—many counties mentioned the difficulty JBBS clients have obtaining transportation to services within the community.
    - Improving emergency transportation—We do not have a safe way to transport people—they need to reach a safe place once they get released.
- Want to increase **peer support services** in the community—provide home visits or meet with clients the first year out. Check-ins with people more in the community to have more shared continuity in the transition to community living.
- For some jails, the **space for treatment** is a considerable challenge and so counties indicated the need for more coordination and brainstorming with correctional staff on creating access to JBBS clients to improve treatment.
    - In some settings the need is greater buy-in across the jail in understanding the value of the JBBS program and then prioritizing inmate time in the program.
    - Funding for training for correctional staff to enhance their understanding of the importance of treatment. Provide costs data or safety data to demonstrate impact on areas that are important to them.

- Additional staff and time to focus on **building community partnerships** and creative methods for supporting client transition needs (e.g., bikes, meals, transportation, etc.).
    - Some described the need for a new technology support that would help them identify the appropriate community resources.
- Adding **tele-psychiatry** to the jail to improve time between assessment and prescription provided and support individuals staying on medications through transitions in and out of criminal justice settings.
- Increased access to **residential substance use treatment**—especially in rural areas where it is sparse.
- Increased **accountability to the individual**—for example having courts charge clients for emergency department use so that they focus more on treatment as a way to prevent use of high cost acute care.

Question 2: How can program capacity be supported?

When asked about resources that would support their county in increasing JBBS program capacity, correctional staff indicated that increased staffing is the most needed resource (29%), followed by more physical space (19%). More funding, greater availability of therapy hours, and additional services were also of importance (14% each).

Behavioral health providers reported that 40% of organizations (n=17) have a waitlist for JBBS services. Waitlist size ranges from 2-60 individuals, with an average of 23 individuals. Individual time spent on a waitlist ranges from 1.5-8 weeks, with an average of 4.8 weeks. The most common resources behavioral health providers identified to increase JBBS program capacity were more staff (5 counties, 7 organizations); more space (2 counties); and more training and education (5 counties). Three counties explicitly stated they needed more funding. Many counties indicate a need for more services including more case management services (3), more transitional services (7), and more treatment services (7). Six counties indicated a need for the JBBS program to include individuals with mental health issues. Treatment space was also a limited resource among several counties, including Clear Creek and Jefferson. Treatment and jail space was also a resource constraint in Alamosa. Two counties (Montrose and Morgan) indicated less JBBS documentation would be helpful in alleviating resource constraints. Six counties indicated a need for greater collaboration with jails, including resources for awareness building and collaboration.

Question 3: What are the resources or operational changes needed to support additional services or populations?

In addition to the data about resources that would support programming, the surveys and interviews also asked correctional staff and behavioral health providers to indicate specific needs to expand the program to new populations such as those with mental health conditions. The results are similar to the

data presented above, suggesting the same resources are needed to expand programming capacity and to serve additional services and populations. A summary of responses indicates resources needed to increase program capacity include more staff (5 counties, 7 behavioral health providers); more space (2 counties); and more training and education (5 counties). Three counties explicitly stated they needed more funding. Many counties indicate a need for more services including more case management services (3 counties), more transitional services particularly for housing (7 counties), and more treatment services (7 counties). Six counties indicated a need for the JBBS program to include individuals with mental health issues. Treatment space was also a limited resource among several counties, including Clear Creek, Jefferson and Alamosa. Two counties (Montrose and Morgan) indicated less JBBS administrative documentation would be helpful in alleviating resource constraints. Six counties indicated a need for greater collaboration with jails, including resources for awareness building and collaboration and clarity on program components.

Recommendations for Resources

The recommendations for additional resources to add to the existing JBBS programs is directly tied to decisions about expansion of the program to other conditions such as mental health or expansion of the program more generally. When and if the State identifies additional funding or resources for the program, these are general recommendations. It should be noted that these recommendations align with a point in time evaluation and thus may need to be adapted depending on when resources are added as programs may identify different specific needs at that time. The training recommendations provided below could be done at a statewide level while the recommendations included in the expansion population may be county specific.

Training for Correctional Staff—Consider the development of a statewide standard training tool for correctional staff to learn about the JBBS program. The goal of the training would be to enhance correctional staff understanding and support of the program. This training could be a recorded webinar or materials provided to counties directly. The specific county providers and Sheriff department leads could tailor the trainings to the county. Ideally the training would be provided both the behavioral health provider and correctional staff leads for the JBBS program. Core elements could include:

- Rate of Behavioral Health Conditions in jail settings with specific data being added by the specific counties;
- Signs and symptoms of core mental health and substance use conditions to improve correctional staff identification of individuals in need of services.
- Overview of the JBBS program components (assessment, treatment and coordination with community providers) with specific county programming being added by the County contracted behavioral health providers.
    - Include when possible data on outcomes and impact of the program including improvements in critical incidents or safety issues within the jail (see final recommendations on critical incident tracking).
    - The role and importance of correctional staff in the program.

Community Resources—Consider innovative or creative methods for improving coordination of services for criminal justice population upon release. This could be implemented in numerous ways:

- Increase funding to JBBS programs for a position focused on community based case management (no jail based work) that becomes the primary point of transition. This position may include time for development of partnerships or other relationship development to

support JBBS clients in the community.
  - This could also include a peer specialist approach in counties that can offer that programming to focus specifically on engagement and support in community transitions.
- The OBH could partner with counties to consider pilot programming in partnership with Regional Accountable Entities to develop a cohesive wrap around recovery plan for individuals in JBBS. This may include greater regional planning for access to housing, employment and transportation to support JBBS client social determinant of health needs upon release.
  - This could include assessment and discussion at a regional level of the need for residential substance use treatment services and development of services at a regional level or in sharing resources across regions.

Summary of Key Findings

The JBBS program has numerous strengths and is clearly having an impact on individuals in jail across the State. Over the years of the program and despite variation in program implementation, there are consistent program findings that demonstrate stability and consistency of the program. Thousands of individuals have received screening for behavioral health conditions and more importantly the average JBBS enrollee receives 26 hours of services. The average duration of services received has been stable across the life of the program even as the average length of stay and number of services has decreased over time.

The complexity of the JBBS population has also remained consistent with frequent co-occurring mental health and substance use needs. However, the counties are unanimous that individuals with mental health without a substance use condition are a priority population for services within the jail. Other concerns are individuals with trauma and risk for overdose.

The outcomes for the program are harder to demonstrate at this point in time, but the preliminary findings suggest that the program is achieving a primary goal of connecting individuals to community based behavioral health services. At this point in the JBBS program, outcome data suggest inappropriate utilization of services (emergency and acute care services) is low, however firm understanding of who completes treatment in the community is unknown. The JBBS program is at a good place in its history to adapt the program to enhance measurement of client outcomes and impact to be able to more firmly demonstrate effectiveness. The program also appears to be impacting recidivism at the least by reducing crimes related to substance use and or reducing the risk for violent crime. Table 12 provides a high-level summary of findings across all research areas.

Table 12 High-Level Summary of Findings by Research Area

Research Area 1: Target Population	
Wide variation seen in protocols to screen inmates for behavioral health need and program eligibility.	Screening inmates varies significantly across counties in terms of who conducts the screening, who receives the screening, and whether additional screening is conducted beyond the required JBBS screens.
Universal screening is rarely conducted.	Only two counties screen every inmate who enters the jail. Barriers to universal screening include a lack of staffing, time

	capacity at booking, and concerns about appropriateness and quality of screening inmates at that point.
Average length of stay in jail drives criteria for referral.	Three quarters of providers said the length of stay in jail informs the criteria for program referral. Half said behavioral capacity and staffing also impacts referral numbers.
Most view JBBS screening protocol as accurate in identifying individuals with substance use disorder.	While most providers viewed the JBBS screening as very accurate or somewhat accurate at identifying individuals with SUD, some had concerns about the timing of the screening (at booking) and inmate rapport with clinicians impacting accuracy.
Research Area 2: Expansion of Population	
Mental health issues are significant need for jail population.	82% of jail staff and 49% of behavioral health providers said if the program could be expanded, a priority population would be those with mental health concerns. Sixty-five percent of inmates screened for mental health scored positive for symptoms. JBBS program data and community claims data support the prevalence of mental health need in the JBBS population with consistency in the top 10 diagnoses over the course of the program.
Service gaps would need to be addressed to serve those with mental health issues.	For behavioral health providers, key service gaps included psychiatric medication management and alternative housing options for inmates with serious mental illness. For jail staff the most significant gaps were behavioral modification and evaluation.
Targeted services are needed for inmates with short jail stays.	Both behavioral health providers and jail staff identified the need for services at release and post-release to facilitate a successful community transition. Currently most JBBS programs focus on those with longer jail stays to allow for treatment completion.
Research Area 3: Implementation	
Wait time between inmate referral and screening is increasing.	Across all counties, a trend analysis reveals a significant increase in the wait time between referral and screening, with an average wait of 4.8 days.
Counties differ substantially in contact with clients, types of services and duration of services.	Most contacts are in person, but some send clients more often to other service providers or have phone sessions. Not any one site offers the same set of services and/or all 37 types of services. Service duration ranges from less than one hour to 810 hours per JBBS enrollee with the state average being 26 hours of services for JBBS enrollees.
Average length of stay and number of services are down, but treatment dose is consistent over time.	The statewide average length of stay for JBBS has been decreasing, with a median of 62 days. Individual services per client has also dropped 42% from 2012-2017. However, inmates have consistently received around 26 hours of service in JBBS, including through group therapy.
All programs use evidence-based practices for treating SUD.	Across the programs, Cognitive Behavioral Therapies are implemented most often (88%), followed by Mindfulness (68%), and Psychoeducation (60%). Variation between

	counties in specific therapies used was often more about who delivered the therapy.
The type of JBBS contract impacts program variation.	Contracts that include one jail and one behavioral health provider offers higher rates of case management whereas contracts with one jail and multiple providers delivers more treatment and has the shortest average length of stay.
Research Area 4: Outcomes	
Most clients are discharged successfully.	Statewide, approximately 83% of clients are discharged successfully, meaning they achieved goals or completed treatment up until release.
JBBS enrollees have low inappropriate service utilization in the community.	The rate of inappropriate utilization of community services upon discharge (e.g. ER utilization) has decreased from 4% in 2012 to 2% in 2017.
Recidivism resulting in jail or prison that involves alcohol and other drugs has decreased among JBBS enrollees.	The contribution of crimes involving alcohol and other drugs to recidivism has decreased since 2012. Recidivism has dropped 24%, from 83% of drug and alcohol related crimes resulting in jail or prison to 63% of these crimes resulting in jail or prison. This analysis was performed on a relative small sample size so has limitations.
Research Area 5: Additional Resources	
Funding and training are needed to improve program effectiveness.	Correctional staff identified the need for additional funding for transition services, more staff, and more services/programs. Both jail staff and behavioral health providers cited the need for additional training and training resources for staff.
40% of organizations have a wait list for JBBS services	Waitlist size ranges from 2 – 60 individuals and time on a waitlist ranges from 1.5 – 8 weeks. Respondents cited the need for more staff, more space and more training/education resources to better serve the population.

A primary goal of the evaluation was to identify relevant differences in the variation of programs to inform standardization of program elements in the future. The development of typologies was a method to group programs based on shared program elements. Table 13 provides a summary of how the various program types performed and key questions within the evaluation. The findings suggest that there are meaningful differences among program types and that this method of grouping programs by program component be an effective way to begin to explore core program elements that lead to effectiveness.

Table 13 Summary of Typology and Program Variation on Key Evaluation Questions

	Statewide	**Jail Based**	**Eclectic**	**Psychiatric**	**Long**	**Coordinate**	**Residential**

		Coordination	Approach	Prescriber and Medication Management	Stay and Many Sessions	Medication Services and Brief Stay	Peer Focused
Average Dose (Minutes Per Day)	**29**	14	16	22	15	13	57
Length of Stay (Months)	**2.9**	3.1	3.2	3.2	2.6	1.9	2.1
% of Services that are Treatment Based	**61%**	48%	58%	67%	58%	37%	74%
% of Services that are Case Management	**27%**	36%	29%	20%	28%	49%	16%
% of Services with In-person Contact	**77%**	87%	86%	83%	71%	64%	57%
Average No. of total service sessions	**30.4**	26.6	25.8	51	27.6	26.2	35.4
Average Hours of Total Service Sessions	**26**	17	20	22	9	1	51
Reincarceration to Jail (n=3,912)	**27%**	33%	32%	36%	32%	0%*	17%
Reincarceration to Prison (n=3,912)	**14%**	15%	18%	16%	21%	25%*	9%
Inappropriate BH Care Utilization (n=8,535)	**40%**	42%	42%	45%	49%	36%	31%

Limitations of Evaluation

Many data points suggest that the JBBS program is a strong program having an impact on inmates with behavioral health conditions. However, there are limitations in the degree to which this initial evaluation could clearly demonstrate the effectiveness of the services. As an initial program evaluation there are numerous limitations to the findings and conclusions which is consistent with early evaluation efforts which are often best suited to provide descriptive data about the program as well as identify potential metrics that could improve more quantitative and robust results.

As the program has evolved, there is a growing understanding of key data to inform the value of the program. Although the JBBS program has evolved in data collection, there remain significant limitations in the JBBS data set that limit understanding of the program outcomes. One such limitation is tracking client factors which are currently limited to the Level of Service Inventory while many factors such as

symptom severity, level of engagement, and access to supports may be critical factors to outcome attainment. As discussed throughout the report, findings from this study provide an opportunity for enhancing outcome measures and metrics to inform program outcomes in the future.

The outcome analysis was also significantly limited by the inability to obtain Medicaid claims data. Based on survey data, a significant percentage (approximately 75%) of individuals in the JBBS program are enrolled in Medicaid at release from jail. The utilization data that was received is therefore potentially missing important information on how JBBS participants engage in services upon release. For example, the data analysis did not include emergency department or inpatient hospitalization data for Medicaid members. Because there is amble data about the use of emergency departments among individuals released from criminal justice settings,[53] this could be a significant limitation in identifying success of the JBBS program at changing utilization patterns. The central goal of the JBBS program is to ensure that individuals are connected to community providers. To demonstrate that impact, the analysis needs to include the whole population's utilization and likely include data that crosses behavioral health and physical health databases. In Colorado behavioral health claims data may under-report emergency department utilization as often these acute episodes are coded as a physical health cause with behavioral health as secondary.

Another important limitation was the ability to control for factors related to criminal justice recidivism. Recidivism is a difficult variable to study because so many factors impact the result including how recidivism is defined, the social variables surrounding the populations (e.g., law enforcement patterns, court mandates, and technical violations), the aging of the population being evaluated, and other broader societal considerations (employment market, financial environment, etc.).[54] This evaluation was unable to control for any of these factors and this limits the ability to determine the true impact of JBBS on recidivism.

Finally, this evaluation is limited by the design as a point in time evaluation incorporating data from only those who participated in elements of the study (survey and interview). Ideally, the evaluation would occur over multiple years exploring the same questions and examining trends and consistencies in the data—both quantitative and qualitative allowing for more interpretation of how changes in program implementation impact effectiveness. Based on resources this was not possible and in some ways, it provides an opportunity to learn from this point in time study to better inform a more robust and long-term evaluation of the program in the future. Findings on metrics and other variables within this study can inform that next long-term evaluation and provide avenues for capturing the data needed to draw robust findings.

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[53] Frank, J.W., Linder, J.A., Becker, W.C., Fiellin, D.A., & Wang, E.A. (2014). Increased hospital and emergency department utilization by individuals with recent criminal justice involvement: Results of a National Survey. *Journal General Internal Medicine, 29*(9), 12-26-1233.

[54] National Institute of Justice. Measuring Recidivism. Available at https://www.nij.gov/topics/corrections/recidivism/Pages/measuring.aspx

Recommendations

Program Components

Training for Behavioral Health Providers—In continuation of OBH efforts to enhance behavioral health training on working with criminal justice populations, ongoing training may be a central consideration for the future of the JBBS program. Specific training areas to consider include:

- **Criminogenic risk factors—**how to assesses and address criminogenic risk in criminal justice populations. Include best practice approaches that target specific risk factors that may be beyond behavioral health conditions. An important element of this training is teaching behavioral health providers how to use the Level of Service Inventory-Revised (LSI-R) as both an assessment tool and a potential treatment planning tool for addressing criminogenic risk within the program.
- **Evidence based practice—**tracking improvements in research on evidence based approaches to treatment within jail settings, provide updates and education on approaches that are demonstrating greater effectiveness. Specific adaptations for short-stay populations may also need training and enhanced education so that providers can tailor specific elements of treatment to specific populations. Similarly, the State may want to consider a methodology for checking fidelity of evidence based approaches that can support providers in ensuring they are delivering the specific program elements that result in quality outcomes.

Measurement Based Care—Nationally, there is a movement within behavioral health care to engage in measurement based care.[55,56] Measurement based care engages the use of validated screening tools as a form of measurement of treatment progress. The act of measurement of symptoms throughout treatment allows for quantitative identification of improvement and more importantly identification of individuals with lack of improvement. By identification of lack of improvement, providers can more quickly adapt care to ensure quality and outcomes. The process includes systematic administration of symptom rating scales, tracking of symptom scores often within a registry, regular review of the registry by the treatment team to identify individual patients who are not improving or have not yet met the "treat to target" goal, and then adjusting treatment for those individuals. The goal is to have data that informs clinical decision making at both the individual and population level allowing for more targeted intervention to ensure outcomes. Measurement based care provides data on client improvement in the short-term and the long-term and offers a more quantifiable outcome. For example, X number of JBBS clients have a 50% reduction in symptoms within six sessions. The other advantages of measurement based care is that the measurement provides clients education on their symptoms and is often a patient satisfaction tool building on treatment through the process. The JBBS program is already engaging in validated screening and tracking patient progress through the JBBS program data. Adding measurement of symptom improvement would quickly enhance this data as well as the quality of care delivered.

Psychiatric Medication—A consistent need identified by programs is access to psychiatric medication for treatment of mental health symptoms (particularly psychosis and mania). The role of psychiatric

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[55] Fortney, J.C., Unützer, J., Wrenn, G., Pyne, J.M., et al. (2017). A tipping point for measurement-based care. *Psychiatric Services, 68*(2), 179-188.
[56] Fortney, J., Sladek, R., & Unützer, J. (2015). Fixing Behavioral Health Care in America: A national call for measurement based care in the delivery of behavioral health services. *The Kennedy Forum.*

medications in correctional settings as long been a complex issue with concerns about misuse, abuse, and risk. However, there is growing understanding of the importance of consistent and ongoing maintenance of medications for the long-term recovery of individuals with mental health and substance use conditions. Additionally, there is a growing interest in how psychiatric medications may improve criminal justice outcomes and could be related to reductions in criminal behavior.[57] JBBS could be an avenue for exploring the importance of this component of care. The finding in this evaluation that the psychiatric medication typology had a greater impact on outcomes further supports continuing to explore the role of this variable on program outcomes. Specific recommendations include:

1. *Consider adding psychiatric medications as a standardized program element*. This may be challenging in some counties with contractual limitations with their correctional health vendor or in rural communities with poor access to psychiatric services. However, the JBBS program could work at these barriers to support counties in engaging services as part of the core funding of JBBS programming.
2. *Consider conducting a more formal pilot* on the impact of psychiatric medications on outcomes by testing counties with psychiatric medications as part of services against those without services. This would include more formal tracking of individuals and specific outcome metrics demonstrating impact.

Short-Term Stays and Pre-Sentence Populations—Throughout the evaluation, distinctions were made about population needs for those with a short term stay or presentence status and those who have been sentenced and are in jails for more considerable time periods. Many programs built in admission criteria around sentence to ensure that clients could be engaged in services for a reasonable treatment period. However, almost all counties acknowledged the need among the pre-sentence population and the risk for those individuals to return quickly to jail after release. Based on the importance placed on this population throughout the qualitative data, a recommendation is to consider developing an alternative JBBS approach for pre-sentence populations.

The JBBS program is well suited and designed for the sentenced population. However, some of those design elements are more difficult for pre-sentence populations. Rather than adapting the whole program, an alternative program could be designed to target pre-sentence populations. This sub-program within JBBS could be refined for pre-sentence populations in the following ways:

- Adapt intake procedures to gain basic information about the inmate while reducing enrollment time;
- Tailor services specifically for populations who may only receive 1-3 services while in JBBS. For example, psychoeducation open groups (facilitating the ability for inmates to come and go rapidly), case management groups on general information of resources in the community addressing social determinants of health, techniques for managing post release challenges, and general referrals to behavioral health treatment in the community; and
- Adapt the workforce in JBBS to these specific services. This could be a more peer led program or staffed solely by case managers with training in psychoeducation on behavioral health.

[57] Finkelhor, D. & Johnson, M. (2015). Has psychiatric medication reduced crime and delinquency? *Trauma, Violence, & Abuse, 18*(3), 339-347.

Residential Program Impact—This evaluation suggests that residential programming may be an important avenue for JBBS desired outcomes. The typology with residential programming had lower inappropriate utilization of services in the community and had lower recidivism rates. This may be an impact of dose (with the highest dose) or it may have something to do with the type of therapeutic community. There is evidence that this type of therapeutic community may be effective for reducing substance use in inmates.[58] In this evaluation, the finding may be a result of sample size or other factors, however it is worth further investigation and consideration in future evaluations.

JBBS Staff Turnover—From an observational perspective throughout the evaluation, it was apparent that the JBBS program as considerable turnover in behavioral health providers. Nationally, research over decades have indicated that behavioral health organizations have considerable turnover with rates as high as 25-50% and this has a significant impact on staff, client outcomes, and implementation of evidence based practice.[59] The JBBS program is serving a more complex population and working in jails adds a layer of specific skill. There are many reasons for turnover (salary, stress on the job, etc.) and the JBBS program has limited ability to impact these core concerns. At the same time, the turnover may be impacting the program in small or significant ways. As a result, the following recommendations are made:

- Consider developing a workgroup of JBBS program leadership to consider methods for reducing turnover among behavioral health providers;
- Consider tracking behavioral health provider turnover more clearly to help identify the degree of impact on the program and to have as a variable to explore impact on outcomes. This could also support the creation of a “caseload” metric that provides information on county program capacity and how capacity impacts other outcomes such as waitlists, engagement, treatment amount and treatment duration.

Data and Evaluation

Logic Model and Theory of Change—The JBBS program is at a point of stability with multiple years and counties deeply invested in the program and its impact. It is a good time and opportunity to develop a theory of change and a logic model. Providers and counties could participate in this process offering important impressions from JBBS program delivery on what matters most as well as what is possible. A logic model would also provide opportunity to more clearly identify the specific metrics that are needed to inform the short-term and the long-term outcomes. This evaluation can provide some valuable information on potential variables to be included as well as more clear metrics for examining the outcomes.

Motivation and Engagement Measure—Many of the programs described the individual’s readiness for change or engagement as central to effectiveness of the program. Although an individual may be identified as having need for services, the services need to be targeted towards those most ready for treatment. Recommend adding a readiness for change or engagement measure to the screening process to help identify a baseline score of engagement. This could help to identify those most ready for the treatment and support targeting of services especially as capacity within the programs becomes a growing challenge. Additionally, the engagement tool could be used again at the end to examine

[58] Sacks, S., Sacks, J.Y., McKendrick, K., Banks, S., & Stommel, J. (2004). Modified TC for MICA offenders: Crime outcomes. *Behavioral Sciences and the Law, 22*(4), 477-501.
[59] Woltmann, E.M., Whitley, R., McHugo, G.J., Brunette, M., Torrey, W.C. et al. (2008). The Role of Staff Turnover in the Implementation of Evidence-Based Practices in Mental Health Care. *Psychiatric Services, 59*(7).

changes in readiness or motivation for change. This could be an outcome of the program and demonstrate how the program is preparing individuals for outpatient/community based services.

Qualitative Analysis of Program Components—This evaluation highlights the variability of implementation of the JBBS program. A next step would be to conduct a qualitative assessment of program differences at a more granular level. For example, extensive interviews and potentially site visits to determine the core elements of the JBBS program statewide and the specific variation among counties. Tied to other recommendations on measurement based care and improve outcome tracking, this data could start to refine a list of elements for standardization and begin to demonstrate what components of care drive the impact of the program. For example, case management is a service that all programs provide but the specific case management functions and approaches vary significantly. Understanding what case management services are valuable for what specific JBBS sub-population can support tailoring of the program long-term.

Client Factors—At the center of the JBBS program is the individual receiving services while incarcerated. This evaluation was unable to account for individual differences beyond basic demographics and their level of risk score. However, many other client factors may impact the program. The acuity of behavioral health conditions, the individual's level of engagement in change, the individual's barriers to treatment and social detriments of health all impact the program. This evaluation could not account for client differences which may be important to consider. A JBBS program may be engaging in more of a particular service because of the unique population served and there may be specific services that are better aligned for specific client factors. As a result, it is recommended that future evaluations incorporate client factors and that additional factors be considered in the JBBS database.

JBBS Electronic Medical Record—The JBBS database is an incredible foundation for the program and has allowed capturing of JBBS data since the program began. However, long-term it may be more useful and effective for the program to shift from a database to an electronic medical record to capture more information about client factors, treatment specific components of care, and to support other functions such as reporting and shared treatment planning. Ideally, the software or tool would be inter-operable with other systems including behavioral health provider organizations electronic medical record creating a seamless transition to the community treatment planning as well as other data sources such as the Colorado Health Information Exchanges (HIE). Access to the HIE could be invaluable for sharing data on individuals with criminal justice involvement, supporting JBBS program review of other outcomes such as emergency department utilization and inpatient/acute care.