FBC COmmunity Collaborate Program for JUstice Involved and At-RiSk Youth with MI or CMISA (FOCUS Youth) Program

Fort Bend County (FBC), Texas, is one of the top ten fastest growing counties in the U.S. The FBC 2019-20 Community Plan identified juvenile delinquency and limited availability of adequate mental health and substance use treatment for youth as critical community problems. Given the lack of treatment services available for the mentally ill in FBC, mental health has become a law enforcement issue. Thus, there is a *critical need* to improve responses to and outcomes for youth with mental illness (MI) or co-occurring MI and substance abuse (CMISA) that come into contact with or are at risk for becoming involved in the justice system in FBC. *These changes are needed in order to continue to ensure the public safety of FBC.*

The *goal* of the proposed FOCUS Youth Program is to increase public safety within FBC by improving responses to and outcomes for justice involved and at-risk youth with MI or CMISA. The *objective* of this program is to develop and implement a cross-system collaborative approach, involving law enforcement, court, and behavioral health personnel, as well as consumers in FBC, to improve responses to and outcomes for justice involved and at-risk youth with MI or CMISA. The FOCUS Youth Program will realize the following three *deliverables*:

1. Provide systematic and appropriate training across FBC to law enforcement and court personnel on comprehensive behavioral health, crisis intervention, and trauma-informed strategies.
2. Improve processes for a) screening and assessment of youth in the community and the justice system and b) referral of youth with MI or CMISA to appropriate community behavioral health services and/or diversion programs.
3. Enhance targeted services for justice involved and at-risk youth with MI or CMISA provided by community behavioral health treatment providers and diversion programs.

In addition, the FOCUS Youth Program seeks to address the Office of Juvenile Justice and Delinquency Prevention (OJJDP) program-specific priority area of *promoting effective strategies by law enforcement to identify and reduce risk of harm for youth with MI or CMISA.*

DRAFT

FBC COmmunity Collaborate Program for JUstice Involved and At-RiSk Youth with MI or CMISA (FOCUS Youth) Program

Program Narrative

A. Goal, Objective, and Deliverables

Fort Bend County (FBC), Texas, is one of the top ten fastest growing counties in the U.S.[1] with over 811,000 inhabitants.[2] While being one of the most ethnically diverse counties in America, comprised of 36% Anglo, 24% Hispanic, 21% African American, and 20% Asian,[3, 4] serving the disparate needs of the FBC community is often challenging. Two critical community problems outlined in the FBC 2019-20 Community Plan include 1) juvenile delinquency and children in need of supervision (status offenses), especially at-risk youth exhibiting negative behaviors and 2) limited availability of programs that provide adequate behavioral health (mental health and substance use) treatment for youth.[5] In addition, FBC has been designated by the Health Resources and Services Administration (HRSA) as both a medically underserved community and a health professional shortage area for mental health care providers.[6, 7] Given the lack of treatment services available for the mentally ill in FBC, mental health has become a law enforcement issue.[8] In 2018, there were 1,660 referrals to the FBC Juvenile Probation Department (1,235 misdemeanor and status offenses and 425 felony offenses).[5] In that same year, FBC's Juvenile Probation Division Psychology Services provided 7,020 mental health referrals for youth (age 11-17) and families that came into contact with the justice system, 2,325 individual and family counseling sessions in the FBC Juvenile Detention Center, and 1,312 individual and family counseling sessions as a condition of the youth's probation.[5] Thus, there is a *critical need* to improve responses to and outcomes for youth with mental illness (MI) or co-occurring MI and substance abuse (CMISA) that come into contact with or are at risk for

becoming involved with the justice system in FBC. *In the absence of such changes, increasing public safety within FBC will likely remain difficult.*

The *goal* of the proposed **F**BC C**O**mmunity **C**ollaborate Program for J**U**stice Involved and At-Ri**S**k **Youth** with MI or CMISA (FOCUS Youth) Program is to increase public safety within FBC by improving responses to and outcomes for justice involved and at-risk youth with MI or CMISA. The *objective* of the proposed FOCUS Youth Program is to develop and implement a cross-system collaborative approach, involving law enforcement, court, and behavioral health (mental health and substance use treatment) personnel, as well as consumers in FBC, to improve responses to and outcomes for justice involved and at-risk youth with MI or CMISA. This cross-system collaborative approach will be used to accomplish the work required to realize the following three *deliverables*:

1. Provide systematic and appropriate training across FBC to law enforcement and court personnel on comprehensive behavioral health, crisis intervention, and trauma-informed strategies.
2. Improve processes for a) screening and assessment of youth in the community and the justice system and b) referral of youth with MI or CMISA to appropriate community behavioral health services and/or diversion programs.
3. Enhance targeted services for justice involved and at-risk youth with MI or CMISA provided by community behavioral health treatment providers and diversion programs.

It is important to note that the proposed FOCUS Youth Program seeks to address the Office of Juvenile Justice and Delinquency Prevention (OJJDP) program-specific priority area of *promoting effective strategies by law enforcement to identify and reduce risk of harm for youth with MI or CMISA*. This priority will be addressed through specific activities required to achieve

deliverables 1 and 2 in which FBC law enforcement receives 1) training that will improve their ability to appropriately respond to youth with MI or CMISA and 2) a new tool (mobile app) developed to support them in a) conducting brief screenings of youth for MI or CMISA and b) referring youth in need to appropriate community behavioral health services and/or diversion programs. Both an improved capability to respond and the use of a new quick screening-referral mobile app will enhance law enforcement's ability to identify and reduce the risk of harm for youth with MI or CMISA in FBC.

B. **Description of the Issue**

No existing structure for cross-system collaboration with respect to responding to and addressing the needs of justice involved and at-risk youth with MI or CMISA. FBC has a wide range of successful community-based programs targeting physical health, behavioral health, and substance use among youth. The FBC Juvenile Detention Center incorporates mental health screening and assessment, and some law enforcement agencies have been trained in crisis intervention strategies. Currently, however, ***FBC lacks coordinated protocols to provide effective responses for those struggling with MI or CMISA***.[5] While there are frequent interactions between law enforcement, court, and behavioral health personnel in FBC, these groups often work in silos, and consumers and their families have little influence or involvement. Therefore, **developing and implementing the FOCUS Youth Program utilizing a cross-system collaborative approach that coordinates care between agencies in FBC is necessary to improve responses to and outcome for justice involved and at-risk youth with MI or CMISA.**

Lack of systematic and appropriate training to meet the needs of justice involved and at-risk youth with MI or CMISA. The onset of mental illness symptomology frequently occurs

during childhood or adolescence, and when left untreated, these symptoms are likely to develop into psychological disorders with long-lasting effects.[9-11] When symptoms of mental illnesses manifest as behavioral issues, they can lead to continued interactions with justice systems.[12-14] Between 65% and 75% of justice involved youth have discernable emotional and/or behavioral difficulties,[15-18] putting them at risk of ongoing functional impairment and continued justice system involvement.[12, 19-22] In addition, a large percentage of high school students report frequent use of alcohol and/or other substances, and these substance abusing behaviors are often disguised as mental health issues (e.g., depression).[8] Research has also shown that 75-90% of justice involved youth have experienced at least one traumatic event, and the interaction of MI or CMISA with past trauma can heighten behavioral reactions;[23-26] hence, youth who have experienced prior or ongoing trauma are consistently overrepresented within justice systems.[16, 20, 27] The behavioral health needs of these youth, however, often remain unidentified until they come into contact with the justice system.[17, 22, 24, 28]

Research has shown that training in the use of Crisis Intervention Teams (CITs) are associated with improved attitudes towards and awareness of MI, increased confidence in identification of MI, and improved access to mental health care.[29, 30] The FBC Sheriff's Office currently has a CIT and nearly all of their officers have been trained in crisis intervention techniques through the Memphis Model, which is a nationally recognized program to improve officer and consumer safety and redirect individuals with mental illness to appropriate community health services.[31] Beyond the Sheriff's Office, FBC has a Juvenile Detention Center, a Juvenile Probation Department, four precinct Constables' offices, 10 municipal police departments, Department of Public Safety investigators and troopers, and court personnel, of which a very limited number have previously received crisis intervention training. In addition, no

law enforcement groups or court personnel within FBC have previously receive trauma-informed training. Therefore, ***currently FBC law enforcement and court personnel are inconsistently and inadequately prepared to assist youth in crisis and/or who have experienced trauma***; so, **providing systematic and appropriate training across FBC to law enforcement and court personnel on comprehensive behavioral health, crisis intervention, and trauma-informed strategies supports improving responses to youth with MI or CMISA** (and this addresses the selected OJJDP program-specific priority area).

Gaps in screening, assessment, and referral processes for justice involved and at-risk youth with MI or CMISA. The most extensive screening and assessment processes currently used in FBC to identify youth with MI or CMISA occur only after youth come into contact with the justice system. Yet, prior studies have indicated that redirecting youth into diversion programs is the most effective method for reducing rates of recidivism and promoting positive life outcomes.[32] In addition, diversion programs cost significantly less than imprisonment, with some programs yielding up to $13 in benefits to public safety for every dollar spent.[33] Currently, however, only a small number (approximately 20) of justice involved and at-risk youth with MI or CMISA in FBC are referred annually to the county's youth diversion program, Successful Outcomes Utilizing Resiliency for Child Empowerment (SOURCE). This program, which is operated by FBC Behavioral Health Services (BHS), offers clinical services and case management for youth and their families to address social determinants of health and mental health needs. While originally designed to receive referrals from any organization across FBC, ***the diversion program's current referrals come mainly from FBC courts and the Juvenile Probation Department***. Hence, **developing and implementing a new quick screening-referral tool (mobile app) for use by non-clinical entities in the community (prior to formal contact**

with the justice system), e.g., law enforcement and school authorities, will increase broad exposure of at-risk youth with MI or CMISA to screening and referrals to appropriate community behavioral health services and/or to diversion programs in FBC (and this addresses the selected OJJDP program-specific priority area).

While justice involved youth with MI or CMISA tend to have high rates of trauma, this is often overlooked by screening and assessment processes used in juvenile detention centers. Failure to identify the impact of trauma has been shown to lead to poor treatment outcomes.[34-36] In addition, those with MI or CMISA account for a majority of completed and attempted suicides,[37-40] which is a major concern within justice systems where suicide rates are higher than the general population.[41] As required by the State of Texas, all youth with justice system contact in FBC are screened using ***the Massachusetts Youth Screening Inventory-Version 2 (MAYSI-2)***.[42] Despite the MAYSI-2's reliability and validity for identifying particular mental health problems, such as alcohol/drug use, anger-irritability, depression-anxiety, somatic complaints, and suicide ideation, it ***frequently fails to adequately capture experiences of trauma*** and psychosis, particularly in female and ethnic minority youth.[24, 43, 44] While other screening and assessment instruments are currently used in addition to the MAYSI-2, **implementing more comprehensive and targeted screening and assessment tools, included those for trauma, suicide, etc., in FBC's Juvenile Detention Center is necessary to ensure youth with MI or CMISA are identified and referred to appropriate behavioral health services and/or diversion programs within the community**.

Lack of targeted behavioral health services for justice involved and at-risk youth with MI or CMISA. Enhanced targeted services for justice involved and at-risk youth with MI or

CMISA provided by community behavioral health treatment providers and diversion programs are needed in FBC.

C. Project Design and Implementation

The development and deployment of the FOCUS Youth Program will be accomplished through two distinct phases – planning and implementation.

C.1. Planning phase

This phase will focus on the planning activities needed to develop a cross-system collaborative approach in FBC to improve responses to and outcomes for justice involved and at-risk youth with MI or CMISA. The work performed in this phase will be overseen by the **F**BC Justice Involved and **A**t-Risk Youth **C**ollabora**T**ive for **Behavioral Health** (FACT Behavioral Health) committee, which will be composed of key leadership representatives with decision-making authority from law enforcement, court, and behavioral health agencies across FBC, as well as consumers (youth) with MI or CMISA and their families who have had prior involvement with the FBC juvenile justice system. The planning phase will span three stages, and the FACT Behavioral Health committee will identify appropriate front-line staff to serve on subcommittees to perform the work in these stages.

To increase the likelihood of successfully implementing the work planned across these three stages in the subsequent phase of this project, the planning phase will include having the subcommittee for each stage perform additional activities as outlined in the Quality Implementation Framework (QIF).[45] This approach provides a blueprint of action-oriented implementation activities for use in behavioral health care settings that consists of critical steps organized within a series of four phases. However, the steps in the first two phases of the QIF – 1) Initial Considerations Regarding the Host Setting and 2) Creating a Structure for

Implementation – should be addressed before implementation begins; hence, subcommittees working on each stage of the planning phase will 1) assess the needs, resources, fit, and capacity/readiness for each department/group within FBC affected by the actions to be implemented, 2) determine whether adaptations to actions planned for implementation are needed in order to support successful implementation, 3) obtain explicit buy-in for the actions to be implemented (with adaptations, if needed) from critical stakeholders (e.g., leaders, decision-makers, other front-line staff) by a) ensuring leaders perceive the actions to be implemented as valuable and will engage in the implementation process and b) identifying champions to advocate for and developing incentives to encourage adherence to changes resulting from the actions implemented, 4) build capacity (time and knowledge/skill) for implementation activities for staff in each department/group affected by the actions to be implemented, including providing training, as needed, to support staff in performing changes, resulting from the actions implemented, as intended, 5) identify (with input from leadership) a team of qualified staff to oversee all implementation activities, and 6) develop a detailed plan for all activities required to implement the needed changes.

Stage 1: Develop a countywide training plan for law enforcement and court personnel in FBC on comprehensive behavioral health, crisis intervention, and trauma-informed strategies. The subcommittee working on this stage will select the specific trainings to be implemented (appropriate, potential trainings are outlined in Table 1). This subcommittee will also determine how each training will be administered. Potential options include 1) hiring external consultants to conduct training sessions across agencies within FBC or 2) identifying select front-line staff from agencies withing FBC to become certified instructors who will then provide training locally for others. While the latter option may be more attractive from a cost and sustainability

standpoint, it will involve developing a plan for both train-the-trainer and subsequent internal training sessions for law enforcement and court personnel across FBC (and this addresses the selected OJJDP program-specific priority area). Once the mechanism for administering each training has been identified, the subcommittee will follow the steps in the first two phases of the QIF[45] to guide their remining planning activities in this stage.

Table 1. Potential trainings to implement across FBC

Cat.	Training	Description (duration)
BH	Youth Mental Health First Aid (YMHFA)[46]	Teaches adults a 5-step action plan on how to help youth experiencing a mental health or addiction challenge or in crisis (1-day)
CI	Crisis Intervention Teams (CIT)[31]	Provides law enforcement-based crisis intervention training for assisting individuals with a mental illness and improves the safety of patrol officers, consumers, family members, and citizens within the community (40 hours)
	Crisis Intervention Teams-Youth (CIT-Y)[47]	Supplemental training for police officers to understand, identify, and react to mental health issues in light of adolescent development and connect youth to effective and developmentally appropriate community services (1-day)
	Adolescent Mental Health Training for School Resource Officers (AMHT-SRO)[48]	CIT-Y for SROs on how to best respond to youth displaying mental and behavioral health symptoms (2-days)
TI	Trauma-Informed Response Training[49]	Teaches justice system professionals how to increase their understanding and awareness of trauma impact and develop trauma-informed responses, along with strategies to develop/implement trauma-informed policies (1-day)

Cat. – Category; BH – Behavioral health; CI – Crisis intervention; TI – Trauma-informed

Stage 2: Develop a plan to improve processes for a) screening and assessment of youth in the community and the justice system **and b) referral** of youth with MI or CMISA to appropriate community behavioral health services and/or diversion programs.

Planning to improve screening and referral of youth in the community. To improve the identification of youth with MI or CMISA and support their referral to community behavioral health treatment providers, the subcommittee working on this sub-stage will design a new tool, called the **Quick** Community **M**ental he**A**l**T**h s**C**reening c**H**ecklist Referral Mobile **App**lication

(Quick MATCH App), that utilizes technology aligned with youth culture. Subcommittee members will identify approximately 8-10 questions that non-clinical entities in the community (prior to formal contact with the justice system), e.g., law enforcement and school authorities, can use to screen youth for MI and CMISA (and this addresses the selected OJJDP program-specific priority area). In addition, so that youth can be quickly referred to appropriate, evidence-based services within the community, the subcommittee will select which community behavioral health treatment providers' and diversion programs' information to also include as part of the Quick MATCH App. Providers/programs in FBC likely to be included are AccessHealth (a Federally Qualified Health Center, FQHC), Fort Bend Regional Council on Substance Abuse, Inc. (FBRC), Texana Center (the Local Mental Health Authority, LMHA), and SOURCE. Once the Quick MATCH App is designed, the subcommittee will follow the steps in the first two phases of the QIF[45] to guide their remining planning activities in this sub-stage. Finally, given the diversity of FBC's population, the Quick MATCH App will be made available in English, Spanish, Vietnamese, and Chinese.

Planning to improve screening, assessment, and referral of youth in the justice system. This stage of the planning phase will be performed by a subcommittee of key front-line staff from FBC Juvenile Detention and their Center Psychological Services, community behavioral health treatment providers, and diversion programs in FBC. This subcommittee's initial step will involve mapping the step-by-step nature of the screening, assessment, and referral processes used in FBC's juvenile detention center. Then, the processes will be analyzed in terms of their rigor with respect to identifying and referring justice involved youth with MI or CMISA to appropriate community behavioral health services and/or diversion programs. Where critical gaps exist in current processes, subcommittee members will identify ways to enhance the rigor of current

processes, e.g., new/revised screening and/or assessment tools, improved referral pathways, etc. (appropriate, potential screening and assessment tools are outlined in Table 2, all of which have been recommended and validated by SAMHSA[50]). Once the improvements to the screening, assessment, and referral processes are determined, the subcommittee will follow the steps in the first two phases of the QIF[45] to guide their remining planning activities in this sub-stage.

Table 2. Potential screening and assessment tools to implement in the FBC

Construct	Measure	Items	Duration	Admin. By
Trauma-informed screening	The Life Events Checklist for DSM-5 (LEC-5)[51]	17	5 min.	Self-report
	Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5)[52]*	20	10 min.	
Suicide screening	Beck Scale for Suicide Ideation (BSS)[53]*	21	5-10 min.	Self-report
Trauma-informed assessment	Posttraumatic Symptom Scale-Interview Version (PSS-I)[54]	17	15-25 min.	Semi-structured interview
Suicide assessment	Suicide Risk Decision Tree (SRDT)[55-57]	N/A	20 min.	Interview

*SAMHSA recommends for use with justice system populations – PCL-5[58-62] and BSS[63-68]

Stage 3. Develop a plan to enhance targeted services provided by established community behavioral health treatment providers and diversion programs in order to improve outcomes for justice involved and at-risk youth with MI or CMISA. The subcommittee working on this stage will perform a strategic review of current resources and identify gaps through a comparison of needs and priorities within the community using asset mapping.[69] This approach will visually depict the existing resources within the FBC agencies involved in behavioral health treatment (AccessHealth, FBRC, and Texana Center) and diversion (SOURCE). Subcommittee members will then analyze data regarding justice involved and at-risk youth with MI or CMISA in FBC to assess their needs and identify gaps in resources versus needs. Using information from the asset mapping and needs assessment activities, what is required to provide an effective and comprehensive continuum of evidence-based preventive and clinical interventions within the

community will be determined (potential interventions are outlined in Table 3). Once the intervention that will be implemented is selected, training for the requisite staff will be identified. Then, the subcommittee will follow the steps in the first two phases of the QIF[45] to guide their remining planning activities in this stage.

Table 3. Potential evidence-based interventions to implement in FBC		
Intervention	**Description**	**Benefit**
Cognitive Behavioral Therapy (CBT)	Addresses interpersonal, problem solving, anger management, and social skills within individual or group therapy settings	Reduces recidivism[70]
Trauma-focused CBT (TF-CBT)[71]	Includes psychoeducation, relaxation, emotional identification, and coping skills	Reduces trauma symptomology among adjudicated youth[72]
Functional Family Therapy (FFT)[73]	Brief, family-centered intervention consisting of engagement, motivation, relational assessment, behavior change, and generalization	Reduces recidivism[74]
Multisystemic Therapy (MST)	A multi-modal, family-based intervention that addresses causal and correlating factors of delinquency and substance use	Reduces recidivism, MI and CMISA concerns, as well as delinquent behaviors[75]

C.2. Implementation phase

The implementation teams identified in each stage of the planning phase will execute the plans developed for implementing each of corresponding three stages in this phase. This work will be guided by the two remaining (out of four) phases of the QIF[45] – 3) Ongoing Structure Once Implementation Begins and 4) Improving Future Applications; hence, implementation team members will 1) provide on-going technical assistance to front-line staff, as needed, 2) collect data to track and evaluate implementation progress, 3) identify gaps in actual implementation progress versus established targets, 4) provide feedback to staff regarding implementation progress, 5) obtain input from key front-line staff regarding causes of gaps in progress and develop solutions to address these issues, and 6) document strengths and weakness observed during implementation in order to learn from the experience.

Stage 1: Execute selected trainings on behavioral health, crisis intervention, and trauma-informed strategies for law enforcement and court personnel across FBC.

Stage 2: Implement process improvements for a) screening and assessment of youth in the community and the justice system **and b) referral** of youth with MI or CMISA to appropriate community behavioral health services and/or diversion programs.

In the community. Build and deploy the Quick MATCH App.

In the justice system. Implement new/revised screening and/or assessment tools and/or improved referral pathways within the FBC Juvenile Detention Center.

Stage 3: Implement the selected evidence-based intervention within community behavioral health treatment providers (AccessHealth, FBRC, and Texana) and/or diversion programs (SOURCE) in order to improve outcomes for justice-involved and at-risk youth with MI or CMISA.

C.3. Sustainment beyond grant period

The FOCUS Youth Program contains several aspects that will support its sustainment beyond the grant period. The training provided to 1) law enforcement and court personnel across FBC on selected behavioral health, crisis intervention, and trauma-informed strategies and 2) behavioral health treatment providers on the selected evidence-based intervention will provide sustained benefit in terms of enhanced responses to and outcome for justice involved and at-risk youth. For example, for trainings in which the train-the-trainer approach is selected, training will become self-sustaining across FCB through the group of certified instructors that will be able to provide training across the county at little to no additional cost. In addition, once created and implemented, the Quick MATCH App will serve as a long-term resource for non-clinical

entities, e.g., law enforcement and school authorities, to screen youth for MI and CMISA and quickly refer them to appropriate, evidence-based behavioral health services within FBC.

D. Capabilities and Competencies

For the past X years, FBC BHS has worked with the courts, criminal justice, and other county departments to develop needed services to support justice involved and at-risk youth with behavioral health disorders. The programs they operate, including SOURCE, Recovery and Reintegration, and Infant Toddler Court, target reducing recidivism, supporting reintegration, recovery, and family reunification. In addition to working directly with the courts, BHS coordinates with behavioral health treatment providers across FBC to serve justice involved and at-risk youth. BHS has previously managed several funding awards from state and federal agencies. For example, they are currently working on the "Fort Bend County Justice and Mental Health Collaboration: Stepping Up" project funded by the Bureau of Justice Assistance (BJA-2019-15100, Category 1). For projects like this with subawards, the subawards are administered through the FBC financial office.

The evaluation team will focus on both process evaluation and outcome evaluation. Each of these components are described in detail in the following section. Through a partnership with the University of Houston, the evaluation team will include two faculty and a doctoral student who have an established relationship based on previous collaborations with FCB and extensive evaluation expertise. As the outcomes and process evaluator, Dr. Gearing's expertise focuses extensively on mental health treatment engagement and adherence strategies for individuals with serious mental illnesses. Dr. Gearing has extensive experience researching and evaluating patterns of service delivery, service utilization, and barriers and enhancing promoters to mental health treatment and services with the focus to engage and maintain clients in treatment and

improve outcomes and recovery (Gearing et al., 2014; Gearing et al., 2013; Gearing et al., 2012; Gearing et al., 2015; Schwalbe et al, 2013). Dr. Gearing will provide his expertise to plan, implement, and monitor the evaluation processes on improving outcomes for youth with MI or CMISA. Dr. Gearing will coordinate with the evaluation team and FBC. As the process performance evaluator, Dr. Kovach will utilize her expertise in the application of engineering methods to design and improve operational processes within behavioral healthcare to advise the planning team on conducting a process analysis and service inventory and developing process improvements and new service provision strategies. In addition, based on iterative comparisons of actual versus expected performance data collected throughout the implementation phase, Dr. Kovach will directly oversee the continuous improvement of processes and service provision strategies (Kovach et al., 2017; Kovach et al., 2018a; Kovach et al., 2018b; Mitchell et al., 2016).

E. Plan for Collecting Required Performance Measure Data

To strengthen the FOCUS Youth Program as it builds across the three year grant period and to ensure treatment fidelity, a rigorous process and outcome evaluation will be conducted with established partners from the University of Houston (evaluation team) who have extensive research and practice experience in behavioral health and continuous improvement.

Stage 1: Evaluate the countywide training for law enforcement and court personnel in FBC on comprehensive behavioral health, crisis intervention, and trauma-informed strategies. Evaluations will be provided pre and post for all trainings to assess changes in attendee's knowledge, attitudes, and skills. The implementation team will collect data on the number of regions within FBC reached through the trainings, the agencies (e.g., law enforcement, court, etc.) that participate in the trainings, and the number of people that are trained. This data will provide a clearer assessment of the coverage of training across FBC, which will in turn affect the

number of justice involved and at-risk youth with MI and CMISA that are positively impacted as a result of the trainings implemented.

Stage 2: Evaluate the process improvements implemented for a) screening and assessment of youth in the community and the justice system **and b) referral** of youth with MI or CMISA to appropriate community behavioral health services and/or diversion programs.

Evaluating the improvements implemented for screening and referral of youth in the community. The implementation team will collect data on the number of times the Quick MATCH App is used and how many referrals to community behavioral health services and/or diversion programs result from its use. This data will provide a rational assessment of the number of at-risk youth that benefit from screening prior to formal contact with the justice system and those with MI and CMISA that seek treatment as a result of using the Quick MATCH App.

Evaluating the improvements implemented for screening, assessment, and referral of youth in the justice system. The implementation team, with assistance from the evaluation team's doctoral student, will collect data on and process performance measures (see Table 4) to guide ongoing monitoring and improvement of the changes implemented with respect to screening, assessment, and referral of youth with MI or CMISA in the FBC Juvenile Detention Center. These evaluation activities will utilize Lean methods. For the past five decades, Lean methods have been used by organizations across the globe to drive superior performance in both production and service operations.[76-110] Based on the Toyota Production System,[111-115] Lean encompasses methods for improving process efficiency by reducing waste (i.e., work that does not add value to a product or service).[116-122] More recently, Lean methods have been used in behavioral health care settings to streamline the flow of care services such that consumers move

seamlessly through intake and treatment processes, for example, without unnecessary delays.[123-129]

Using Lean methods, bi-weekly, Dr. Kovach, with assistance from the doctoral student, will analyze the data collected regarding process performance measures to identify gaps in actual program performance versus established targets (see Table 4). Then, input from key program stakeholders, i.e., front-line staff from the FBC Juvenile Detention Center and its Psychological Services group, community behavioral health treatment providers (AccessHealth, FBRC, and Texana Center), and diversion programs (SOURCE), will be obtained to identify the causes of gaps in performance and develop solutions to address these issues. Finally, the Process Evaluator and doctoral student will work with program stakeholders to implement changes to the screening, assessment, and/or referral of youth with MI or CMISA in the FBC Juvenile Detention Center to eliminate performance gaps. In years 2 and 3 of the grant period, analyses to identify gaps in program performance will be conducted monthly.

Table 4. Ongoing process performance measures and targets

Measure ***(percentage of)***	**Target** [17, 130, 131]
Youth administered new trauma-informed screening	100% of youth held in detention
Youth administered new suicide screening	
Youth administered new trauma-informed assessment	100% of youth scoring above the clinical cut-off on screenings
Youth administered new suicide assessment	
Referrals to appropriate mental health treatment services	100% of youth scoring above the clinical cut-off on assessments
Referrals to appropriate substance use treatment services	
Intake mental health appointments attended	100% of youth referred
Intake substance use appointments attended	

Measure ***(average time from first justice system contact to)***	**Target**
Administration of new trauma-informed screening	0 days
Administration of new suicide screening	
Administration of new trauma-informed assessment	3 days
Administration of new suicide assessment	
Referral to appropriate mental health treatment services	7 days
Referral to appropriate substance use treatment services	
First contact with mental health treatment services (intake appointment)	21 days
First contact with substance abuse treatment services (intake appointment)	

Stage 3. Evaluate the enhanced targeted services provided by established community behavioral health treatment providers and diversion programs in order to improve outcomes for justice involved and at-risk youth with MI or CMISA. The evaluation team will collect data regarding the use of the evidence-based intervention implemented. Dr. Gearing, with assistance from the doctoral student, will evaluate treatment fidelity of the use of this evidence-based intervention.

Evaluation of the Effectiveness of the FOCUS Youth Program will employ standardized measures to collect data. Table X specifies the constructs, informants, measures, psychometric properties, and sample items that will be used to conduct pre-post comparisons of key behavioral health outcomes. To further assess the effectiveness of the FOCUS Youth Program, Table Y contains the list of measures that will be used to evaluate between group differences on key research questions.

Table Z. Ongoing process measures

Construct	Measure (number of items; alpha value)	Sample Item
Satisfaction and burden	FOCUS Youth Program Satisfaction Questionnaire (10 items)	"Rate your satisfaction with the text messages you received"
Fidelity	FOCUS Youth Program Feedback Sheet (6 items)	"How many text messages did you send/ receive?"
	FOCUS Youth Program Fidelity Checklist (8 items)	"The FOCUS Youth Program was delivered as planned."
Adherence outcomes	Treatment and Medication Compliance Data Sheet (TMCDS) (6 items; $\alpha = 0.85$) [132]	"Takes all medicine as prescribed"
Mental health service utilization audits	Appointment attendance, hospitalizations, and other programmatic outcomes (e.g., school, employment involvement, etc.)	Frequencies tracked by doctoral student

Bibliographical References

1. U.S.-Census-Bureau. *The 25 fastest growing counties in the United States in 2018, by change in population from 2010 to 2018*. 2018; Available from: https://www.statista.com/statistics/241711/fastest-growing-counties-in-the-us/.
2. U.S.-Census-Bureau. *Quick Facts: Fort Bend County, Texas*. 2019 [cited 2020 April 20]; Available from: https://www.census.gov/quickfacts/fact/table/fortbendcountytexas/PST045216#qf-headnote-a.
3. Herrera, S. *How Fort Bend County Became a Model for Diversity*. 2016 [cited 2018 March 8]; Available from: https://www.chron.com/neighborhood/fortbend/news/article/How-Fort-Bend-County-became-a-model-for-diversity-7232090.php.
4. Klineberg, S., L., *The 2018 Kinder Houston Area Survey: Tracking responses to income inequalitieis, demographic transformations, and threatening storms*. 2018, Kinder Institute for Urban Research, Rice University: Houston, TX.
5. FBC, *Fort Bend County Public Safety Community Plan 2019-2020*. 2019: Fort Bend County, Texas.
6. U.S.-Department-of-Health-and-Human-Services. *Health Resources & Service Administration (HRSA) Data Warehouse MAU Find: Fort Bend County TX*. 2020 [cited 2020 April 20]; Available from: https://datawarehouse.hrsa.gov/tools/analyzers/MuaFind.aspx.
7. U.S.-Department-of-Health-and-Human-Services. *Health Resources & Service Administration (HRSA) Data Warehouse HPSA Find: Fort Bend County TX*. 2020 [cited 2020 April 20]; Available from: https://datawarehouse.hrsa.gov/tools/analyzers/HpsaFind.aspx.
8. Frumkin, P. and A. Schwartz, *A report on the demographic changes and changing needs of Fort Bend County*. 2011, RGK Center for Philanthropy and Community Service, Lyndon B. Johnson School of Public Affairs, The University of Texas at Austin.
9. Kessler, R.C., et al., *Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication.* Archives of General Psychiatry, 2005. **62**(6): p. 593-602.
10. Merikangas, K.R., et al., *Lifetime prevalence of mental disorders in US adolescents: results from the National Comorbidity Survey Replication–Adolescent Supplement (NCS-A).* Journal of the American Academy of Child & Adolescent Psychiatry, 2010. **49**(10): p. 980-989.
11. Smith, J.P. and G.C. Smith, *Long-term economic costs of psychological problems during childhood.* Social Science & Medicine, 2010. **71**(1): p. 110-115.
12. Colwell, B., S.F. Villarreal, and E.M. Espinosa, *Preliminary outcomes of a pre-adjudication diversion initiative for juvenile justice involved youth with mental health needs in Texas.* Criminal Justice and Behavior, 2012. **39**(4): p. 447-460.
13. HCJPD, *2017 annual report - We make a difference*. 2017, Harris County Juvenile Probation Department Houston, TX.
14. TMMHPI, *Harris County Mental Health Services for children, youth and families: 2017 system assessment*. 2017, The Meadows Mental Health Policy Institute: Houston, TX.

15. Abram, K.M., et al., *Comorbid psychiatric disorders in youth in juvenile detention.* Archives of General Psychiatry, 2003. **60**(11): p. 1097-1108.
16. Dierkhising, C.B., et al., *Trauma histories among justice-involved youth: Findings from the National Child Traumatic Stress Network.* European Journal of Psychotraumatology, 2013. **4**(1): p. 20274.
17. Shufelt, J.L. and J.J. Cocozza, *Youth with mental health disorders in the juvenile justice system: Results from a multi-state prevalence study*. 2006, National Center for Mental Health and Juvenile Justice: Delmar, NY.
18. Wasserman, G.A., et al., *Psychiatric disorder, comorbidity, and suicidal behavior in juvenile justice youth.* Criminal Justice and Behavior, 2010. **37**(12): p. 1361-1376.
19. Espinosa, E.M., J.R. Sorensen, and M.A. Lopez, *Youth pathways to placement: The influence of gender, mental health need and trauma on confinement in the juvenile justice system.* Journal of Youth and Adolescence, 2013. **42**(12): p. 1824-1836.
20. Leve, L.D., P. Chamberlain, and H.K. Kim, *Risks, outcomes, and evidence-based interventions for girls in the US juvenile justice system.* Clinical Child and Family Psychology Review, 2015. **18**(3): p. 252-279.
21. Wu, N.S., et al., *Childhood trauma and health outcomes in adults with comorbid substance abuse and mental health disorders.* Addictive Behaviors, 2010. **35**(1): p. 68-71.
22. Yampolskaya, S. and E. Chuang, *Effects of mental health disorders on the risk of juvenile justice system involvement and recidivism among children placed in out-of-home care.* American Journal of Orthopsychiatry, 2012. **82**(4): p. 585.
23. Dierkhising, C.B., et al., *Trauma histories among justice-involved youth: Findings from the National Child Traumatic Stress Network.* European Journal of Psychotraumatology, 2013. **4**(1): p. 1-12.
24. Ford, J.D., et al., *Complex trauma and aggression in secure juvenile justice settings.* Criminal Justice and Behavior, 2012. **39**(6): p. 694-724.
25. NCMHJJ, *Strengthening our future: Key elements to developing a trauma-informed juvenile justice diversion program for youth with behavioral health conditions*. 2016, Technical Assistance Collaborative, National Center for Mental Health and Juvenile Justice.
26. Sprague, C., *Judges and child trauma: Findings from the national child traumatic stress network/national council of juvenile and family court focus groups*, in *NCTSN Service Systems Brief*. 2008, National Center for Child Traumatic Stress: Los Angeles, CA. p. 1-4.
27. Chapman, J.F. and J.D. Ford, *Relationships between suicide risk, traumatic experiences, and substance use among juvenile detainees.* Archives of Suicide Research, 2008. **12**(1): p. 50-61.
28. Schubert, C.A., E.P. Mulvey, and C. Glasheen, *Influence of mental health and substance use problems and criminogenic risk on outcomes in serious juvenile offenders.* Journal of the American Academy of Child & Adolescent Psychiatry, 2011. **50**(9): p. 925-937.
29. Teller, J.L.S., et al., *Crisis intervention team training for police officers responding to mental disturbance calls.* Psychiatric Services, 2006. **57**(2): p. 232-237.
30. Tamis, K. and C. Fuller, *It takes a village: Diversion resources for police and families*. 2016, Vera Institute of Justice: New York.

31. Dupont, R., S. Cochran, and S. Pillsbury, *Crisis intervention team core elements*. 2007, CIT Center, Department of Criminology and Criminal Justice, School of Urban Affairs and Public Policy, University of Memphis: Memphis, TN.
32. Skowyra, K.R. and J.J. Cocozza, *A blueprint for change: A comprehensive model for the identification and treatment of youth wioth mental health needs in contact with the juvenile justice system*. 2006, National Center for Mental Health and Juvenile Justice: Delmar, NY.
33. JPI, *The costs of confinement: Why good juvenile justice policieis make good fiscal sense*. 2009, The Justice Policy Institute: Washington, D.C.
34. Prendergast, M.L., *Interventions to promote successful re-entry among drug-abusing parolees.* Addiction Science & Clinical Practice, 2009. **5**(1): p. 4-13.
35. Ruiz, M.A., et al., *Co-occurring mental health and substance use problems in offenders: Implications for risk assessment.* Psychological Assessment, 2012. **24**(1): p. 77.
36. Steadman, J., et al., *Six steps to improve your drug court outcomes for adults with co-occurring disorders*. 2013, National Drug Court Institute and SAMHSA's GAINS Center for Behavioral Health and Justice Transformation: Alexandria, VA.
37. Cavanagh, J.T.O., et al., *Psychological autopsy studies of suicide: A systematic review.* Psychological Medicine, 2003. **33**(3): p. 395-405.
38. Conwell, Y., et al., *Relationship of age and Axis I diagnoses in victims of completed suicide: A psychological autopsy study.* The American Journal of Psychiatry, 1996. **153**(8): p. 1001-1008.
39. Duberstein, P.R., Y. Conwell, and E.D. Caine, *Age differences in the personality characteristics of suicide completers: Preliminary findings from a psychological autopsy study.* Psychiatry, 1994. **57**(3): p. 213-224.
40. Nock, M.K., et al., *Cross-national prevalence and risk factors for suicidal ideation, plans and attempts.* The British Journal of Psychiatry, 2008. **192**(2): p. 98-105.
41. Jenkins, R., et al., *Psychiatric and social aspects of suicidal behaviour in prisons.* Psychological Medicine, 2005. **35**(2): p. 257-269.
42. Grisso, T., et al., *The Massachusetts youth screening instrument-version 2 (MAYSI-2): Comprehensive research review*. 2012, Worcester, MA: University of Massachusetts Medical School.
43. Archer, R.P., et al., *An examination and replication of the psychometric properties of the Massachusetts Youth Screening Instrument-(MAYSI-2) among adolescents in detention settings.* Assessment, 2004. **11**(4): p. 290-302.
44. Kerig, P.K., M.A. Moeddel, and S.P. Becker, *Assessing the sensitivity and specificity of the MAYSI-2 for detecting trauma among youth in juvenile detention.* Child & Youth Care Forum, 2011. **40**(5): p. 345-362.
45. Meyers, D.C., J.A. Durlak, and A. Wandersman, *The quality implementation framework: A synthesis of critical steps in the implementation process.* American Journal of Community Psychology, 2012. **50**(3-4): p. 462-480.
46. USA-Mental-Health-First-Aid. *Youth Mental Health First Aid*. 2020 [cited 2020 April 20]; Available from: https://www.mentalhealthfirstaid.org/population-focused-modules/youth/.
47. Doulas, A.V. and A.J. Lurigio, *Youth crisis intervention teams (CITs): A response to the fragmentation of the educational, mental health, and juvenile justice systems.* Journal of Police Crisis Negotiations, 2010. **10**(1-2): p. 241-263.

48. MHJJCFC, *Adolescent Mental Health Training for School Resource Officers (AMHT-SRO)*. 2020, Mental Health and Juvenile Justice Collaborative for Change: New York.
49. SAMHSA. *Trauma Training for Criminal Justice Professionals*. 2015 [cited 2020 April 20]; Available from: https://www.samhsa.gov/gains-center/trauma-training-criminal-justice-professionals.
50. SAMHSA, *Screening and Assessment of Co-occurring Disorders in the Justice System*. 2015, Substance Abuse and Mental Health Services Administration: Rockville, MD.
51. Weathers, F.W., et al., *The Life Events Checklist for DSM-5 (LEC-5) - Standard*. 2013, U.S. Department of Veterans Affairs, National Center for Post Traumatic Stress Disorder: Washington, D.C.
52. Weathers, F.W., et al., *The PTSD Checklist for DSM-5 (PCL-5)*. 2013, U.S. Department of Veterans Affairs, National Center for Post Traumatic Stress Disorder: Washington, D.C.
53. Beck, A.T., R.A. Steer, and G.K. Brown, *Manual for the Beck Depression Inventory-II*. 1996, San Antonio, TX: Psychological Corporation.
54. Foa, E.B., et al., *Reliability and validity of a brief instrument for assessing post-traumatic stress disorder.* Journal of Traumatic Stress, 1993. **6**(4): p. 459-473.
55. Cukrowicz, K.C., et al., *A standard of care for the assessment of suicide risk and associated treatment: The Florida State University Psychology Clinic as an example.* Journal of Contemporary Psychotherapy, 2004. **34**(1): p. 87-100.
56. Joiner, T.E., et al., *The interpersonal theory of suicide: Guidance for working with suicidal clients*. 2009, Washington, D.C.: American Psychological Association.
57. Joiner, T.E., et al., *Scientizing and routinizing the assessment of suicidality in outpatient practice.* Professional Psychology: Research and Practice, 1999. **30**(5): p. 447-453.
58. Ball, S., et al., *Interpersonal trauma in female offenders: A new, brief, group intervention delivered in a community based setting.* The Journal of Forensic Psychiatry & Psychology, 2013. **24**(6): p. 795-802.
59. Owens, G.P., S.M. Rogers, and A.A. Whitesell, *Use of mental health services and barriers to care for individuals on probation or parole.* Journal of Offender Rehabilitation, 2011. **50**(1): p. 37-47.
60. Pankow, J., et al., *Examining concurrent validity and predictive utility for the Addiction Severity Index and Texas Christian University (TCU) short forms.* Journal of Offender Rehabilitation, 2012. **51**(1-2): p. 78-95.
61. Rowan-Szal, G.A., et al., *Brief trauma and mental health assessments for female offenders in addiction treatment.* Journal of Offender Rehabilitation, 2012. **51**(1-2): p. 57-77.
62. Wolff, N., et al., *Effectiveness of cognitive–behavioral trauma treatment for incarcerated women with mental illnesses and substance abuse disorders.* Journal of Anxiety Disorders, 2012. **26**(7): p. 703-710.
63. Horon, R., et al., *A study of the use and interpretation of standardized suicide risk assessment: Measures within a psychiatrically hospitalized correctional population.* Suicide and Life-Threatening Behavior, 2013. **43**(1): p. 17-38.
64. Kroner, D.G., et al., *Reliabilities, validities, and cutoff scores of the depression hopelessness suicide screening form among women offenders.* Criminal Justice and Behavior, 2011. **38**(8): p. 779-795.

65. Lohner, J. and N. Konrad, *Deliberate self-harm and suicide attempt in custody: Distinguishing features in male inmates' self-injurious behavior.* International Journal of Law and Psychiatry, 2006. **29**(5): p. 370-385.
66. Palmer, E.J. and R. Connelly, *Depression, hopelessness and suicide ideation among vulnerable prisoners.* Criminal Behaviour and Mental Health, 2005. **15**(3): p. 164-170.
67. Senior, J., et al., *The identification and management of suicide risk in local prisons.* The Journal of Forensic Psychiatry & Psychology, 2007. **18**(3): p. 368-380.
68. Way, B.B., et al., *Suicidal ideation among inmate-patients in state prison: Prevalence, reluctance to report, and treatment preferences.* Behavioral sciences & the Law, 2013. **31**(2): p. 230-238.
69. Carroll, A., M. Perez, and P. Toy, *Performing a community assessment curriculum*. 2004, UCLA Center for Health Policy Research, Health DATA Program Train-the-Trainer Project: Los Angeles, CA.
70. Underwood, L.A. and A. Washington, *Mental illness and juvenile offenders.* International Journal of Environmental Research and Public Health, 2016. **13**(2): p. 228-241.
71. Ford, J., P. Kerig, and E. Olafson, *Evidence-informed interventions for posttraumatic stress problems with youth involved in the juvenile justice system*. 2014, Durham, NC: National Child Traumatic Stress Network. 2016.
72. Cohen, J.A., et al., *A randomized implementation study of trauma-focused cognitive behavioral therapy for adjudicated teens in residential treatment facilities.* Child Maltreatment, 2016. **21**(2): p. 156-167.
73. Alexander, J.F., et al., *Functional family therapy for adolescent behavior problems*. 2013, Washington, D.C.: American Psychological Association.
74. Shelton, D., *Patterns of treatment services and costs for young offenders with mental disorders.* Journal of Child and Adolescent Psychiatric Nursing, 2005. **18**(3): p. 103-112.
75. Curtis, N.M., K.R. Ronan, and C.M. Borduin, *Multisystemic treatment: a meta-analysis of outcome studies.* Journal of Family Psychology, 2004. **18**(3): p. 411-419.
76. Sohal, A.S. and A. Egglestone, *Lean production: Experience among Australian organizations.* International Journal of Operations & Production Management, 1994. **14**(11): p. 35-51.
77. Sohal, A.S., *Developing a lean production organization: an Australian case study.* International Journal of Operations & Production Management, 1996. **16**(2): p. 91-102.
78. Bowen, D.E. and W.E. Youngdahl, *"Lean" service: In defense of a production-line approach.* International Journal of Service Industry Management, 1998. **9**(3): p. 207-225.
79. Storch, R.L. and S. Lim, *Improving flow to achieve lean manufacturing in shipbuilding.* Production Planning & Control, 1999. **10**(2): p. 127-137.
80. Bamber, L. and B.G. Dale, *Lean production: A study of application in a traditional manufacturing environment.* Production Planning & Control, 2000. **11**(3): p. 291-298.
81. Comm, C.L. and D.F.X. Mathaisel, *An exploratory analysis in applying lean manufacturing to a labor-intensive industry in China.* Asia Pacific Journal of Marketing and Logistics, 2005. **17**(4): p. 63-80.
82. Bonavia, T. and J.A. Marin, *An empirical study of lean production in the ceramic tile industry in Spain.* International Journal of Operations & Production Management, 2006. **26**(5): p. 505-531.
83. Parry, G.C. and C.E. Turner, *Application of lean visual process management tools.* Production Planning & Control, 2006. **17**(1): p. 77-86.

84. Weller, H.N., et al., *Application of lean manufacturing concepts to drug discovery: Rapid analogue library synthesis.* Journal of Combinatorial Chemistry, 2006. **8**(5): p. 664-669.
85. Johansen, E. and L. Walter, *Lean construction: Prospects for the German construction industry.* Lean Construction Journal, 2007. **3**(1): p. 19-32.
86. Hines, P., A.L. Martins, and J. Beale, *Testing the boundaries of lean thinking: Observations from the legal public sector.* Public Money and Management, 2008. **28**(1): p. 35-40.
87. Jørgensen, B. and S. Emmitt, *Lost in transition: The transfer of lean manufacturing to construction.* Engineering, Construction and Architectural Management, 2008. **15**(4): p. 383-398.
88. Sahoo, A.K., et al., *Lean philosophy: Implementation in a forging company.* The International Journal of Advanced Manufacturing Technology, 2008. **36**(5-6): p. 451-462.
89. Álvarez, R., et al., *Redesigning an assembly line through lean manufacturing tools.* The International Journal of Advanced Manufacturing Technology, 2009. **43**(9-10): p. 949-958.
90. Piercy, N. and N. Rich, *Lean transformation in the pure service environment: The case of the call service centre.* International Journal of Operations & Production Management, 2009. **29**(1): p. 54-76.
91. Wong, Y.C., K.Y. Wong, and A. Ali, *A study on lean manufacturing implementation in the Malaysian electrical and electronics industry.* European Journal of Scientific Research, 2009. **38**(4): p. 521-535.
92. Chen, H., R.R. Lindeke, and D.A. Wyrick, *Lean automated manufacturing: Avoiding the pitfalls to embrace the opportunities.* Assembly Automation, 2010. **30**(2): p. 117-123.
93. Chen, L. and B. Meng, *The application of value stream mapping based lean production system.* International Journal of Business and Management, 2010. **5**(6): p. 203-209.
94. Grove, A.L., et al., *Lean implementation in primary care health visiting services in National Health Service UK.* Quality and Safety in Health Care, 2010. **19**(5): p. 1-5.
95. Perez, C., et al., *Development of lean supply chains: A case study of the Catalan pork sector.* Supply Chain Management: An International Journal, 2010. **15**(1): p. 55-68.
96. Cottyn, J., et al., *A method to align a manufacturing execution system with Lean objectives.* International Journal of Production Research, 2011. **49**(14): p. 4397-4413.
97. Demeter, K. and Z. Matyusz, *The impact of lean practices on inventory turnover.* International Journal of Production Economics, 2011. **133**(1): p. 154-163.
98. Eswaramoorthi, M., et al., *A survey on lean practices in Indian machine tool industries.* The International Journal of Advanced Manufacturing Technology, 2011. **52**(9-12): p. 1091-1101.
99. Hodge, G.L., et al., *Adapting lean manufacturing principles to the textile industry.* Production Planning & Control, 2011. **22**(3): p. 237-247.
100. Pool, A., J. Wijngaard, and D.-J. Van der Zee, *Lean planning in the semi-process industry, a case study.* International Journal of Production Economics, 2011. **131**(1): p. 194-203.
101. Wong, Y.C. and K.Y. Wong, *Approaches and practices of lean manufacturing: The case of electrical and electronics companies.* African Journal of Business Management, 2011. **5**(6): p. 21-64.

102. Agus, A. and M. Shukri Hajinoor, *Lean production supply chain management as driver towards enhancing product quality and business performance: Case study of manufacturing companies in Malaysia.* International Journal of Quality and Reliability Management, 2012. **29**(1): p. 92-121.
103. Jiménez, E., et al., *Applicability of lean production with VSM to the Rioja wine sector.* International Journal of Production Research, 2012. **50**(7): p. 1890-1904.
104. Panizzolo, R., et al., *Lean manufacturing in developing countries: Evidence from Indian SMEs.* Production Planning & Control, 2012. **23**(10-11): p. 769-788.
105. Subha, M.V. and S. Jaisankar, *Balanced adoption of lean manufacturing practices in engineering goods manufacturing firms.* European Journal of Social Sciences, 2012. **28**(2): p. 271-277.
106. Bhamu, J., A. Khandelwal, and K.S. Sangwan, *Lean manufacturing implementation in an automated production line: A case study.* International Journal of Services and Operations Management, 2013. **15**(4): p. 411-429.
107. Powell, D., J. Riezebos, and J.O. Strandhagen, *Lean production and ERP systems in small-and medium-sized enterprises: ERP support for pull production.* International Journal of Production Research, 2013. **51**(2): p. 395-409.
108. El Sayed, M.J., et al., *Improving emergency department door to doctor time and process reliability: A successful implementation of lean methodology.* Medicine, 2015. **94**(42): p. 1-6.
109. Naidoo, L. and O.H. Mahomed, *Impact of Lean on patient cycle and waiting times at a rural district hospital in KwaZulu-Natal.* African Journal of Primary Health Care & Family Medicine, 2016. **8**(1): p. 2071-2928.
110. Hung, D.Y., et al., *Scaling lean in primary care: Impacts on system performance.* American Journal of Managed Care, 2017. **23**(3): p. 161-168.
111. Monden, Y., *The Toyota Production System*. 1983, Portland, OR: Productivity Press.
112. Ohno, T., *Toyota Production System: Beyond Large-scale Production*. 1988, New York: Productivity Press.
113. Spear, S. and H.K. Bowen, *Decoding the DNA of the Toyota production system.* Harvard Business Review, 1999. **77**(5): p. 96-108.
114. Pascal, D., *Lean Production Simplified: A Plain Language Guide to the World's Most Powerful Production System*. 2002, New York: Productivity Press.
115. Liker, J.K., *The ToyotaWay: 14 Management Principles from the World's Greatest Manufacturer*. 2004, New York: McGraw-Hill,.
116. Womack, J., D. Jones, and D. Roos, *The Machine that Changed the World*. 1990, New York: Rawson Associates.
117. Womack, J.P. and D.T. Jones, *Lean Thinking: Banish Waste and Create Wealth in Your Corporation*. 1996, New York: Simon and Schuster.
118. Ulrich, D., S. Kerr, and R. Ashkenas, *The GE Work-Out: How to Implement GE's Revolutionary Method for Busting Bureaucracy and Attacking Organizational Problems – Fast!* 2002, New York: McGraw-Hill.
119. Rother, M. and J. Shook, *Learning to see: Value stream mapping to add value and eliminate muda*. 2003, Cambridge, MA: Lean Enterprise Institute.
120. Shah, R. and P.T. Ward, *Lean manufacturing: Context, practice bundles, and performance.* Journal of Operations Management, 2003. **21**(2): p. 129-149.

121. Shah, R. and P.T. Ward, *Defining and developing measures of Lean production.* Journal of Operations Management, 2007. **25**(4): p. 785-805.
122. Holweg, M., *The genealogy of lean production.* Journal of Operations Management, 2007. **25**(2): p. 420-437.
123. Merlino, J.P., et al., *Leading with lean: Getting the outcomes we need with the funding we have.* Psychiatric Quarterly, 2015. **86**(3): p. 301-310.
124. LaGanga, L.R., *Lean service operations: Reflections and new directions for capacity expansion in outpatient clinics.* Journal of Operations Management, 2011. **29**(5): p. 422-433.
125. Atkinson, P. and E.B. Mukaetova-Ladinska, *Nurse-led liaison mental health service for older adults: Service development using lean thinking methodology.* Journal of Psychosomatic Research, 2012. **72**(4): p. 328-331.
126. Weaver, A., et al., *The impact of system level factors on treatment timeliness: Utilizing the Toyota production system to implement direct intake scheduling in a semi-rural community mental health clinic.* The Journal of Behavioral Health Services & Research, 2013. **40**(3): p. 294-305.
127. Steinfeld, B., et al., *The role of lean process improvement in implementation of evidence-based practices in behavioral health care.* The Journal of Behavioral Health Services & Research, 2015. **42**(4): p. 504-518.
128. Balfour, M.E., et al., *Using lean to rapidly and sustainably transform a behavioral health crisis program: Impact on throughput and safety.* The Joint Commission Journal on Quality and Patient Safety, 2017. **43**(6): p. 275-283.
129. Okeoma, B.C., *Lean perspectives: A case for implementing parent–child relational problem screening.* Journal of Psychosocial Nursing and Mental Health Services, 2018. **56**(9): p. 27-32.
130. Colins, O., et al., *Psychiatric disorders in detained male adolescents: A systematic literature review.* The Canadian Journal of Psychiatry, 2010. **55**(4): p. 255-263.
131. Gilbert, A.L., et al., *Screening incarcerated juveniles using the MAYSI-2.* Journal of Correctional Health Care, 2015. **21**(1): p. 35-44.
132. Glick, I.D. and C. Chen, *The Treatment Compliance Medication Data Sheet.* 1984, Cornell University Medical College: Cornell.

Budget Summary

Note: Any errors detected on this page should be fixed on the corresponding Budget Detail tab.

	Year 1		Year 2 (if needed)		Year 3 (if needed)		Year 4 (if needed)		Year 5 (if needed)		
Budget Category	Federal Request	Non-Federal Request	Federal Request	Non-Federal Request	Federal Request	Non-Federal Request	Federal Request	Non-Federal Request	Federal Request	Non-Federal Request	Total(s)
A. Personnel	$93,440	$51,158	$101,857	$84,480	$101,856	$84,480	$0	$0	$0	$0	$517,269
B. Fringe Benefits	$36,807	$22,019	$40,374	$36,904	$40,374	$25,586	$0	$0	$0	$0	$202,064
C. Travel	$1,392	$0	$1,392	$0	$1,392	$0	$0	$0	$0	$0	$4,176
D. Equipment	$7,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$7,500
E. Supplies	$600	$0	$600	$0	$0	$0	$0	$0	$0	$0	$1,200
F. Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
G. Subawards (Subgrants)	$73,088	$0	$73,088	$0	$73,088	$0	$0	$0	$0	$0	$219,264
H. Procurement Contracts	$10,000	$0	$20,000	$0	$20,000	$0	$0	$0	$0	$0	$50,000
I. Other	$900	$300	$14,000	$0	$14,000	$0	$0	$0	$0	$0	$29,200
Total Direct Costs	$223,727	$73,477	$251,311	$121,384	$250,710	$110,066	$0	$0	$0	$0	$1,030,673
J. Indirect Costs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Project Costs	$223,727	$73,477	$251,311	$121,384	$250,710	$110,066	$0	$0	$0	$0	$1,030,673
Does this budget contain conference costs which is defined broadly to include meetings, retreats, seminars, symposia, and training activities? - Y/N										Yes	