MHSA Innovation 4 Project
Mobile Transcranial Magnetic Stimulation (TMS)

Los Angeles County Department of Mental Health (LACDMH) proposes to implement Transcranial Magnetic Stimulation (TMS) as a treatment for psychiatric disorders. TMS is a non-invasive treatment that can enhance or suppress the activity of neurons in targeted areas of the brain through the use of electromagnetic stimulation. Currently, TMS is F.D.A. approved for the treatment of depression and, according to the American Psychiatric Association best practice guidelines for the treatment of major depressive disorder, TMS is now a first-line treatment for depression that has not responded to one antidepressant medication (APA 2010) as well as being effective for treatment-resistant depression. In addition, recent clinical studies suggest that TMS can be an effective treatment for a number of other psychiatric disorders, including substance use disorders, schizophrenia, obsessive-compulsive disorder, and post-traumatic stress disorder. TMS uses precisely targeted magnetic pulses similar to those used in Magnetic Resonance Imaging (MRI) to stimulate key areas of the brain that are underactive in patients with depression. The patient reclines comfortably in the treatment chair and is awake and alert during treatment. An electromagnetic coil is then placed directly to the target area of the brain where the device generates magnetic fields that alter the electrical activity of neurons. The enhancing or suppressing of neuron activity depends upon a number of variables including the frequency of the TMS pulses. During treatment, the patient hears a clicking sound and feels a tapping sensation on the head. The patient can go back to their normal activities immediately after treatment. Treatment can last between 10-45 minutes and is administered once per day for 5 consecutive days per week for 4-8 weeks. LACDMH proposes to implement a mobile TMS program for individuals residing in Board and Care (B&C) facilities that suffer from treatment-resistant depression that is not responsive to antidepressant medication or therapy. LACDMH estimates serving 384 clients a year across approximately 8 Board and Care facilities.

The Need

B&C residents are some of the most impaired individuals in the county, with symptoms that are often refractory to treatment with multiple medications. As such, treatment with other, non-pharmacologic modalities is warranted and may be effective. Although we propose to initially focus on B&C residents with treatment refractory depression, these individuals may also have other psychiatric disorders that may respond to TMS. The ultimate goal of this project is to reduce the burden of symptoms in this population and increase their social and occupational functioning. Treatment refractory depression often results in Board and Care facilities with residents who experience very poor qualities of life, do not progress in their recovery and spend hours each day engaging in unhealthy activities such as smoking. The development of a mobile TMS program would both bring a novel, effective treatment to this population and also overcome a major barrier to treatment adherence because the treatment would be brought directly to their place of residence. The Department plans to purchase and retrofit a large sprinter van that will contain the TMS device, coil holder, coil cooling system, and a

TMS chair. It will be equipped with a generator that can power the TMS system as well as an internet link for charting, medical records and telepsychiatry.

TMS has become a standard treatment in private practice and in academic centers across the country. However, this treatment has been unavailable to clients in the Specialty Public Mental Health system. Therefore, we propose the development of an innovative mobile TMS treatment network that directly brings this treatment to individuals with chronic mental disorders.

The goals of this project include:

- Provide access to new and effective treatment to clients with chronic and severe mental illness
- Increase adherence to treatment by bringing the treatment to the client
- Reduce use of other resources (i.e., psychiatric hospitalization, Emergency Room visits, intensive supportive services, etc.)
- Improve social and occupational functioning that would lead to successful community reintegration
- Collect and analyze data to support treatment efficacy for treatment-resistant depression and other psychiatric conditions in this population

The project would be a 3 year demonstration project.

Innovation Primary Purpose

Overall, the primary purpose of this Innovation project is to improve the quality of mental health services and achieve greater outcomes by providing new and effective treatment to clients with chronic and severe mental illness.

Treatment refractory depression (TRD), defined as depression that has not responded to at least one antidepressant medication, affects approximately 4.2 million Americans. According to Los Angeles County Department of Mental Health (LACDMH) records, in the 2016-2017 fiscal year, approximately 42,000 individuals are being treated for major depressive disorder and an additional 23,000 individuals are receiving treatment for other disorders in which depression plays a key role (bipolar bisorder and schizoaffective disorder). Based upon the literature, we estimate that at least 35% of these individuals have depressive symptoms that are treatment refractory. Among these individuals, people who reside in B&C facilities have some of the most severe, treatment refractory symptoms which prevent them from living independently. In LACDMH, there were approximately 4000 residents of B&C facilities who were receiving mental health services in 2016-2017. Of these, 24% had a primary diagnosis of major depressive disorder and 29% had primary diagnosis of either bipolar disorder or schizoaffective disorder. These numbers show that there are thousands of individuals within LA County, and especially in B&C facilities, who need for treatments to reduce symptoms that have not been alleviated by medications or therapy alone.

This project will reduce the significant symptom burden of individuals with chronic severe mental illness that continue to suffer in spite of great efforts to treat them with

standard care or with more intensive treatment programs. Los Angeles County expends a disproportionate amount of resources on people with severe chronic mental illness who require high levels of mental health care (including recurrent hospitalizations), are unable to care for themselves, and thus live in supervised residential settings such as board and care facilities (B&C). Due to their functional impairments and socio-economic status, these individuals often lack access to the most up-to-date and effective treatments for their mental illness. They also often are unable to adhere to treatments. If available and delivered in a manner that can be adhered to, such treatments may alleviate their symptoms and improve their level of functioning in the community.

Target Population

The target population includes individuals residing in board and care facilities that have a depression as a major part of their psychiatric symptoms and ***one or more of the following***:

- Resistance to treatment with psychopharmacologic agents as evidenced by a lack of a clinically significant response to at least two psychopharmacologic agents in the current depressive episode; or
- Inability to tolerate psychopharmacologic agents as evidenced by two trials of psychopharmacologic agents from two different agent classes; or
- History of response to TMS in a previous depressive episode; or
- A history of response to ECT in a previous or current episode or an inability to tolerate ECT, or is a candidate for, but has declined ECT and TMS is considered a less invasive treatment option.

However, because of the nature of the TMS treatment, we would exclude individuals with a history of seizure disorder and those with metal implants in the head or upper torso (e.g., cardiac pacemakers).

Mobile TMS

The components of this Innovation project are as follows:

1. Purchase TMS device and accessories including modified van that will transport the treatment to contracted board and care facilities in Los Angeles County.

2. A lead psychiatrist will oversee initial TMS treatment sessions and track progress by collecting symptoms and functional outcomes that can, in turn, be used to judge the efficacy of this program.

3. Hire and train staff (Nurse, Psychiatric Technician) to operate equipment.

4. Identify Board and Care facilities with higher numbers of clients who meet criteria listed in *Target Population* above and engage and educate facility operators.

5. Engage clients at facilities. Once clients have been identified and agree to treatment, they will be seen 1 times per day for 5 consecutive days per week for 4-8 weeks.
6. As clients begin treatment, client satisfaction and reactions will guide use of TMS within each facility.

7. Administer outcome measures at the beginning and end of each week of treatment. Outcome measures may include the following: Quick Inventory of Depressive Symptoms (QIDS-16, patient rated), the Hamilton Depression Rating Scale (HDRS, clinician rated), and a measure for adaptive daily living and quality of life. Additional rating scales may be used to track comorbid symptoms as appropriate. These assessment tools will enable clinicians to track improvements in depressive symptoms and functional outcomes that can, in turn, be used to judge the efficacy of this program.

Qualifications for Innovation Project

"Innovative Project": This is a project that the county designs and implements for a defined time period, and evaluates to develop new best practices in mental health. An Innovative Project meets one of the following criteria:	**Select One**
1. Introduces a new approach or approach that is new to the overall mental health system, including, but not limited to, prevention and early intervention.	X
2. Makes a change to an existing practice in the field of mental health, including but not limited to, application to a different population	
3. Introduces a new application to the mental health system of a promising practice or approach that has been successful in a non-mental health context	

The challenge to be addressed by this Innovation Project:

This project seeks to test out a novel approach to the treatment of individuals with chronic severe mental illness specifically those with treatment-resistant depression, delivered by trained personnel.

This project seeks to expand the range of mental health services offered by the Los Angeles County Department of Mental Health to treat those individuals most in need and that have not been successful in alleviating their symptoms with standard treatment.

This project is a collaboration between the LACDMH and the board and care (B&C) facilities within Los Angeles County. We will create a mobile TMS treatment center that is initially focused on treating residents of B&C with chronic mood disorders (major depressive disorder, bipolar depression, schizoaffective disorder with depression).

Several factors led to an initial focus on B&C residents. First, many individuals with serious mental health problems are unable to live independently and thus reside in B&C. These individuals also often have great difficulty with adherence to mental health treatment and ongoing symptoms in spite of great efforts to alleviate them. TMS may be an effective treatment for some of these individuals. Yet currently they lack access to it. This project is therefore aligned with several MHSA Innovative Program goals including enhancing collaboration between agencies (Los Angeles County DMH and B&C programs), increasing access to care, and improving quality of treatment and the outcomes in this vulnerable population.

In addition to treating major depressive disorder, a number of trials have shown TMS to be effective for the treatment of medication resistant depression in bipolar disorder (Dell'Osso et al 2009) which is important because most patients with bipolar disorder spend much more time depressed than in manic episodes. Also of great potential use for the treatment of patients with chronic severe mental illness is the finding the TMS may be effective for the treatment of schizophrenia (Cole et al. 2015). While more studies are needed, data suggests that TMS can be helpful for reducing debilitating auditory hallucinations and negative symptoms that are part of schizophrenia. Another common comorbidity in chronic mental illness is substance use. Ongoing research suggests that TMS may be used to reduce craving of substances such as cocaine and nicotine (Hanlon et al. 2015). Finally, a number of studies have found TMS to reduce symptoms in post-traumatic stress disorder (PTSD, Karsen et al. 2015).

Overarching Learning Questions

1. Will these individuals be adherent with a mobile TMS treatment program?
2. Is TMS an effective treatment for this population?
3. Does TMS for depression lead to improvement in comorbid symptoms (i.e., substance use, psychotic symptoms, etc.)?
4. If TMS is an effective treatment for this population, should the program be expanded to treat a larger part of the population?

Stakeholder involvement in proposed Innovation Project

LACDMH's stakeholder process meets Welfare and Institutions Code 5848 on composition of the System Leadership Team (SLT) and meaningful involvement of stakeholders related to mental health planning, policy, implementation, monitoring, quality improvement, evaluation and budget allocations. The composition of the System Leadership Team meets California Code of Regulations Section 3300 on stakeholder diversity.

To create meaningful stakeholder involvement, LACDMH convenes a 58 member SLT is composed of individuals representing the following organizations, cultures and interests:

- *LA County Chief Executive Office*
- *Representation from each Service Area Advisory Committee*
- *Consumer and family member representation, including NAMI, self-help and the LA County Client Coalition*

- *Department of Public Social Services*
- *Health Care, including the Hospital Association and LA County Department of Public Health, LA County Department of Health Services*
- *LA Police Department*
- *Probation*
- *Housing development*
- *Older Adult service providers and LA County Community and Senior Services*
- *Under-Represented Ethnic Populations, including Asian Pacific Islanders, American Indian, African American, Latino and Middle Eastern/Eastern European perspectives*
- *Clergy*
- *City of Long Beach*
- *Veterans*
- *LA County Mental Health Commission*
- *Unions*
- *Co-Occurring Joint Action Council*
- *Education, including the LA Unified School District, universities and charter schools*
- *Lesbian, Bisexual, Gay, Transgender and Questioning (LBGTQ)*
- *LA Department of Children and Family Services*
- *LA County Commission on Children and Families*
- *Junior blind*
- *Statewide perspective*
- *Mental health providers, including the Association of Community Human Service Agencies (ACHSA)*
- *Mental Health Commission*

Planning for this project began in the spring of 2017, but has been a focus of Dr. Sherin since becoming the Director of the Los Angeles County Department of Mental Health. A proposal was presented to the System Leadership Team on October 18, 2017 with a request for feedback. The feedback received was overwhelmingly positive. Stakeholders expressed an interest in expanding the target population to include other severely mentally ill individuals in other mental health settings than just B&C residents. In response to this feedback, it was explained that one of the goals of the project was to collect enough data to support an expansion of the target population. Feedback beyond that has been categorized in the following manner:

- Populations of interest:
    - Request to include FSP clients that have been identified as having more severe symptomatology.
    - Individuals who may reside in Institutions of Mental Disease (IMD) who may benefit from TMS treatment.
- Concern regarding painful side effects of the treatment.
- Clarification and differentiation between Electroconvulsive Therapy (ECT) and TMS treatment.
- Consider other funding sources to pay for TMS treatment.

Feedback has been considered and much of it incorporated into the proposal or will be incorporated into the implementation phase of this project.

In addition, we plan to solicit peer involvement by engaging individuals with lived experience in our peer resource center and those who have undergone TMS treatment to assist others that may be contemplating this type of treatment.

The Department's Mental Health Commission Executive Committee will be briefed on January 11, 2018, with a formal presentation to the Commission on January, 25, 2018.

Board Deputy briefings have begun and will be completed in January, 2018.

Timeframe of the Project and Project Milestones

Upon approval from the Mental Health Services Oversight and Accountability Commission, the Department will issue a solicitation to identify one or more companies with capacity to immediately initiate the deliverables in this project proposal including retrofitting a Transit Van with TMS medical device and accessories. The projected timeframe is as follows but, due to the innovative nature of this project, actual implementation steps may deviate in terms of sequence and/or timeframes:

- October 27, 2017: 30 Day Public Posting of Proposed Project
- February, 2018: Anticipated presentation and approval from the MHSOAC
- March, 2018: Van retrofitting with TMS medical device.
- May, 2018: Hire and train staff to administer treatment and collect outcome measures. In addition, identify eligible clients at board and care facilities that are willing to participate in TMS treatment.
- May 2018: Launch project by beginning treatment and tracking progress weekly.
- FY 2018-2019: Development, testing and implementation of deliverables.
- FY 2019-2020 through FY 2020 – 2021: Continued use, evaluation and scaling and a final evaluation to the Department.

As with all components of the MHSA, implementation and preliminary outcomes will be reviewed with the LACDMH's SLT periodically and will be reported on in MHSA Annual Updates/MHSA Three Year Program and Expenditure Plans.

Proposed Implementation and Dissemination Strategies

The Los Angeles County Department of Mental Health has conducted preliminary meetings with Board and Care facilities to present TMS and assess the degree of need for this treatment. Based on preliminary findings, there is a genuine interest from providers in implementing TMS with their eligible residents. LACDMH will continue to research and analyze outcomes data (i.e., demographics, diagnoses, patient treatment history, etc.) to identify appropriate candidates for treatment and work with facilities in offering TMS to their residents. In addition, LACDMH will begin systematic outreach to B&C facilities in order to educate residents, staff and treatment providers about TMS. This outreach will disseminate knowledge about this treatment and expand the recruitment of individuals for whom TMS may be an appropriate treatment.

Inclusion Criteria: We will initially focus on B&C residents with treatment refractory depression which may be a component of major depressive disorder, schizoaffective disorder, or bipolar disorder. We define “treatment refractory” as having an inadequate response to at least two antidepressant medications at adequate dose and duration, or an inability to tolerate such medications. Patients taking medications will not be excluded and may continue their medications during treatment. Eventually, we hope that the outcomes collected for this project will support the expansion of the target population to include eligible individuals outside of B&C facilities (e.g., LACDMH operated facilities) that are suffering and would benefit from TMS treatment.

Exclusion Criteria: Because of the nature of the TMS treatment, we will exclude patients with metal implants in the head or upper torso such as cardiac pacemakers, aneurysm clips, carotid stents, implanted intracranial electrodes, metal shrapnel, ferromagnetic implants in the mouth, eyes or ears (such as cochlear implants). In addition, we will exclude patients with a known seizure disorder or a history of recurrent seizures.

Informed Consent: In order to ensure that each patient is freely participating in this treatment, the treating psychiatrist will obtain informed consent from the patient. This will require that the patient understand the nature of the treatment, its potential for benefit, and its potential risks, the treating psychiatrist will obtain informed consent for each patient. The procedure will be described in detail the procedures involved in the treatment including the use of a magnetic coil, the sensations associated with the treatment (tactile, auditory), the approximate duration of each session, the frequency of sessions, the approximate number of sessions and the potential need for maintenance treatments in order to prevent relapse.

Potential risks that will be discussed include the following:

- The potential for a tapping sensation that can be annoying or painful at the site of stimulation (reported by approximately one third of patients and usually improves over course of treatment). The person administering the treatments may make adjustments in order to ensure that the treatment is tolerable for each patient.
- The treatment can also produce contractions of superficial facial or jaw muscles occurring only during the treatment and that do not persist after treatments.
- Headaches may also occur as a result of the treatment (reported in approximately 50% of patients). These usually improve over the course of treatment and can be alleviated by over-the-counter pain medication
- TMS produces a loud clicking sound. Therefore we require patients to wear ear plugs during the treatments. There is no evidence that TMS permanently affects hearing if earplugs are worn.
- A seizure is the most serious risk associated with TMS. The risk of seizures, however, is exceedingly low (<1/30000 treatments).
- There is also a risk that the patient may not improve or may experience worsening mood or anxiety. If these issues arise, they will be addressed by the treating TMS psychiatrist.

- Finally, as with all treatments, there are unforeseeable risks that we do not yet know about or that are not currently recognized. If possible, we will continue to follow the cohort of patients in this project longitudinally in order to further define such as yet unknown risks.

Potential Benefits of TMS that will be discussed:

- TMS has been shown to lead to a remission of depressive symptoms in between 30-68% of patients with treatment refractory depression.
- TMS may also improve symptoms of other psychiatric disorders including PTSD, psychosis, substance use disorders, autism, and eating disorders. However, more studies are needed in order to know how likely TMS is to be effective for these issues

The mobile TMS project will be overseen by a lead psychiatrist that will be providing outreach, engagement and education to B&C facilities, and eventually, to other contracted and directly operated facilities throughout the county that provide mental health services to seriously mentally ill individuals. Outreach and engagement may consist of, but is not limited to, in-person presentations, webinars, and other forms of social media. The lead psychiatrist will manage LACDMH staff comprised of a Mental health Counselor, RN; Clinical Psychologist II; and a Psychiatric Technician that will assist in the roll-out of this project, including:

- Develop and distribute informational brochures, flyers, and other handouts relating to TMS treatment.
- Establish specific protocol for TMS treatment administration and follow-up.
- Provide assistance in engaging potential patients at B&C facilities that would benefit from TMS treatment.
- Transport TMS equipment to facilities and assist in administering treatment.
- Track and monitor patient progress weekly by use of outcome measures.
- Analyze and report on aggregate outcome measure data.
- Prepare and distribute outcome measures findings on a quarterly basis and share internally within the Department and County.

As with all components of the MHSA, implementation and preliminary outcomes will be reviewed with the LACDMH's SLT periodically and will be reported on in MHSA Annual Updates/MHSA Three Year Program and Expenditure Plans.

Within Los Angeles County a steering committee would be formed consisting of interested stakeholders and key LACDMH staff that would review progress, available data and inform implementation. If new target populations are identified based on the data collected, mid-course implementation shifts will be made accordingly.

LACDMH will actively participate in Mental Health Services Oversight and Accountability Commission sponsored Innovation Summits and resulting forums for cross-county learning and support related to the use of TMS in the mental health system.

Overall Approach to Evaluation

This project will be evaluated by using weekly symptom and functional based outcome measures to track treatment progress. Outcome measures will be administered at the beginning and end of each week of treatment. Outcome measures may include the following: Quick Inventory of Depressive Symptoms (QIDS-16, patient rated), the Hamilton Depression Rating Scale (HDRS, clinician rated), and a measure for adaptive daily living, quality of life and satisfaction with TMS. Additional rating scales may be used to track comorbid symptoms as appropriate. These assessment tools will enable clinicians to track improvements in depressive symptoms and functional outcomes that can, in turn, be used to judge the efficacy of this program. The Mental Health Counselor, RN will administer weekly patient rating scales; collect HDRS from B&C clinicians, and collect functionally based outcome measures to track treatment progress. The Clinical Psychologist II (employed by the Department) will assume responsibility for the evaluation, aggregating and analyzing all data, and assisting in the dissemination of data findings to providers and the larger community. Specific outcomes include:

1. Reduction in depressive symptoms.
2. Increased social and occupational functioning.
3. Increased adherence to treatment through a qualitative review of the client's record and feedback from the client's case manager.
4. For high utilizers of inpatient or emergency services, decreases in utilization of those services, analyzing utilization 6 months prior to TMS and 6 months after TMS.
5. Increased wellbeing as evidenced by increased social connectedness and engaging in meaningful activities.

Disseminating Successful Learning

The Department will responsibly and appropriately share the findings of this project with providers and the larger community. Findings related to effective implementation of TMS treatment, establishment of best practices, barriers to implementation, the utility of program expansion will be discussed with the mental health community so that this program, if successful, may be expanded within Los Angeles County and in other counties and states. Data will be aggregated and shared internally within the Department and County; and externally throughout California via in-person facilitation/workshops, webinars, and educational materials that will educate individuals about TMS and best practices for action planning and further implementation. Within the Department/County LACDMH will provide regular reports to Service Area Advisory Committees (SAACs), the System Leadership Team or through other broader countywide opportunities. Outcome data reports will be available for distribution on a quarterly basis, and may include the following data elements: number of clients served, demographic information, diagnoses, Pre/Post scores and percent change for depression, adaptive daily living and quality of life scales.

Impact, reach, implementation status and outcomes will be documented in Annual Updates and MHSA 3 Year Program and Expenditure Plans. In addition, LACDMH will seek to present the project and its outcomes throughout the project at statewide

conferences, meetings and perhaps at relevant national conferences. LACDMH will also seek to partner with other counties who may be engaging in similar work, through venues such as the County Behavioral Health Directors' Association (CBHDA). Finally, there may be opportunity to partner on articles submitted to peer-reviewed journals.

Sustainability

Analytics associated with mobile TMS, coupled with a comprehensive evaluation, will inform actions taken by the Department at the conclusion of the third year of the project. Factors to be taken into account will include user satisfaction and outcomes, advances in TMS at the conclusion of the project and the overall effectiveness of this treatment for specific populations. At the conclusion of the third year, DMH will explore continuing deemed services by maintaining operating staff through the MHSA Community and Service Supports (CSS) plan.

Estimated Annual Innovation Budget:

DMH Costs for FY 17-18 (Effective January 1, 2018 thru June 30, 2018):

Modified Van:	$89,195	(One-time cost)
Magventure TMS (1 device):	$69,433	(One-time cost)
Laptop	$2,000	(One-time cost)
Van Maintenance Plan:	$3,000	
Mental Health Psychiatrist:	$158,388	(Salary and Employee Benefits)
Mental Health Counselor, RN:	$75,617	(Salary and Employee Benefits)
Clinical Psychologist II	$66,932	(Salary and Employee Benefits)
The Psychologist will assume responsibility for the evaluation		
Psychiatric Technician II:	$32,661	(Salary and Employee Benefits)
Intermediate Typist Clerk:	$51,014	(Salary and Employee Benefits)
Operating Cost for 1 clinical position:	$4000	(One-time cost)
Total Cost:	**$552,240**	

DMH Costs for FY 18-19 (July 1, 2018 thru June 30, 2019):

Van Maintenance Plan:	$6,000	
Mental Health Psychiatrist:	$316,775	(Salary and Employee Benefits)
Mental Health Counselor, RN:	$151,234	(Salary and Employee Benefits)
Clinical Psychologist II	$133,863	(Salary and Employee Benefits)
The Psychologist will assume responsibility for the evaluation		
Psychiatric Technician II:	$65,322	(Salary and Employee Benefits)
Intermediate Typist Clerk:	$51,014	(Salary and Employee Benefits)
Total Cost:	**$724,208**	

DMH Costs for FY 19-20 (July 1, 2019 thru June 30, 2020):

Van Maintenance Plan:	$6,000	
Mental Health Psychiatrist:	$316,775	(Salary and Employee Benefits)
Mental Health Counselor, RN:	$151,234	(Salary and Employee Benefits)
Clinical Psychologist II	$133,863	(Salary and Employee Benefits)
The Psychologist will assume responsibility for the evaluation		

Psychiatric Technician II:	$65,322	(Salary and Employee Benefits)
Intermediate Typist Clerk:	$51,014	(Salary and Employee Benefits)
Total Cost:	**$724,208**	

DMH Costs for FY 20-21 (July 1, 2020 thru December 30, 2020):

Van Maintenance Plan:	$3,000	
Mental Health Psychiatrist:	$158,388	(Salary and Employee Benefits)
Mental Health Counselor, RN:	$75,617	(Salary and Employee Benefits)
Clinical Psychologist II	$66,932	(Salary and Employee Benefits)
The Psychologist will assume responsibility for the evaluation		
Psychiatric Technician II:	$32,661	(Salary and Employee Benefits)
Intermediate Typist Clerk:	$51,014	(Salary and Employee Benefits)
Total Cost:	**$387,612**	

FY 17-18 Estimated Cost (Effective January 1, 2018 thru June 30, 2018):	**$552,240**
FY 18-19 Estimated Cost (July 1, 2018 thru June 30, 2019):	**$724,208**
FY 19-20 Estimated Cost (July 1, 2019 thru June 30, 2020):	**$724,208**
FY 20-21 Estimated Cost (July 1, 2020 thru December 30, 2020):	**$387,612**
Note- the cost of the evaluation is the cost of the Psychologist conducting it:	***$401,590***

Total 3 year Project Cost: $2,388,268

Budget Narrative:

(1) Mental Health Psychiatrist: The psychiatrist will participate in outreach and education in B&C facilities with staff, providers and potential patients. The psychiatrist will also perform in-person evaluations to determine if a referred patient meets criteria for and may benefit from TMS treatment. The psychiatrist will prescribe and manage the TMS treatments. Initially, the psychiatrist will be on site for treatments. However, the psychiatrist may be off site and manage daily TMS sessions via tele-psychiatry in conjunction with the mental health nurse and psychiatric technician who will always be on site.

(1) Mental Health Counselor, RN: The Mental Health Counselor RN will deliver the daily TMS treatment sessions and perform daily assessments of the patient's symptoms and any side effects that will be communicated to the psychiatrist. They will also administer patient rating scales. This team member will also be trained to provide first-aid and Basic Life Support (BLS) in case of emergency.

(1) Clinical Psychologist II: The Clinical Psychologist will assume responsibility for the evaluation of this project and will establish a database into which rating scales and other

clinical data will be entered in order to track patient progress/response to treatment, side effects, and treatment parameters. They will analyze this data which can then be de-identified and used for outcomes measurement reporting. The Clinical Psychologist will also provide outreach and education regarding outcomes of this project to other providers throughout L.A. County and the state of California.

(1) Psychiatric Technician II: The Psychiatric Technician will be driving the mobile TMS unit to treatment sites throughout L.A. County, will assist the Mental Health Counselor, RN with setup of the TMS device for each treatment session, will help administer clinical rating scales and will interface with B&C staff regarding patient progress.

(1) Intermediate Typist Clerk: The Intermediate Typist Clerk will provide administrative support to the mobile TMS team. This includes, but is not limited to, securing TMS education presentation locations; preparing educational packets; registering attendees; sending registration confirmations; setting up the audio visual equipment for meetings; provide phone coverage for mobile TMS team; assist in the preparation of TMS related community meetings; responsible for maintaining records and the upkeep for the county TMS van; and serve as backup timekeeper and travel coordinator for the team.

This project will be entirely funded by MHSA Innovation Plan.