INNOVATIVE PROJECT PLAN
TECH for TRAUMA

COMPLETE APPLICATION CHECKLIST
Innovation (INN) Project Application Packets submitted for approval by the MHSOAC should include the following prior to being scheduled before the Commission:
☒ Final INN Project Plan with any relevant supplemental documents and examples: program flow-chart or logic model. Budget should be consistent with what has (or will be) presented to Board of Supervisors. *(Refer to CCR Title9, Sections 3910-3935 for Innovation Regulations and Requirements)*
☒ Local Mental Health Board approval Approval Date: 7/17/19
☒ Completed 30 day public comment period Comment Period: 4/23/20 – 5/24/20
☒ BOS approval date Approval Date: 11/05/19 If County has not presented before BOS, please indicate date when presentation to BOS will be scheduled: _____ *Note: For those Counties that require INN approval from MHSOAC prior to their county's BOS approval, the MHSOAC may issue contingency approvals for INN projects pending BOS approval on a case-by-case basis.*
Desired Presentation Date for Commission: May 28, 2020 ***Note: Date requested above is not guaranteed until MHSOAC staff verifies all requirements have been met.***

County Name: Mendocino

Date submitted: April 2020

Project Title: Tech for Trauma- Virtual Reality and Computer technology modalities for Trauma related symptoms

Total amount requested: $800,000 over 5 years

Duration of project: 5 years

Purpose of Document: The purpose of this template is to assist County staff in preparing materials that will introduce the purpose, need, design, implementation plan, evaluation plan, and sustainability plan of an Innovation Project proposal to key stakeholders. *This document is a technical assistance tool that is recommended, not required.*

Innovation Project Defined: As stated in California Code of Regulations, Title 9, Section 3200.184, an Innovation project is defined as a project that "the County designs and implements for a defined time period and evaluates to develop new best practices in mental health services and supports". As such, an Innovation project should provide new knowledge to inform current and future mental health practices and approaches, and not merely replicate the practices/approaches of another community.

Section 1: Innovations Regulations Requirement Categories

CHOOSE A GENERAL REQUIREMENT:

An Innovative Project must be defined by one of the following general criteria. The proposed project:

- ☒ Introduces a new practice or approach to the overall mental health system, including, but not limited to, prevention and early intervention
- ☐ Makes a change to an existing practice in the field of mental health, including but not limited to, application to a different population
- ☒ Applies a promising community driven practice or approach that has been successful in a non-mental health context or setting to the mental health system

☐ Supports participation in a housing program designed to stabilize a person's living situation while also providing supportive services onsite

CHOOSE A PRIMARY PURPOSE:

An Innovative Project must have a primary purpose that is developed and evaluated in relation to the chosen general requirement. The proposed project:

☐ Increases access to mental health services to underserved groups
☒ Increases the quality of mental health services, including measured outcomes
☐ Promotes interagency and community collaboration related to Mental Health Services or supports or outcomes
☐ Increases access to mental health services, including but not limited to, services provided through permanent supportive housing

Section 2: Project Overview

PRIMARY PROBLEM

What primary problem or challenge are you trying to address? Please provide a brief narrative summary of the challenge or problem that you have identified and why it is important to solve for your community. Describe what led to the development of the idea for your INN project and the reasons that you have prioritized this project over alternative challenges identified in your county.

Mendocino County has a high rate of trauma in our Transitional Age Youth population. Of the 238 TAY individuals currently receiving treatment through Mendocino County Behavioral Health, 163 of them, over half, have a diagnosis of PTSD. Currently, the traditional treatments of exposure therapy through imaginative or in vivo exposure as well as mindfulness training are among the treatments to reduce PTSD and its correlated diagnosis of anxiety and depression (Freeman et al., 2017). Even though treatments for PTSD, anxiety, and depression see excellent outcomes for individuals who follow through on the full treatment, drop-out rates and treatment refusals reduce the number of successful outcomes for our youth population. Untreated PTSD can lead to increases in anxiety, depression, substance abuse, and homelessness.

Many Transitional Age Youth in our county are experiencing rehoming, retraumatization, and, in many cases, homelessness. Mendocino County has the highest per capita rate of children in the foster care system at 11.3 per 1,000 children according to numerous studies including 2018 Kidsdata.org, compared to the state average of 5.3 per 1,000 children. Rehoming adds to the destabilized nature of our youth population, trauma that follows them regardless of the outcomes of those situations. Upwards of 29% of foster care youth at age 21 have experienced homelessness (Kelly, 2020; Fowler et al., 2017). One indicator for homelessness is time spent in the foster care

system. In Mendocino County, our youth have experienced a higher burden of trauma through detention, and are at a higher risk of homelessness, and we hope to address the fallout of this increased trauma through the Tech for Trauma project.

Tech for Trauma will address the barriers between Transitional Age Youth and treatment for PTSD and its correlated diagnoses such as anxiety and depression. Our goal is to increase engagement with young people and reduce drop-out rates for treatment of PTSD, anxiety, and depression. Many barriers exist between the Transitional Age Youth of Mendocino County and treatment. The largest barrier to access is due to transportation. Many TAY individuals do not have control of their transportation and must rely on others or public transportation to get to their treatment sessions. Many of the smaller communities have no public transportation connections to the cities where services are provided.

By adding Virtual Reality options in our county, we hope to engage youth more successfully. Refusal rates for exposure treatments through VR are 3% compared to the refusal rate of in vivo exposure treatments 27% (Garcia-Palacios et al., 2007). Similarly, Freeman et. al., (2017) reported that studies found dropout rates for treatments utilizing VR were lower than those for traditional treatments. Given the higher engagement people have with VR treatments, we hope to use Tech for Trauma to create a stronger buy in with our Transitional Age Youth population in a meaningful way. By increasing engagement with TAY individuals we hope to reduce the negative impacts of PTSD, which can lead to more serious mental illness outcomes.

Many providers in Mendocino County have been reluctant to begin utilizing this new technology in conjunction with mental health applications. Tech for Trauma will also provide a low risk opportunity for providers to begin utilizing a treatment modality that is proving to be revolutionary, with projects such as Bravemind which uses detailed re-creations of battlefield scenarios to help reduce PTSD symptoms in veterans. While Tech for Trauma would not be able to utilize such a highly sophisticated system, it is a project where both the providers and the consumers would be able to learn about the promising benefits of Virtual Reality and applications to mental health that are already proving to be effective and engaging.

Tech for Trauma intends to identify providers within Mendocino County who service the TAY population to help bring VR to Mendocino County residents. Our goal is bring VR technology to some providers within the county as a pilot project within the TAY population. Our hope is to increase engagement, introduce providers to using VR, and decrease negative symptoms of PTSD. Should Tech for Trauma prove successful, we would look to expand the program into other age groups, other providers, and other technological modalities.

PROPOSED PROJECT

Describe the INN Project you are proposing. Include sufficient details that ensures the identified problem and potential solutions are clear. In this section, you may wish to identify how you plan to implement the project, the relevant participants/roles within the project, what participants will typically experience, and any other key activities associated with development and implementation.

A) Provide a brief narrative overview description of the proposed project.

Tech for Trauma is looking to explore ways to increase engagement with youth and transitional age adults. Virtual Reality has proven to be a very promising tool in the

reduction of symptoms of post-traumatic stress disorder and co-occurring anxiety and depression. One of the problems with engaging young people in services to treat PTSD and the subsidiary issues of anxiety and depression is that interest is lost. Some youth have different barriers to services, such as home placement changes, busy schedules, and not having transportation they control. Because of these barriers, engagement with youth clients who have experienced trauma suffers in long term engagement. The goal with Tech for Trauma is to create a situation that is more engaging. We hope that by offering a second modality for services, an augmentation of more traditional services, these consumers will be more driven to engage.

The difficulty with virtual reality is that the cost is still prohibitive for many providers. Our goal is to make headsets and computers available to service providers who are already in the process of engaging with transitional age youth. The application of virtual reality technology would not supplant traditional services but augment them.

By reducing the risk threshold for providers in Mendocino County, we hope to increase the kinds of treatments available starting with PTSD and anxiety disorders in our county. By increasing the range of treatments available in our county, we hope to capitalize on the reduction of refusal rates with VR, an approximate 24% reduction (Garcia-Palacios et al., 2007), and the reduced dropout rates to reach more people and increase desired outcomes of those mental health services in Mendocino County.

B) Identify which of the three project general requirements specified above [per CCR, Title 9, Sect. 3910(a)] the project will implement.

The Tech for Trauma project intends to introduce a currently unutilized technology, Virtual Reality, to public mental health services in Mendocino County. This technology has many mental health applications and has been previously used in research conditions successfully. Tech for Trauma would increase the treatments available in Mendocino County by augmenting traditional treatments with Virtual Reality Technology.

C) Briefly explain how you have determined that your selected approach is appropriate. For example, if you intend to apply an approach from outside the mental health field, briefly describe how the practice has been historically applied.

By utilizing Virtual Reality, Tech for Trauma will hopefully reduce refusal rates for the TAY population. Reduced refusal means more people engaging with treatment. Because engagement is one of the biggest factors in decreasing the long term effects of trauma on our TAY population, Tech for Trauma should address this barrier to treatment. Increased engagement and reduced stigma are the desired outcomes, and according to several studies (Freeman et al., 2017; Garcai-Palacious et al., 2007), Virtual Reality treatments tend to be preferred by individuals receiving treatment. Increased engagement should decrease the negative effects of PTSD and reduce negative effects of anxiety family disorders.

D) Estimate the number of individuals expected to be served annually and how you arrived at this number.

In the fiscal year of 2018-2019, Mendocino County had 163 TAY individuals with a diagnosis of PTSD receiving services from Mendocino County BHRS and our contracted providers. Our goal with Tech for Trauma is to start by offering services with the goal of providing services to at least 50 Transitional Age Youth. Ideally we will do this by offering headsets to 5 providers, potentially more providers if there are multiple providers at the same location, and compensating the time for clinicians to utilize the headsets as an augmentation to their current clinical work. We hope to expand Tech for Trauma to be able to serve all 163 TAY individuals who currently have PTSD diagnosis should they choose to participate. In fiscal year 2018-2019, 329 adults in Mendocino County were served who also had a diagnosis of PTSD. Given the prevalence of individuals with PTSD diagnoses in Mendocino County, we intend to expand to the adult population should Tech for Trauma prove beneficial with youth.

E) Describe the population to be served, including relevant demographic information (age, gender identity, race, ethnicity, sexual orientation, and/or language used to communicate).

Tech for Trauma intends to start with 16-24 year olds, Transition Age Youth in the initial proposal. Our plan is to offer to partner with providers who service individuals within the TAY population. From the initial program, we aim to expand to adults with PTSD. We do not currently plan to develop Tech for Trauma into servicing children as the ramifications for children under the age of 13 utilizing virtual reality is currently not well studied. Within the virtual reality community, the manufacturers of recreational virtual reality specifically recommend against using headsets for individuals under the age of 12. Currently, there are no ethno demographic population criteria for Tech for Trauma, only age, and should the treatment prove successful in TAY, we intend to expand to adults.

RESEARCH ON INN COMPONENT

A) What are you proposing that distinguishes your project from similar projects that other counties and/or providers have already tested or implemented?

Tech for Trauma intends to introduce a modality of service to Mendocino County that has proven to be effective in treating PTSD and anxiety disorders (Freeman et al., 2017). Currently there are no providers within Mendocino County Mental Health Services who utilize this treatment due to unfamiliarity with the technology and startup costs. Due to the rural nature of Mendocino County, seeking treatment that isn't offered within the county is time consuming and costly as the nearest city with services is at

least an hour's drive from the County line. This creates barriers to a treatment shown to have lower refusal rates and lower dropout rates (Garcia-Palacios et al., 2007).

The Bravemind project has utilized Virtual Reality to treat PTSD in veterans, however there are no ways for individuals within our county to receive the benefits of the treatments offered by Bravemind at this time. Currently, the Bravemind project is still in the realm of university level research and not public health, which is what Tech for Trauma is attempting to provide.

B) Describe the efforts made to investigate existing models or approaches close to what you're proposing. Have you identified gaps in the literature or existing practice that your project would seek to address? Please provide citations and links to where you have gathered this information.

Application of Virtual Reality to mental health treatments has generated many studies and is still in the early stages of full development. With the decrease in cost for high quality devices, the prevalence of VR technology has increased to the point of being included in home entertainment systems. Similarly, mental health applications have increased as VR provides a practical solution to exposure therapy where experiencing exposure in vivo is cost prohibitive, dangerous, or time consuming (Freeman et al., 2017). VR treatment of schizophrenia has also proved effective in reducing paranoid ideation and anxiety (Grochowska et al., 2019). The majority of Virtual Reality treatments have been used to reduce symptoms of PTSD, anxiety, and depression (Freeman et al., 2017), with the most common therapy being Virtual Reality Exposure or VRE.

Comparisons between effectiveness of Virtual Reality Exposure and Prolonged Exposure treatments have shown that VRE is as effective as PE (Gonçalves et al., 2012). Another study looked at the response to VRE versus PE and found that for patients who were younger and not currently taking antidepressant medications, the outcomes for VRE were better, showing greater PTSD symptom reduction than with PE (Norr et al., 2018). Virtual Reality treatments also have a considerable advantage over more traditional in vivo exposure therapy as VRE has a significantly lower refusal rate, 3% for VRE, versus 27% for traditional in vivo (Garcia-Palacios et al., 2007) for certain phobias.

Given these outcome indicators, lower refusal rates, and greater symptom reduction in younger populations, we believe Tech for Trauma could have a significant impact on the mental health of our TAY population. Tech for Trauma will also bring VR augmented treatment into our county where previously, an individual seeking these treatments would need to go out of county, a journey of over an hour each direction, to receive treatments of this kind.

Fowler P.J., Marcal K.E., Zhang J, Day O, Landsverk J, (2017) Homelessness and Aging Out of Foster Care: A National Comparison of Child Welfare-Involved Adolescents. *Children and Youth Services Review*, **77**

Freeman D, Reeve S, Robinson A, Ehlers A, Clark D, Spanlang B, and Slater M (2017). Virtual Reality in the assessment, understanding, and treatment of mental health disorders. *Psychological Medicine*, **47**, 2393-2400

Garcia-Palacios A, Botella C, Hoffman H, Fabregat S (2007). Comparing Acceptance and Refusal Rates of Virtual Reality Exposure vs. In Vivo Exposure in Patients with Specific Phobias. Cyber Psychology & Behavior, **10:5**, 722-724

Gonçalves R, Pedrozo AL, Coutinho ESF, Figueira I, Ventura P (2012). Efficacy of Virtual Reality Exposure Therapy in the Treatment of PTSD: A Systematic Review, PLoS ONE, 7:12 e48469. https://doi.org/10.1371/journal.pone.0048469

Grochowska A, Jarema M, Wichniak A (2019). Virtual reality – a valuable tool to advance treatment of mental disorders. *Archives of Psychiatry and Psychotherapy*, **21:1**, 65-73

Kelly, Peggy (2020). Risk and Protective Factors Contributing to Homelessness Among Foster Care youth: An Analysis of the National Youth in Transition Database. Children and Youth Services Review, **108**

Norr AM, Rizzo AA, Smolenski DJ, Rothbaum BO, Reger MA, Katz AC (2018). Virtual reality exposure versus prolonged exposure for PTSD : Which treatment for whom? *Depression and Anxiety*, **35:6**, 523-529

LEARNING GOALS/PROJECT AIMS

The broad objective of the Innovative Component of the MHSA is to incentivize learning that contributes to the expansion of effective practices in the mental health system. Describe your learning goals/specific aims and how you hope to contribute to the expansion of effective practices.

A) What is it that you want to learn or better understand over the course of the INN Project, and why have you prioritized these goals?

We want to learn if introducing a new treatment can increase engagement with TAY who have a PTSD diagnosis. Our goals are to reduce the symptoms of PTSD in our TAY population. Through the Tech for Trauma we intend to address the following learning goals:

Learning goal #1) Does VRE treatment reduce the symptoms of PTSD, anxiety, and depression in TAY in Mendocino County as evidenced by depression index scores?

Learning goal #2) Are TAY more likely to seek treatment with dual modality treatment (VRE and therapeutic services) as evidenced by increased TAY engagement with therapy?

Learning goal #3) Do TAY engage in the VRE treatment to completion, as defined by markers on the anxiety and depression scale, more often than without VRE, specifically, is the dropout rate for treatment lower over the course of the project?

B) How do your learning goals relate to the key elements/approaches that are new, changed or adapted in your project?

Mendocino County does not currently have VRE treatment available. Studies of the VRE show that it is a potentially useful option for engaging younger people to alleviate symptoms of PTSD, anxiety, and depression. Our learning goals directly relate to the addition of VRE in Mendocino County because all of the learning goals are about engagement and reduction of PTSD symptoms in TAY.

Learning Goal #1 directly relates to the key element that is new because Mendocino County currently does not have Virtual Reality treatments for TAY who have a diagnosis of PTSD. We intend to test if VRE reduces symptoms of PTSD.

Learning Goal #2 directly relates to what is new because we are learning if younger people will have a lower refusal or disengagement rate to PTSD symptom reducing therapeutic treatments through VR versus traditional PE.

Learning Goal #3 directly relates to the key element of introducing Virtual Reality treatments to Mendocino County because it is looking at whether dropout rates improve with VRE compared to more traditional therapies.

EVALUATION OR LEARNING PLAN

For each of your learning goals or specific aims, describe the approach you will take to determine whether the goal or objective was met. Specifically, please identify how each goal will be measured and the proposed data you intend on using.

We intend to engage in evidenced based practices with the Tech for Trauma project. Our goal is to collect data sufficient to discern if our learning goals are being met. Most data collection will depend on outcomes from the clients and notes from the providers. We intend to address each of our three learning goals as follows:

Learning goal #1) Does VRE treatment reduce the symptoms of PTSD, anxiety, and depression in TAY in Mendocino County?
As evidenced by scores on a depression index.
As evidenced by a reduction in crisis contacts.
As evidenced by self-reported anxiety reduction.

Learning goal #2) Are TAY more likely to seek treatment with dual modality treatment (VRE and therapeutic services)?
As evidenced by increased number of TAY individuals receiving treatment when compared to previous years (i.e. an avatar diagnostic report from a period of time prior to the project compared to a similar length of time after the project has begun)

Learning goal #3) Do TAY engage in the VRE treatment to completion more often than without VRE, specifically, is the dropout rate for VR treatment lower?
As evidenced by comparing typical completion rates with the completion rates for the project (completion meaning client has completed a certain percentage of appointments necessary).
As evidenced by scores on a depression index.
As evidenced by self-reported satisfaction surveys.
All recipients will be asked to participate in pre and post surveys such as Child Assessment of Needs and Strengths (CANS), Generalized Anxiety Disorder Scale (GAD 7), and Patient Health Questionnaire (PHQ-9). Tech for Trauma will also include a questionnaire to fine tune necessary data for our Learning Goals.

Section 3: Additional Information for Regulatory Requirements

CONTRACTING

If you expect to contract out the INN project and/or project evaluation, what project resources will be applied to managing the County's relationship to the contractor(s)? How will the County ensure quality as well as regulatory compliance in these contracted relationships?

Mendocino County's MHSA Program Administrator will oversee and monitor the Tech for Trauma project and contractors within the project. The County will contract with providers in the area who currently work with the target population—TAY who have PTSD diagnoses—to bring treatments to those in need. The contract between the County and the providers will include reporting requirements for quarterly reporting, monthly invoices, and Annual Revenue and Expenditure Reports.

Reporting requirements contained within this contract(s) will include reporting language similar to Innovation regulation 3510.020 for annual reporting as follows:

(a) As part of the Mental Health Services Act Annual Revenue and Expenditure Report the Provider shall report the following:

1. The total dollar amount expended during the reporting period by the following funding sources:
    (A) Innovation Funds
    (B) Medi-Cal Federal Financial Participation
    (C) 1991 Realignment
    (D) Behavioral Health Subaccount
    (E) Any other funding

Similarly, the County will collect demographic information quarterly from contract provider(s) similar to the language from Innovations regulations Section 3580.010 as follows:

(a) The Quarterly Innovative Project Report shall include:
    (1) Name of the Innovative Project
    (2) Whether and what changes were made to the Innovative Project during the reporting period and the reasons for the changes.
    (3) Available evaluation data, including outcomes of the Innovative Project and information about which elements of the Project are contributing to outcomes.
    (4) Program information collected during the reporting period, including for applicable Innovative Projects that serve individuals, number of participants served by:
        (A) Age by the following categories:
            1. 0-15 (children/youth)
            2. 16-25 (transition age youth)
            3. 26-59 (adult)
            4. Ages 60+ (older adults)
            5. Number of respondents who declined to answer the question
        (B) Race by the following categories:

1. American Indian or Alaska Native
2. Asian
3. Black or African American
4. Native Hawaiian or other Pacific Islander
5. White
6. Other
7. More than one race
8. Number of respondents who declined to answer the question

(C) Ethnicity by the following categories:

1. Hispanic or Latino as follows
   a. Caribbean
   b. Central American
   c. Mexican/Mexican-American/Chicano
   d. Puerto Rican
   e. South American
   f. Other
   g. Number of respondents who declined to answer the question
2. Non-Hispanic or Non-Latino as follows
   a. African
   b. Asian Indian/South Asian
   c. Cambodian
   d. Chinese
   e. Eastern European
   f. European
   g. Filipino
   h. Japanese
   i. Korean
   j. Middle Eastern
   k. Vietnamese
   l. Other
   m. Number of respondents who declined to answer the question
3. More than one ethnicity
4. Number of respondents who declined to answer the question

(D) Primary language used by threshold languages for the individual county

(E) Sexual orientation,

1. Gay or Lesbian
2. Heterosexual or Straight
3. Bisexual
4. Questioning or unsure of sexual orientation
5. Queer
6. Another sexual orientation
7. Number of respondents who declined to answer the question

(F) A Disability, defined as a physical or mental impairment or medical condition lasting at least six months that substantially limits a major life activity, which is not the result of a severe mental illness.

1. Yes, report the number that apply in each domain of disability(ies)
   a. Communication domain separately by each of the following
      (i) Difficulty seeing
      (ii) Difficulty hearing, or having speech understood
      (iii) Other (specify)
   b. Mental domain not including a mental illness (including but not limited to a learning disability, developmental disability, dementia)
   c. Physical/mobility domain
   d. Chronic health condition (including but not limited to chronic pain)
   e. Other (specify)
2. No
3. Number of respondents who declined to answer the question

(G) Veteran status, (if over 18)

1. Yes
2. No
3. Number of respondents who declined to answer the question

(H) Gender

1. Assigned sex at birth
   a. Male
   b. Female
   c. Number of respondents who declined to answer the question
2. Current gender identity
   a. Male
   b. Female
   c. Transgender
   d. Genderqueer
   e. Questioning or unsure of gender identity
   f. Another gender identity
   g. Number of respondents who declined to answer the question

To ensure contractors provide appropriate information, invoices shall not be paid until all reporting is up to date and accurate. These terms shall be noted in the contract(s) with providers.

Administration of the contracted providers will be maintained by the MHSA unit within Mendocino County. The MHSA unit will be responsible for reporting all information to the state as well as sending annual reports and making copies of annual reports available on the County website.

COMMUNITY PROGRAM PLANNING

Please describe the County's Community Program Planning process for the Innovative Project, encompassing inclusion of stakeholders, representatives of unserved or under-served populations, and individuals who reflect the cultural, ethnic and racial diversity of the County's community.

Mendocino County collects stakeholder input on MHSA projects at stakeholder activities including bimonthly stakeholder Forums, biannual consumer events, monthly Behavioral Health Advisory Board meetings, and other stakeholder feedback events. In addition we sought targeted stakeholder feedback from the Veterans population on 08/24/2019 as suggested by our Behavioral Health Advisory Board.

At the Veterans event held at Todd Grove Park, Mendocino County MHSA employees conducted surveys of the Veterans in attendance. We chose to look into Virtual Reality for Veterans because much of the literature around PTSD focuses on Veterans, such as the Bravemind project. However, the overall feeling of the Veterans surveyed (13) is that they do not want more interaction with technology but less. The respondents to our survey said that PTSD was the biggest mental health concern for them and their families. While several reluctantly said they would be willing to try VRE (5), those opposed were strongly opinionated on the matter. Several suggest that younger Veterans would be more likely to participate in Virtual Reality based treatments.

Based on the feedback from our local Veteran population, we directed Tech for Trauma towards younger people. Anecdotal feedback from our stakeholders at the 02/12/2020 Stakeholders Forum which was well attended by people in all age categories, the TAY population present expressed enthusiasm towards virtual reality treatment.

MHSA GENERAL STANDARDS

Using specific examples, briefly describe how your INN Project reflects, and is consistent with, all potentially applicable MHSA General Standards listed below as set forth in Title 9 California Code of Regulations, Section 3320 (Please refer to the MHSOAC Innovation Review Tool for definitions of and references for each of the General Standards.) If one or more general standards could not be applied to your INN Project, please explain why.

Community Collaboration

A) Community Collaboration

Stakeholder feedback was utilized in the prioritization of the Tech for Trauma project during the development of the Three Year plan for 17-20. We have discussed this project with Veterans, at stakeholder meetings, and with providers. Our goal is to bring a new treatment to the area to expand the services we can offer to people with PTSD in our county. Our stakeholders often complain about having to travel out of county for treatments, and as VR treatments grow in acceptance and popularity, our residents will soon be in a position of having to travel to receive these treatments. Our stakeholders have communicated that the lack of services in our county is one of the main issues they would

like for us to address. Because this is a major concern for our stakeholders, they chose this project because VR treatment is not currently available in the county. Tech for Trauma is a direct result of community input addressing Mendocino County's unique needs.

B) Cultural Competency

Mendocino County has a highly diverse population. According to the 2000 Census, our population is 80% white, 22.2% Hispanic or Latino, 4.8% American Native, 1.7% Asian, 0.7% African American, and 0.1% Pacific Islander. To address the needs of our diverse population, all our providers will be contractually required to attend two appropriate cultural responsiveness trainings a year. Bilingual providers are already utilized, and we will encourage bilingual providers to compete for the contracts provided through Tech for Trauma. Data will be monitored for trends among cultural groups to assess needs within our TAY population.

C) Client-Driven

The Tech for Trauma project will be client driven in that it will be an optional addition to current modalities of treatment. Consumers who no longer wish to engage in the program can discontinue at any time. Individuals who do stay on will have many options within the Virtual Reality settings as programming for this technology is proceeding faster than it can be studied. All Tech for Trauma utilization of Virtual Reality as a healing tool will be monitored by mental health professional overseeing treatment. While some of it may seem like a game, it will have the goal of increased well-being and resilience, and hopefully a reduction in symptoms associated with PTSD.

D) Family-Driven

Tech for Trauma is family driven because many parents and family members of TAY who have been diagnosed with PTSD are looking for engagement with and for their family members. Due to the large number of PTSD diagnoses within the TAY population, family support will be necessary, and for many recipients, family permission will be necessary. Given the nature of virtual reality, there is also a possibility for treatments using VR to include the family for a greater engagement with the TAY population. For that reason, family support and guidance will play key roles in the utilization of Tech for Trauma.

E) Wellness, Recovery, and Resilience-Focused.

Virtual Reality applications would be used for the purpose of assisting in recovery of TAY affected by PTSD, for strengthening resilience and enhancing their sense of emotional well-being.

F) Integrated Service Experience for Clients and Families

The Tech for Trauma project relies on being integrated with more traditional services. For instance, we envision the VR headsets being utilized as part of a larger, clinical session. The Tech for Trauma project is not intended to supplant traditional modality, but to enhance and supplement currently utilized practices.

CULTURAL COMPETENCE AND STAKEHOLDER INVOLVEMENT IN EVALUATION

Explain how you plan to ensure that the Project evaluation is culturally competent and includes meaningful stakeholder participation.

Stakeholder forums are held every other month for MHSA funded projects on an ongoing basis. These forums have been held regularly for more than the past five years and Innovation projects are always an agenda item. At forums, we receive stakeholder feedback and provide information regarding the status and progress of the Innovation projects. More specific to Tech for Trauma, regular meetings will be held to communicate with the stakeholders for this project which will begin within six months of the approval of the Tech for Trauma project. At these meetings, we will discuss and implement the Tech for Trauma project. At this time, key informant meetings for Tech for Trauma meetings have been held with veterans, adult specialty mental health providers, and youth specialty mental health providers. We have also sought stakeholder feedback and direction from our Behavioral Health Advisory Board, and this project was chosen for further development through the three year planning process.

All clinicians and staff working on the Tech for Trauma project will be contractually required to maintain cultural responsiveness training with at least two qualifying trainings a year, similar to the requirements for Mendocino County Employees. As Mendocino County has a rich cultural diversity, we expect that there are target groups who would be more or less interested in the Tech for Trauma project, and for this reason, the Virtual Reality Therapy will not be offered as a supplanting treatment but as a supplemental treatment.

INNOVATION PROJECT SUSTAINABILITY AND CONTINUITY OF CARE

Briefly describe how the County will decide whether it will continue with the INN project in its entirety, or keep particular elements of the INN project without utilizing INN Funds following project completion.

Mendocino County will evaluate the Tech for Trauma project based on outcome assessments that measure indexes for anxiety and depression. Based on improvements, we will adapt aspects of the Tech for Trauma project to be extended to more of the population. We intend to collect these index markers quarterly to determine if the project is making a measurable difference. Based on the success of the modality, more traditional funding streams will be sought for the existing hardware to be used going forward.

Will individuals with serious mental illness receive services from the proposed project? If yes, describe how you plan to protect and provide continuity of care for these individuals upon project completion.

The Tech for Trauma project intends to serve people in Mendocino County who have PTSD, a serious mental illness. Due to the nature of this project, technology methods paired with traditional clinician work, we expect the clinical work to continue after the project has reached the end of its funding period. Because this project is supplementing not supplanting, there will not be an interruption in the continuity of care should this modality not become a mainstay within Mendocino County.

COMMUNICATION AND DISSEMINATION PLAN

Describe how you plan to communicate results, newly demonstrated successful practices, and lessons learned from your INN Project.

A) How do you plan to disseminate information to stakeholders within your county and (if applicable) to other counties? How will program participants or other stakeholders be involved in communication efforts?

The County plans to hold regular Tech for Trauma meetings where we will disseminate information on a local level. These regular meetings will be used to keep information channels open between our stakeholders and providers. We will communicate successes and difficulties with our stakeholders while continuing to receive feedback from the projects stakeholders.

In addition to regular meetings, the County will post all annual reports regarding the project on our website, and include reports regarding Tech for Trauma to the MHSA stakeholders meeting, held every other month at venues across the county to increase dissemination of information. These meetings will also be a place where MHSA stakeholders can voice opinions or make comments regarding the Tech for Trauma project.

The County also intends to present the information learned from our project at regional and statewide meetings to share our learning process with other counties.

B) KEYWORDS for search: Please list up to 5 keywords or phrases for this project that someone interested in your project might use to find it in a search.

Virtual Reality, PTSD, Transitional Age Youth

TIMELINE

A) Specify the expected start date and end date of your INN Project

Start Date: July 2020
End Date: June 2025

B) Specify the total timeframe (duration) of the INN Project

Five Years

C) Include a project timeline that specifies key activities, milestones, and deliverables—by quarter.

- Q1 FY 20-21 Contract RFP Process; acquire equipment.
- Q2 FY 20-21 Staff recruiting, additional input from stakeholders.
- Q3 FY 20-21 Initial roll out and treatments begun. Data collection begins.
- Q4 FY 20-21 Annual Report on project, data collection, treatment, and consumer surveys.
- Q1 FY 21-22 – Q3 FY 21-22 Data Collection, treatment, consumer surveys, stakeholder input.
- Q4 FY 21-22 Annual Report on project, data collection, treatment, and consumer surveys
- Q1 FY 22-23 – Q3 FY 22-23 Data Collection, treatment, consumer surveys, stakeholder input
- Q4 FY 22-23 Annual Report on project, data collection, treatment, and consumer surveys
- Q1 FY 23-24 – Q3 FY 23-24 Data Collection, treatment, consumer surveys, stakeholder input
- Q1 FY 23-24 Evaluate potential expansion into adult age group based on collected data.
- Q4 FY 23-24 Annual Report on project, data collection, treatment, and consumer surveys
- Q1 FY 24-25 – Q4 FY 24-25 Data Collection, treatment, consumer surveys, stakeholder input
- Q3 FY 24-25 – Q4 FY 24-25 Project evaluation and final report, Annual report

Section 4: INN Project Budget and Source of Expenditures

INN PROJECT BUDGET AND SOURCE OF EXPENDITURES

The next three sections identify how the MHSA funds are being utilized:

A) BUDGET NARRATIVE (Specifics about how money is being spent for the development of this project)
B) BUDGET BY FISCAL YEAR AND SPECIFIC BUDGET CATEGORY (Identification of expenses of the project by funding category and fiscal year)
C) BUDGET CONTEXT (if MHSA funds are being leveraged with other funding sources)

BUDGET NARRATIVE

Provide a brief budget narrative to explain how the total budget is appropriate for the described INN project. The goal of the narrative should be to provide the interested reader with both an overview of the total project and enough detail to understand the proposed project structure. Ideally, the narrative would include an explanation of amounts budgeted to ensure/support stakeholder involvement (For example, "$5000 for annual involvement stipends for stakeholder representatives, for 3 years: Total $15,000") and identify the key personnel and contracted roles and responsibilities that will be involved in the project (For example, "Project coordinator, full-time; Statistical consultant, part-time; 2 Research assistants, part-time…"). Please include a discussion of administration expenses (direct and indirect) and evaluation expenses associated with this project. Please consider amounts associated with developing, refining, piloting and evaluating the proposed project and the dissemination of the Innovative project results.

The budget for the Tech for Trauma calls for a modest startup staff of 0.75 FTE of Mental Health Clinicians. This position is intended to be split into smaller FTEs amongst providers because Tech for Trauma is meant to be a supplemental treatment. A 0.2 FTE for a Department Application Specialist is budgeted to oversee the software needs of the program. A 0.25 FTE TAY Advocate position is budgeted to provide support and case management services for the participants in the Tech for Trauma. Additionally, a 0.25 FTE extra help Staff Assistant position is included to help with the data collection and paperwork surrounding the Tech for Trauma Project.

We have included rental costs for space to provide services as well as software subscriptions in the operating costs of the Tech for Trauma project.

The budget for the Tech for Trauma includes a number of non-recurring costs such as virtual reality headsets, VR ready computers, covers/pads for headset storage, hygiene wipes, disposable face masks, locking equipment, and video monitors for clinical staff. The budget includes repurchase of most items in grant year 3.

Budgeting for consultation in the Tech for Trauma includes contracting for tech support, planning consultation and evaluation of the program.

BUDGET BY FISCAL YEAR AND SPECIFIC BUDGET CATEGORY*

EXPENDITURES							
PERSONNEL COSTS (salaries, wages, benefits)		**FY 20/21**	**FY 21/22**	**FY 22/23**	**FY 23/24**	**FY 24/25**	**TOTAL**
1.	Salaries	$71,276	$74,840	$78,582	$82,511	$86,637	$393,846
2.	Direct Costs						
3.	Indirect Costs	$27,307	$28,672	$30,106	$31,611	$33,191	$150,887
4.	Total Personnel Costs	$98,583	$103,512	$108,688	$114,122	$119,828	$544,733
OPERATING COSTS		**FY 20/21**	**FY 21/22**	**FY 22/23**	**FY 23/24**	**FY 24/25**	**TOTAL**
5.	Direct Costs	$9,000	$9,450	$9,923	$10,418	$10,940	$49,731

6.	Indirect Costs						
7.	Total Operating Costs	$9,000	$9,450	$9,923	$10,418	$10,940	$49,731
NON RECURRING COSTS (equipment, technology)		**FY 20/21**	**FY 21/22**	**FY 22/23**	**FY 23/24**	**FY 24/25**	**TOTAL**
8.	**Equipment and technology**	$28,596	$0	$24,996	$0	$0	$53,592
9.							
10.	Total Non-recurring costs	$28,596	$0	$24,996	$0	$0	$53,592
CONSULTANT COSTS / CONTRACTS (clinical, training, facilitator, evaluation)		**FY 20/21**	**FY 21/22**	**FY 22/23**	**FY 23/24**	**FY 24/25**	**TOTAL**
11.	Direct Costs	$25,000	$26,250	$27,563	$28,941	$30,387	$138,141
12.	Indirect Costs	$2,500	$2,625	$2,756	$2,890	$3,032	$13,803
13.	Total Consultant Costs	$27,500	$28,875	$30,319	$31,831	$33,419	$151,944
OTHER EXPENDITURES (please explain in budget narrative)		**FY 20/21**	**FY 21/22**	**FY 22/23**	**FY 23/24**	**FY 24/25**	**TOTAL**
14.							
15.							
16.	Total Other Expenditures						
BUDGET TOTALS							
Personnel (line 1)		$71,276	$74,840	$78,582	$82,511	$86,637	$393,846
Direct Costs (add lines 2, 5 and 11 from above)		$34,000	$35,700	$37,485	$39,359	$41,327	$187,872
Indirect Costs (add lines 3, 6 and 12 from above)		$29,807	$31,297	$32,862	$34,501	$36,223	$164,690
Non-recurring costs (line 10)		$28,596	$0	$24,996	$0	$0	$53,592
Other Expenditures (line 16)							
TOTAL INNOVATION BUDGET		$163,679	$141,837	$173,925	$156,372	$164,187	$800,000

*For a complete definition of direct and indirect costs, please use DHCS Information Notice 14-033. This notice aligns with the federal definition for direct/indirect costs.

BUDGET CONTEXT - EXPENDITURES BY FUNDING SOURCE AND FISCAL YEAR (FY)							
ADMINISTRATION:							
A.	**Estimated total mental health expenditures <u>for ADMINISTRATION</u> for the entire duration of this INN Project by FY & the following funding sources:**	**FY 20/21**	**FY 21/22**	**FY 22/23**	**FY 23/24**	**FY 24/25**	**TOTAL**
1.	Innovative MHSA Funds	$37,492	$39,367	$41,335	$43,398	$45,565	$207,157

2.	Federal Financial Participation						
3.	1991 Realignment						
4.	Behavioral Health Subaccount						
5.	Other funding*						
6.	**Total Proposed Administration**						
EVALUATION:							
B.	**Estimated total mental health expenditures <u>for EVALUATION</u> for the entire duration of this INN Project by FY & the following funding sources:**	**FY 20/21**	**FY 21/22**	**FY 22/23**	**FY 23/24**	**FY 24/25**	**TOTAL**
1.	Innovative MHSA Funds	$20,000	$21,000	$22,050	$23,153	$24,310	$110,513
2.	Federal Financial Participation						
3.	1991 Realignment						
4.	Behavioral Health Subaccount						
5.	Other funding*						
6.	**Total Proposed Evaluation**						
TOTAL:							
C.	**Estimated TOTAL mental health expenditures (this sum to total funding requested) for the entire duration of this INN Project by FY & the following funding sources:**	**FY 20/21**	**FY 21/22**	**FY 22/23**	**FY 23/24**	**FY 24/25**	**TOTAL**
1.	Innovative MHSA Funds	$163,679	$141,837	$173,925	$156,372	$164,187	$800,000
2.	Federal Financial Participation						
3.	1991 Realignment						
4.	Behavioral Health Subaccount						
5.	Other funding*						
6.	**Total Proposed Expenditures**	$163,679	$141,837	$173,925	$156,372	$164,187	$800,000
*If "Other funding" is included, please explain.							

Appendix A: Public Comments

Public Comment 4/23/20 through 5/24/20 Public Comment Hearing 05/20/2020 for Mendocino County Behavioral Health & Recovery Services Innovation Project #3: Tech For Trauma

Comments:

1. Excellent! If it's working…why not continue to use it, but it won't be for every single youth. Sounds like a fun way to treat trauma, via video technology. Youth may be easy to reach, but difficult to retain.

2. I just finished reading it, and you really did an awesome job making the case for it for our TAYs! Bravo!

3. In reviewing the proposed project Tech for Trauma, I am happy to see an innovative project for Mendocino County youth. Mendocino County provides a lot for the youth, but there is still so much to be done and this looks like a great next step.

4. The Tech for Trauma proposal is an innovative idea and it seems the intention is to serve our adolescent population using tools more aligned with their digital culture. In reading through the proposal, I was concerned about the following three areas:

    a. Access: Access to services and maintaining engagement are generally difficult for the target population. My understanding from the proposal is sites would be selected and youth would have to access services from these sites I do not see a creative solution to the access issue The technology may continue to draw a youth to the site, but all of the access related issues remain unaddressed. For a pilot, it might be better to set up a site where there is congregate living for the target population. Additionally, given COVID19 constraints, this proposal may be better postponed.

    b. Assessment/Monitoring Progress: I noted the use of PHQ9, GAD7 and the CANS as pre/post assessment tools. I did not see a specific PTSD assessment, nor a dissociation assessment indicated. There is evidence that VR can actually increase dissociation which is why dissociation should be monitored. I feel strongly these tools need to be standardized across the implementation should this project move forward.

    c. If we wanted to focus on innovative trauma treatment for our adolescents, it might be more effective to offer EMDR training for up to 100 licensed clinicians in the county. The approximate cost would be $450,000 (improved if we can have training in our county, and contract with Consultants). EMDR therapy can be offered in person or online and has shown to be restorative with the

transition age youth population. Additionally, I have just received an email indicating the clinician training is now available online.

d. There are several studies showing positive outcomes with this evidence based practice.
    - https://www.ncbi.nlm.nih.gov/pubmed/31663396
    - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6263101/
    - https://www.psycom.net/emdr-therapy-anxiety-panic-ptsd-trauma/
    - https://solsticeeast.com/blog/emdr-therapy-teens-trauma/

5. I have concern about lack of personal contact. Not having personal contact contributes to lack of respect and human connection. It increases isolation. It is important to be flexible with time, and results.

6. Trust challenges with Round Valley impacted the start up. This new proposal is also concerned about trust and connection.

7. I think internet connectivity is a huge access barrier in our county. It's one thing if offering at provider sites but if option for clients to use in home or check out, that would provide additional barriers. Connectivity is often forgotten about. As much as I love technology and the ability to cover gaps in services, there is something to be said for human interaction and real in person experiences. Do we need more tech, or are there other options. I am cautiously supportive.

8. I want to support the project. I think the demographic is tech savvy and anything to help engage in services. With trauma there is an evidence based process that needs to be engaged in for trauma and if technology helps to engage, I support it.

9. For Members of the public wishing to experience this technology, it is available at the Library for free on the Third Saturday of the month from 1-3 when the library is open.

10. I think this is a good idea, not sure about the specifics of the tech platform. I know this is reversion funding, so we risk losing if not approved. I am hoping that Innovation is allowed to be flexible to support CSS. I think the idea of Tech application for TAY is a benefit. We've seen benefits with texting and telehealth with this population. It is a good project.

11. You will want to ask for equipment for outlying districts.

12. Request for Innovation to be made more flexible to maintain existing MHSA services with the budget hits.

13. Tech for trauma needs a kind of control group that works only with actual people. This is particularly important for TAY as relationships are often key. This group should have the same amount of time as the tech population

Questions:

1. My question is: after what point do therapists give up, if the person continues to be non-compliant, that is does not want to participate? Traumatized have to be approached delicately, like a person with a third degree burn.

   Participation in the Tech for Trauma program will be voluntary. Most specialty mental health services are voluntary. Our hope is that this new approach to treatment will encourage increased participation.
2. My only comment is where you talk about Mendocino County being highly diverse. Is 80% white highly diverse, especially with .7 African Americans? Just asking.

   The characterization of diverse is meant to reflect on our large population of Hispanic/Latino as well as our Native American population. The racial data used was from the 2000 Census and allowed people to choose more than one race, and while 80% of respondents said they identified as white, 22 percent identified as Hispanic/Latino and 4.8% identified as Native American. The percentage of Hispanic/Latino identifying people across the nation was 12 percent in the 2000 Census.

3. What a wonderful idea to help TAY clients. I am hopeful for your project. I read the online documents and offer the following comments in a supportive manner:

   a. Industry support. There is a large industry of creative online artists that produce virtual programs, particularly for the targeted age range. What is the possibility of contacting one of them for support in this program. I don't mean war games, but the graphics are quite good, and they might lend you resources to launch and sustain the program. I'd be happy to get you contacts.

   b. Regional Sharing? Once the project is running, can it be shared with neighboring counties? I presume similar age and family challenges present in nearby communities.

      Should our program prove to be a success, we will be making the plans and our strategies available to other counties through the MHSOAC website, MHSA specific networking.
   c. Network and wifi coverages. Am assuming there are gaps in internet coverage in that region. Have you considered this challenge and solutions? Most major cellular providers offer community help to extend internet ranges, or provide portable units (aka "cows") for your clients. First responders in your county might have equipment for this purpose too.

      Our plan is to start with sessions that happen at a mental health provider's office.

d. Any downside to virtual tech? Over the years, I've read that too much virtual tech can create issues with family and socializing. FYI.

   We have received many concerns about this. The virtual reality and technology applications, will be an adjunct to regular mental health services. The benefit of the technological services will be monitored during treatment.

e. Related Uses. Expanded/future uses you might consider are educational, training (jobs, self-skills, health) for youth. I've discovered working with a local foster home operator, that youth need job training that is not always friendly/available/close by to their foster care center. Most local community colleges offer the New World of Work that encompasses 12 competencies for immersion into entry level jobs and careers.

   The related uses for virtual reality technology have only just begun. Should this program be successful, we intend explore other uses.

4. Training/Equipment: I have concerns about the actual training of the clinicians, and the distribution, tracking and upkeep of the equipment. With staff turnover, what is the day 1 training opportunities for the replacement staff? Also, when the equipment becomes obsolete, how are these items recycled?

   The training for use of the equipment will depend on which types of technology are tested and how we expand use among providers. Ideally, the equipment selected will not require a great deal of technical expertise. Our plan is expand the technology use with successes and gauge what the mental health providers deem to be an efficient balance between training and utilization.

5. How will this work with to actually use the equipment? In the office? Checked out by clients? What are the impacts with COVID?

   The equipment is meant to be used with the mental health service provider. Our vision for this project was to use the technology as an adjunct to standard services, and providers would be available to the client while using the technology. The project was developed prior to COVID-19. We would modify the project to include the same safety precautions which are being utilized in specialty mental health care, including use of personal protective equipment, sanitizing shared space and equipment, and screening for symptoms prior to scheduling appointments.

6. How reliable is this tech program, what company manufacture these?

   Because technology advances so quickly, we have not specified which manufacturer we are considering, however there are a number to choose from. We plan to include the providers, and possibly TAY youth as Key informants before finalizing selection.

7. I looked at the literature cited. There weren't that many. Will something be written about this if the project is approved and goes forward? It seems as if we need more information.

   Results and learning from this project will be summarized in publicly available reports as the project progresses, and in the final project report and evaluations. Details and lessons learned will be shared with other counties and statewide through Mental Health Services Act presentations at meetings, workshops, and webinars.