Identification of Project

Project Title:	**SOAR:** ***Student Outlying Area Referrals***	Clinical: ____ Non-Clinical: _**X**_
Project Leader:	**Amanda Fenn Greenberg, MPH**	Title: **MHSA Coordinator**
Initiation Date:	**December, 2016**	
Completion:	**Active and On-going**	Projected Study Period: **24 Months**
PIP Description	***Improve mental health outcomes (decrease rates of chronic sad or hopeless feelings) among students in Eastern Sierra Unified School District Schools. The intervention will include groups and outreach designed to increase rates of referral to needed mental health services, thereby improving a process of care (non-clinical PIP). The secondary goal of the PIP is to improve outcomes (as measured by the PHQ-9 and GAD-7 assessments) specifically for those students who are referred to service.***	

Section 1: Select & Describe the Study Topic

1a. Describe the stakeholders who are involved in developing and implementing this PIP

Mono County Behavioral Health (MCBH) assembled a PIP committee comprised of the department's Director (Robin Roberts), Fiscal & Administrative Services Officer (Shirley Martin), Clinical Supervisor (Annie Linaweaver), Quality Assurance (QA) Coordinator (Julie Jones), Mental Health Services Act (MHSA) Coordinator (Amanda Fenn Greenberg), and Fiscal & Technical Specialist (Laura Cruz). Throughout the process of developing and implementing this clinical PIP, several other key stakeholders, including therapists and case managers were asked to contribute feedback to the proposed strength-based approach.

Each of these stakeholders brought a critical viewpoint to the PIP development process. The members contributed an intimate knowledge of the department's inner workings and challenges, as well as insight into the strategic vision and direction of the department. The therapists and administrative staff provided further information about daily practices and the feasibility of the intervention, while the MHSA Coordinator – a new member of the team – brought an outsider's perspective.

1b. Define the problem by describing the data reviewed and relevant benchmarks. Explain why this is a problem priority for the MHP, how it is within the MHP's scope of influence, and what specific consumer population it affects.

Studies have shown that the "onset of mental health problems often occurs during childhood or adolescences"; however, youth who experience mental health problems are rarely identified and served.[1] "Youth who experience mental health disorders, particularly when not identified and treated early, experience severely compromised life functioning." Youth surveillance surveys are often used to identify risk behaviors among certain populations, and in California, the California Healthy Kids Survey (CHKS) is one such tool. Indeed, the CHKS has several items related to mental health functioning, including two that will be the focus of this PIP:

1. During the past 12 months did you ever feel so sad or hopeless almost every day for two weeks or more that you stopped doing some usual activities?

[1] Dowdy, E., Furlong, M., & Sharkey, J. D. (2013). Using Surveillance of Mental Health to Increase Understanding of Youth Involvement in High-Risk Behaviors. *Journal of Emotional and Behavioral Disorders, 21*(1). Retrieved from http://journals.sagepub.com/doi/pdf/10.1177/1063426611416817

2. **Question**: In the past 30 days did you miss school for any of the following reasons?

   Answer option: Felt very sad, hopeless, anxious, stressed, or angry

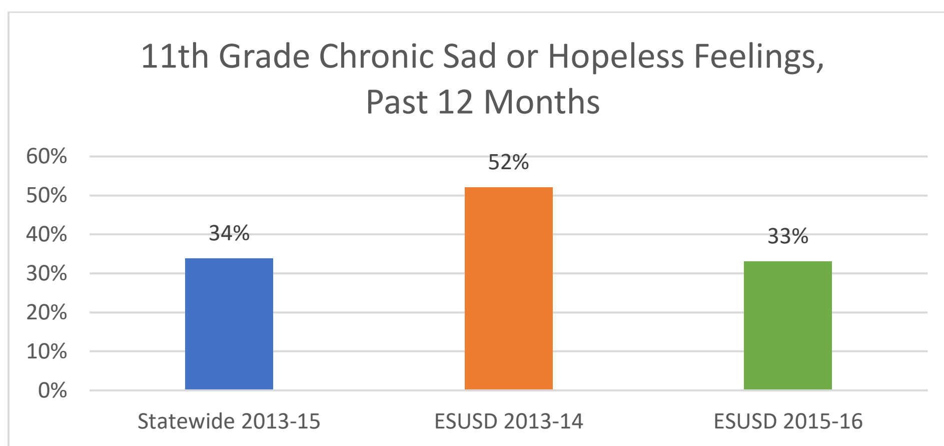
In addition to signaling potential mental health issues, reports of chronic sad/hopeless days are associated with suicide ideation and other risky behaviors such as substance use, aggression, and victimization.[2] In short, when students report high rates of chronic sad/hopeless days, mental health and school professionals should take note and take action.

There are two primary school districts in Mono County: Mammoth Unified School District (MUSD) and Eastern Sierra Unified School District (ESUSD). Although the entire county is rural and remote, ESUSD is significantly more rural and remote than MUSD; furthermore, there are only 172 students in ESUSD's middle and high schools (grades 6-12). Presently, MUSD benefits from such MCBH services as guest speaker presentations, prevention curricula, and – most importantly – a school-based counseling program called Mammoth North Star. This program is focused on prevention and early identification of mental health issues for students in grades K-12. This program utilizes a framework of prevention and early intervention strategies that encourages the school and the community to implement programs and services that meet local needs. Currently, there are 651 students in grades 6-12 at MUSD schools, and approximately 26 are seen at Mammoth North Star.

Although MCBH has discussed expanding services into ESUSD schools, the department has been limited by staff capacity and the challenges of traveling 60 to 90 minutes to provide services. Moreover, extreme weather conditions in the mountains can make traveling throughout the county a particular challenge in winter. Despite these challenges, MCBH has identified a significant problem in ESUSD schools that must be addressed, and the department has the capacity to design and implement an intervention to address it.

In January 2016, California released the results of the 2013-2014 CHKS and MCBH took note of an alarming result: 52% of 11th graders in ESUSD schools reported chronic sad or hopeless feelings. At that point, MCBH started to examine opportunities for outreach and intervention in ESUSD middle and high schools. The resulting work serves as the basis for this PIP. In January 2017, California released the results of the 2015-16 CHKS; happily, the rates of chronic sad or hopeless feelings have dropped dramatically to 33% (without a targeted intervention from MCBH). At the state level, the rate of chronic sad or hopeless feelings among 11th graders (2013-15) was 33.8%. Please see Figure 1 below.

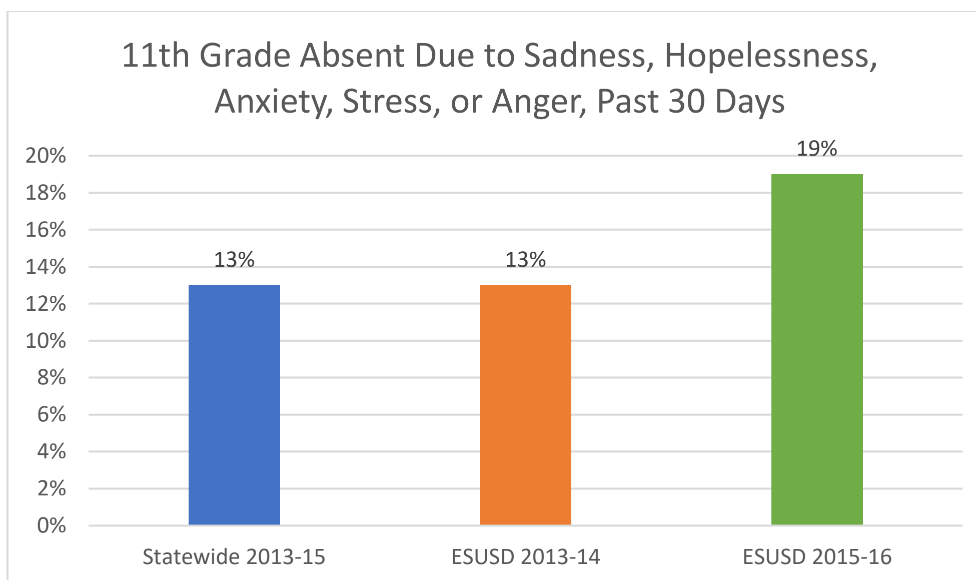
Figure 1.



[2] Dowdy, E., Furlong, M., & Sharkey, J. D. (2013). Using Surveillance of Mental Health to Increase Understanding of Youth Involvement in High-Risk Behaviors. *Journal of Emotional and Behavioral Disorders, 21*(1). Retrieved from http://journals.sagepub.com/doi/pdf/10.1177/1063426611416817

That said, it is important to note that the sample size from ESUSD CHKS surveys is quite small (n=31 in 2013-14; n=21 in 2015-16) and is therefore not as reliable as in other larger counties. MCBH is still concerned about the rates of chronic sad or hopeless feelings that have been reported, especially with the very high rates in 2013-14. Additionally, further investigation of the ESUSD CHKS data found that although the rates of chronic sad or hopeless feelings had dropped, the rates of 11th graders missing school due to feeling "very sad, hopeless, anxious, stressed, or angry" in the last 30 days had increased from 13% (2013-2014) to 19% (2015-2016).

Figure 2.



The goal of this PIP is to improve mental health outcomes among students in ESUSD middle and high schools by improving the process of care that surrounds referring students to individual services. In order to meet this goal, MCBH will implement an intervention that includes classroom outreach and groups focused on mental health issues. This intervention will be designed to increase rates of referral to needed mental health services. In this way, the intervention helps improve processes of care by creating a new way to link individuals in need of individual services to MCBH's services. The secondary goal of the PIP is to improve outcomes (as measured by the Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder 7-item (GAD-7) scale) specifically for those students who are referred to service.[3] This will ensure that the improved process of care (referrals) actually targets client outcomes.

This intervention was chosen as a way to directly influence the poor outcomes identified in the CHKS among students in ESUSD middle and high schools. MCBH hypothesizes that there are at least 7 students (4% of the student population) in need of individual services in ESUSD middle and high schools. By implementing the proposed intervention in these schools, MCBH has created a clear way to identify and refer these students to needed individual services. Evidence has shown school-based interventions to be effective in identifying and referring students to individual services.[4] Moreover, MCBH has experienced great success

[3] Please note that MCBH discussed using the Child and Adolescent Needs Strengths (CANS) Assessment for this PIP. However, it was decided that this lengthy assessment (which also requires the presence of a parent, guardian, or other caregiver) would be too burdensome for the proposed intervention. Moreover, the PHQ-9 and GAD-7 are already given routinely to students upon intake. For these reasons, MCBH believes that the PHQ-9 and GAD-7 are better tools to measure this intervention.

[4] Rones, M., & Hoagwood, K. (2000). School-Based Mental Health Services: A Research Review. *Clinical Child and Family Psychology Review, 3*(4), 223-241. Retrieved from http://link.springer.com/article/10.1023/A:1026425104386

with its Mammoth North Star program. Overall, MCBH believes that this intervention has the potential to impact the mental health status of the youth served by linking them to needed individual services through improved processes of care.

Section 2: Define & Include the Study Question

- Will the expansion of group and outreach services in Eastern Sierra Unified School District result in an increase in referrals to individual services?
- Will the youth who are referred to service experience decreases in their PHQ-9 and GAD-7 scores after one year of service?
- Will the youth in Eastern Sierra Unified School District experience a decrease in chronic sad or hopeless feelings (as measured by CHKS) after one year of expanded group and outreach services?*

*The option of creating and administering a survey with behavioral health items that would be independent of the CHKS (and thus provide real-time results) was discussed; however, it was determined that such a survey would be too burdensome for the schools and teachers, especially given that the results would address a secondary study question.

Section 3: Identify Study Population

This PIP is comprised of two different study populations:

1. ESUSD students referred to individual services
2. All youth in ESUSD middle (6th-8th grade) and high schools (172 students total)

The intervention that is encompassed by this PIP initially targets all students in ESUSD middle and high schools through outreach, education, and mental health groups. Therefore, the ESUSD middle and high school student population makes up one key population. MCBH will also be following up with this broader study population through large-scale surveillance tools such as the CHKS. However, because this PIP focuses on improving the process of care through referrals to individual services, the primary study population is made up of the students who are actually referred to individual services. The clinical outcomes of these students will be tracked throughout the course of their services at MCBH.

Please see Table 1 below for information on age, gender, race, and payer for the clients included in the study population. Please note that this information is not provided on a client by client basis in order to help protect the confidentiality of the clients included in this PIP. Demographic information for the broader ESUSD study population as measured by the CHKS was not available due to the small sample size.

Table 1. Referred Students Study Population Characteristics

Gender	Study Population Count	Study Population Percent
Male		
Female		
Other		
Race/Ethnicity		
White		
Hispanic/Latino		
Other		
Age		

0-15		
16-25		
26-40		
41-59		
60+		
Payer		
Medicare		
Medi-Cal		
Private insurance		

Section 4: Select & Explain the Study Indicators

The study questions for this PIP are:

- Will the expansion of group and outreach services in Eastern Sierra Unified School District middle and high schools result in an increase in students referred to individual MCBH services?
    - Rationale: Creating new avenues to identify youth in need of care and refer them to service is an important component of improving processes of care and ultimately improving client outcomes.
- Will the youth who are referred to service experience decreases in their PHQ-9 and GAD-7 scores after three months of service?
    - Rationale: Once the students who are referred to individual services, it is critical to see if they are showing improvement in mental health and functional status outcomes.
- Will the youth in Eastern Sierra Unified School District experience a decrease in sad/hopeless days (as measured by CHKS) after one year of expanded group and outreach services?
    - Rationale: Although this school-based intervention is focused on improving processes of care, one of its secondary goals is to improve school health indicators overall.

These outcomes will be quantifiably measured by a series of performance indicators, which are outlined in Table 2 below. Progress toward the majority of the performance indicators (follow-up) will be measured at various specified points in time.

Table 2. Study Performance Indicators

#	Performance Indicator	Numerator	Denominator	Baseline	Goal
1	% of ESUSD middle and high school students referred to individual services	# of students referred to individual services*	Total # of students at ESUSD middle/high schools (172)	n/a	4.7% (8 total students)**
2	% referred students who become open consumers	# of referred students who become open consumers***	Total # of referred students	n/a	88% (7 total students)
3a	% decrease in PHQ-9 scores	Aggregate average decrease in PHQ-9 scores	Aggregate average baseline PHQ-9 score	TBA	15% decrease

3b	% decrease in GAD-7 scores	Aggregate average decrease in GAD-7 scores	Aggregate average baseline GAD-7 score	TBA	15% decrease
4	Decrease in rate of sad or hopeless feelings	n/a	n/a	33%	31%
5	Decrease in absenteeism due to sadness, etc.	n/a	n/a	19%	17%

*Students will be referred to individual services if they show a cluster of symptoms. The thresholds for referrals will be discussed in an upcoming staff training.

**This goal was developed based on the percent of middle and high school students in MUSD schools currently served by Mammoth North Star.

***This indicator will allow MCBH to 1) account for students who are determined to not actually meet medical necessity and 2) track students who are referred to individual services to ensure they actually seek out those services.

Section 5: Sampling Methods

Given the small size of this PIP's target population, MCBH will not be using a sampling method.

Section 6: Develop Study Design & Data Collection Procedures

The measures for this project were designed by the MHSA Coordinator, who is an MCBH employee. She will also be responsible for collecting and analyzing the data. The MHSA Coordinator holds a Master of Public Health with experience in survey development, evaluation plan development, and program planning. She is proficient in analyzing data in Excel and SPSS statistical software; however, given the small sample size of this PIP, data analysis will be conducted in Excel.

Please see Table 3 below for a summary of the data collection and analysis plan. The instruments used for data collection will provide consistent and accurate data over time because the tools used (PHQ-9, GAD-7, CHKS) have been validated. Any data that is collected outside the validated tools (count of # of students referred, etc.) will be collected by one person: the MHSA Coordinator.

As a contingency for untoward results, MCBH plans to assess the number of students referred to services and the number of students who become MCBH clients at several time points during the first year of the intervention. If students aren't being referred to services, then the department will assess whether the intervention is working closely enough with students to identify those who need referrals. Similarly, if students who are referred aren't actually becoming MCBH clients, then the department will discuss increasing ease of access and decreasing other potential barriers. If improvements in consumer outcomes are not achieved, then a secondary level of analysis will be conducted to determine how the PIP could have greater success. If the data collected at follow-up do show improvements, then the study will continue as planned.

See Table 3 on the following page for a summary of the data collection and analysis plan.

Table 3: Data Collection & Analysis				
Measure	Who	Timing	Data Collection	Analysis Steps
% of ESUSD middle and high school students referred to individual services	MHSA Coord.	Every 3 months post-launch	Referral Records School Enrollment Records	1. Count # of students referred (numerator) 2. County # of students at the school (denominator) 3. Divide numerator by denominator and multiply by 100 4. Compare % to goal of 4.7%
% referred students who become open consumers	MHSA Coord.	**Baseline:** Pre-intervention **Follow-Up:** Every 3 months post-launch	EHR Referral Records	5. Count # of referred students who become open consumers (numerator) 6. Count # of referred students (denominator) 7. Divide numerator by denominator and multiply by 100 8. Compare % to goal of 90%
Percent derease in PHQ-9 and GAD-7 scores	MHSA Coord.	**Baseline**: Intake **Follow-Up**: Every 3 months post-baseline	PHQ-9 and GAD-7 (clinical staff)	9. Beginning three months after first baseline is completed: calculate % decrease for all individuals for PHQ-9 and for GAD-7 10. Calculate the average % decrease for all individuals 11. Compare average % decrease across sample to goal of 15% 12. Analysis will be run every three months on a rolling basis
Decrease in rate of sad or hopeless feelings	MHSA Coord.	**Baseline:** 2015-16 CHKS **Follow-Up:** 2017-18 CHKS	CHKS	13. Review CHKS results from 2015-16 and 2017-18 14. Compare rates of sad or hopeless feelings in 2017-18 to goal of 31%
Decrease in absenteeism due to sadness, etc.	MHSA Coord.	**Baseline:** 2015-16 CHKS **Follow-Up:** 2017-18 CHKS	CHKS	15. Review CHKS results from 2015-16 and 2017-18 16. Compare rates of absenteeism due to sadness, etc. in 2017-18 to goal of 17%

Section 7: Develop & Describe Study Interventions

Table 4. Intervention Summary

Intervention Name	Barriers/Causes Intervention Designed to Target	Corresponding Indicator	Date Applied
ESUSD Group/Outreach Expansion	• Limited access to services • Lack of awareness of MCBH services • Poor outcomes among students in need of individual services • High rates of sad or hopeless feelings • High rates of absenteeism due to sadness, etc.	1-5	TBA

This intervention is designed to improve processes of care in order to provide services to students with mental health issues. MCBH has identified a clear need for services among students in ESUSD middle and high schools. In order to refer more students into individual services (and improve their clinical outcomes), MCBH has designed a school-based intervention that will include an expansion of group and other outreach services. MCBH case managers already offer groups in other parts of the county, so extending those activities to ESUSD middle and high schools specifically is logical and feasible.

MCBH case managers will launch the PIP by meeting with ESUSD principals and the superintendent to build relationships and identify needs. Based upon the identified needs, the case managers will hold targeted four- to six-week groups for students at ESUSD middle and high schools. Teachers will be able to refer students with various mental health and behavioral issues to the groups and the case managers will determine whether the students should be referred to individual services as well. The threshold for referral will be based whether students show a cluster of symptoms that will be identified and discussed at an upcoming staff training.

If a student is referred to individual services, the case manager will coordinate with MCBH therapists to determine the best time and place for services. Additionally, the PIP will track the number of students who are referred to services and actually become open clients. This will ensure that students are not "falling through the cracks" and missing out on needed services. Furthermore, MCBH will ensure that once students become open consumers, they are assessed with the PHQ-9 and GAD-7 at baseline and every three months thereafter to ensure that their outcomes are improving over time. Not all students who are reached by the expanded groups and outreach will become open clients; however, the secondary goal of this PIP is that ESUSD students more broadly will also experience improved mental health outcomes. This aspect of the PIP will be measured by the California Healthy Kids Survey.

Section 8: Data Analysis & Interpretation of Study Results

This PIP is active and ongoing, therefore the analysis of the baseline and follow-up data has not yet been completed. Please see Section 6 for the data analysis plan. Once the data has been analyzed, it will be reported in Table 5 below. The columns in this table that are highlighted in gold will be filled out as the analysis is run.

This data is expected to trigger further QI projects. If MCBH meets its targets at all data collection points, then MCBH will continue with the PIP as planned, and potentially expand the intervention to hold additional groups in ESUSD schools. If the data do not show that the department has met its goals, then the PIP Committee will return to the data to see what aspects of the intervention were less successful and develop any additional trainings or services to address those shortcomings before moving on to future stages of the intervention. Furthermore, the PIP Committee will interview consumers and other involved parties to further understand how the intervention could be improved.

Please see Table 5 below for a summary of the data analysis.

Table 5: Summary of Performance Indicators & Measurement

Performance Indicator	Date of Baseline	Baseline Msmt	Date of Follow-Up	Follow-Up Msmt	Goal for Improvement	Results	Goal Met? (Y/N)
% of ESUSD middle and high school students referred to individual services	n/a	n/a	12 months post- launch		4.7% (8 total students) of ESUSD middle and high school students referred to individual services		
% referred students who become open consumers	n/a	___	12 months post-launch		90% of referred students become open consumers		
% decrease in PHQ-9 scores	Determined individually		Every 3 months post-baseline		15% Decrease		
% decrease in GAD-7 scores	Determined individually		Every 3 months post-baseline		15% Decrease		
Decrease in rate of sad or hopeless feelings	CHKS 2015-16	33%	CHKS 2017-18		Decrease to 31%		
Decrease in absenteeism due to sadness, etc.	CHKS 2015-16	19%	CHKS 2017-18		Decrease to 17%		

Section 9: Assess Whether Improvement Is "Real" Improvement

This PIP is active and ongoing, therefore a thorough reflection on the results of the PIP is not possible at this time. However, given the small size of the study population, we do not anticipate distinct challenges related to sampling, monitoring, or analysis in terms of studying the results of this PIP.

MCBH also does not anticipate challenges with the comparability of the initial and repeat measures for the clients (both referred and opened) given the small sample and simplicity of count data. We also do not anticipate challenges regarding the PHQ-9 or GAD-7 assessments, as the initial and repeat measures for each student will be conducted by the same therapist. Moreover, these assessments are not very time-consuming and do not require the presence of a parent or guardian for the youth to complete.

MCBH does anticipate some challenges regarding the initial and repeat measure of the larger school population using the CHKS data. The CHKS is only administered every other year and the results are often released with a significant lag. MCBH engaged in discussion around whether it would be feasible and valuable to administer a schools-wide survey that would measure a series of mental health indicators; however, given that the school-wide improvement was a secondary goal of this PIP (vs. referring students to services), it was determined that this step was unnecessary and overly burdensome for schools.

The primary measures of improvement will be reported as percent change in GAD-7 and PHQ-9 and percent of students referred and opened; after collecting these data, MCBH will report whether the goal was met. At the conclusion of the PIP, MCBH will determine whether it would have been helpful to collect and monitor data more frequently. Statistical testing will not be used, as the study sample is small and we do not need to control for non-independent sampling. Furthermore, this study is not designed to be generalized across individuals, settings, and times, and is therefore not subject to threats to external validity. There is not a control group.

In the data analysis section, the MHSA Coordinator will report on whether the goal for each indicator was met. The PIP will be considered successful if the goals are met for three of the five indicators identified. The increases in student referrals and services will be directly attributable to the PIP intervention. Additionally, decreases in the PHQ-9 and GAD-7 are likely attributable to the intervention as the students who are assessed with these scales will be receiving individual therapy and attending school groups. It will be more difficult to attribute school-wide changes in the CHKS indicators to the intervention; however, MCBH still believes that these are important measures to follow-up on. In addition to this follow-up activity, MCBH will use the data gathered to inform programming decisions and potentially expand the intervention.

Finally, with regard to sustained improvement, this PIP has served as a catalyst for re-starting groups in ESUSD middle and high schools, a service that has been on hiatus for a number of years. MCBH will continue its commitment to serving the outlying areas of the county, including the ESUSD schools indefinitely, as a result of this PIP. Progress will be monitored according to the data collection and analysis plans, which will allow MCBH to measure whether the improvement is sustained over time.