Performance Improvement Project Implementation & Submission Tool

PLANNING TEMPLATE

INTRODUCTION & INSTRUCTION

This tool provides a structure for development and submission of Performance Improvement Projects (PIPs). It is based on EQR Protocol 3: Validating Performance Improvement Projects (PIPs), as a mandatory protocol delivered by the Centers for Medicare & Medicaid Services (CMS) in September of 2012.

The use of this format for PIP submission will assure that the MHP addresses all of the required elements of a PIP. If the MHP uses another format, they must ensure that all of the required elements of the PIP are addressed and included in their submission. **PLEASE fully complete each section and answer ALL questions.**

- The PIP should target improvement in either a clinical or non-clinical service delivered by the MHP.
- The PIP process is not used to evaluate the effectiveness of a specific program operated by the MHP. If a specific program is experiencing identified problems, changes and interventions can be studied using the PIP process. This can be done to create improvements in the program and should be included in the narrative.
- The narrative should explain how addressing the study issue will also address a broad spectrum of consumer care and services over time. If the PIP addresses a high-impact or high risk condition, it may involve a smaller portion of the MHP consumer population, so the importance of addressing this type of issue must be detailed in the study narrative.
- Each year a PIP is evaluated is separate and specific. Although topic selection and explanation may cover more than one PIP year, every section should be reviewed and updated, as needed, to ensure continued relevance and to address on-going and new interventions or changes to the study.
- If sampling methods are used, the documentation presented must include the appropriateness and validity of the sampling method, the type of sampling method used and why, and what statistical subset of the consumer population was used.
- General information about the use of sampling methods and the types of sampling methods to use to obtain valid and reliable information can be found in Appendix II of the EQR Protocols.[1]

[1] EQR Protocol: Appendix II: Sampling Approaches, Sept. 2012, DHHS, Centers for Medicare & Medicaid Services (CMS), OMB Approval No. 0938-0786

Identification of Plan/Project

MHP Name:	**County of San Diego Behavioral Health Services (SDCBHS)**		
Project Title:	**Client Engagement after Discharge from Psychiatric Hospital**	Check One: Clinical	Non-Clinical **X**
Project Leader:	**Liz Miles, Ed.D, MPH, MSW/Steve Tally, Ph.D**	Title: Principal Administrative Analyst	Role: **Performance Improvement Project (PIP) Lead**
Start Date (MM/DD/YY):	**April 2016**		
Completion Date (MM/DD/YY):	**Spring 2018**	Projected Study Period (# of months): **24**	
Brief Description of PIP: *(Please include the GOAL of the PIP and what the PIP is attempting to accomplish.)*	**Increase the engagement with services after discharge for clients who are discharged from the San Diego County Psychiatric Hospital and who are not currently active clients in the SDCBHS.**		

Step 1: Select & Describe the Study Topic

1. *The PIP Study Topic selection narrative should include a description of stakeholders involved in developing and implementing the PIP. MHPs are encouraged to seek input from consumers and all stakeholders who are users of, or are concerned with specific areas of service.*

- *Assemble a multi-functional team (e.g. clinical staff, consumers, contract providers as appropriate).*

  A multi-functional team was assembled for the purposes of developing and implementing the PIP, including subject matter experts and staff from the San Diego County Psychiatric Hospital (SDCPH), County of San Diego Behavioral Health Services (SDCBHS) staff members, clinicians and staff from select Outpatient programs, and contracted Research Centers. Additionally, we have recruited staff from the Innovations Program "Next Steps" to consult on the design of further interventions in the follow-on phases of this PIP. Next Steps is a program that works to increase linkages and engagements to services after discharge using Peer Specialists.

- *Describe the stakeholders who are involved in developing and implementation of this PIP. Be sure to include CFM group representation.*
  - Clients: Clients were interviewed from peer-based "Next Steps" program. Next Steps is a peer-based program that utilizes peer support specialists to facilitate linkages to services after discharge from inpatient facilities. As such, Next Steps staff have unique insights into the barriers to linkage encountered by clients discharging from hospitalization.
  - Program staff: Program staff from SDCBHS programs.
  - Clinicians: Clinicians from both the SDCPH and participating outpatient clinics.
  - Hospital staff: Staff from the SDCPH included the Clinical Director, and both clinical and administrative staff.

  Detailed list of staff:
  - Michael S. Krelstein, M.D. – Clinical Director, Behavioral Health Services
  - Michelle Raby, LMFT – East County Program Manager

- Elene Bratton, MS, LMFT - North Central Program Manager
- Diana Cobb – Southeast Program Manager
- Stephanie Sambrano MS, LMFT, Psychiatric Social Worker Coordinator, SDCPH
- Nancy Nguyen, MSW - Mental Health Case Management Clinician, SDCPH
- Steve Tally, Ph.D. – Assistant Director of Research, Health Services Research Center, University of California, San Diego
- Lucyna Klinicka – Program Evaluation Specialist
- Dasha Dahdouh, MPH – Quality Improvement, Performance Improvement Research Analyst, Behavioral Health Services
- Linda Richardson, Ph.D., R.N. – National Alliance on Mental Illness (NAMI) Next Steps Director
- Jamie Mancera Ortega – Senior Office Assistant, East County Mental Health Clinic
- Phuong Quach, Psy.D., LMFT – Behavioral Health Program Coordinator, Behavioral Health Services
- Nilanie Ramos, MSW – Health Planning and Program Specialist, Behavioral Health Services
- Nicole Esposito, M.D. – Assistant Medical Director, Behavioral Health Services

➢ *Describe the stakeholders' role(s) in the PIP and how they were selected to participate.*
  - SDCPH Staff: Hospital staff will be identifying new-to-system clients and working with them to schedule an appointment with a selected clinic. They will also coordinate sharing client information with the participating clinics. Hospital staff was also instrumental in identifying the overall problem, and the procedural differences between new and existing clients that may be related to the lower engagement rates. Hospital staff and Clinical Director attend all PIP meetings with SDCBHS teams.
  - Program Administration, Staff, and Clinicians: Administration, staff, and clinicians at the three selected programs have participated in the coordination and design of the PIP. Administrators and staff have helped integrate the new scheduling procedures, and clinicians have provided feedback regarding the usefulness of contact with regard to hard-to-engage clients.
  - Clients: For the first phase of the PIP, consumer feedback took the form of interviews of Next Steps Peer Specialists who were interviewed as part of regular program evaluation activities for that program. As the initial phase addressed a systematic issue (the provision of a timely appointment) the input from clients was minimal, and involved confirmation that it indeed is helpful to clients to have an appointment at the time of discharge (versus a walk-in recommendation). The second phase of the PIP included administering an Engagement with Services Survey, a short questionnaire asking clients what might help them attend a follow-up appointment.

➢ *The problem to be addressed should be clearly stated with narrative explanation including what brought the problem to the attention of the MHP.*
  - *What is the problem?*
    There is a low engagement rate with outpatient services after discharge from a psychiatric hospital for clients who are new to the SDCBHS system compared to those who are already a current client in the SDCBHS system.

  - *How did it come to your attention?*
    Routine analysis of no-show data as well as review of client engagement patterns after discharge from SDCPH revealed the pattern. Additionally, as part of the previous PIP, a review of Serious Incident Reports demonstrated that among clients who committed suicide in FY 2013-14, a high percentage of these suicides occurred within 90 days of their last service received in the Behavioral Health Systems of Care.

- *What data have you reviewed that suggests the issue is indeed a problem for the MHP? Describe any relevant benchmarks.*
  Analyses of SDCBHS client data revealed that upon discharge from the SDCPH only 26% (605/2,312) of clients who were new to the system, or who had previously been in the system but later had closed cases, connected with services within 30 days of discharge. This compares with approximately 45% of clients who were currently active in the SDCBHS system. Furthermore, the data before and after psychiatric hospital discharge for FY 2015-16 showed that 11% of connected discharges were readmitted within 30 days compared to 15-22% for those who did not connect with services. Additionally, non-connected discharges had an average of one more EPU or PERT service prior to admission compared to connected discharges since 1/1/15. High rates of readmission and emergency visits are linked to high costs of healthcare. (20)

- *What literature and/or research have been reviewed that explain the issue's relevance to the MHP's consumers?*
  It is well documented that for clients with mental and substance use problems, the time right after discharge from a psychiatric hospital carries many risks. Inadequate transition from inpatient to outpatient care can result in a higher risk of medication noncompliance (1), re-hospitalization (2, 3, 4, 5, 6), homelessness (7, 8), and suicide (9, 10, 11, 12, 13). High rates of readmission and emergency visits are linked to high costs of healthcare. (20)

  Furthermore, analyses of BHS data before and after psychiatric hospital discharge for fiscal year 2015-16 showed that 11% of connected discharges were readmitted within 30 days compared to 26% for those who did not connect with services. Additionally, non-connected discharges had an average of one more EPU or PERT service prior to admission compared to connected discharges since 1/1/15.

- *The study topic narrative will address:*
  - *What is the overarching goal of the PIP?*
    To increase the engagement with services after discharge rate and decrease the readmission rate for clients who are discharged from the SDCPH and who are not currently active clients in the SDCBHS system.

  - *How will the PIP be used to improve processes and outcomes of care provided by the MHP?*
    The intervention(s) developed through this PIP will be refined and a process presented to stakeholders as a model for all all SDCBHS inpatient units. Processes will be improved through increased communications between inpatient units and outpatient MHP's as well as the adoption of a more personal and effective handoff of clients after discharge. Outcomes will be improved through more effective engagement with services for clients who are new to the SDCBHS system, or mental health services overall.

  - *How any proposed interventions are grounded in proven methods and critical to the study topic.*
    Several literature reviews and studies point to the evidence that simple transition techniques, such as inpatient – outpatient provider communication, timely scheduling of initial appointment, educating clients about the details of the outpatient appointment, and phone call reminders can lead to improved client engagement in outpatient care (5, 14, 15, 16, 17, 18, 19).

- *The study topic narrative will clearly demonstrate:*
  - *How the identified study topic is relevant to the consumer population*
  - *How addressing the problem will impact a significant portion of MHP consumer population*
  - *How the interventions have the potential to impact the mental health, functional status, or satisfaction of consumers served.*

The analyses of historical SDCBHS data and published literature described in the sections above, demonstrate the importance of properly transitioning clients from inpatient to outpatient care. It is, therefore, critical to increase the engagement with services after discharge rate for clients who are discharged from the SDCPH and who are not currently active clients in the SDCBHS system.

Interviews with clients, program staff, clinicians and hospital staff revealed that the likely cause may be that there are two different processes for engagement for the two groups. Open clients are given an appointment that takes place within three days of their discharge with their current provider. Clients not active in the SDCBHS system are given information on how to use "walk-in" services and are given a program name, address, and contact, but no appointment. Therefore, these clients, who are unfamiliar with the system and have no personal contacts at any program, are being asked to initiate contact.

Focus groups conducted with two organizations (Next Steps and Telecare) who work with recently discharged clients as part of their mission revealed the following potential problems with the walk-in model as it applies to recently discharged clients with no system connections or familiarity:

- If the client is screened (triaged) out at walk-in, they may not be given a future appointment.
- If the walk-in availability for a clinic is at capacity, the client is not sent to another clinic right away but asked to come back another day.
- When discharged from a hospital, clients don't understand how to access a clinic.
- There is a lack of communication with the hospital and program teams regarding discharge planning.
- The clinics are currently limited to seeing a specified number of walk-in people per day.

It is apparent from the data that clients not currently in the SDCBHS system were not engaging with follow-up services after discharge from the hospital, and further apparent from qualitative interviews that the possible problem may be related to the reliance on a walk-in connection versus a specific appointment.

Description of Initial Intervention:
It is, therefore, proposed that an intervention is implemented, whereby discharged clients who are not active in the SDCBHS system are given a specific appointment to take place within three days of discharge, including a date and time, and the name of a contact or clinician with whom they will be making contact. The main outcome to be measured would be engagement with services.

A successful engagement is defined as satisfying any of the 3 criteria below:

- Attending the provided appointment.
- Attending another appointment at a SDCBHS program at a comparable level of care.
- Attending unscheduled non-emergency services such as a walk-in session.

The intervention(s) developed through this PIP will be refined and efforts made to have them adopted systemwide as a process for all SDCBHS inpatient units. Processes will be improved through increased communications between inpatient units and outpatient MHP's as well as the adoption of a more personal and effective handoff of clients after discharge. Outcomes will be improved through more effective engagement with services for clients who are new to the SDCBHS system, or mental health services overall.

References:

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STEP 2: DEFINE & INCLUDE THE STUDY QUESTION

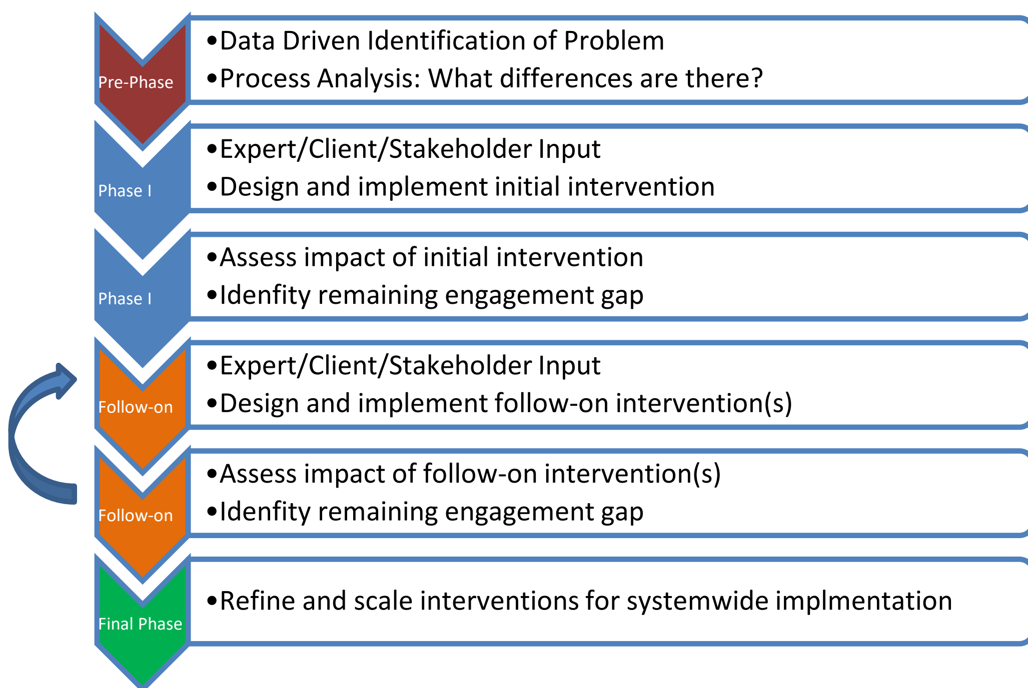
The study question must be stated in a clear, concise and answerable format. It should identify the focus of the PIP. The study question establishes a framework for the goals, measurement, and evaluation of the study.

Overall PIP Study Question:

Will the development of a standardized process for acute hospital discharged, new consumers (new to the system or not currently active with the SDCBHS) – which includes an aftercare appointment within three days of discharge and a reminder call – improve outpatient engagement by 10% to 30% and reduce readmissions by 10% to 30%?

This PIP was designed to be a multi-phase, iterative project. It is acknowledged that increasing engagement rates is a complex task, and that the factors related to the observed disparity in rates between new and existing clients is likely due to multiple factors. Therefore, this PIP is designed in the framework of an iterative process that began with the identification of what was deemed to be the primary difference between the discharge process for new and existing clients – the provision of an aftercare appointment within 3 days of discharge.

The overall PIP model follows the process shown in the Figure below, whereby after each intervention, the remaining engagement gap is analyzed, and follow-up interventions are designed and implemented until the process is deemed to be maximally effective and ready for scaling to the system level.



STEP 3: IDENTIFY STUDY POPULATION

Clearly identify the consumer population included in the study. Include an explanation of how the study will address the entire consumer population, or a specific sample of that population. If the study pertains to an identified sector of the MHP consumer population, how inclusion of all members will occur is required. The documentation must include data on the MHP's enrolled consumers, as well as the number of consumers relevant to the study topic.

This Step may include:

- *Demographic information;*
- *Utilization and outcome data or information available; and*
- *Other study sources (such as pharmacy data) that may be utilized to identify all consumers who are to be included in the study.*

This study will address a specific sample of the client population as defined below.

For this PIP, the study population is defined as clients who are:

1. Discharged from SDCPH during the study period.

2. Not currently active clients in the SDCBHS system. Not currently active clients can fall into two categories:
    a. New to the system: No currently open or closed record in the SDCBH system.
    b. Previously in the system but closed: Non-active clients are those who have a record in the SDCBH system, and therefore have received services, but whose status was "closed" at the time of their admission to the SDCPH.

STEP 4: SELECT & EXPLAIN THE STUDY INDICATORS

"A study indicator is a measurable characteristic, quality, trait, or attribute of a particular individual, object, or situation to be studied."[2] Each PIP must include one or more measurable indicators to track performance and improvement over a specific period of time.

Indicators should be:

- *Objective;*
- *Clearly defined;*
- *Based on current clinical knowledge or health service research; and*
- *A valid indicator of consumer outcomes.*

The indicators will be evaluated based on:

- *Why they were selected;*
- *How they measure performance;*
- *How they measure change in mental health status, functional status, beneficiary satisfaction; and/or*
- *Have outcomes improved that are strongly associated with a process of care;*
- *Do they use data available through administrative, medical records, or another readily accessible source; and*
- *Relevance to the study question.*

The measures can be based on current clinical practice guidelines or health services research. The MHP must document the basis for adopting the specific indicator.

In reporting on the chosen indicators include:

- *A description of the indicator;*
- *The numerator and denominator;*
- *The baseline for each performance indicator; and*
- *The performance goal.*

This PIP has the goal of increasing engagement rates for clients who are discharged from the SDCPH and are not current clients in the SDCBHS system. In FY 2015-16, 28% of new clients who were discharged from the SDCPH engaged in services with an outpatient or case management provider within 90 days of discharge. This compares with 45% for those clients who were discharged and were already clients in the MH system. As

[2] EQR Protocol 3, Validation of Performance Improvement Project, Sept. 2012, DHHS, Centers for Medicare & Medicaid Services (CMS), OMB Approval No. 0938-0786

stated in sections above, one of the main differences with regard to procedure between these two types of clients was that current clients were provided an appointment at discharge, while new clients were provided with information about a walk-in clinic visit (no appointment). Therefore, the indicators will be a straightforward count of discharges and engagements for new clients at three timepoints (7, 30, and 90 days) in order to calculate the rate as shown in the table below. In addition, analysis of system data indicated a disparity for new and existing clients with regard to 30-day readmission rates, with readmission rates for existing clients at 11% as compared with 26% for new clients or those no longer active. Therefore, a secondary indicator will be 7-, 30-, and 90-day readmission rates. Finally, in order to systematically track adherence to the intervention, the number of clients who actually attend their scheduled appointment will be tracked.

Note regarding engagement time windows: Although the initial problem was identified through the analysis of 90-day engagement rates, it is acknowledged that true engagement takes place in a much shorter time frame, and to adequately assess linkages due to the intervention, a spectrum of timeframes of engagement should be examined, including one encompassing the first 7 days after discharge. Therefore, engagement rates will be examined for 7, 30, and 90 days.

Table of indicators:

#	Describe Performance Indicator	Numerator	Denominator	Baseline for Performance Indicator (number)	Goal (number)
1	Connection with services after discharge	# of clients who connect with outpatient services at their referred clinic within 7, 30 and 90 days after discharge	# of clients who were discharged from the SDCPH and also were not active clients in the SDCBHS.	7 days: 334/2,312 = 14%	35-45%
				30 days: 605/2,312 = 26%	
				90 days: 784/2,312 = 34%	
2	Readmission rates	# of clients who are readmitted within 7, 30, and 90 days	# of clients who were discharged from the SDCPH and also were not active clients in the SDCBHS.	7 days: 198/2,312 = 9%	10-15%
				30 days: 347/2,312 = 15%	
				90 days: 497/2,312 = 22%	

Step 5: Sampling Methods (if applicable)

The MHP must provide the study description and methodology.

- *Identify the following:*
  - *Calculate the required sample size*

    Although sample size and power are critical for large scale studies that will be conducting hypothesis testing, such sampling methods assume that it is not feasible to sample the entire population (thus requiring a sample). For this PIP, our population is all new/non-active clients who are discharged from the SDCPH during a 12 month period. Although this itself is a subsample of all clients from all SDCBHS inpatient hospitals, we will be targeting this entire population from SDCPH in order to address the feasibility of the intervention to apply on a systemwide level. Targeting the entire population from SDCPH enables us to avoid sampling error, as we are not selecting a subset from the SDCPH population.

    For this PIP, the number of new clients who are discharged from SDCPH is approximately 10-20 per month. Therefore, we can expect a fairly sizeable sample to accrue during the fiscal year. As our outcomes variable is dichotomous (engage or not engage with services), statistical variation and error are reduced greatly increasing power.

  - *Consider and specify the true or estimated frequency of the event?*
  - *Identify the confidence level to be used?*
  - *Identify an acceptable margin of error?*

    A margin of error and/or confidence interval will not need to be calculated as these are estimates of how accurate a representation of the total population the study data provides. As we will be targeting the total population as defined above, no margin of error can be calculated.

Describe the valid sampling techniques used?

_______N of enrollees in sampling frame
_______N of sample
_______N of participants (i.e. – return rate)
N/A see above

Step 6: Develop Study Design & Data Collection Procedures

A study design must be developed that will show the impact of all planned interventions. Include the information describing the following:

- *Describe the data to be collected.*
  - Demographic information as follows:
    - Age
    - Gender
    - Preferred Language
    - Race/Ethnicity
    - Educational Level
    - Employment Status
    - Insurance Status
    - Living Situation
    - Diagnosis
    - Substance Use Diagnosis
    - Treatment Level of Care
  - Connection with services after hospital discharge: This is defined as having a service at a SDCBHS outpatient or case management clinic within 7, 30 or 90 days after discharge.
  - Readmission data for 7, 30, and 90 days after discharge.

- *Describe the methods of data collection and sources of the data. How do these factors produce valid and reliable data representing the entire consumer population to which the study indicators apply?*

  Upon discharge, hospital staff will work with the new clients to make an appointment at one of three participating clinics servicing a broad geographic region. The clinic staff will keep logs (Appendix A) documenting clients' date of discharge and date of scheduled appointments as communicated from the SDCPH. These logs were submitted to SDCBHS on a monthly basis. The UCSD contractors used these logs to pull additional client information from the SDCBHS MHS, Cerner Community Behavioral Health (CCBH) system to look at the service utilization post-discharge. The information pulled from CCBH included demographics and a list of all services used. This method of data collection assures that the most accurate data is collected about all of the clients who participate in this PIP intervention.

- *Describe the instruments for data collection, and how they provided for consistent and accurate data collection over time.*

  Each clinic used an Excel log to keep track of PIP intervention clients. Any issues related to the use of the logs were discussed during regular meetings with representatives from each of the three participating clinics, SDCPH, SDCBHS, and contractors from UCSD to assure accurate and consistent data collection over time. The information collected included:
  - Client ID
  - Client name
  - Date of discharge

- Date of birth
- Date of appointment
- Status of appointment (e.g., no-show, etc.)

- *Describe the prospective data analysis plan. Include contingencies for untoward results.*

  The data analysis plan entailed:
  - Calculation of engagement and readmission rates for new clients as described in Step 5 above.
  - Analytic comparisons of demographics and other defining characteristics for new clients and existing clients during the PIP year. This will help determine if person-level characteristics (beyond status as an existing client) may perhaps differ between these groups. This will help explain unexpected or low-level results.
  - Data was summarized, reported, and reviewed at least quarterly.

- *Identify the staff that will be collecting data, and their qualifications. Include contractual, temporary, or consultative personnel.*
  - Administrative staff at SDCPH: Psychiatric Social Worker Coordinator – Stephanie Sambrano, MS, LMFT; Mental Health Case Management Clinician – Nancy Nguyen, MSW.
  - County-operated Outpatient Clinics: North Central Program Manager – Elene Bratton, MS, LMFT; East County Program Manager – Michelle Raby, LMFT; Southeast Program Manager – Diana Cobb.

STEP 7: DEVELOP & DESCRIBE STUDY INTERVENTIONS

The MHP must develop reasonable interventions that address causes/barriers identified through data analysis and QI processes. Summarize interventions in a table that:

- Describes each intervention;
- Identifies the specific barriers/causes each intervention is designed to address;
- Identifies the corresponding indicator that measures the performance of the intervention; and
- Maintains the integrity/measurability of each intervention.
- Describe how the interventions will impact the indicators and help to answer the study question.

Number of Intervention	List each Specific Intervention	Barriers/Causes Intervention Designed to Target	Corresponding Indicator	Date Applied
1	Providing an appointment to an appropriate service provider (along with specific contact information) to clients who are discharged from a psychiatric hospital (and are not currently active in the SDCBHS system).	Lack of a scheduled follow-up appointment at the time of discharge from a psychiatric hospital.	**Engagement rate with outpatient clinic within 7, 30, and 90 days of discharge for clients new to the SDCBHS.**	August 2016
2	Once the appointment is made, providers will provide a follow-up reminder phone call and an informational flyer regarding the program.	Not all clinics were following the same procedure with regard to reminders to the client after the referral appointment was made. This adjustment was incorporated shortly	**Engagement rate with outpatient clinic within 7, 30, and 90 days of discharge for clients new to the SDCBHS.**	December 2016

		after data collection began in order to standardize reminder methods.		

STEP 8: DATA ANALYSIS & INTERPRETATION OF STUDY RESULTS

Data analysis begins with examining the performance of each intervention, based on the defined indicators. (For detailed guidance, follow the criteria outlined in Protocol 3, Activity 1, Step 8.)

- *Describe the data analysis process. Did it occur as planned?*

Data analysis occurred as planned. Each month participating clinics submitted the Excel logs designed to keep track of PIP intervention clients to the SDCBHS. The UCSD contractors used these logs to pull additional client information from Cerner Community Behavioral Health (CCBH) system to look at client service utilization post-discharge. The aggregated information was then analyzed, graphed, and shared with stakeholders on regular basis.

- *Did results trigger modifications to the project or its interventions?*

As a result of reviewing the data at the monthly stakeholder meetings, low numbers of new clients added each month to the tracking sheets sparked a discussion on how to improve care coordination and communication between SDCPH and the County-operated clinics. This resulted in improved continuous communication between outpatient clinics and the hospitals, and the lessons learned were documented and targeted for inclusion when applying the process to other hospitals. Additionally, two follow-up enhancements to the intervention were implemented:

1) *Engagement with Services Survey*
   In order to ensure no major areas that would aid in increasing engagement rates were missed, an Engagement with Service Questionnaire was administered to all willing clients at discharge. The survey asked them to choose from a list of items could potentially help them attend an appointment. Results are presented in the following section and the survey is presented in Appendix B.

2) *Information Flyers*
   Discussions during stakeholder meetings revealed that clients might benefit from further information that would remove some of the mystery regarding the clinics to which clients were being referred. To help project a friendly and welcoming face to the clinics an information flyer was developed for each participating clinic and was provided to the client upon discharge. An example of the flyer is presented in Appendix C.

- *Did analysis trigger any follow-up activities?*

As those who do not engage with the referred clinic often end up in emergency services of some type as their next service in the system, the analysis triggered activities in order to track further services for those clients, and also to track the first appearance back in the system for those clients who had no services after discharge.

- Review results in adherence to the statistical analysis techniques defined in the data analysis plan.

The data analysis plan involved the calculation of engagement rates. The comparison of rates and proportions by means of statistical methods and hypothesis testing was not a planned part of the process at this point due to the small sample size. However, it should be noted that given the outcomes for those clients who do not engage with the referred clinic (e.g., usage of emergency or jail services), the practical and clinical significance of any increased engagement is already evident, even if statistical significance is not attained.

➢ Does the analysis identify factors that influence the comparability of initial and repeat measurements?

The current model does not employ repeated measurements (e.g., Pre and Post), but rather tracks rates across time for engagement.

Present objective data analysis results for each performance indicator. A Table can be included (see example), and attach all supporting data, tables, charts, or graphs as appropriate.

Engagement with Services at Referred Outpatient Provider:

Ninety-one (91) new clients discharged from the SDCPH and eligible for the intervention (i.e., would be a candidate for an appointment at one of the three participating clinics) since the beginning of this intervention on August 1, 2016. At the time of the last follow-up tracking that occurred on October 31, 2017: 34 clients (37%) received their first post-discharge service from the provider they were referred to within 7 days of discharge; 39 clients (43%) received a service within 30 days of discharge; and 40 clients (44%) received services within 90 days of discharge. This represents an increase of 10 to 23 percentage points from baseline system data.

Readmission Rates:

Readmission rates for clients in the intervention were 8% (7-day), 11% (30-day), and 12% (90-day). This represents a decrease of between 1 and 10 percentage points from baseline systemwide readmission rates. It is interesting to note that the main improvements with regard to readmission are seen at the 90-day post discharge period which is significant as an indicator of the success of longer term engagement in lowering readmission rates.

Performance Indicator	Date of Baseline Measurement	Baseline Measurement* (numerator/denominator)	Goal for % Improvement	Intervention Applied & Date	Date of Re-measurement	Results (numerator/denominator)
Engagement rates: First service after discharge (7, 30, and 90 days) with referred outpatient clinic.	FY 2015-16 (systemwide data)	7 days: 334/2,312 = 14%	10-15%	8/1/2016	10/31/2017	7 days: 34/91 = 37%
		30 days: 605/2,312 = 26%				30 days: 39/91 = 43%
		90 days: 784/2,312 = 34%				90 days: 39/91 = 44%
Readmission rates (7, 30, and 90 days) after initial discharge from an inpatient setting.	FY 2015-16 (systemwide data)	7 days: 198/2,312 = 9%	10-15%	8/1/2016	10/31/2017	7 days: 7/91 = 8%
		30 days: 347/2,312 = 15%				30 days: 10/91 = 11%
		90 days: 497/2,312 = 22%				90 days: 11/91 = 12%

*Baseline measure engagement rates were defined as receiving a service at any outpatient provider as there was no referred to clinics.

Detailed Follow-up Analyses

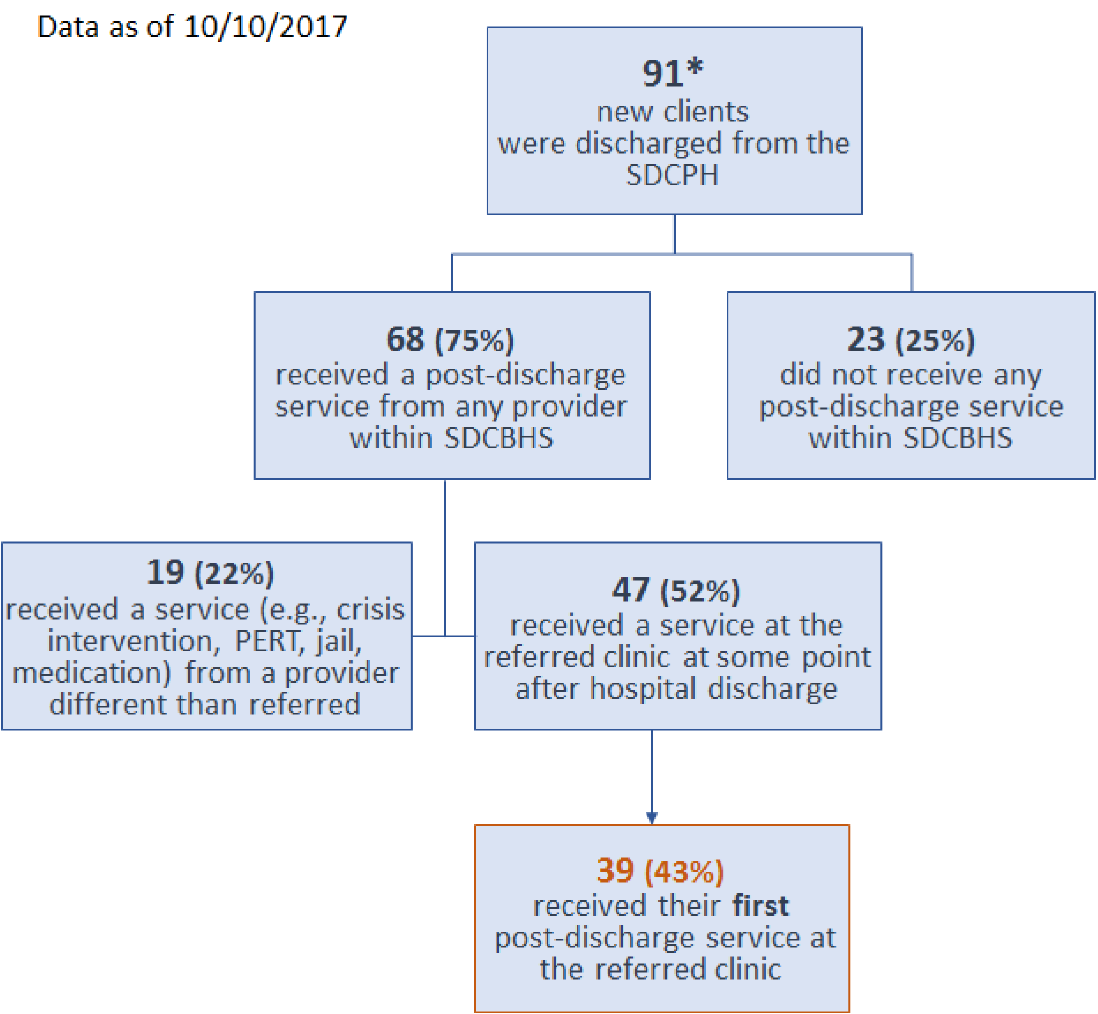
The following Figure (next page) shows the pathways of the 91 discharged clients that were referred to one of the three County-operated clinics. As shown, 39 clients had their *first* service at the referred clinic after discharge. More detailed tracking of the 91 referred clients shows that 68 actually did receive a service within the SDCBHS system after discharge. Additionally, 47 of those clients had at least one service at the clinic they were referred to (8 clients had services at another location than the referred clinic before having a service at the referred clinic). The clinical pathways of the 19 clients who did *not* receive their first service at the referred clinic were generally not optimal. Of the 19 non-engaging clients with services in the system most

first services after discharge were for crisis intervention, jail services or other emergency or crisis-related services. This illustrates the probable outcomes when not properly engaged with outpatient services after discharge.

PIP Services After Discharge

Flow Chart

Data as of 10/10/2017



*104 discharges were recorded in the clinic logs; 13 of the discharged clients refused referral and/or post-discharge services and are not counted in the analysis.

Results of Engagement with Service Survey:
In order to further ascertain factors that might be related to client engagement, a client engagement survey was conducted with all discharged clients between May and July, 2017. The survey was developed with stakeholder input consisting of Peer Support Specialists (current and former clients) working at the Next Steps Peer-based program. Next Steps staff administered the survey to clients at discharge.

As shown, 63% of clients felt a message from the clinic would help them attend their appointment, with a phone call being the most commonly desired form of contact (52%).

Results of the *Engagement with services survey*

Number of submitted surveys: 109
Number of declines/refusals: 17
Number of completed surveys: 92

Number of submitted surveys: 109
Number of declines/refusals: 17
Number of completed surveys: 92

Items	#	%
1. A personal message from somebody at the clinic before the appointment	**58**	**63%**
a. Phone	**30**	**52%**
b. Text	19	**33%**
c. Email	11	**19%**
d. Other (mail, sister (illegible))	4	**7%**
1. Help with transportation to the clinic	**58**	**63%**
2. Assist with the initial paperwork	41	45%
3. Obtaining medication at first appointment	38	41%
4. Education and support from family/friends	36	39%
5. Education on brain illness.	34	37%
6. Evening and/or weekend appointment	31	34%
7. More information about non-medication treatments	30	33%
8. Education on health impacts of follow-up care	27	29%
9. Day of discharge appointment	25	27%
10. Other	20	22%

The analysis of the study data must include an interpretation of the extent to which the PIP is successful and any follow-up activities planned.
As a result of these results, we would judge the PIP to be very promising, show great potential for success if applied on a systemwide scale. As mentioned above, the outcomes for those who do not engage with appropriate outpatient services after discharge are generally severe (crisis intervention, PERT, jail). The fact that at least 43% of discharged clients engaged with services at the referred clinic is promising. Given that these are clients whose first exposure to the SDCBHS was through the SDCPH, this finding is even more pronounced, as new clients with a serious mental illness (SMI) are generally difficult to engage into routine services until multiple crisis events have occurred. Given the relatively simple concept (although complex in execution) and rate of success, stakeholders have already begun a push to provide information and materials for other SDCBHS inpatient units and outpatient clinics to adopt this model. Initial steps have been to present results at stakeholder meetings such as the Hospital Partners Group, the Clinical Standards Workgroup, and the Ad Hoc panel which is comprised of outpatient clinic Program Managers. Initial interest has been high, and brief handouts have been prepared summarizing the results and lessons learned.

DEMOGRAPHICS

Inpatient - County Services (FY 2015-16): 1,847

PIP Intervention Sample: 91

	SDCBHS IP		PIP Sample	
Age	Unique Clients	%	Unique Clients	%
Age <18-25	382	21%	22	24%
Age 26-59	1,337	72%	64	70%
Age 60+	128	7%	5	5%
Gender				
Female	677	37%	30	30%
Male	1,169	63%	58	70%
Other / Unknown	1	0%	01	0%
Preferred Language				
English	1,692	92%	89	98%
Spanish	100	5%	0	0%
Tagalog	3	0%	0	0%
Vietnamese	14	1%	0	0%
Other Asian	12	1%	0	0%
Arabic	3	0%	1	1%
Farsi	1	0%	1	1%
Other Middle Eastern			0	0%
Other / Unknown	22	1%	0	0%
Race / Ethnicity				
White	864	47%	56	62%
Hispanic	467	25%	17	19%
African American	299	16%	10	11%
Asian / Pacific Islander	116	6%	2	2%
Native American	22	1%	0	0%
Other	56	3%	4	4%

Unknown	23	1%	2	2%

	SDCBHS IP		PIP Sample	
Education Level	Unique Clients	% **	Unique Clients	% **
High School Diploma / GED	565	39%	37	41%
Some College / Vocational Training	181	13%	15	16%
Associates Degree	149	10%	8	9%
Bachelor's Degree	105	7%	13	14%
Master's Degree	23	2%	0	0%
Doctoral Degree	6	0%	2	2%
High School Not Completed	409	28%	12	13%
Unknown / Not Reported	409		6	7%
Diagnosis				
Schizophrenia and Other Psychotic Disorders	1,329	73%	56	62%
Bipolar Disorders	360	20%	25	27%
Depressive Disorders	127	7%	10	11%
Stressor and Adjustment Disorders	16	1%	0	0%
Anxiety Disorders	2	0%	0	0%
Other / Unknown	11		0	0%
Substance Use Diagnosis				
Any Substance Use Disorder	1,477	80%	20	87%
No Substance Use Disorder	370	20%	3	13%
Insurance Status		%		%
Uninsured / Unknown	438	24%	15	16%
Medi-Cal Only	1,170	63%	69	76%
Medi-Cal + Medicare	131	7%	4	4%
Medicare Only	7	0%	0	0%
Private	101	5%	3	3%

	SDCBHS IP		PIP Sample	
Employment Status	Unique Clients	% **	Unique Clients	% **
Competitive Job	135	8%	14	15%
Seeking Work	236	15%	19	21%
Not in Labor Force	728	45%	23	25%
Not Seeking Work	395	25%	17	19%
Resident / Inmate of Institution	6	0%	0	0%
Other	102	6%	8	9%
Unknown	245		12	13%
Living Situation				
Lives Independently	855	48%	69	76%
Board & Care	111	6%	4	4%
Justice Related	9	1%	0	0%
Homeless	741	42%	18	20%
Institutional	48	3%	1	1%
Other / Unknown	83		1	1%

* Percentages exclude Unknown values.

** Percentages exclude Other / Unknown / Not Reported values.

STEP 9: ASSESS WHETHER IMPROVEMENT IS "REAL" IMPROVEMENT

Real and sustained improvement are the result of a continuous cycle of measuring and analyzing performance, thoroughly analyzing results, and ensuring implementation of appropriate solutions. To analyze the results of the PIP the MPH must document the following steps:

- *Describe issues associated with data analysis –*
  - *Did data cycles clearly identify when measurements occurred? Should monitoring have occurred more frequently?*
    Administrative staff at each of the clinics kept logs (Appendix A) documenting clients' date of discharge and date of scheduled appointments as communicated from the SDCPH. These logs were submitted to SDCBHS on a **monthly basis**. The UCSD contractors used these logs to pull additional client information from CCBH to look at the service utilization post-discharge. This method of data collection was adequate to track progress. Close monitoring of clinic procedures enabled early identification of discrepancies, between the procedures used for contacting clients and SDCPH, at each of the clinics. These procedures were standardized early on and applied across the three clinics.

  - *Results of statistical significance testing.*
    Significance testing was not appropriate for these analyses because the main outcome is an increase in the engagement rate to a predetermined goal.

  - *What factors influenced comparability of the initial and repeat measures?*
    The initial data used to establish the initial rate of post-discharge engagement with services for new clients included all new clients from an entire fiscal year. The sample used in the study was new clients from a single hospital, limited to those clients who may be appropriate to have services at one of the three participating clinics. Therefore, although it is likely the sample was representative of the System, there may be some biases due to these factors.

  - *What, if any, factors threatened the internal or external validity of the outcomes?*
    This intervention had a relatively simple design, however, lack of alignment with regard to procedures for communications with clients and with SDCPH between clinics could be a threat to the internal validity. Additionally, as mentioned above, the fact that the intervention was conducted at only one inpatient unit (SDCPH) are possible threats to the external validity. To address these, frequent meetings and communications with participating clinics have been implemented to ensure procedures are standardized and protocol is being adhered to. Additionally, if successful at SDCPH, other County hospitals may be included in order to increase the generalizability, as well as to allow the entire hospital system to benefit from the procedures developed for this PIP.

- *To what extent was the PIP successful and how did the interventions applied contribute to this success?*
  This PIP intervention was very successful in increasing engagement rates for clients who were discharged from the SDCPH and were not current clients in the SDCBHS system. Since August 1, 2016, 44% of new clients who were discharged from the SDCPH engaged in post-discharge services with an outpatient or case management provider they were referred to. This compares with 26% for new clients who were discharged from the SDCPH in FY 2015-16, which served as a baseline for this intervention. The main intervention although simple in concept, addressed a systemic gap.

- *Are there plans for follow-up activities?*

  This intervention was designed to address the most apparent procedural difference between the existing and the new clients at the time of discharge from the SDCPH, which was identified through interviews with clients, program staff, clinicians and hospital staff. As a result, new and existing clients were given the same treatment at discharge, and thus, opportunity to engage with outpatient services. Initial steps have been to present results at stakeholder meetings such as the Hospital Partners Group, the Clinical Standards Workgroup, and the Ad Hoc panel comprised of outpatient clinic Program Managers. Initial interest has been high, and as of this writing, materials are being prepared that will provide a blue-print for others to follow, including lessons learned during early stages. Additionally, follow-up activities that will enhance the overall method have also already begun. These include standardizing the follow-up reminder techniques, potentially including other means of contact (e.g., text, email), and providing information flyers about the clinics that the clients will be referred to.

- *Does the data analysis demonstrate an improvement in processes or consumer outcomes?*

  Although engagement rates increased substantially, the impact on most outcomes must be inferred as they were not measured for this intervention. However, it is not in dispute that engaging clients with outpatient services after discharge from the inpatient setting generally results in better long-term outcomes. With regard to our other study outcome, readmission rates were decreased overall, with the most marked decrease seen at the 90-day post-discharge period.

It is essential to determine if the reported change is "real" change, or the result of an environmental or unintended consequence, or random chance. The following questions should be answered in the documentation:

- *How did you validate that the same methodology was used when each measurement was repeated?*

  Routine meetings were held with the representatives from each of the three participating clinics, SDCPH, SDCBHS, and the contractors from UCSD. These meetings served as a platform to address any issues related to the data collection and to compare communication methods (with clients and with SDCPH) used by each of the clinics. For example, it was determined in early meetings that not all clinics were engaged in the same procedure and timelines for reminder calls to the referred clients. Standardized procedures were then implemented whereby all clients would receive a similar reminder phone call within 24 hours of their appointment being scheduled.

- *Was there documented quantitative improvement in process or outcomes of care?*

  As mentioned in previous sections, although simple in concept the intervention was quite complex in execution, and required a blending of processes from multiple partners such as the hospital, the participating programs, and SDCBHS. The final processes have been documented for use by others interested in adopting the model. These include detailed descriptions of the client handoff and communication between these partners, and how to best schedule appointments and transfer client information in a timely manner.

- *Describe the "face validity," or how the improvements appear to be the results of the PIP interventions.*

  The analysis showed increase in engagement rates from 26% to 43%. Analyses took place every month after the newest data logs were obtained. The stability of the engagement rates was of interest as more clients were added. After 50 clients were in the analyses, the engagement numbers were very stable, and even climbed until the final sample of 91. Although it could be possible that this increase in rates could be due to factors other than the intervention or chance, it is highly unlikely, and the face validity of the PIP is high.

- *Describe the statistical evidence supporting that the improvement is true improvement.*

  As mentioned in previous sections, data logs were analyzed monthly in order to assess the stability of the engagement rates. After more than one full year of client information there has been enough time to assess even the longest-term outcomes (90 days) for all clients in the sample. The sample size of 91 clients provided ample power and stable estimates of the true impact of the intervention. A post-hoc power analysis of 91 clients in a test of comparison between a population and sample proportions revealed 95% power at an Alpha of .05.

- *Was the improvement sustained through repeated measurements over comparable time periods? (If this is a new PIP, what is the plan for monitoring and sustaining improvement?)*

  The initial analyses presented last year contained only a small sample of 28 clients. It showed an engagement rate of 36% (90-day). Since this initial measurement, data has been analyzed monthly and the engagement rate numbers have stabilized at or above 40% for the entire life of the analyses. There was no considerable fluctuation or period effects observed during different time periods.

APPENDIX A

Client Appointment Tracking Log

CCBH #	Patient Name	Date of Discharge	Date of Birth	Date of Appointment	Appointment Verified	Appointment Status

APPENDIX B

Engagement with Services Survey

Name (optional) ___________________ Date ______________

Client ID (optional) _________________

The goal of the County of San Diego Behavioral Health Services is to provide the best quality and services available to you. Please help us by completing this short survey. Your responses will only be used to enhance our services and make sure that your expectations are met. We appreciate your comments and a chance to serve you.

Which items below might help you attend your follow-up appointment? (Check all that apply)

- ☐ A personal message from somebody at the clinic before the appointment
  Choose your favorite option: ☐Phone ☐Text ☐Email ☐Other______________
- ☐ Help with transportation to the clinic
- ☐ More information about non-medication treatments (counseling, skill building classes, activities) available at the clinic
- ☐ Obtaining medication at first appointment
- ☐ Day of discharge appointment
- ☐ Evening and/or weekend appointment
- ☐ Assist with the initial paperwork
- ☐ Education on brain illness
- ☐ Education on health impacts of follow-up care
- ☐ Education and support from family/friends
- ☐ Other ___________________________

HEALTH SERVICES RESEARCH CENTER
UNIVERSITY OF CALIFORNIA, SAN DIEGO

APPENDIX C
Program Information Flyers (2 of 3 shown)

HELPFUL INFORMATION: OUR MENTAL HEALTH CENTER

EAST COUNTY MENTAL HEALTH CLINIC

1000 Broadway, Suite 210
El Cajon, CA 92021

☎ (619) 401-5500

WALK-IN HOURS:
- **Mon-Thurs:** 9AM-12PM, 1PM-3:30PM
- **Fri:** 9AM-12PM, 1PM-2:30PM

SERVICES PROVIDED

- Comprehensive Behavioral Health Assessment
- Medication Management
- Crisis Care
- Group and Individual Therapy
- Client-Centered Care and Connection to Services
- Substance Use Recovery Support and Referrals to Treatment
- Job/School Skills Assessment and Support
- Rehabilitation and Recovery Groups
- Homeless Services
- Peer Support

Bus Line
848

Trolley Stop
EL CAJON TRANSIT STATION
Orange & Green Lines

APPOINTMENT REMINDER *(Please bring and carry with you)*

DATE: ____

TIME: ____

YOU WILL MEET WITH: __________________________

HELPFUL INFORMATION: OUR MENTAL HEALTH CENTER

NORTH CENTRAL MENTAL HEALTH CENTER

1250 Morena Blvd
San Diego, CA 92110

☎ (619) 692-8750

WALK-IN HOURS:
- **Mon-Fri:** 8:30AM-3:30PM

SERVICES PROVIDED

- Comprehensive Behavioral Health Assessment
- Medication Management
- Crisis Care
- Group and Individual Therapy
- Client-Centered Care and Connection to Services
- Substance Use Recovery Support and Referrals to Treatment
- Job/School Skills Assessment and Support
- Peer and Recovery Groups
- Activity Center (outings, trainings and other activities to support recovery)
- Homeless Services

Bus Line
105

TROLLEY STOP
OLD TOWN TRANSIT CENTER - *Green Line*

APPOINTMENT REMINDER *(Please bring and carry with you)*

DATE: ____

TIME: ____

YOU WILL MEET WITH: __________________________