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# Performance Improvement Project Implementation & Submission Tool

# Tuolumne's Clinical PIP: *Engaging Clients through Assessment*

## 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: | **Tuolumne County Behavioral Health** |
| Project Title: | **Engaging Clients through the Intake and Assessment Process** Check One: Clinical **X** Non-Clinical |
| Project Leader: | **Sarah Lambie** Title: **QI Coordinator** Role: **Project Coordinator** |
| Start Date (MM/DD/YY): | **October 2015** |
| Completion Date (MM/DD/YY): | **January 2018** Projected Study Period (# of months): **27** |
| Brief Description of PIP: *(Please include the GOAL of the PIP and what the PIP is attempting to accomplish.)* | **Will decreasing wait time to initial assessment to 21 days and increasing client contacts help to decrease no-show rates to 20% and increase hope in the recovery process (as measured by the HOPE scale)?** |

## 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).
   - Describe the stakeholders who are involved in developing and implementation of this PIP. Be sure to include CFM group representation.
   - Describe the stakeholders' role(s) in the PIP and how they were selected to participate.

   **Quality Improvement Council**

   - Members of the Quality Improvement Council include peers, peer advocates, peer staff, community stakeholders, parent/family members, and staff representatives from each TCBH program. QI Council provides monthly feedback on QI Work Plan progress, initiatives, and data reports.

   Quality Management Committee

   - Supervisory review of data and business process
   - Provide feedback, oversight, and recommendations

   Planned Services Supervisor

   - Trainer for Brief Action Planning and Motivational Interviewing

   FSP Supervisor

   - Project Lead for "Same Day / Next Day" initiative for reducing wait times

CAIP (Crisis, Access, and Intake Program) Supervisor
- Lead for ensuring follow-up contacts between new clients and TCBH

Compliance & Information Systems Manager
- Oversight to E.H.R., Billing, and Program Integrity

E.H.R. Supervisor
- Lead for Team which is responsible for Monitoring and Resolving Intake Appointments for walk-in clients

QI Coordinator
- Liaison for planning trainings, management discussions, prompting business processes
- Facilitate Stakeholder feedback through QI Council, Quality Management Committee, Data Committee, and Management Meetings

QI Staff Analyst
- Conducting data analysis
- Lead for staff feedback opportunities through the Staff Improvement Collaborative, quarterly

2. Define the problem.
   - 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?
       **High no-shows to initial assessment indicates a lack of client engagement between first contact and first appointment.**
     - How did it come to your attention?
       **When conducting monitoring of no-shows, analyzing timeliness of initial assessment, and discussing the intake schedules and staffing capacity.**
     - What data have you reviewed that suggests the issue is indeed a problem for the MHP? Describe any relevant benchmarks.
       **Timeliness in other systems is sometimes a walk-in or immediate process, also the State has implemented a benchmark of 10 business days. No-shows for Initial Assessment are higher than other appointment types at TCBH.**
     - What literature and/or research have been reviewed that explain the issue's relevance to the MHP's consumers?
       **See full narrative below.**

   - The study topic narrative will address:

- What is the overarching goal of the PIP?
  **Increase client engagement and HOPE through increased contacts and reduced wait-times to initial assessment.**
- How will the PIP be used to improve processes and outcomes of care provided by the MHP?
  **Initiatives will target adding client service codes to monitor contacts, implement an outcome measure for HOPE, and monitor timeliness and outcomes.**

- How any proposed interventions are grounded in proven methods and critical to the study topic.
  **Evidenced based practices such as Motivational Interviewing and Brief Action Planning will be implemented through trainings to be utilized during the client services to increase engagement and HOPE.**

- 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.
    **Contacts from initial request to assessment are relevant to all Medi-Cal beneficiaries entering the TCBH system. Engagement and HOPE are key factors in the therapeutic process. See full narrative below.**

**Detailed Project Narrative:**

This project started when the trend of no-show rates was identified as an issue by the management team after reviewing several datasets involving initial assessment no-show rates and timeliness of response to request for initial access. Analysis revealed similar trends to research, that as the number of days a client waited for initial assessment increased, so did no-show rates. Initial analysis of the time period between October 2014 and September 2015 revealed an average no-show rate of **36%**. This is highly relevant to Tuolumne County Behavioral Health's (TCBH) ability to serve and satisfy clients and increase positive outcomes throughout the recovery process.

To further investigate, QI Council (QIC) addressed this topic during the regularly held monthly meeting comprised of family members, staff, peers, peer specialists, persons with lived experience, stakeholders, QI, and management. Based on feedback from QIC beginning November 4, 2015, members agreed that the approach and topic were important to the overall TCBH population as no-shows and timeliness impact all clients at the beginning of their recovery process and are a quality of care topic. Thus, with these considerations in addition to the management team, no-show rates were escalated from a point of interest into a PIP. QI initiated a focus group to discuss TCBH specific issues which may be a barrier to care, resulting in No-Shows.

Discussion continued at TCBH's QI Council (QIC) to address possible reasons for no-shows. Some barriers identified were directed to other forums, as appropriate. For example, feedback regarding transportation issues was directed to Tuolumne County's Transportation Council (TCTC). These summarized issues were presented to TCTC via a Memo and delivered via QIC participant, who also sits on the board for TCTC. Transportation issues are discussed ongoing and multiple avenues of transportation are offered whether it is through TCBH, California Health and Wellness, Anthem Blue Cross, the Tuolumne County transportation system, Dial-a-Ride, or reimbursed through the Tuolumne TRIP program. QI-Council agreed that transportation issues are dealt with in other forums and the PIP continued to focus on issues that TCBH could best impact.

**Commented [AM1]:** Good focus on consumers…

The team further narrowed the discussion down to two mediating factors which impact show-rates for clients**: 1) Treatment barriers and 2) Lack of engagement**. Potential barriers may be cultural/linguistic, convenience (appointment times, location, etc.), childcare issues, disabilities, transportation issues, etc. Barriers and lack of engagement may cause no-shows for both new and established clients, and it may reasonably be assumed that not showing up for therapy – for whatever reason – tends to lead to poor outcomes for clients who genuinely require specialty mental health services.

Given that no-show rates (for both assessments and therapy appointments) are approximately **10% higher for new clients** than for established clients – and given that the barriers for both populations are presumably the same – **the PIP team inferred that the difference in no-show rates derives from lack of engagement, as new clients have not been fully immersed in the process of therapy**. Therefore, while the team resolved to identify and address barriers affecting both populations, the team particularly wished to identify the root cause(s) of new clients' lack of engagement so that **TCBH could implement appropriate clinical interventions and supportive strategies to engage them in treatment which would in turn lead to better outcomes for those clients.**

Engagement involves a triad of factors: 1**) Interpersonal relationship**, as related to this study this would be the client relationship with TCBH service providers such as Behavioral Health Workers and Clinicians, 2) The availability of **external resources**, which in this case would be brochures, informing materials, phone list card, providing a connection to various community resources, and 3) Increasing **internal resources**; ability to regulate intensity of behavior/mood in response to stressful events (goal setting, education around mental illness and treatment options). These three factors, in combination, comprise HOPE, which has been widely cited as a critical component of the recovery process (Davidson et al., 2008; Davidson & White 2007; Lovejoy, 1982; Russinova, 1999; Schrank, Stanghellini, and Slade, 2008; Saelor, K.T., Ness, O., and Semb, R., 2015; Snyder, 1994; Stickley & Wrightva, 2011; Van Hooft, 2011). Through engaging a client and working to identify resources and build trust with the treatment provider, the client gains hope in the recovery process.

When first reaching out for care, the client is connected with the CAIP team (Crisis, Access, Intervention Program) for an initial triage, to set an appointment, and schedule any necessary follow-up calls between the time of the call and the client's initial assessment. This was targeted as a critical time to engage the client, identify resources available and any resources CAIP could connect the client with, and build engagement in the recovery process until the client is connected with a Clinician and Plan of Care.

Based on the amorphous nature of crisis response, the CAIP team must be flexible to respond to client needs in a way that best suits the needs and resources of the client, yet, in a way that is measurable to collect baseline data on what an effective amount of support looks like in the treatment system while clients wait for their first appointment.

To measure changes in a client's progress, the **Snyder Hope Scale was chosen as an outcome measure** to assess the impact of client engagement services. Additional data regarding **beneficiary satisfaction** will be analyzed from the ongoing POQI (CPS/MHSIP) scores which are collected and monitored bi-annually.

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.

**Will decreasing wait time to initial assessment to 21 days and increasing client contacts help to decrease no-show rates to 20% and increase hope in the recovery process (as measured by the HOPE scale)?**

## 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.

**Demographics**: Tuolumne County's population is primarily Caucasian, English speaking, and has a slightly higher female distribution. 85% of Tuolumne County's population lives in Sonora, within 5 miles of TCBH. All Tuolumne County residence are within the time and distance standards of 60 miles and 90 minutes, with a large portion of Tuolumne's land being comprised of National Forest. See appendix A for additional demographic information.

**TCBH Population**: The population for this study includes ALL new clients entering the TCBH system who are Medi-Cal eligible or meet other sub-class criteria for specialty mental health services. The study will address the entire population of new clients as TCBH serves a small rural population, the PIP aims to maximize the population being studied. Data to be utilized will be E.H.R. data for the Initial Contact Form, initial assessment appointment offered, direct client contacts between initial contact and initial assessment, then between assessment and first appointment. Hope data will be collected on the initial contact form, the initial assessment, and at discharge.

**Utilization and Outcome data**: This study will utilize Client Services from the E.H.R. and implement the HOPE scale to monitor outcomes.

## 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.

**Specify the performance indicators in a Table.**

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

| # | Describe Performance Indicator | Numerator | Denominator | Baseline for Performance Indicator (number) | Goal (number) | End Result |
|---|---|---|---|---|---|---|
| 1 | **Timeliness from Initial Contact to first offered Initial Assessment, % Meeting 21 day Goal** | **Number of Appointments Meeting Timeliness Goals** | **All Initial Intake Appointments** | **CY 2015: 38%** | **80%** | **CY 2016: 91%** |
| 2 | **No-Shows to Initial Assessment** | **# Client No-Show for Initial Assessment** | **Total Number of Initial Assessments Scheduled** | **36% No-Show in 2015 at time of sample measure October 2014 and September 2015** | **20%** | **CY 2016: 31%**<br><br>**CY 2017: 28%** |
| 3 | **HOPE Scale Data** | **Average Hope Score for Sample** | **15** | **6.9 (2016)** | **8.0** | **7.5 (2017)** |

## STEP 5: SAMPLING METHODS (IF APPLICABLE)

The MHP must provide the study description and methodology.

- Identify the following:
  - Calculate the required sample size?
  - Consider and specify the true or estimated frequency of the event?
  - Identify the confidence level to be used?
  - Identify an acceptable margin of error?

  Describe the valid sampling techniques used?

  **N/A –** All persons who took the Hope scale more than one time were included in the study. Since Tuolumne has a small population, no sampling techniques were applied. Anyone who responded to the Hope survey at Initial Request for services, Assessment, or discharge was included.

## 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.
- 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?
- Describe the instruments for data collection, and how they provided for consistent and accurate data collection over time.
- Describe the prospective data analysis plan. Include contingencies for untoward results.
- Identify the staff that will be collecting data, and their qualifications. Include contractual, temporary, or consultative personnel.

    - **Snyder's Hope Scale** 3 Questions, 5 Likert anchors (Strongly Agree – Strongly Disagree), The HOPE scale was inserted at 3 distinct times during the client engagement experience: Pre: Initial Contact, Mid: Initial Assessment, and Post: Discharge.

    - **Client Contacts** will be collected via the E.H.R. all client contacts will be collected such as Initial Contact, Triage, Access/Coordination, Appointment Reminder Calls, Client Support, Plan Development, Initial Assessment, etc.

    - **Timeliness** The key timeliness indicator is measured from initial contact to initial assessment.

    - **Beneficiary Satisfaction** via the POQI survey 2x/year, ongoing. MHSIP Survey questions.

    - **Data collection & Analysis**
        - All data related to this PIP will be collected through the E.H.R. except for the POQI survey which is collected on paper and processed by the State, then further analyzed by QI.
        - Provider staff enters client contacts as they occur. Each staff is trained in the E.H.R. upon hire and receives individual follow-up trainings as needed if monitoring reports indicate issues.
        - Data is exported from the E.H.R. using pre-established export templates that deliver accurate and valid results. The main report being utilized is a "Client Services" report. A second E.H.R. report is utilized to export the HOPE data scores.
        - Timeliness measures are collected for the entire TCBH system on either a monthly or quarterly basis
        - HOPE scores are collected at 3 distinct time periods
        - A bivariate analysis will be conducted to see if there is a link between Access Coordination services and improved HOPE throughout the client engagement process.

    - **Contingencies**: If untoward results occur, we will further analyze the business process for training opportunities and/or demographics to see if there are trends within a certain sub-group or within our provider system, treatment team, etc. as sample sizes allow.

## 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 | **Launching the Initial Contact Form** | To improve the ability to track timeliness from Initial Request for Care to Initial Appointment | Indicator #1 | ✓ Summer 2015 - Completed |
| 2 | **Launching the Access/Coordination Service Code** | Work to reduce any barriers to attending appointments, increase client engagement, provide any short term needed follow-ups before the Initial Assessment<br><br>Access Coordination services are meaningful in building the 3 facets of engagement: Interpersonal relationship, internal resources, and external resources. | Indicators #2 and 3 | ✓ Fall 2015 - Completed |
| 3 | **Adding Initial Assessment Appointments to the schedule** | Reduce Wait Time, Increase Show Rate | Indicators #1 & 2 | ✓ Winter 2016 - Completed |
| 4 | **HOPE "Inspiring Strategies" Training** | Learning Objectives & Clinical Practice Improvements:<br>1) Build staff's skillset to identify client goals<br>2) Build staff's skillset to engage clients<br>3) Review how staff can inform client's about what to expect in the treatment process | Indicators #2 & 3 | ✓ Winter 2016 - Completed |
| 5 | **Implementing the Snyder Hope Scale** | Monitoring Engagement at Initial Request for Care, Assessment, and Discharge | Indicator #3 | ✓ Winter 2016 - Completed |

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|---|---|---|---|---|
| 6 | **Brief Action Planning (BAP) Training** | Learning Objectives & Clinical Practice Improvements:<br>1) Review the triad of engagement factors<br>2) Identify barriers<br>3) Identify motivation<br>4) Identify resources<br>5) Build internal resources<br>6) Identify and plan around a short term goal (SMART goals)<br>7) Develop a follow-up plan | Indicators # 2 & 3 | ✓ Winter 2016 - Completed |
| 7 | **Implementation of Case Assignment in the CAIP unit** | Increase engagement by having a point of contact and someone responsible for follow-ups while the client waits for initial assessment.<br><br>The person assigned to the case would in most cases be the person who had first contact with the client and launched the Initial Contact form (see initiative #1) and then also would be conducting the "Access/Coordination" services shown above in initiative #2.<br><br>Also intended to decrease no-shows. | Indicators #2 & 3 | ✓ Spring 2017 - Completed |
| 8 | **QA and prompt access/coordination contacts between Initial Request and Initial Assessment** | As a check on initiatives #2 and 7 (Access/Coordination and Case Assignment) QI conducted a check on the business process and client experience between Initial Contact and First Assessment. See service sequence table below.<br><br>Goal: Assuring staff complete follow-ups during which staff can utilize the BAP and MI concepts to increase engagement and decrease no-show rates to the Initial Assessment. | Indicators #2 & 3 | ✓ Fall 2017 - Completed |

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|---|---|---|---|---|
| 9 | **QA "Follow-Up Binder"** | Another QA check on the process related to initiatives 2, 7, and 8.<br>For some staff who are relief or outside of the CAIP crisis unit, follow-ups are prompted via a paper process with a centralized binder for CAIP staff to collaborate on follow-up contacts.<br><br>To assure that access/coordination was occurring per business process, a sample of the binder forms were collected and compared against the paper request for service and the E.H.R. service reports. | Indicators #2 & 3 | ✓ Fall 2017 - Completed |
| 10 | **Case Management Supervision** | Monitor crisis worker caseloads for contacts or discharge per process<br><br>Conducted monthly at the management meeting. | Indicators #2 & 3 | ✓ Fall 2017 - Ongoing |
| 11 | **Motivational Interviewing (MI) Training** | TCBH Contracted with CIBHS to deploy a 2-day training. Day 1 was an introduction to MI and day 2 was an in-depth series for Clinical staff. A follow-up the next month was conducted via in-service to further train on how to integrate MI concepts into the documentation process.<br><br>Learning Objectives & Clinical Practice improvements include:<br>1) Increase staff's ability to facilitate communications with clients<br>2) Identify barriers to treatment and motivations to change<br>3) Review how to document the evidence based practice (EBP) in the Plan of Care and Progress Notes | Indicators #2 & 3 | ✓ October & November 2017 |

## 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?

  **Yes. Client Service reports** were exported from the E.H.R. as planned. **HOPE data** was exported as recommended via EQRO Technical Assistance. HOPE data exports occurred at 3 distinct times to analyze score changes and impact of various interventions.
  - The first HOPE data pull happened at the onset of the study and serves as the baseline.
  - The second HOPE data pull occurred when access coordination codes, case management, and the BAP and HOPE trainings had been implemented.
  - The third HOPE data pull serves as the post test comparison to verify impacts of all initiatives.

- Did results trigger modifications to the project or its interventions?
- Did analysis trigger any follow-up activities?

  **Yes,** based on the HOPE data pulls we noticed that in some cases a client would not always experience the HOPE scale at the 3 pre/mid/post services but might in fact receive a HOPE scale at multiple assessment services (two "mids"). This is due to ongoing clients who require an assessment update or new clients who receive an intake assessment and perhaps their clinician will re-assess and make assessment updates. Therefore, the data analysis approach was updated to include 1st, 2nd, and 3rd instances of the client taking the HOPE scale to accommodate the true business process. Not all clients move through the system in the short time-frame of the study to collect Initial, Assessment, and Discharge data, but we could still verify if engagement was building throughout the treatment experience.

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

  - **QA Business Process & Service Code Sequence**
    - Goal: After implementing the Initial Request Form and Access/Coordination service code, data was gathered to analyze if the business process was being followed.
    - Analysis: A sample of client data was collected and evaluated for the linear sequence. Service code 1 represents the initial contact, 5 a triage, 9 is Access/Coordination, and 10, 13, and 15 are the Initial Assessment, Plan Development, and POC process.
    - Outcome: The data below shows 71% of the clients experienced the expected entry experience. Due to variation of clients entering the system through walk-in, crisis, referral, and other means – the results were within expectations and no further recommendations were made. It was determined that clients are receiving services in the expected order the majority of the time, and any missing HOPE scores would be due to sampling data at various points in time where the client might not have experienced a full intake, assessment, and discharge during that timeframe which is understandable. (See appendix D)

  - **QA Alternate Business Process**
    - In addition to the Initial Contact form and new service code 9/Access Coordination, the crisis team uses a follow-up binder to help share the task of following-up with clients. Due to the offline nature of the binder, QI selected a random sample of paper

follow-up forms from the binder were collected to assure that the process was effectively triggering client support services and that such services were also documented in the Electronic Health Record system.
    - Outcome: The results were positive overall with 89% of requested follow-ups occurring and of those services, 94% being logged in the E.H.R. No further improvements to this process were recommended. (See appendix E)

- **Analysis of Engagement and HOPE**
    - To statistically analyze the relationship between access coordination and other services which aimed to engage the client, these services were compared to the HOPE scores via a bivariate analysis.

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

    - The **sampling approach** impacts comparability of measures as each HOPE scale survey includes a new group of clients. However, the measures are collected in exactly the same way and then averaged across the group.
    - By updating the data analysis approach to include 1st, 2nd, and 3rd time taking the HOPE scale and not the Initial, Assessment, and Discharge approach we were able to expand the N-size of the population and draw conclusions from a larger population rather than using the small discharge population as the post-results. This approach allows us to more realistically analyze how HOPE changes alongside client service contacts.

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.

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.

| Performance Indicator | Date of Baseline Measurement | Baseline Measurement (numerator/denominator) | Goal for % Improvement | Intervention Applied & Date | Date of Re-measurement | Results (numerator/denominator | % Improvement Achieved |
|---|---|---|---|---|---|---|---|
| 1 | **Timeliness from Initial Contact to first offered Initial Assessment, % Meeting 21 day Goal** | CY 2015<br>65/ 170 = 38% | 42% improvement in timeliness to reach an 80% compliance rate | See intervention table | 1/2017 | CY 2016<br>371 / 408 = 91% | 53% Improvement |
| 2 | **No-Shows to Initial Assessment** | October & November 2015<br>42 / 116 =36% | 16% reduction in no-shows to reach a goal of 20% no-shows | See intervention table | 1/2017 | CY 2016<br>232 / 749 =31% | 5% Improvement |
| 3 | **HOPE Scale Data** | 6.9 /15 | 1.1 increase in scores to reach an 8.0 average | See intervention table | Spring 2017 and Fall 2017 | 7.5 / 15 | 0.6 Point Improvement |

**Commented [AM2]:** This is not a correct conclusion: this is a 53 percentage point improvement. It's actually a 139% increase

**Commented [AM3]:** Same comment as above, is actually a 14%

## 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?

**Yes, data for HOPE and Client Services were collected in Summer of 2016, Spring of 2017, and Fall of 2017.**

**No, data should not have been collected more frequently, data was collected after various interventions were inserted such as the Access/Coordination code and caseload management, and after additional trainings and prompting to adhere to the business process.**

Results of statistical significance testing.

**See bivariate analysis below in Appendix C, the trend line shows a positive relationship between HOPE scores and client services.**

What factors influenced comparability of the initial and repeat measures?

**The repeated measures were collected and analyzed in exactly the same way, the only difference was the client population was different in each sample.**

What, if any, factors threatened the internal or external validity of the outcomes?

**Internal**:

- Although the clients would experience "maturation" during the study, such maturation would be associated with receiving client services which **is** the independent, so is not a threat to validity but an intended outcome.
- Testing is short and infrequent and is not a threat.
- History is not a threat as if a client previously had services, they may have a higher baseline but their hope would be expected to continue to grow during their new treatment session. Instrumentation is not a threat as this is a published and validated scale.
- Regression: Clients who are high utilizers would be expected to continue to be higher utilizers or services and clients who tend to self-score very low or high on a scale would also tend to continue along that pattern. No extreme scores were noted in the study, just one participant who had the same score for all 3 survey instances. Regression is not a concern.
- Differential selection could threaten the study as groups were not randomly assigned. However, since the HOPE scale is administered to all new or returning clients at Initial Request for service, the study is thought to be as un-biased as possible.
- Experimental mortality could play a factor, especially in having a low N-size for post-score. The system experiences clients who come in for one or two services and then have no-further contact (Ex: In CY2017 there were 2040 persons with at least 1 contact in the system but only 545 engaged clients).
- Selection interaction, design contamination, and compensatory rivalry were not a threat as there were no experimental groups in this study.

**External**:

- Aptitude-treatment, situational, and placebo threats are not applicable as there were no experimental groups or placebos in this study
- Pre-test was lower than the post-test, thus the findings are generalizable
- Rosenthal's effect – A person could have more expectations at initial assessment since they are beginning treatment, but this increase in positive outcomes would be in-line with the study as we expect clients to become more engaged as treatment progresses and services increase, therefore this is not a threat to the study.
- Population validity – This would be valid to generalize to other mental health or medical models where a similar business process could be applied.
- Ecological validity would only be impacted due to having "multiple treatment inputs", for example, clients may experience services with both the CAIP team and then the Planned Services team at assessment. Other businesses may have a different system which could increase or lessen the outcome scores.

- To what extent was the PIP successful and how did the interventions applied contribute to this success?

- **Implementing the Initial Contact Form, the Access/Coordination service code, and scheduling Initial Intake Assessments were all very successful initiatives as described in the performance indicator table and appendices. Timeliness improved in the first year of the study by 53%.**
- **The impact of access/coordination and other client services were strongly tied to the HOPE outcomes. HOPE Scores improved by 2.0 points from the baseline to the last sample after implementation of all initiatives.**

- Are there plans for follow-up activities?
  - **Yes.** Additional system improvements are planned to expand from intake appointments to train CAIP staff to be able to perform intake assessments so that clients can utilize a walk-in assessment. This decision was made after evaluating that even when wait times were drastically improved, no-shows remained high. EQRO Technical Assistance recommended that when clients come in for their initial contact it would be beneficial to be able to offer an intake at that time rather than scheduling the client and prompting their return. To achieve this follow-up, the Planned Services Supervisor has scheduled a time to train the CAIP Supervisor to perform Intake Assessments. The CAIP Supervisor will then train the CAIP team.

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

  - **Business Process:**
    - Improvement in Timeliness to Initial Assessment
    - Successful implementation of the Initial Contact Form and Access/Coordination service code

  - **Consumer Outcomes:**
    - Assured quality of care by assigning CAIP staff to manage caseloads and by assuring access/coordination contacts and follow-ups were occurring and documented.

    - Demonstrated that increased client contacts were linked with increased levels of client HOPE as an outcome

    - Consumers with high HOPE were less likely to no-show for Med Evaluations

    - From the beginning of the project to the end, client scores **increased 0.6 points overall** (See Appendix G)

    - In addition to the overall scores, there were even significant increases in positive responses at the first contact, an increase from 6.9 to 8.1. Even though we expected HOPE to increase with additional contacts, the effectiveness of Brief Action Planning and Motivational Interviewing and assurances of follow-up Access/Coordination calls could be influencing a 1.2 point increase in positive scores for even the first contact with TCBH as compared from the beginning of the study to the end. (See Appendix G)

    - **Beneficiary Satisfaction** scores from the May 2017 POQI survey were compared to the final HOPE data pull participants. Questions that were analyzed focused around treatment, access, and functioning. Out of seven questions, HOPE participants yielded more positive responses in comparison to the general TCBH POQI participants on every question. For the questions, "Staff returned my calls within 24 hours" and "I am better able to deal with crisis", there was a 24% increase in positive responses from HOPE participants vs. all TCBH participants. See Appendix B.

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?

  **Data collection methods remained constant throughout this study.** Data was collected with the same HOPE scale questions, in the same 3 forms. Exports of Client Service data came from the same report generator, the only difference was time-frames exported. Methodology was consistent due to each new client treatment period begins with the launch of a service code 1 and an Initial Contact Form which contains the first time of contact and also the 3 HOPE questions. Each client is required to participate in an Initial Assessment, and ongoing clients will experience an Annual Assessment, HOPE questions are collected again within this assessment.

- Was there documented quantitative improvement in process or outcomes of care?
  **Yes, see performance indicators table and appendices.**

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

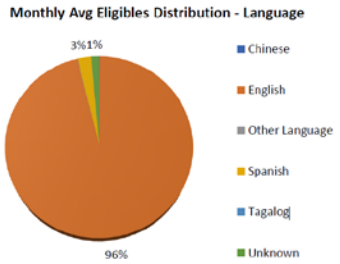
  **Face Validity Check:** Although the scale is a valid and published measure, analysis was conducted to further assure that the Abbreviated Snyder's Hope scale retained face validity within this study. Separate HOPE items were compared to see if there were any drastic differences between items. Results showed there was only a 0.1 difference between questions in the first sample and 0.2 difference between item scores in the second and third samples. The first and third item scored most similarly, therefore we can also conclude that the item order did not impact results or result in any survey fatigue. Knowing that all items were within 0.2 points of each other, we were able to assure that HOPE was indeed being measured as intended.

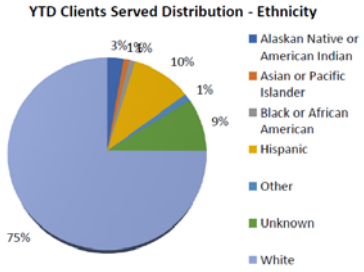
- Describe the statistical evidence supporting that the improvement is true improvement.
  - The study produced a 0.7 positive correlation between client contacts and HOPE scores. See Bivariate analysis in Appendix C.
  - Additionally, high HOPE clients had received an average of 9 services whereas low HOPE clients had an average of 5 services (See Appendix F).
  - Clients with additional contacts retained high HOPE, even in cases where they experienced long wait times. This indicates, as expected, that client services are a moderating factor in HOPE (See Appendix F).

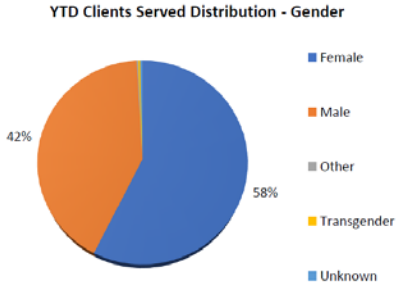
- Was the improvement sustained through repeated measurements over comparable time periods? (If this is a new PIP, what is the plan for monitoring and sustaining improvement?)
  - Baseline HOPE data was pulled in the winter of 2016 shortly after the implantation of the Snyder's HOPE scale. After the implementation of Case Assignment in the CAIP unit in spring of 2017, another HOPE data pull was completed. This pull yielded an improvement in scores by 0.14 points. The third and final HOPE pull was done in fall of 2017 after an Access Coordination Prompt to the CAIP Unit. The final data pull showed again another improvement in another 0.46 points for a total 0.6 point increase from the first sample to the last sample of the study (See Appendix G).

## Appendix A

DEMOGRAPHIC SUMMARY OF TCBH ELIGIBLES



## Appendix B

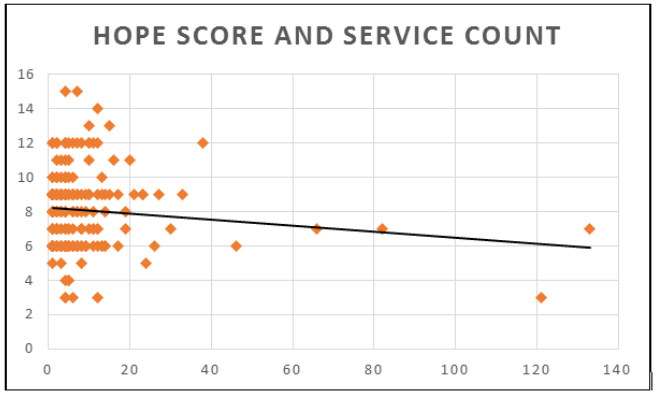
BENEFICIARY SATISFACTION AND CLINCIAL OUTCOMES

| Beneficiary Satisfaction Survey: HOPE Participants Compared to All TCBH Responses<br>Percent of Positive Responses for POQI Spring 2017 | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Staff were willing to see me as often as I felt was necessary | Staff returned my calls within 24 hours | Staff here believe that I can grow, change and recover | Staff helped me obtain the information I needed so that I could take charge of managing my illness | I was encouraged to use consumer-run programs | I am better able to control my life | I am better able to deal with crisis |
| **All TCBH POQI Responses** | 78% | 76% | 86% | 84% | 91% | 79% | 76% |
| **Final HOPE Participant Sample Responses** | 86% | 100% | 100% | 100% | 100% | 100% | 100% |

## Appendix C

BIVARIATE ANALYSIS

Bivariate Analysis of HOPE Scores vs. Client Service Count




*HOPE Scores are calculated as followed: the lower the HOPE Score the more Hopeful a client feels. As you read the analysis please remember that lower hope scores are better than higher scores.

The relationship between HOPE Scores and Service Counts is linear. We can see this because the trend line changes at a constant rate. The gradient of the graph above is -.7, which shows a constant linear correlation between HOPE Scores and Service Counts.

As Service Count, or contacts from Tuolumne County Behavioral Health, increase clients HOPE Scores decrease; **which is a positive relationship because the lower the HOPE Score the more Hope a client has.** We can see this because as service counts increase the HOPE Scores decrease, to reveal that clients become more hopeful as they receive more services.

## Appendix D

CLIENT SERVICE SEQUENCE QA

Service code 1 represents the initial contact, 5 Triage, 9 Access/Coordination, 10 Initial Assessment, 13 Plan Development, and 15 POC process

71% of the clients experienced the expected entry experience

| Clt | 1st | 2nd | 3rd | 4th | 5th | 6th | 7th | 8th | 9th | 10th | 11th | 12th | 13th | 14th | 15th |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 421 | 1 | 5 | 10 | 15 | 441 | 13 | 443 | 70 | 30 | 30 | 13 | | | |
| 2 | 1 | 5 | 9 | 70 | 10 | 10 | 15 | 30 | 30 | 30 | 30 | | | | |
| 3 | 1 | 5 | 10 | 15 | 443 | 443 | 30 | 30 | | | | | | | |
| 4 | 1 | 5 | 10 | 443 | 443 | 13 | 443 | 30 | 443 | 30 | 30 | | | | |
| 5 | 421 | 421 | 421 | 70 | 1 | 5 | 10 | 15 | 443 | 35 | 35 | 15 | 35 | 15 | 35 |
| 6 | 421 | 421 | 421 | 70 | 1 | 5 | 9 | 52 | 70 | 9 | 10 | 15 | 443 | 70 | 70 |
| 7 | 25 | 70 | 441 | 441 | 9 | 441 | 50 | 73 | 421 | 20 | 50 | 5 | 13 | 441 | 441 |
| 8 | 1 | 5 | 10 | 15 | 11 | 20 | | | | | | | | | |
| 9 | 1 | 5 | 10 | 443 | 13 | 11 | 15 | 30 | 30 | 441 | 30 | 443 | 425 | 30 | |
| 10 | 1 | 5 | 441 | 10 | 15 | 425 | 441 | 441 | 443 | 25 | 11 | 20 | | | |
| 11 | 421 | 421 | 421 | 421 | 441 | 421 | 421 | 421 | 421 | 421 | 421 | 421 | 421 | 73 | 52 |
| 12 | 421 | 421 | 421 | 421 | 441 | 421 | 441 | 70 | 441 | 9 | 9 | 421 | 441 | 421 | 9 |
| 13 | 421 | 421 | 9 | 1 | 5 | 421 | 421 | 421 | 421 | 421 | 441 | 421 | 421 | 421 | 421 |
| 14 | 70 | 1 | 9 | 9 | 9 | 9 | | | | | | | | | |
| 15 | 70 | 9 | 421 | 52 | 1 | 5 | 421 | 421 | 70 | 52 | | | | | |
| 16 | 1 | 441 | 50 | 10 | 13 | 441 | 441 | 441 | 421 | 24 | | | | | |
| 17 | 421 | 5 | 1 | 441 | 70 | 421 | 9 | 10 | 52 | | | | | | |
| 18 | 1 | 5 | 10 | 13 | 15 | 50 | 70 | 50 | 73 | 441 | 33 | 441 | 441 | 443 | 441 |
| 19 | 421 | 5 | 1 | 10 | 443 | 443 | 15 | 30 | 30 | 30 | | | | | |
| 20 | 1 | 5 | 441 | 441 | 70 | 441 | 50 | 441 | 73 | 50 | 421 | 50 | 73 | 50 | 10 |
| 21 | 1 | 5 | 10 | 443 | 15 | 13 | | | | | | | | | |

**Appendix E**

QA Access/Coordination Follow-Up services via Binder

| CAIP Follow-Up Form Process QA | | |
|---|---|---|
| Total Requested Follow Up Calls | 55 | |
| Total Completed Follow Up Calls on Paper | 49 | **89%** |
| Total Follow Ups Logged In E.H.R. | 46 | **94%** |

**Appendix F**

Average Number of Services Comparison for Participants with High or Low HOPE

| | Services |
|---|---|
| HIGH Hope | 9.3 |
| LOW Hope | 4.6 |

HOPE Compared to Timeliness of Services

| **Timeliness** (Average Business Days) | | | | | |
|---|---|---|---|---|---|
| | Initial to Assessment | Initial to Psych | Initial to SMH | Assessment to Psych | Assessment to SMH |
| HIGH HOPE | 26 | 80 | 51 | 55 | 21 |
| LOW HOPE | 19 | - | 45 | 39 | 27 |

**Appendix G**

HOPE Score Results

| Round of Administered Hope Scale | Av. Score |
|---|---|
| 1st Sample | 6.9 |
| 2nd Sample | 7.04 |
| 3rd Sample | 7.5 |

Increase in HOPE Scores at First Contact

| | 1st Sample | 2nd Sample | 3rd Sample |
|---|---|---|---|
| **Average 1st Score** | 6.9 / 15<br>N=19 | 7.7 / 15<br>N= 19 | 8.1 / 15<br>N=25 |