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]

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

MHP Name:	**County of San Diego Behavioral Health Services (SDCBHS)**
Project Title:	**Therapeutic Homework** Check One: Clinical **X** Non-Clinical
Project Leader:	**Liz Miles, Ed.D, MPH, MSW/Emily Trask, Ph.D.** Title: Principal Administrative Analyst Role: **Performance Improvement Project Lead**
Start Date (MM/DD/YY):	**April 2016**
Completion Date (MM/DD/YY):	**Spring 2018** Projected Study Period (# of months): **24 (anticipated)**
Brief Description of PIP: *(Please include the GOAL of the PIP and what the PIP is attempting to accomplish.)*	**Utilizing a four-phase performance improvement project, the main goal of this PIP is to improve consumer outcomes through the increased use of therapeutic homework in youth receiving services in the Children, Youth and Families Behavioral Health Services (CYFBHS) system.**

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.**
   The HW PIP Workgroup is a diverse representation of professionals from the County of San Diego Behavioral Health Systems of Care and Behavioral Health Programs whose experience and expertise provided valuable direction and insight for this PIP. Members include:

   Julie McPherson – Community Research Foundation Program Manager
   Rhaelynne Scherr – South Bay Community Services Program Manager
   Michelle Ly – Union of Pan Asian Communities Program Manager
   Dasha Dahdouh, MPH – Research Analyst, Performance Improvement Team, Behavioral Health Services
   Amanda Lance-Sexton – Behavioral Health Program Coordinator, Behavioral Health Services
   Shane Padamada – Youth Advocate (CFM representative)
   Yael Koenig – Deputy Director, Children, Youth and Families, Behavioral Health Services
   Emily Trask, Ph.D – Child and Adolescent Services Research Center, University of California, San Diego
   Bill Ganger, M.A. – Child and Adolescent Services Research Center, San Diego State University
   Amy Chadwick – Child and Adolescent Services Research Center, University of California, San Diego
   Tiffany Lagare – Child and Adolescent Services Research Center, University of California, San Diego
   Anh Tran – Child and Adolescent Services Research Center, University of California, San Diego

- ➤ **Describe the stakeholders' role(s) in the PIP and how they were selected to participate.**
  The stakeholders in the PIP workgroup are vital to every stage of the PIP process and have met at least *bi-monthly* since the project began in April, 2016. They helped choose the topic, develop the HW baseline survey and reviewed the results, guided development of the educational handout on therapeutic homework, provided input on the data indicators, data collection schedule, timelines, and evaluation of app-based homework assignments. Stakeholders were selected to participate either because they have a strong investment in the PIP's success as program managers at large diverse outpatient programs (contracted and county) or they represent key county decision makers.

  A San Diego County youth advocate has reviewed the PIP materials and provided the PIP committee with important feedback from a consumer perspective on the barriers to completing therapeutic homework (i.e., homework is not provided electronically). The main barrier the youth advocate identified was targeted in the homework interventions. The youth advocate was selected due to personal experience with the system and interest in this project.

  Researchers at the Child and Adolescent Services Research Center (CASRC) drafted the data evaluation plan, statistical analysis, interpretation of data, and the roadmap narrative with feedback from San Diego County Behavioral Health Services (SDCBHS). CASRC researchers were selected to complete this evaluation because of their proven track record completing successful evaluations for San Diego County.

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.**

  - o **What is the problem?**
    Limited positive benefit of therapy: After six months of treatment in BHS, caregivers report only small to moderate changes in youth behavioral and emotional problems (Trask & Garland, 2012). Specifically, caregiver reports of treatment effects were **small to moderate** ($d = .39$ for internalizing problems; $d = .49$ for externalizing problems) in FY 2011-12. More current data (FY 2014-15) showed a slight improvement from FY 2011-12, though treatment effects were still moderate (effect sizes were $d = .51$ for internalizing problems; $d = .56$ for externalizing problems).

  - o **How did it come to your attention?**
    This problem came to our attention during another Children Youth and Families (CYF) SDCBHS project with the goal of quantifying the average change in behavioral and emotional outcomes at the end of therapy.

  - o **What data have you reviewed that suggests the issue is indeed a problem for the MHP? Describe any relevant benchmarks. What literature and/or research have been reviewed that explain the issue's relevance to the MHP's consumers**?
    Benchmarks: All studies discussed here utilized the same measure of treatment effectiveness (i.e., the Cohen's d effect size statistic) to facilitate a meaningful comparison.
    - ▪ $d = .76$: One large review summarized results from 45 child and youth treatment outcome studies, and reported that the average treatment effect was moderate to large (Lipsey & Wilson, 1993).

- d = .88: A meta-analytic review reported that Triple P had an average effect size of .88 at post-treatment for youth with disruptive behavior disorders (de Graaf et al., 2008).
- d = 1.08: Another meta-analytic summary of the effects of cognitive-behavioral therapy in youth and adults reported a large post-treatment effect (Kazanztis, Whittington, & Dattilio, 2010).

Thus, treatment effects have increased slightly in San Diego's MHP after a concerted effort by SDCBHS to offer more training in short-term evidence-based therapies and increase focus on reviewing therapy outcomes; however, there is still room for improvement since this MHP's treatment effects (d = .51 - .56) are smaller than the average treatment (ranged from d = .76 to 1.08 across review studies) seen in child therapy.

➢ **The study topic narrative will address:**

o **What is the overarching goal of the PIP?**
The main goal of this PIP is to improve therapy outcomes.

o **How will the PIP be used to improve processes and outcomes of care provided by the MHP?**
Outcomes: The PIP will be used to improve clinical outcomes for youth (i.e., greater emotional and behavioral symptom reduction, shorter length of treatment) via improvement in clinical processes (i.e., use of therapeutic homework).

o **How any proposed interventions are grounded in proven methods and critical to the study topic.**
Therapeutic HW is considered a common element of evidence-based practice (EBP; Garland, Hawley, Brookman-Frazee, Hurlburt, 2008); however, it is not being used consistently in the County of San Diego Children, Youth, and Families Behavioral Health Services system. National studies have reported higher rates of therapy HW utilization compared to San Diego's MHP. For instance, studies have found that therapists used HW in 57% of sessions (Kazantzis & Deane, 1999) and that 83% of mental health professionals reported the use of HW in psychotherapy (Kazantzis, Busch, Ronan, & Merrick, 2007). Lastly, 68% of psychologists stated that they "often" or "almost always" assign HW (Kazantzis, Lampropoulos, & Deane, 2005). *In San Diego's MHP, 40% of outpatient clinicians report administering HW to youth during the majority of sessions ("all / 100%" or "most / 75%" of sessions).*

To determine the feasibility of doing a therapeutic homework intervention in this PIP project, statistical analyses were conducted in the spring of 2016 on the relationship between use of HW and outcomes in this MHP. Results showed that youth clients who received more therapeutic HW assignments had significantly better emotional and behavioral outcomes. Conversely, less HW usage is associated with poorer outcomes in this MHP. Further, a recent research study that was completed with clients in this MHP, found that caregivers rated treatment as more effective when clinicians utilized therapeutic HW in sessions with their children (Haine-Schlagel & Walsh, 2015).

Given that homework is a fundamental skill building component of the majority of evidence-based treatments (Garland et al., 2008) and is associated with the perceived effectiveness of treatment in San Diego (Haine-Schlagel, Fettes, Garcia, Brookman-Frazee, & Garland, 2014) as well as therapy outcomes nationwide (Kazantzis, Whittington, & Dattilio, 2010), increasing use of therapeutic HW could improve client outcomes.

Interventions to increase use of therapeutic HW will rely on proven methods. For example, research has found that there are a number of techniques purported to improve the therapeutic use of HW such as assigning smaller amounts of less complicated HW tasks, demonstrating the HW with the client first, and using the client's input when developing the HW assignment (Kelly & Deane, 2011). Further, research suggests that stand-alone clinician trainings are not effective (Dorsey et al., 2013) and that organizational supports are needed for widespread change (e.g. support through supervision), thus trainings focusing on supervisors will be offered (in addition to clinician trainings) to support therapist behavior change and skillful implementation of homework (Beidas & Kendall, 2010).

➤ **The study topic narrative will clearly demonstrate**:

o **How the identified study topic is relevant to the consumer population**
The average treatment effect among clients receiving therapy in San Diego County's CYFBHS system is moderate and obtaining better clinical outcomes is relevant to all consumers. Further, this study topic is relevant to the entire population of youth clients receiving outpatient mental health services. Use of homework is associated with **improved outcomes nationwide across youths' most common presenting problems**: disruptive behaviors, anxiety, and depressive disorders (Clarke et al., 2015; Kazantzis, Whittington, & Dattilio, 2010). Use of therapeutic HW has also been found to reduce **parental stress and decrease the length of time** in treatment (Ros, Hernandez, Graziano, & Bagner, 2016; Stokes et al., 2016). Research has shown that use of therapeutic homework is associated with enhanced outcomes across all common youth mental health disorders: anxiety, depression, trauma, and disruptive behavior disorders.

o **How addressing the problem will impact a significant portion of MHP consumer population**
Year I – Systemwide Educational Handout on use of Therapeutic Homework: This first phase intervention consisted of putting system supports in place for the use of therapeutic HW: adding an item to the medical record reviews about the use of HW, adding an indicator of use of HW to the progress notes, and educating the system on the importance of using HW to gain their support through the educational handout on therapeutic HW. Research suggests that organizational supports are needed to support widespread change (Beidas et al., 2010). Thus, it was imperative that we put supports in place prior to doing supervisor and clinician trainings on the use of HW.

Fifty-two (52) outpatient program managers (who served 15,600 youth in the fiscal year 2016-17) received the systemwide educational intervention and were instructed to present it to their clinicians. Furthermore, approximately 500 clinicians received a copy of the educational overview (Attachment III) on the importance of using therapeutic HW with clients. Thus, each client in our system should be receiving services from a clinician who received this educational intervention. A baseline survey of outpatient clinicians' homework use (to track usage) was administered in May 2016 and re-administered in September 2016.

Year II - Supervisor Training on Therapeutic HW: Supervisors at one large representative central region outpatient clinic served as the **pilot program**. In FY 2016-17 this pilot program served 693 youth, which represents 5% of clients served at all children's outpatient programs in FY 2016-17. Every administrative and clinical supervisor (N=16) from the pilot program participated in a training (January, 2017) on the use of therapeutic HW with clients and methods to overcome the three top barriers (i.e., lack of structure to support using HW, client noncompliance, and absence of using technology-delivered HW assignments) identified through the baseline HW survey and family consumer representatives. This baseline survey of clinician use of therapeutic HW was administered in May of 2016 (see Attachment I for the survey questions). The pilot program clinicians tracked their HW usage for each session from October 2016 through June 2017 (see Attachment II for pilot program HW tracking sheet).

This intervention will be rolled-out systemwide to supervisors from all CYF programs in the spring of 2018. The goal of this training is to positively impact CYF client outcomes on a larger scale. Each systemwide HW training has the capacity to train 30 supervisors (out of approximately 120 CYF clinical supervisors systemwide) and all CYF supervisors will be encouraged to attend one of the offered trainings. Thus, each supervisor training could impact the services provided to and outcomes of approximately 4,000 CYF clients (approximately 25% of the number of clients served each year, whose clinicians are supervised by the supervisors who attended the HW training).

- o **How the interventions have the potential to impact the mental health, functional status, or satisfaction of consumers served**
  In San Diego County MHP, youth clients who received therapeutic HW assignments had better emotional and behavioral outcomes. Thus, increasing the use of therapeutic HW (therapeutic process) has the potential to impact mental health outcomes of youth receiving therapy services. Research shows that therapeutic HW assignment and completion of caregiver/youth homework is associated with improved outcomes in a multitude of mental health disorders. For instance, in a group of youth with Obsessive Compulsive Disorders (OCD), HW compliance was associated with a decrease in anxiety symptoms (Park et al., 2014). Greater HW completion among parents was associated with improvement in their children's conduct problems (Hogstrom et al., 2015; Kling et al., 2010; Ros et al., 2016). Lastly, in a study of Parent-Child Interaction Therapy (PCIT), parents who practiced PCIT skills more outside of session demonstrated greater mastery of parenting skills in fewer treatment sessions (Stokes et al., 2016).

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.

Will increased use of therapeutic homework following supervisor training precede a 10% reduction on the internalizing and externalizing Child and Adolescent Measurement System scales and a 10% decrease in length of time in treatment?

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.*

Year 1: Systemwide Educational Handout on use of Therapeutic Homework. The first phase of this quality improvement project is applicable to all youth receiving a billable outpatient therapy service in San Diego's MHP. All program managers received the informational handout and were instructed to present it to their staff. The handout was emailed to all outpatient clinicians. Thus, all clients who receive services at an outpatient program should be receiving therapy from a clinician who learned about the importance of therapeutic HW usage. A baseline survey of outpatient clinicians' homework use (to track usage) was administered in May 2016 and re-administered in September 2016 after program managers and clinicians received the educational handout.

During the first phase intervention (baseline: Q4 FY 2015-16 – follow-up: Q1 2016-17), 3,797 clients from 52 outpatient programs discharged from services and had outcome measures. The majority of youth were male (55%) and their average age was 10.9 years (age range 1-20). The racial/ethnic breakdown was: 59.4% Latino, 19.5% White, 7% African American, 2.6% Asian/Pacific Islander, and 11% Other.
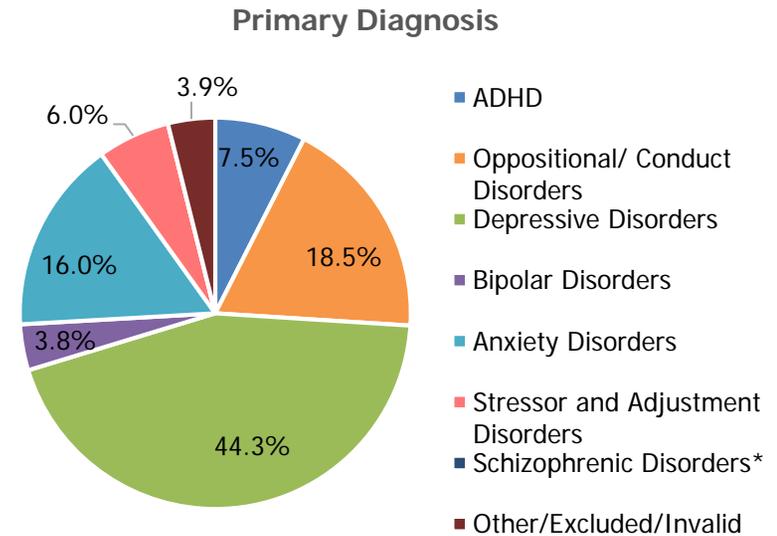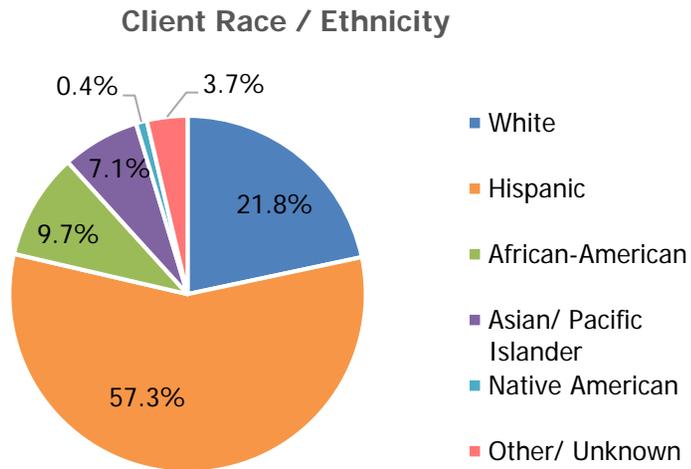
Year 2: Pilot Program Client Data

During FY 2016-17, 693 clients were served at the pilot program whose supervisors received the therapeutic HW intervention. The majority of clients served at the pilot program were male (57%), Hispanic (57%), Medi-Cal recipients (100%), and had a depressive, anxiety, ADHD (attention deficit hyperactivity disorder), or ODD (oppositional defiant disorder) diagnosis (86%). Their average age was 11.4 years (age range 4-18).

Overall, the pilot program's clients were representative of San Diego's CYFCBHS clients served in FY 2016-17. Specifically, the average age (11.5 versus 11.4 years old), gender breakdown (57% male versus 56% male), racial/ethnic breakdown (e.g., 57% Hispanic versus 59% Hispanic), and Medi-Cal status (100% versus 99.7%) of clients in the pilot program and systemwide were approximately the same. One notable difference was that the pilot program served more clients with depressive disorders (44% versus 26% systemwide). Further, other CYF programs serve a limited amount of youth ages 18-24, whereas the pilot program serves clients up to age 18. Please note that the majority of Transition Age Youth ages 18 and older are served in the adult/older adult system of care.

Pilot Program Client Demographic Data (N = 693):

Client Age

- Ages 0 to 5 — 5.6%
- Ages 6 to 11 — 42.9%
- Ages 12 to 18 — 51.5%

Client Gender

- Female — 43.0%
- Male — 57.0%

Client Race / Ethnicity

- White — 21.8%
- Hispanic — 57.3%
- African-American — 9.7%
- Asian/ Pacific Islander — 7.1%
- Native American — 0.4%
- Other/ Unknown — 3.7%

Primary Diagnosis

- ADHD — 7.5%
- Oppositional/ Conduct Disorders — 18.5%
- Depressive Disorders — 44.3%
- Bipolar Disorders — 3.8%
- Anxiety Disorders — 16.0%
- Stressor and Adjustment Disorders — 6.0%
- Schizophrenic Disorders* — 3.9%
- Other/Excluded/Invalid

*No schizophrenic disorders reported

Clinician Pilot Program Data on Usage of Therapeutic Homework at Baseline

Pilot Program Clinicians:

On the May 2016 online HW survey, all of the pilot program clinicians reported using therapeutic HW during the past month to varying degrees (ranged from '100% of the sessions' to '25% of the sessions' on the online HW survey). Further, pilot program clinicians assigned HW to 82% (274/333) of the clients seen during baseline data collection (October 2016 – January 2017).

Systemwide Clinicians: While the intervention was only provided to the pilot program supervisors, clinicians from the entire CYF system completed the online HW survey (n = 267 clinicians representing approximately 50% of all clinicians providing therapy to youth and their families). Given that the implementation plan is to roll the supervisor HW training out systemwide, relevancy to the entire system is important: At baseline 6.4% of clinicians reported using homework over the past month in all (100%) of their sessions, 33.3% reported using it in most (75%), 31.8% in half (50%), 22.5% in a quarter (25%), and 6.0% reported using HW in none (0%) of their sessions over the past month.

Thus, therapeutic HW is being used by almost all clinicians who responded to the online survey. However, given that the therapeutic homework intervention is aimed at establishing the value of therapeutic HW, provision of HW resources, and discussion of overcoming obstacles to utilizing homework with clients, if a clinician doesn't currently utilize therapeutic HW (or rarely utilizes it) then they (or more specifically their supervisor) would be the target audience for a training, since clinicians providing services to youth should be utilizing homework with **all** clients as this is a best practice for any evidence-based treatment. Please see Step 1 (page 5) for description of how use of therapeutic homework is relevant to all youth diagnoses / presenting problems.

"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 a 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.

Year I: Performance Indicators for Systemwide Educational Evaluation

#	Describe Performance Indicator	Numerator	Denominator	Baseline for Performance Indicator (number)	Goal (number)
1	**Clinicians assigned HW at all (100%) or most (75%) therapy sessions over the past month*	*106*	*267 Clinicians completed the survey*	*40%*	*10% increase (50%)*
2	*Caregiver report disruptive behavior outcomes discharge score (PCAMS Externalizing Score)*	*Sum of PCAMS externalizing scores = 31,488*	*Total # of clients with intake and discharge PCAMS = 1,035*	*Mean = 30.42*	*10% reduction (mean score of 27 on PCAMS discharge externalizing scale)*
3	*Caregiver report depression / anxiety outcomes discharge score (PCAMS Internalizing Score)*	*Sum of PCAMS internalizing scores = 15,035*	*Total # of clients with intake and discharge PCAMS = 1034*	*Mean = 14.54*	*10% reduction (mean score of 13 on PCAMS discharge internalizing scale)*
4	*Treatment Length (Close date – open date)*	*13,160 months*	*3375 clients in Q4 FY 2015-16*	*Mean = 3.9 months*	*3.5 months = 10% reduction in average treatment length*

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

Year II: Baseline Performance Indicators for Pilot Program
The performance indicators changed slightly from year 1 to 2 to reflect the evolution of this project and are not directly comparable. The first year of this project examined whether systemwide education about the benefits of therapeutic homework changed outcomes systemwide. The second year of this PIP was a pilot intervention examining whether a clinical intervention for supervisors regarding the use of therapeutic homework resulted in better outcomes. The pilot program reported that clients enter services at different levels of severity across the year, therefore Change Scores on the Parent Child and Adolescent Measurement System (PCAMS) were utilized to control for differing levels of client severity across the year. Treatment length was obtained from the sample of youth who discharged during the baseline and follow-up periods.

- **Parent Child and Adolescent Measurement System (PCAMS) internalizing and externalizing scale scores** were available through medical records and were chosen because the ultimate goal of the HW intervention is to positively impact client mental health outcomes. The PCAMS evaluates emotional and behavioral outcomes and is considered reliable and valid. Clinicians are instructed to administer this assessment to each client at intake, every utilization management time point, and discharge. Change scores represent the size of the improvement. Larger change scores represent greater emotional and behavioral symptom reduction. This measure was also chosen because of the research showing the positive relationship between therapeutic HW and client outcomes (reviewed in Step 1).

- **Treatment length** was obtained through Cerner Community Behavioral Health (CCBH) administrative billing data and was selected because research has shown that increased use of HW is related to a decrease in treatment length (reviewed in Step 1) due to homework facilitating more efficient service delivery. Thus, reducing the average length of client's treatment is considered a positive outcome.

#	Describe Performance Indicator	Numerator	Denominator	Baseline for Performance Indicator (number)	Goal (number)
1	**Percent of sessions in which clinicians assigned therapeutic homework**	Sessions in which HW was assigned = 1380	Total number of sessions held during baseline data collection (October 2016 – January 2017) = 2022	68%	10% increase = 75%
2	**Parent Child and Adolescent Measurement System (PCAMS) - Caregiver report externalizing scale change score (discharge minus intake scores)**	Sum of PCAMS externalizing change scores = 472	Total # of clients who discharged during baseline with PCAMS externalizing data (October 2016 – January 2017) = 107	Mean = 4.41	10% increase on externalizing change score (discharge minus intake) = 4.85
3	**PCAMS - Caregiver report internalizing scale change score (discharge minus intake scores)**	Sum of PCAMS internalizing change scores (discharge minus intake scores) = 227	Total # of clients who discharged during baseline with PCAMS internalizing data = (October 2016 – January 2017) = 107	Mean = 2.12	10% increase on internalizing change score (discharge minus intake) = 2.33

4	Treatment Length (Close date – open date) for discharged clients	Sum of months = 773.6	Discharged clients in Baseline (October 2016 – January 2017) = 146	Mean = 5.3 months	10% reduction in average treatment length = 4.77 months

STEP 5: SAMPLING METHODS (IF APPLICABLE)

The MHP must provide the study description and methodology.

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

  Describe the valid sampling techniques used?

_____*N of enrollees in sampling frame*
_____*N of sample*
_____*N of participants (i.e. – return rate)*

Sampling methods are not applicable since this PIP included all youth from the pilot program who discharged from outpatient services from October 2016 through June 2017. All supervisors from the pilot program attended this training and the impact on ALL of their supervisee's clients is of interest.

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.**

Operational Definition of Therapeutic Homework:
The use of therapeutic HW by clinicians was defined as "assignments or exercises completed in between therapy sessions by the client and/or their caregiver to practice skills learned in previous therapy sessions". For clients, HW may involve practicing relaxation skills (e.g., deep breathing) or applying these skills to real-life situations (e.g., using deep breathing while taking a test). For caregivers, it might include doing child-led play at home to strengthen the parent-child relationship.

Why is therapeutic homework applicable to the entire consumer population:
The majority of children seeking mental health services in CYFBHS have a diagnosis of Attention-Deficient/Hyperactivity Disorder, Oppositional Defiant Disorder, an anxiety disorder, or a depressive disorder. Clinicians are expected to use an evidence-based practice with this client population, all of which include administering therapeutic homework during most, if not all, sessions. Further, the majority of clinicians are utilizing therapeutic homework with clients (data reviewed in Step 3).

1. Online Clinician HW survey (*provider data*):
   Clinicians completed a 29-item online survey (Attachment I) about their use of HW assignments over the past month. While the analyses will focus primarily on the pilot program responses, the survey was distributed to clinicians at all CYFBHS outpatient clinics, receiving approximately a 50% response rate at baseline and follow-up. The survey used 5-point Likert scale response options to evaluate the use of HW. Question format and survey administration in the June 2017 follow-up assessment was consistent with the baseline assessment conducted in May 2016. These four specific items were utilized in the pre / post analyses:

   i. Thinking about **all** your clients over the past month, in how many of the therapy sessions did you assign homework?
      a. All of the sessions (100%)
      b. Most of the sessions (75%)
      c. About half of the sessions (50%)
      d. Some of the sessions (25%)
      e. None of the sessions (0%)

   ii. In the past month, in how many of your supervision sessions did your supervisor ask about your use of homework with clients?
      a. All supervision sessions (100%)
      b. Most supervision sessions (75%)
      c. About half of the supervision sessions (50%)
      d. Some supervision sessions (25%)
      e. No supervision sessions (0%)
      f. Not applicable (I had no supervision sessions in the past month)

   iii. In the past month, how often did your clients (or their caregivers) complete their assigned homework? Please provide your best estimate.
      a. All of the time (100%)
      b. Most of the time (75%)
      c. About half of the time (50%)
      d. Some of the time (25%)
      e. None of the time (0%)
      f. Not applicable (I did not assign homework)

iv. Thinking about all the homework you've assigned over the last month, how often did you *review* clients' completion of homework assignments?
   a. All of the time (100%)
   b. Most of the time (75%)
   c. About half of the time (50%)
   d. Some of the time (25%)
   e. None of the time (0%)
   f. Not applicable (I did not assign homework)

2. <u>Pilot Program Therapeutic Homework Tracking Form (Attachment II)</u>:
   The HW tracking form was added in year 2 to more accurately measure homework utilization in each session per the EQRO's recommendation. This eliminates the need to rely on clinicians' retrospective memory of their homework use over the last month. Pilot program clinicians completed a homework tracking sheet for every therapy session for 9 months. For each therapy session, clinicians tracked whether they assigned homework for the next session (*Yes, No*), whether their clients completed last session's homework (*Yes, No, Partial, Not Assigned*), and whether they reviewed the previous sessions' assigned homework (*Yes, No, Not Assigned*). This data was entered into the pilot program's data entry system.
   o <u>Pre-Intervention / Baseline</u>: October - January of fiscal year 2016-17 served as the baseline data collection.
   o <u>Post-Intervention / Follow-up</u>: February - June of fiscal year 2016-17 served as the follow-up data collection period (the HW intervention training was held at the end of January, 2017). The same HW tracking form was used before and after the intervention to ensure consistent data collection.

3. <u>Parent Child and Adolescent Measurement System</u>:
   (PCAMS; Doucette, 2004; *member data*): Behavioral and emotional problems were examined using the externalizing and internalizing scales of the PCAMS. CYFBHS guidelines state that the 30-item PCAMS will be administered to all caregivers of clients ages 5-21 at intake and discharge. PCAMS are administered and entered into the standardized data entry system (DES) by either clinicians or administrative staff at each individual clinical site and then uploaded to a central data management information system where data are converted to SPSS for analysis.
   Reliability/Validity: The PCAMS developers reported that the 11-day test-retest reliability of the measure was .67 for the youth and .89 for the caregiver. Further, estimates of internal consistency ranged from .89 to .94 across multiple samples and respondents (Doucette, 2004). The caregiver PCAMS internalizing and externalizing scores correlated with the CBCL internalizing and externalizing scales (r = .68 and .67; Doucette, 2004), which is a well-established measure of emotional and behavioral problems. The PCAMS was validated in representative populations of youth with emotional disorders (e.g., youth receiving outpatient therapy, intensive home-based services, and youth in foster care). This information supports the reliability and validity of this measure in our MHP.

   The PCAMS was administered, scored, entered, and uploaded using the same methods at baseline and each follow-up time point resulting in consistent and accurate data collection.

4. <u>Treatment Length</u> (c*laims data*):
   Treatment length for pilot program clients was calculated by subtracting intake from discharge dates from the electronic health record for clients discharging from mental health services. This data is available for all clients receiving mental health services. Intake and discharge dates for mental health services provided to BHS clients are entered into the electronic health record by providers who are trained to enter data in a consistent manner for all clients. This same data was collected and calculated using the same methodology at each time point.

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

Year 1:

1. *HW Assignment: The analysis will examine if clinicians' use of HW increases from baseline to first follow-up. Specifically, does the proportion of clinicians who assign HW in the majority of sessions increase by 10%? T-tests will be used to examine if there are any statistically significant changes in clinician use of HW from baseline.*

2. *PCAMS: The analysis will calculate average discharge scores for the PCAMS externalizing and internalizing scales and determine if they decrease by 10 percentage points. Further, t-tests will be utilized to determine if scores are significantly lower at each follow-up time point (indicating a reduction in behavioral and emotional problems).*

3. *Treatment Length: The analysis will calculate average length of treatment in months at baseline and each follow-up time point to determine if treatment length decreases by 10 percentage points. Additionally, a t-test will be utilized to determine if there was a statistically significant reduction of length of treatment at each follow-up time point.*

Year 2 Pilot Program Data Analysis Plan:

1. <u>HW Assignment</u>:
The analyses will examine if the pilot program's use of HW after the HW training changes from their baseline and compared to clinicians from other programs (who didn't receive the intervention) at follow-up. This will be analyzed three ways:

    i. *Baseline and Follow-Up Pilot Program Results from HW Tracking Sheet* (Attachment II): Chi-square tests will be used to examine whether the percentage of sessions that homework is assigned, completed, and reviewed changed from baseline (October 2016 – January 2017) to post-intervention (February 2017 – June 2017).

    ii. *Pre/Post Homework Pilot Program Results from Online Therapeutic Survey* (Attachment I): T-tests will be used determine if the percentage of clinicians reporting that they administered HW, reviewed HW, discussed HW with their supervisors, or their clients completed HW in "all /100% of the sessions" or "most / 75% of the sessions" changed from the May 2016 baseline online survey to the June 2017 follow-up survey.

    iii. *Systemwide Versus Pilot Program Comparisons on the Online Therapeutic Homework Survey at the June 2017 Follow-up*: T-tests will be used determine if the percentage of clinicians reporting that they administered HW, reviewed HW, discussed HW with their supervisors, or their clients completed HW in "all /100% of the sessions" or "most / 75% of the sessions" differs between pilot program clinicians and clinicians from other CYF outpatient programs (who did not receive the intervention) on the June 2017 online therapeutic homework survey.

2. <u>Parent Child and Adolescent Measurement System (PCAMS)</u>:
The analysis will calculate average change scores (discharge scores minus intake scores for each discharged client) for the PCAMS externalizing, internalizing, and total scales. Larger change scores indicate greater reduction of behavioral and emotional problems from intake to discharge. Further, t-tests will be utilized to determine whether post-intervention (February 2017 – June 2017) change scores are significantly different from baseline (October 2016 – January 2017) change scores.

3. Treatment Length:
   The analysis will calculate the average length of treatment in months at baseline and each follow-up time point to determine if treatment length changes. Additionally, a t-test will be utilized to determine if there was a statistically significant reduction of length of treatment from baseline (October 2016 – January 2017) to post-intervention (February 2017 – June 2017).

➢ **Identify the staff that will be collecting data, and their qualifications. Include contractual, temporary, or consultative personnel.**
   Emily Trask, Ph.D., Senior Mental Health Consultant, UCSD
   Tiffany Lagare, M.P.H., Research Assistant, UCSD
   Anh Tran, B.S., Research Assistant, UCSD
   Bill Ganger, M.A., Data Manager, SDSU
   Shellane Villarin, M.P.H., Research Associate, Rady Children's Hospital-San Diego

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.*

Year I Interventions.

Number of Intervention	List each Specific Intervention	Barriers/Causes Intervention Designed to Target	Corresponding Indicator	Date Applied
1	*Adding "use of HW" to medical records review*	*Lack of structure to support use of HW*	*1*	*July 2016*
2	*Adding "used HW" checkbox to progress note*	*Lack of structure to support use of HW*	*1*	*In progress*
3	*Presentations on the importance of using HW at CSOC, PM Meetings up to the minute, SIT committee, training committees*	*Supervisors not asking about use of HW, clinicians not administering HW, lack of knowledge about relationship between therapeutic HW and therapy outcomes*	*1, 2, 3, 4*	*July 2016*
4	*Provision of handout via email on importance of using therapeutic homework to all SDBHS clinicians and program managers*	*Supervisors not asking about use of HW, clinicians not administering HW, lack of knowledge about relationship between therapeutic HW and therapy outcomes*	*1, 2, 3, 4*	*July 2016*

5	Online follow-up clinician survey on their use of HW	Clinicians minimal use of HW	1	September, 2016
6	Presentation on rationale for using therapy HW with pilot program clinicians	Clinicians not administering HW, lack of knowledge about relationship between therapeutic HW and therapy outcomes	1, 2, 3, 4	September, 2016
7	Trained pilot program to track and enter therapy HW data in their data entry system	Lack of structure to support use of HW	1	October, 2016

Describe how the interventions will impact the indicators and help to answer the study question.

The first two interventions must be applied to measure use of therapeutic HW in SDCBHS before answering the study question. Doing presentations at SDCBHS meetings and providing the same information to all clinicians in a written format should answer the study question about whether this educational training of clinical staff on therapeutic HW associated with an improvement in client outcomes (e.g., behavioral/emotional symptoms, length of time in treatment).

Year 2 Pilot Program Interventions:

Number of Intervention	List each Specific Intervention	Barriers/Causes Intervention Designed to Target	Corresponding Indicator	Date Applied
1	Provided pilot program support with completing and entering the homework tracking data	Lack of structure to support use of HW	1	January – July 2017
2	Completed therapeutic homework training with pilot program supervisors	Supervisors not asking about use of HW, clients not completing homework, lack of knowledge about relationship between therapeutic HW and therapy outcomes	1, 2, 3, 4	January 2017
3	Provision of app-based homework assignment list to pilot program supervisors and clinicians	Need for additional therapy resources, clients not completing homework due to lack of electronic resources (main barrier identified by a San Diego youth advocate)	1, 2, 3, 4	February 2017
4	Follow-up consultation with pilot program supervisors	Supervisors not asking about use of HW, clients not completing homework, lack of knowledge about relationship between therapeutic HW and therapy outcomes	1, 2, 3, 4	April 2017
5	Develop Systemwide Implementation Plan	Supervisors not asking about use of HW, clients not completing homework, lack of knowledge about relationship between therapeutic HW and therapy outcomes	1, 2, 3, 4	September – November 2017

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.). 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 indicators for Year I: Systemwide Educational Handout on use of Therapeutic Homework.

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. *Clinicians assigned HW at all or most therapy sessions	May 2016	106 / 267 = 40%	10%	July 2016	September 2016 (different sample of clinicians)	70 / 175 = 40%	0%
2. **Caregiver report disruptive behavior outcomes discharge score (PCAMS Externalizing Score)	Q4 FY 2015-16	31,488 / 1035 = 30.42	10% = 27	July 2016	Q1 FY 2016-17	27,594 / 916 = 30.12	1%
3. **Caregiver report depression/ anxiety outcomes discharge score (PCAMS Internalizing Score)	Q4 FY 2015-16	15,035 / 1034 = 14.54	10% = 13	July 2016	Q1 FY 2016-17	13,461 / 915 = 14.71	0%
4. Average Treatment Length (Close date – open date)	Q4 FY 2015-16	13,160 months / 3375 clients = 3.9 months	3.5 months	July 2016	Q1 FY 2016-17	16,311 / 4003 = 4.07 months	0%

Assignment of therapeutic HW reflects services provided over the last month.
*** Numerator reflects the sum of PCAMS discharge scores for all outpatient clients. Denominator is the total number of clients who completed the PCAMS measure at discharge.*
+Results reflect data from Q1 FY 2016-17 (compared to Q4 FY 2015-16 baseline data). The number of clinicians reporting use of homework at baseline and follow-up differed because the baseline survey was sent to clinicians actively seeing clients in a children's outpatient program in May 2016, while the follow-up survey included all clinicians actively seeing clients in a children's program during September 2016. The surveys were de-identified so it was impossible to re-measure the survey with the exact clinician sample.

➤ *Describe the data analysis process. Did it occur as planned?*
   The most challenging part of the data analysis process was to fit the data into the performance indicator table, which is different than how standardized mental health outcomes are typically reported; mental health outcome data is typically analyzed with statistical techniques to determine improvement. It was also challenging to analyze the data within the timeframe of the PIP because data is collected quarterly, uploaded

to the central DES, and then cleaned before becoming available for analysis. Thus, data from Q1 FY 2016-17 is not available to analyze until November 2017. Once the method of data analysis was chosen, the process occurred as planned with no problems.

➢ *Did results trigger modifications to the project or its interventions? Did analysis trigger any follow-up activities?*
Yes, given the lack of findings outlined in the performance indicator table, we are moving to Phase II of the PIP. Specifically, we have identified a pilot program to provide two clinical trainings: with supervisors and clinicians. A clinical supervisor with 20 years of experience is developing the training on using therapeutic HW effectively with clients. This training will focus on overcoming the barriers identified in the HW baseline clinician survey, which included supervisors not discussing HW in supervision, overcoming client non-completion of HW, and provision of technology-based HW assignments. If these interventions are successful then this training will be offered systemwide.

➢ *Review results in adherence to the statistical analysis techniques defined in the data analysis plan.*
T-tests were utilized to examine statistical significance for all four performance indicators. There were no statistically significant differences from baseline to the first follow-up, nor was there a 10% change on any of the outcome measures, reflecting the lack of improvement detailed in the performance indicator table.

➢ *Does the analysis identify factors that influence the comparability of initial and repeat measurements?*
Different clients were seen across the baseline and follow-up time points, which may impact comparability of initial and repeat measurement. However, treatment effects are average across all clients, thus differences should be minimized.

➢ *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.*
We have concluded that this first phase of the PIP was successful in putting SDCBHS supports in place to encourage the use of HW, but not enough to change clinical practices in use of HW or impact client outcomes. Thus, follow-up activities will consist of providing clinical trainings at a pilot program with supervisors and clinicians. This training will focus on overcoming the barriers identified in the HW baseline clinician survey: supervisors not discussing HW with their clinicians, overcoming client noncompliance with HW, and provision of app-based HW assignments. If these interventions are successful then this training will be offered systemwide.

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?**
➢ **Did results trigger modifications to the project or its interventions?**
➢ **Did analysis trigger any follow-up activities?**
➢ **Review results in adherence to the statistical analysis techniques defined in the data analysis plan.**
➢ **Does the analysis identify factors that influence the comparability of initial and repeat measurements?**

Year 2 Pilot Program Results
The data analysis did occur as planned. The results from year 1 triggered a modification to the intervention. Specifically, since there was no change in outcomes following the systemwide educational handout intervention in year 1, CYFBHS instead provided a 3-hour clinical training on using homework to pilot program supervisors.

**Performance indicators for Year 2: Pilot Program Data Analysis**

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. Percent of sessions in which pilot program clinicians assigned therapeutic homework	October 2016 – January 2017	1380 / 2022 sessions = 68%	Increase of 10% = 75%	January 2017 (Supervisor Therapeutic HW Training at Pilot Program)	February – June 2017	1750 / 2501 sessions = 70%	2.9%
2. PCAMS - Caregiver report Externalizing scale change score (discharge minus intake scores)	October 2016 – January 2017	472 / 107 clients = 4.41	Increase of 10% (.44) = 4.85	January 2017 (Supervisor Therapeutic HW Training at Pilot Program)	February – June 2017	133 total score / 27 clients = 4.93	11.8%
3. **PCAMS - Caregiver report Internalizing scale change score (discharge minus intake scores)**	October 2016 – January 2017	227 / 107 clients = 2.12	Increase of 10% (.21) = 2.33	January 2017 (Supervisor Therapeutic HW Training at Pilot Program)	February – June 2017	65 total score / 27 clients = 2.41	13.7%
4. Treatment Length (Close date – open date) for discharged clients	October 2016 – January 2017	773.6 months / 146 discharged clients = 5.3 months	10% reduction in average treatment length = 4.77 months	January 2017 (Supervisor Therapeutic HW Training at Pilot Program)	February – June 2017	1295.3 months / 250 discharged clients = 5.2	1.9%

Baseline and Follow-Up Pilot Program Results: HW Tracking Sheet

Homework Utilization Indicators
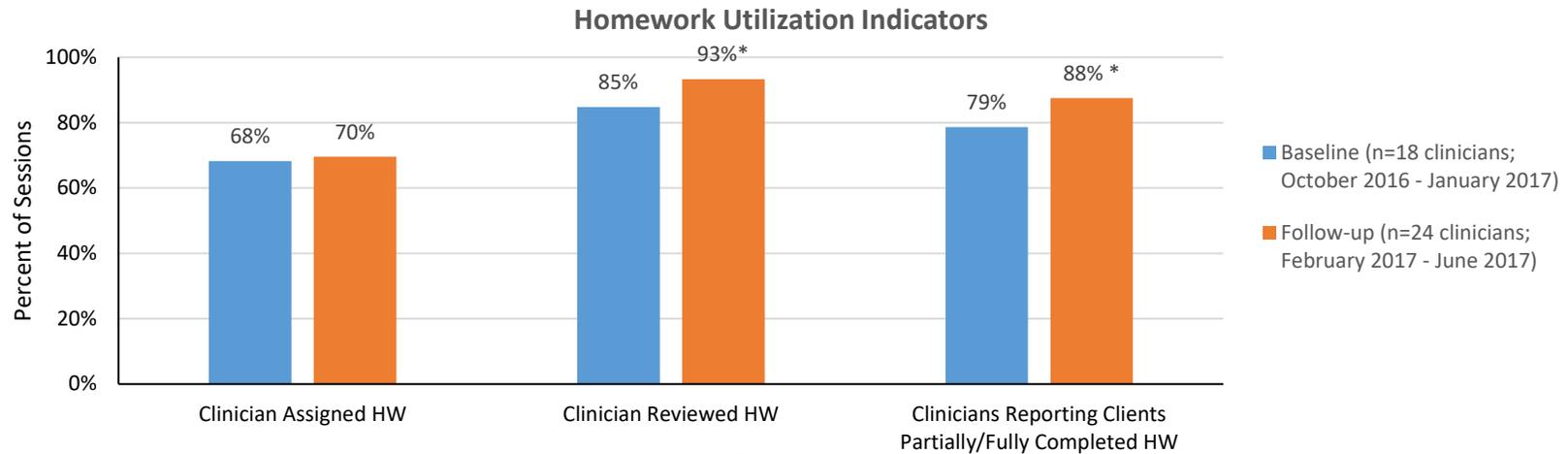
* Chi-square analyses were statistically significant difference at p < .05.

At follow-up, there was a 2% increase in the percentage of sessions in which clinicians assigned HW (not statistically significant), an 8% increase in the percentage of sessions in which clinicians reviewed HW ($p < .05$), and a 9% increase in the percentage of sessions in which clients "partially" or "fully" completed HW ($p < .05$).

Mental Health Outcomes*
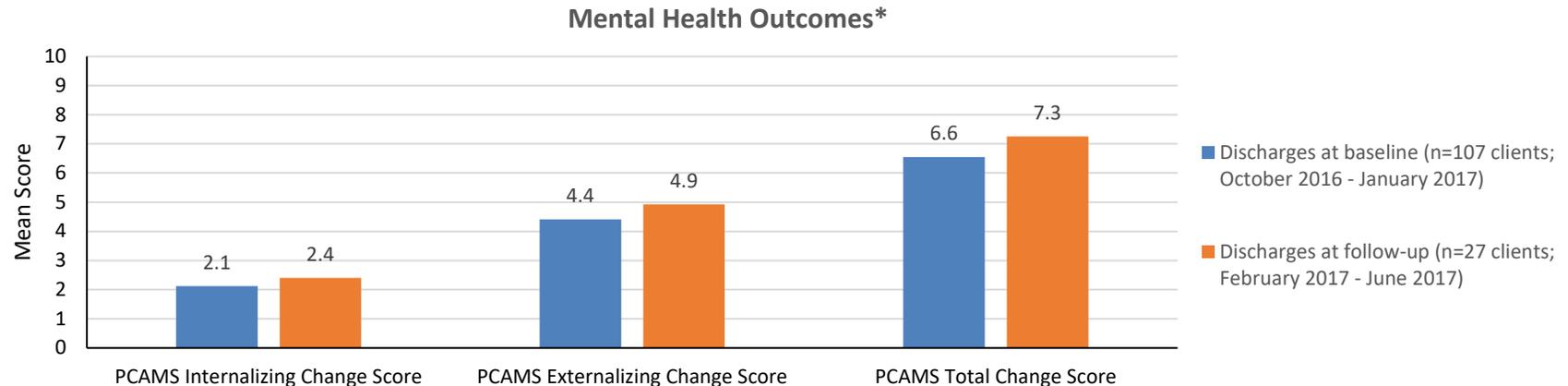
*Higher scores indicate greater improvement.

All t-tests were not statistically significant. However, there were consistent increases in mean change scores (intake minus discharge). Higher change scores indicate more improvement. This reflects potentially greater reduction of behavioral and emotional problems for clients who entered services and discharged during follow-up compared to clients who discharged during baseline data collection.

Pre/Post Results from the Online Therapeutic Homework Survey: Pilot Program Results

Percentage of clinicians who reported assigning HW over the past month
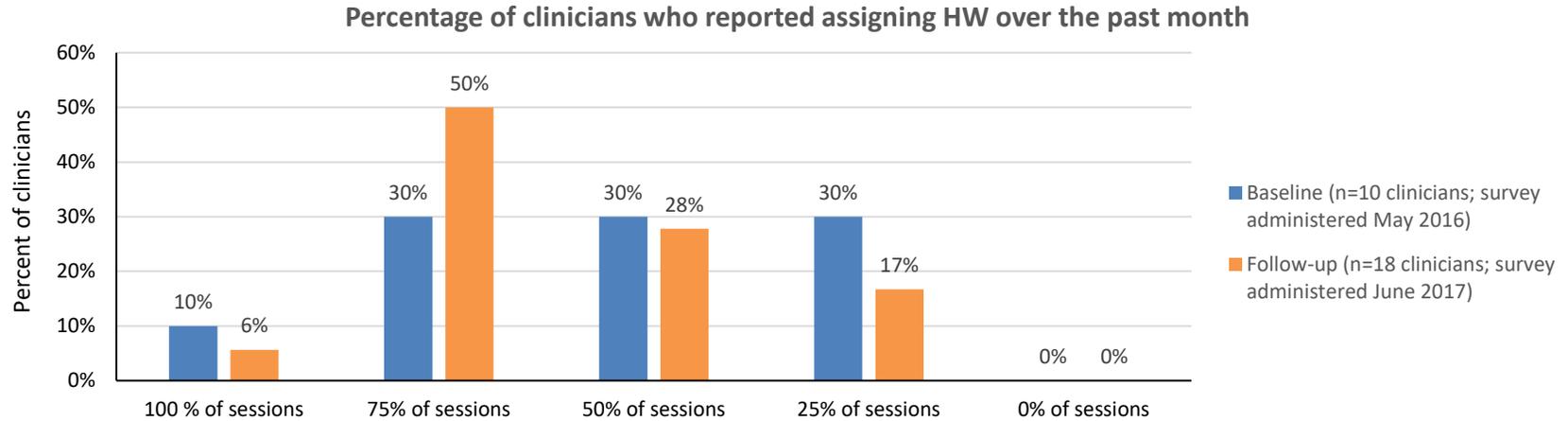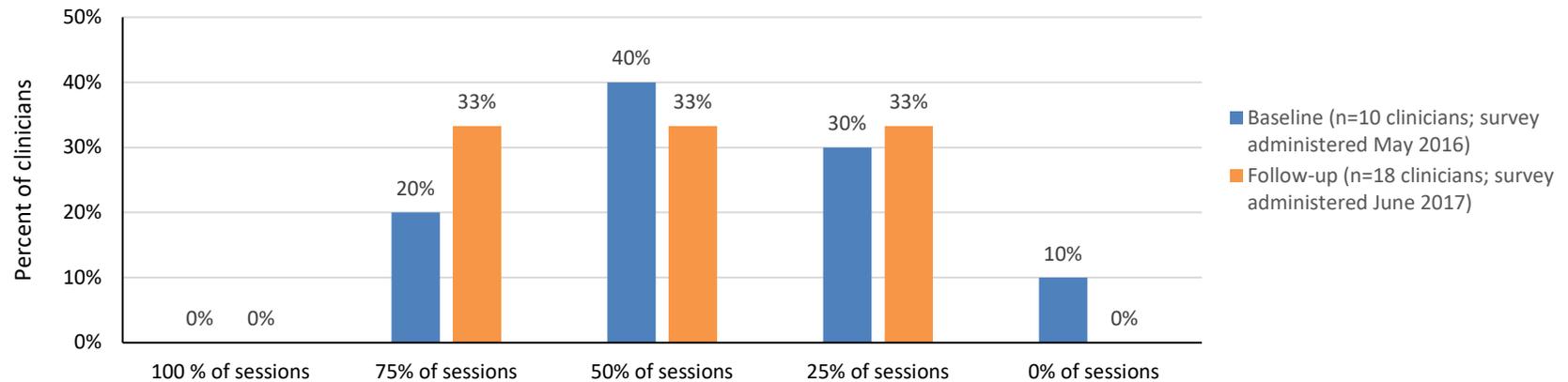

At follow-up, 56% of clinicians in the pilot program reported that they assigned HW in the majority of sessions (75% to 100%) over the past month, which was a 16% increase (not statistically significant) from the May 2016 baseline survey.

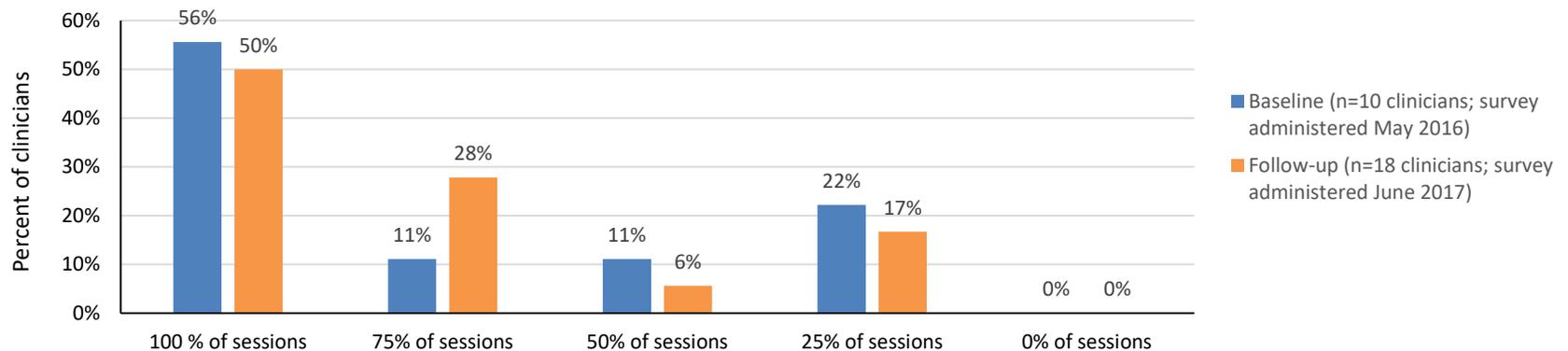## Percentage of clinicians who reported discussing HW in supervision over the past month
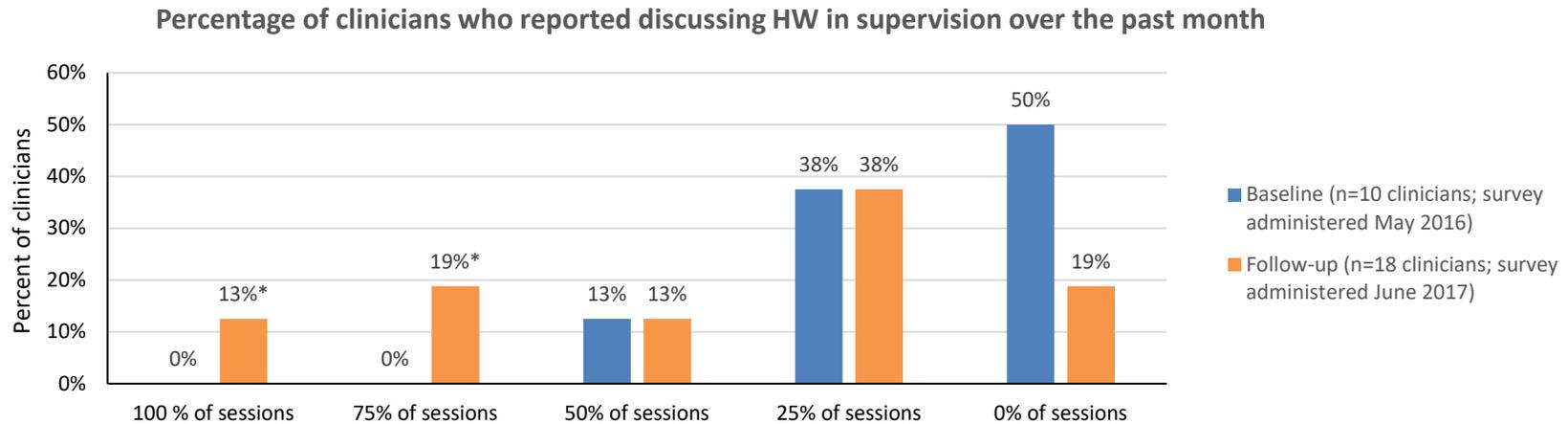
At follow-up, 32% of pilot program clinicians reported discussing HW in the majority of sessions (75% to 100%) over the past month, compared to 0% of clinicians at baseline. A t-test confirmed that this was a statistically significant increase from the May 2016 baseline survey ($p < .05$).

Percentage of clinicians who reported clients completed their assigned HW over the past month

At follow-up, 33% of clinicians reported that clients completed their assigned HW in in the majority of sessions (75% to 100%) over the past month, which was a 13% increase (not statistically significant) from the May 2016 baseline survey.

Percentage of clinicians who reported reviewing HW assignments with clients over the past month

At follow-up, 78% of clinicians in the pilot program reported that they reviewed HW assignments with clients in the majority of sessions (75% to 100%) over the past month, reflecting an 11% increase (not statistically significant) from the May 2016 baseline survey.

Systemwide vs. Pilot Program Comparisons on the June 2017 Follow-up Therapeutic Homework Survey

Percentage of clinicians who reported assigning HW over the past month
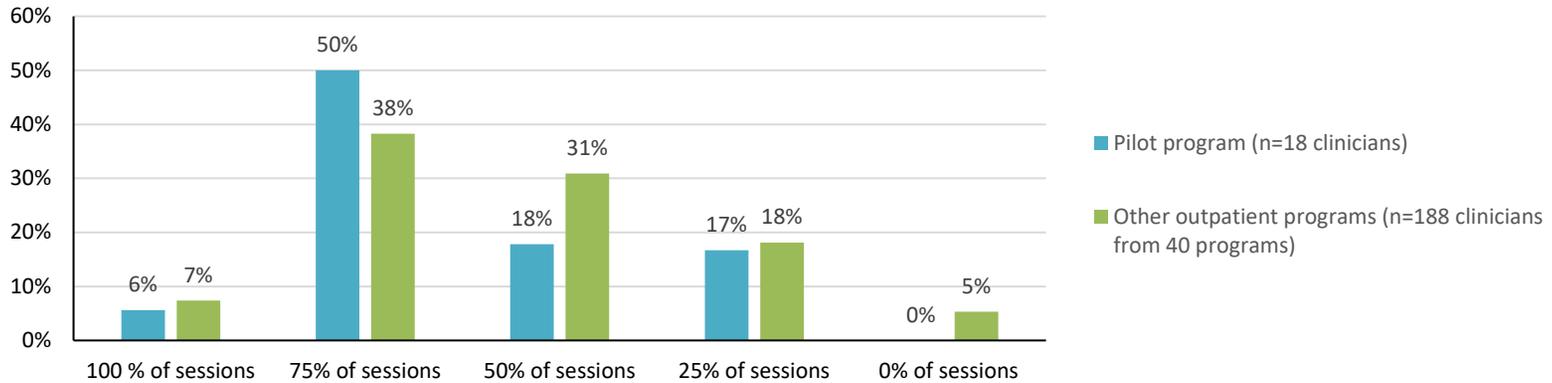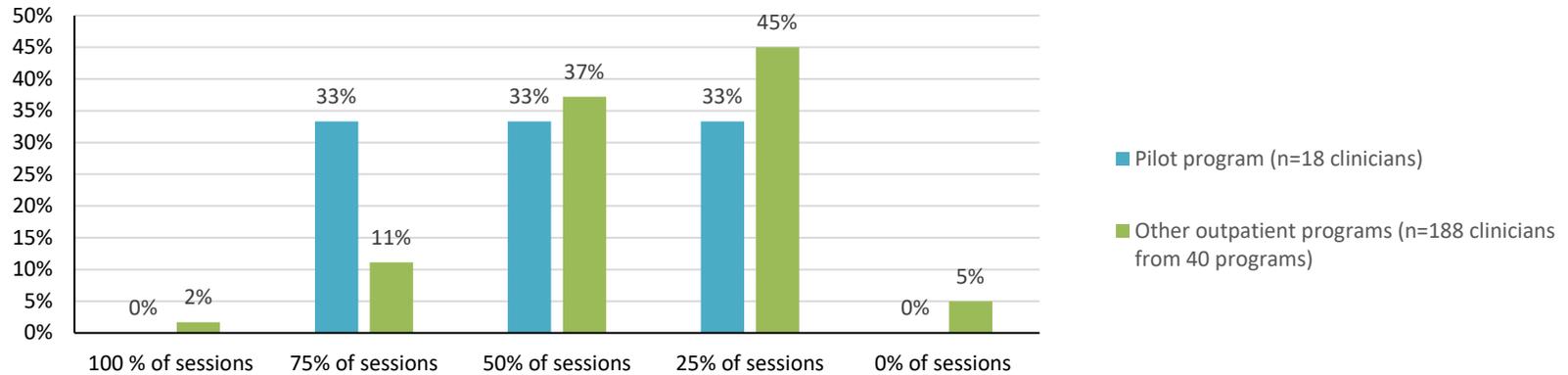

At follow-up, 56% of clinicians in the pilot program reported assigning HW in the majority of sessions (75% to 100%) over the past month, compared to 45% of clinicians from other outpatient programs (not a statistically significant difference).

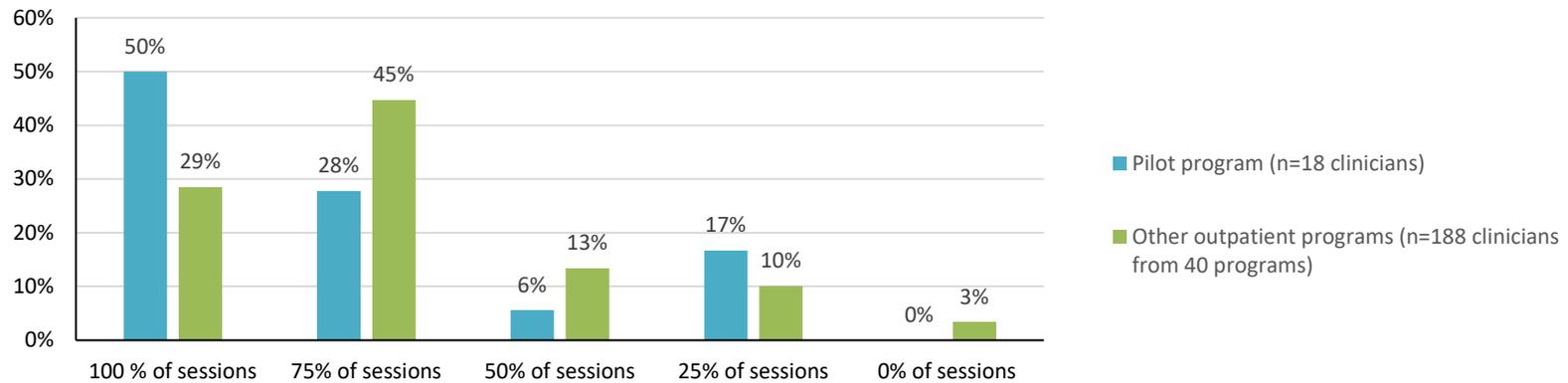**Percentage of clinicians who reported discussing HW in supervision over the past month**
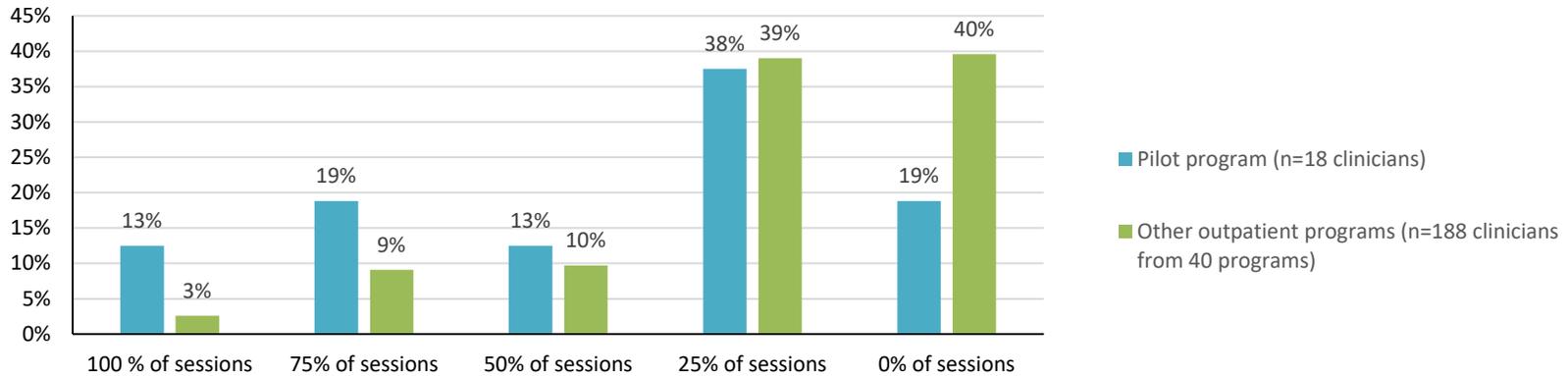
At follow-up, 32% of clinicians at the pilot program reported discussing HW in the majority of supervision sessions (75% - 100%) over the past month, compared to 12% of clinicians from other outpatient programs (not a statistically significant difference).

Percentage of clinicians who reported clients completed their assigned HW over the past month

- ■ Pilot program (n=18 clinicians)
- ■ Other outpatient programs (n=188 clinicians from 40 programs)

	100 % of sessions	75% of sessions	50% of sessions	25% of sessions	0% of sessions
Pilot program	0%	33%	33%	33%	0%
Other outpatient programs	2%	11%	37%	45%	5%

At follow-up, 33% of clinicians at the pilot program reported that clients completed their assigned HW in the majority of sessions (75% - 100%) over the past month, compared to 13% of clinicians from other outpatient programs (not a statistically significant difference).

Percentage of clinicians who reported reviewing HW assignments with clients over the past month

- ■ Pilot program (n=18 clinicians)
- ■ Other outpatient programs (n=188 clinicians from 40 programs)

	100 % of sessions	75% of sessions	50% of sessions	25% of sessions	0% of sessions
Pilot program	50%	28%	6%	17%	0%
Other outpatient programs	29%	45%	13%	10%	3%

At follow-up, 78% of clinicians at the pilot program reported that they reviewed HW assignments with clients in the majority of sessions (75% - 100%) over the past month, compared to 74% of clinicians from other outpatient programs (not a statistically significant difference).

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?
  - ▪ Results of statistical significance testing.
  - ▪ What factors influenced comparability of the initial and repeat measures?
  - ▪ What, if any, factors threatened the internal or external validity of the outcomes?
- ➢ To what extent was the PIP successful and how did the interventions applied contribute to this success?
- ➢ Are there plans for follow-up activities?
- ➢ Does the data analysis demonstrate an improvement in processes or consumer outcomes?

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?
- ➢ Was there documented quantitative improvement in process or outcomes of care?
- ➢ Describe the "face validity," or how the improvements appear to be the results of the PIP interventions.
- ➢ Describe the statistical evidence supporting that the improvement is true improvement.
- ➢ 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?)

Year 2: Pilot Intervention Improvement
- The data cycles clearly identified when measurements occurred.
  - HW usage, PCAMS outcomes, and treatment length data was monitored monthly. Pilot program data analysis utilized the following timeframes:
    - Baseline: October 2016 – January 2017
    - Follow-up: February – June of 2017. The HW clinical intervention training was held in January 2017. To ensure that follow-up measurements reflected services provided after the intervention, the follow-up timeframe began in February 2017.

- There were no statistically significant changes in outcomes from baseline to the first follow-up on the mental health or treatment length performance indicators, likely due to the small sample size.

- Different clients were seen across the baseline and follow-up time points, which may impact comparability of initial and repeat measurement. However, treatment effects are averaged across all clients, thus differences should be minimized. Further, there were an additional seven clinicians (e.g., new interns) who tracked use of therapeutic homework during the follow-up time period, which could also impact comparability of initial and repeat measurement.

- External validity may be threatened because only clients from one outpatient program were included. It is possible that therapeutic HW might be differentially effective with clients in other regions or in other levels of care. This impacts the conclusions that one can make about whether therapy HW may be effective with clients in higher levels of services or different needs (e.g., South region programs near the border).

➤ **To what extent was the PIP successful and how did the interventions applied contribute to this success?**
Mental health outcomes improved by 11.5 to 13.5% on the PCAMS outcome measure, meaning that caregivers reported 11.5 – 13.5 percent greater improvement in behavioral and emotional problems at follow-up. The length of treatment went down slightly (2%), which is the goal of therapeutic HW (more practice = faster rate of improvement).

Both of these positive outcomes may be attributed to the therapeutic HW supervision training. Specifically, while rates of HW utilization on the session tracking form did not change (they started very high because the program manager instilled the value of homework during the October 2016 – January 2017 baseline data collection), clinicians may have administered homework more effectively (e.g., reviewing homework). For instance, more clinicians reviewed HW and their supervisors discussed it more frequently in supervision. Further, clients completed HW more frequently after the HW training, which was the biggest barrier identified to using homework in Year 1.

Lastly, on the follow-up online HW survey, pilot program clinicians reported assigning more HW, discussing HW more frequently in supervision, and reviewing HW more often than clinicians whose supervisors didn't attend the therapeutic HW training.

➤ **Are there plans for follow-up activities?**
A four-hour supervisor therapeutic homework training will be made available to all CYF supervisors within the next year. App-based homework assignments, which were identified as a favorite resource from the pilot program trainees, will be distributed systemwide.

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

Data analysis did not demonstrate a statistically significant improvement in processes or consumer outcomes. However, all of the outcomes improved at follow-up and met our established goals. The lack of statistical significance may be a result of the pilot program's small sample size.

➢ **How did you validate that the same methodology was used when each measurement was repeated?**
Syntax (using the same set of rules for analysis) was applied to assure that the same methodology was used at baseline and follow-up in order to generate the dataset and to analyze the data.

➢ **Was there documented quantitative improvement in process or outcomes of care?**
There was a notable percent improvement in youth emotional/behavioral problems. Length of treatment was slightly shorter and clinicians reported using therapeutic homework more effectively (e.g., reviewing homework more often, supervisors discussing it more often).

➢ **Describe the "face validity," or how the improvements appear to be the results of the PIP interventions.**
Research shows both increases in use of therapeutic HW and administering it more effectively are associated with positive outcome changes. Thus, the fact that clinicians reviewed homework more frequently, discussed HW more frequently in supervision, and their clients completed it more frequently (which was the largest barrier identified to using homework in Year 1) may have resulted in the positive changes observed on the performance indicators.

➢ **Describe the statistical evidence supporting that the improvement is true improvement**.
Statistical analysis did not find improvements on the three performance indicators that were examined.

➢ **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?).**
Because analyzing changes in clients outcomes before and after an intervention is a lengthy process, there was just one repeated measurement (e.g., only clients were included who entered services *after* the intervention in February, but discharged before data analysis could be completed). However, outcome data was reviewed monthly (just not analyzed) for quality assurance purposes.

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Appendix

Attachment I: Baseline online therapeutic homework survey

Attachment II: Homework tracking sheet for pilot program (Year 2 data collection)

Attachment III. Proposed clinical PIP data collection timeline

Attachment IV: Educational Handout provided to program managers on the importance of using therapeutic homework with clients

Attachment I. Online Therapeutic Homework Survey

Thank you for taking the time to complete this brief 5-minute follow-up survey. Please answer the following questions to help us better understand your use of therapeutic homework in session with clients receiving mental health services in SDCBHS. Your responses will help us understand the impact of the county's first homework intervention and will be used to inform quality improvement of clinical services. Survey responses will be combined at the program level - no individual responses will be returned to the program.

Definition of Homework: Assignments or exercises completed in between therapy sessions by the client and/or their caregiver to practice skills learned in previous therapy sessions. For clients, homework may involve practicing relaxation skills (e.g., deep breathing) or applying these skills to real-life situations (e.g., using deep breathing while taking a test). For caregivers, it might include doing child-led play at home to strengthen the parent-child relationship.

1. What is your program's Unit? (Unit is your program's four digit identifier.) _____

2. What are the digits of your program's Subunit (Please enter one subunit. If you work at two subunits, enter the one where you do the most outpatient therapy)? _____

3. How long have you been working with your current program?
    - Less than a year
    - 1-2 years
    - 3-5 years
    - 6-10 years
    - More than 10 years

4. What is your gender?
    - Male
    - Female

5. What is your age?
    - 18-25
    - 26-45
    - 46-65
    - Over 65

6. What is your professional status?
    - In-school/In-training
    - Post-grad, but not yet licensed
    - Licensed Clinician

7. Are you a clinical supervisor?
    - Yes
    - No

8. What is your education level?
   - Some college
   - Bachelor's degree
   - Some graduate school
   - Master's degree
   - Doctoral degree

9. In what setting do you provide the majority of treatment?
   - Outpatient clinic
   - School-based
   - Field-based (e.g., Clients' homes, park)

10. What is your primary theoretical orientation to treatment?
    - Eclectic
    - Cognitive-behavioral
    - Family systems
    - Psychodynamic
    - Humanistic
    - Postmodern
    - Other

11. What is your race? Check all that apply.
    - African American
    - Asian or Pacific Islander
    - Caucasian
    - Middle-Eastern
    - Native American
    - Other

12. Is your ethnic background Hispanic or Latino?
    - Yes
    - No

13. Which of the following practices have you received training in? Mark all that apply.
    - Triple P
    - Incredible Years
    - Parent Child Interaction Therapy
    - Multidimensional Treatment Foster Care
    - KEEP
    - Multi-systemic Therapy

- Cognitive Behavioral Therapy
- Interpersonal Psychotherapy
- Coping Cat
- Motivational Interviewing
- Trauma-Focused Cognitive Behavioral Therapy
- None of the above

14. How much do you agree or disagree with the following statement: "Assigning homework to clients and/or their caregiver(s) is important to enhance therapy outcomes."
- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

15. If you assign homework to clients and/or their caregiver(s), do you use app-based homework assignments? (App-based homework assignments involve downloading apps onto a smartphone platform and using this app to complete therapy homework.)
- Yes
- No
- I don't use homework

16. Approximately how many of your current clients have a primary diagnosis of ADHD or a disruptive behavior disorder (e.g., Oppositional Defiant Disorder)?
- All of my clients (100%)
- Most of my clients (75%)
- About half of my clients (50%)
- Almost none of my clients (25%)
- None of my clients (0%)

17. Thinking of your clients with a primary diagnosis of ADHD or a disruptive behavior disorder, in how many of their sessions over the last month did you assign homework (to your client and/or their caregiver)?
- All of my sessions (100%)
- Most of my sessions (75%)
- About half of my sessions (50%)
- Some of my sessions (25%)
- None of my sessions (0%)

18. Approximately how many of your current clients have a primary diagnosis of depression?
- All of my clients (100%)
- Most of my clients (75%)
- About half of my clients (50%)

- Some of my clients (25%)
- None of my clients (0%)

19. Thinking of your clients with a primary diagnosis of depression, in how many of their sessions over the last month did you assign homework (to either your client or their caregiver)?
    - All of my sessions (100%)
    - Most of my sessions (75%)
    - About half of my sessions (50%)
    - Some of my sessions (25%)
    - None of my sessions (0%)

20. Approximately how many of your current clients have a primary diagnosis of anxiety?
    - All of my clients (100%)
    - Most of my clients (75%)
    - About half of my clients (50%)
    - Some of my clients (25%)
    - None of my clients (0%)

21. Thinking of your clients with a primary diagnosis of anxiety, in how many of their sessions over the last month did you assign homework (to either your client or their caregiver)?
    - All of the sessions (100%)
    - Most of the sessions (75%)
    - About half of the sessions (50%)
    - Some of the sessions (25%)
    - None of the sessions (0%)

22. Thinking about **all** your clients over the past month, in how many of the therapy sessions did you assign homework?
    - All of the sessions (100%)
    - Most of the sessions (75%)
    - About half of the sessions (50%)
    - Some of the sessions (25%)
    - None of the sessions (0%)

23. In the past month, in how many of your supervision sessions did your supervisor ask about your use of homework with clients?
    - All supervision sessions (100%)
    - Most supervision sessions (75%)
    - About half of the supervision sessions (50%)
    - Some supervision sessions (25%)
    - No supervision sessions (0%)
    - Not applicable (I had no supervision sessions in the past month)

24. In the past month, how often did your clients (or their caregivers) complete their assigned homework? Please provide your best estimate.
    - All of the time (100%)
    - Most of the time (75%)
    - About half of the time (50%)
    - Some of the time (25%)
    - None of the time (0%)
    - Not applicable (I did not assign homework)

25. Thinking about all the homework you've assigned over the last month, how often did you *review* clients' completion of homework assignments?
    - All of the time (100%)
    - Most of the time (75%)
    - About half of the time (50%)
    - Some of the time (25%)
    - None of the time (0%)
    - Not applicable (I did not assign homework)

26. What barriers do you encounter when using homework with clients? Check all that apply.
    - Too difficult for clients
    - Clients do not complete it as assigned
    - Clients do not complete it at all
    - Client's problems are too severe
    - Homework assignments not beneficial to therapy outcomes
    - Hard to think of appropriate homework assignments
    - Forgetting to give homework assignments
    - Don't have time to review the homework assignments
    - Clients speak a different language than the clinician
    - Other
27. Please share any further comments about your use of homework below. If you have no further comments, please type "N/A" into the box below.

28. Would you be interested in receiving any additional training or support materials?
    - Yes
    - No

29. We appreciate your feedback and your time! For any questions regarding this survey, please feel free to contact Emily Trask, PhD at evtrask@ucsd.edu.

Attachment II. Homework Tracking Sheet for Pilot Program (Phases II and III Data Collection)

Clinician ID:		Week:		Program Subunit:

Please complete one form weekly. Add one entry **for every outpatient CYF face-to-face session you provided.** Give this form to your data entry staff to enter into the DES once per week. Please circle the best response.

Response codes: 1=Yes; 2=No; 3=Partial; 0=Not Assigned

	Client ID	Client Initials	Date of Session	Client and/ or family completed HW assignment from last session					Reviewed client and/ or family HW from last session				Assigned client and/ or family HW to do before the next session		
1				1	2	3	0	☐	1	2	0	☐	1	2	☐
2				1	2	3	0	☐	1	2	0	☐	1	2	☐
3				1	2	3	0	☐	1	2	0	☐	1	2	☐
4				1	2	3	0	☐	1	2	0	☐	1	2	☐
5				1	2	3	0	☐	1	2	0	☐	1	2	☐
6				1	2	3	0	☐	1	2	0	☐	1	2	☐
7				1	2	3	0	☐	1	2	0	☐	1	2	☐
8				1	2	3	0	☐	1	2	0	☐	1	2	☐
9				1	2	3	0	☐	1	2	0	☐	1	2	☐
10				1	2	3	0	☐	1	2	0	☐	1	2	☐
11				1	2	3	0	☐	1	2	0	☐	1	2	☐
12				1	2	3	0	☐	1	2	0	☐	1	2	☐
13				1	2	3	0	☐	1	2	0	☐	1	2	☐
14				1	2	3	0	☐	1	2	0	☐	1	2	☐
15				1	2	3	0	☐	1	2	0	☐	1	2	☐
16				1	2	3	0	☐	1	2	0	☐	1	2	☐
17				1	2	3	0	☐	1	2	0	☐	1	2	☐
18				1	2	3	0	☐	1	2	0	☐	1	2	☐
19				1	2	3	0	☐	1	2	0	☐	1	2	☐
20				1	2	3	0	☐	1	2	0	☐	1	2	☐
Date of Clinical Supervision Session:				**If you had a supervision session during the past week, did your clinical supervisor ask about your use of homework with any client?**									1	2	☐

Attachment III. Proposed Clinical PIP Data Collection Timeline

Phase	Task	2016							2017												2018
		May	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Spring
Phase I	Collect baseline systemwide HW survey	▓																			
	Phase I systemwide intervention		▓																		
	CAMS data collection		▓	▓	▓																
	Re-administer HW survey systemwide (follow-up #1)				▓																
	Pilot program baseline data collection/training development					▓	▓	▓													
Phase II	1st pilot intervention training (supervisors)								▓												
	Phase 2 CAMS data collection									▓	▓	▓	▓	▓							
	Re-administer HW survey systemwide (follow-up #2)													▓							
	Obtain data download														▓						
Final Analysis	Final Project Analysis															▓	▓	▓	▓		
	Submit Roadmap with Final Analysis																			▓	
Phase III	Phase 3 systemwide training roll-out																				▓

Enhancing Services Through Effective Utilization of Therapeutic Homework

What is This?

Therapeutic Homework is defined as assignments or exercises completed between therapy sessions by the client and/or their caregiver to practice skills learned in previous therapy sessions. For clients, homework may involve practicing relaxation skills (e.g., deep breathing) or applying these skills to real-life situations (e.g., using deep breathing while taking a test). For caregivers, it might include doing child-led play at home to strengthen the parent-child relationship.

Why is This Important?

Recent research has found that parents rated mental health treatment as more effective when clinicians utilized therapeutic homework in sessions with their children in County of San Diego Children, Youth & Families Behavioral Health Services (CYFBHS) (Haine-Schlagel et al., 2015). Given that homework is a fundamental skill-building component of the majority of evidence-based treatments (Garland et al., 2008) and is associated with better outcomes in San Diego county *and* worldwide (Kazantzis, Deane, & Ronan, 2006), increasing use of homework could improve client outcomes.

Currently in CYFBHS, homework to practice what youth or their families learn is assigned in very few treatment sessions (13% of sessions with children who have disruptive behavior disorders; Garland et al., 2010). National studies have reported much higher rates of homework utilization in sessions (e.g., 57% of sessions; Kazantzis & Deane, 1999).

What This Means for You.

Considering the potential positive impact of homework on client outcomes, **CYFBHS will be focusing on the use of therapeutic homework with clients.** A question about homework utilization has been added to the Medical Records Review (for data monitoring purposes only). Clinical trainings about the effective use of therapeutic homework and problem-solving client noncompliance may also be offered. In partnership with CASRC, CYFBHS will also dedicate this year's Performance Improvement Project to enhancing the quality of therapy services by focusing on therapeutic homework.

Children, Youth & Families Behavioral Health Services
v. 7/06/2016 (EVT)