Family Champions Project
Statistical Analysis Plan
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Analysis approach

To assess the association between the multistep CQI process and the outcome measures, trends in dosage, retention, and survey response rates will be assessed over time since the start of the program. If the CQI process has been effective in identifying and addressing issues that require intervention, we would expect that program implementation would get stronger over time, as measured by progress toward meeting programmatic targets for these measures.

Analytic sample

The analytic sample for RQ1 and RQ2 is made up of the participants who received services at the facilities that received CQI intervention efforts as part of the multistep CQI process. The aggregated dosage, retention, and survey response rate data for these participants will make up the analytic sample.

The analytic sample for the secondary research questions (RQ3 and RQ4) about participant healthy partner relationship attitudes will be defined as participants who have complete baseline and outcome data for the constructed outcome measure (complete case). Because these relationship questions are only shown to participants who report currently being in a romantic relationship, participants can only have complete case survey data if they report being in a relationship at both waves of data collection. As mentioned above, participants will only be included in the analytic sample if they have one or no missing values for the five items used to construct this outcome measure (80% or 100% of non-missing items). Participants who do not meet this threshold will have their outcome value assigned to missing and will not be included in the analytic sample; no imputation is planned for the outcome data.

Data preparation

Program-level and participant-level data will be downloaded as an Excel file using nFORM's data export feature. The data sets will be cleaned and prepared for analysis using the R Studio statistical software package. All files will be exported into R and cleaned separately before data sets are merged into a final, wide format file for analyses using nFORM client ID as the unique identifier for matching programmatic (dosage, client status, survey response rates) and participant survey data.

Analytic approach

The analysis for this evaluation will be completed using Excel and the R Studio statistical software package. Trends in programmatic outcome measures will be assessed descriptively over time using graphs that show average dosage, attrition, and survey response rates by month since program start among participants who enrolled in that month. Trends in program-level (cross-site) averages will be assessed for improvements over time, and trends in site-level averages will be assessed both for improvements since program start and immediately following the implementation of targeted interventions, which will be noted on the graphs. Site-level averages will be compared across the full study time period. Assuming the continuous, rapid cycle learning and intervention of the multistep CQI process is happening as planned, average metrics are expected to improve over time and immediately following interventions.

For the secondary research question 3 analysis, a change score will be calculated for each complete case respondent using their average at program entry and their average at program exit. We will use paired sample

t-tests to assess the magnitude and significance of mean score changes among program participants in the analytic sample. For the secondary research question 4 analysis, a basic regression model will be used to determine if higher dosage of primary workshop hours is associated with higher average scores on attitudinal items. Findings are considered statistically significant based on a $p < 0.05$, two-tailed test.

Attrition

Sample attrition is not a concern for the programmatic measures assessed for RQ1 and RQ2.

For the secondary research questions, sample attrition is related to program retention, as participants can only have complete case data if they stay in the program to take their nFORM exit survey. Anthem Strong Families staff have implemented numerous strategies to increase participant retention. Retention is tracked on an ongoing basis as part of the bi-weekly CQI team meetings between Anthem and MER staff, so decreases in survey response rates or participant retention can be tracked and addressed in real time as cohorts are enrolled in the program.

Sample attrition at the participant outcome level will be reported descriptively in the final report. We plan to report the proportion of total program enrollees that is missing for the outcome measure and for what reason (e.g., survey non-response, not eligible to answer relationship questions, exceeded 20% threshold for item missingness within the construct).

Implementation Analysis

Analysis approach

To address these implementation research questions, we will analyze a combination of quantitative and qualitative data. Some quantitative measures of fidelity and engagement will be counts with no calculations required (e.g., number of reports, number of meetings attended, etc.). Engagement measures that use staff survey data will involve simple percentage calculations of the number of responses that rated understandability and feeling welcome as Somewhat Agree or higher, reported descriptively. The sample size of the engagement measures will be the number of survey responses received from the CQI team and broader program staff. Survey responses will be checked for completeness, and we will also ensure that answer levels are numerically coded, and reverse-code where necessary. For the qualitative measures related to context, the evaluation team will summarize broad themes that arise during staff interviews about lessons learned, barriers to implementing CQI, and best practices for the field. The sample size for the context measures will be the number of interviews conducted during site visits. Interview data will be analyzed for key themes by the evaluation lead.

Measures for addressing the implementation research questions

Implementation element	Research question	Measures
Fidelity	To what extent were the five steps of the CQI process carried out as intended each grant year?	• *Total number of reports delivered for each step of the CQI process* • *Timing of report delivery for each report delivered* • *Number of targeted interventions implemented at each service site*
Fidelity	What were the unplanned adaptations to key CQI process components?	• *List of unplanned adaptations, such as in report timing or CQI process components cut*
Engagement	How understandable did CQI team members, and program staff broadly for Step 2 and Step 4, find the reports for each step of the CQI process?	• *Percent of responses in which CQI team members and/or program staff score "Somewhat agree" or higher that they understand the information presented in each report (survey questions are tailored to how much of the CQI process a team member is seeing, with frontline staff being surveyed after Step 2 and Step 4 reports, and CQI team members being surveyed about all steps).*
Engagement	How engaged were CQI team members and program staff in each step of the CQI process?	• *Percent of responses in which CQI team members and/or program staff score "Somewhat agree" or higher that their input was welcome in the discussion of each report* • *Attendance at CQI team meetings by key CQI team members*
Context	How well did the multistep CQI process work?	• *Qualitative assessments of how well the multistep CQI process was implemented (compared to the original plan) and how well it worked for program staff at all levels*
Context	What external events affected the implementation of the multistep CQI process?	• *Description of challenges or barriers to implementing the multistep CQI process overall and to implementing improvement strategies at specific sites*
Context	What are some best practices and lessons learned for improving the multistep CQI process?	• *Description of what lessons learned or best practices were most effective for implementing a CQI process*