Evaluation Technical Assistance Brief

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Continuous Quality Improvement: How Regional Partnership Grantees Can Use Data From the RPG Cross-Site Evaluation to Learn About Project Implementation

Providing high quality Regional Partnership Grant (RPG) services that meet the complex needs of families can be challenging. Grantees must coordinate with a variety of partners across different systems to manage referrals and provide services. With many factors influencing their projects, grantees and their partners may struggle to identify the specific problems they need to address, and how to solve them.

Continuous quality improvement (CQI) can help project teams identify areas to improve and pinpoint solutions by using data to discover and understand the source of problems. RPG projects are already collecting considerable data on the families they serve. With help from the team's local evaluator, those data can be used to implement CQI approaches and strategies.

This brief gives an overview of CQI and describes one CQI framework grantees can easily adapt and use in their local projects: Learn, Innovate, and Improve, or LI². The brief next describes data grantees can use for CQI—data they are already collecting and reporting in the RPG Evaluation Data System (RPG-EDS). Three common challenges grantees face are presented, with an explanation of how to use RPG-EDS data during the Learn phase of LI² to determine the cause of a challenge. This discussion includes steps grantees and their evaluators can take to analyze the data.

Who should read this brief?

The Children's Bureau in the Administration for Children and Families, U.S. Department of Health and Human Services, funded this brief for groups that receive a Regional Partnership Grant (RPG) or for other agencies that want to evaluate their programs. This brief aims to support RPG projects with the process of using data for continuous quality improvement (CQI). This brief draws on the experience of previous and current RPG projects to identify areas in which CQI may be especially important for program success. Grantees and evaluators could use this brief when thinking about how to use the data they are collecting for CQI, or for planning other data to collect. This brief is a companion to another brief that discusses the three phases of the Learn, Innovate, Improve (LI²) framework.[1] It is written with RPG project staff, their local evaluators, and other partners in mind, but it could also be relevant to other program areas and organizations.

What is CQI, and why is it important?

In using CQI, members of a team work together to identify challenges, brainstorm and implement solutions, and systematically observe the outcome of those solutions. The process helps ensure the solutions are right for the problem based on a theory of change. Many social service agencies have begun using CQI to improve practice, service quality, and client outcomes. The Children's Bureau, for example, encourages and provides resources to state child welfare agencies to develop and maintain CQI systems. See Box 2 for more details on what conditions makes CQI most successful.

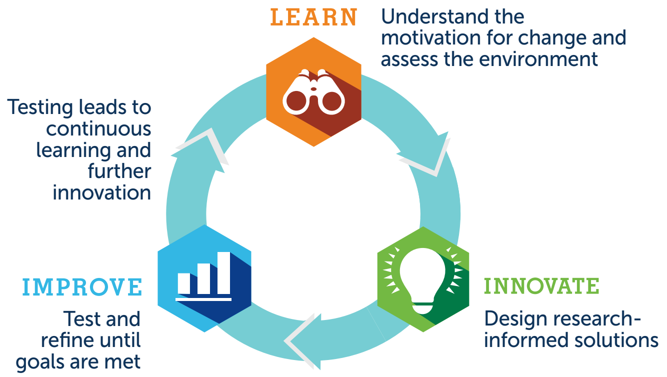
Box 1: What is CQI?

CQI "is the complete process of identifying, describing, and analyzing strengths and problems and then testing, implementing, learning from, and revising solutions."[2]

What is Learn, Innovate, Improve?

Learn, Innovate, Improve (LI²) is one approach to CQI. As shown in Figure 1, LI² is an iterative process with three phases: Learn, Innovate, and Improve. The Learn phase helps project teams clarify their reasons for seeking change and develop a common understanding of the problem(s) they are trying to solve. During the Innovate phase, teams come up with potential solutions to the problems articulated during the Learn phase and prioritize the solutions for testing. In the

Figure 1.



Improve phase, the team tests and refines the solutions.[3] The framework was developed by Mathematica in partnership with the Administration for Children and Families' Office of Planning, Research, and Evaluation (OPRE) and with the Harvard Center on the Developing Child.[4]

This brief focuses on the first phase, Learn, in which people from different parts of a program come together to identify challenges and opportunities for improvement. This phase builds a foundation for the LI² process by getting the key people to the table and on the same page. For RPG, key people to involve might be grantee staff, their partners, referral sources, evaluators, and other stakeholders from the child welfare and substance use treatment communities.

During the Learn phase, the team assesses how the program environment might contribute to current challenges and help develop potential solutions.[5] This assessment relies on various data sources, including those already in place, to enable quick analyses. RPG project staff can work with their local evaluators and use existing data collected for the cross-site evaluation to conduct this assessment.

Box 2: Conditions for success

CQI is most successful when the process involves:[6]

- A small group of individuals to pilot new strategies
- Feedback loops to those involved in the pilot
- An open organizational climate and an organization able to adopt the changes long term

For CQI to work well, staff and their partners need to drive the process. When potential solutions are identified and implemented by people with an investment in the process, the solutions are more likely to have a lasting impact on the program. Frequent interaction during the CQI process as they gather feedback and adjust solutions also fosters a stronger relationship between staff and their partners.

A key resource for the Learn phase of LI²: Enrollment and services data shared with the cross-site evaluation

As part of the RPG cross-site evaluation, grantees collect a common set of data on enrollment, demographics, and service receipt for all project participants. These data, when combined with other data grantees collect for their local evaluations, can be an important resource in the Learn phase. They can help grantees identify challenges their projects are facing in areas such as enrollment, attendance, and engagement in services. These elements of RPG cross-site evaluation data fall into two categories: (1) enrollment and demographics and (2) services.

Enrollment and demographics. These data provide detailed information on each person at the time they enroll in an RPG project. Participants are grouped into "cases," defined as the family, household, or group of individuals who enroll into an RPG project to receive services together. The data collected include age, gender, race, and ethnicity, with more detailed information on socioeconomic status from adults and information on the residence of children (Table 1). Grantees

Table 1. Data elements in RPG-EDS

Enrollment and demographics		Services	
Data collected from all individuals at time of enrollment into RPG • Date of enrollment • Gender • Date of birth • Race and ethnicity • Primary language spoken • Relationship to focal child **Data collected about children at time of enrollment into RPG** • Type of current residence (such as a private residence, shelter or no home, or group home) • Presence of adults in household • Lived in same place for previous 30 days • Medicaid receipt	**Data collected from adults at time of enrollment into RPG** • Highest education level • Employment status • Relationship status and whether individual lives with a romantic partner • Income sources **Data collected at time of exit from RPG** • Date of exit from RPG • Reason for exit from RPG • Updated residence information (for children only)	**Data collected on service interaction** • Date of service • Family members in attendance • Length of interaction (in minutes) • Service provider • Service location • Service type (such as support group, therapy or counseling, or parenting training or home visiting) • Name of model or program used, if any • Service focus (topics and activities, such as recovery planning, personal development, or life skills)	**Data collected about family participation** • Level of engagement during service • Reasons for lack of engagement, if applicable

also report how each person in a case is related to one child, selected as the "focal" child.

The data on individuals can be combined to create additional information about case characteristics, such as case size, the people that are part of a case, and which case members are living together. For example, the marital status of adults and case members' relationship to the focal child can be used to identify cases comprising a single mother and her biological children.

Grantees also provide information on a family's exit from RPG services. This includes the date they stopped services and the primary reason why they stopped. People often stop because they completed all planned services. However, some stop early because of challenges, such as continued substance use, a child's removal from the home, or a desire to discontinue services.

Service data elements. These data describe the types of services and resources provided to families through the RPG projects. Each time project staff work with a family, they record information on who provided the service, the type of service, the main focus of the service, who attended the service, and how engaged they were.

When data from each service interaction are combined, they can be used to create measures of service use, such as the amount, length, and frequency of services. They also can be used to identify any lapses in services.

Using enrollment and services data to improve partnerships and services

In this section of the brief, we demonstrate how grantees can use data from RPG-EDS and other sources to assess three common challenges as part of the Learn phase of LI^2. We present details on these challenges and offer questions grantees could ask their teams to identify possible areas for improvement. We then highlight the RPG-EDS data projects could use to investigate the challenge and note other potentially helpful information. We end with key tips for analyzing RPG-EDS data. Some suggested strategies may require Excel or statistical software.

CHALLENGE 1. The grantee is concerned that families enrolling in the project are not part of the project's focus population, either in general or for specific services. For example, if a project is designed for parents of young children, the grantee may be concerned if many of the enrolled families have adolescent children. If the project is serving families other than the ones it was designed to help, the services may not be well matched to the families' needs.

Assessment questions

1. What are the characteristics of the families enrolled in the RPG project, and how do they compare with the project's stated focus population?

2. For any services with a specific focus population, are the individuals receiving the service part of the focus population?

Relevant RPG-EDS data. The data elements in Table 2, including demographic information on participants and details of the services families have received, could help answer the assessment questions. Check marks denote the elements that may be useful in answering these questions.

Table 2. Data elements for Challenge 1

Enrollment and demographics		Services
Data collected from all individuals at time of enrollment into RPG ✓ *Date of enrollment* ✓ *Gender* ✓ *Date of birth* ✓ *Race and ethnicity* ✓ *Primary language spoken* ✓ *Relationship to focal child*	**Data collected from adults at time of enrollment into RPG** ✓ *Highest education level* ✓ *Employment status* ✓ *Relationship status and whether individual lives with a romantic partner* ✓ *Income sources*	**Data collected on service interaction** • Date of service ✓ *Family members in attendance* • Length of interaction (in minutes) • Service provider • Service location ✓ *Service type (such as support group, therapy or counseling, or parenting training or home visiting)* ✓ *Name of model or program used, if any* • Service focus (topics and activities, such as recovery planning, personal development, or life skills)
Data collected about children at time of enrollment into RPG ✓ *Type of current residence (such as a private residence, shelter or no home, or group home)* ✓ *Presence of adults in household* ✓ *Lived in same place for previous 30 days* ✓ *Medicaid receipt*		

Other useful information to consider

- To accurately explore alignment of the focus population with the families being served, the project must clearly define the focus population (overall and for specific services or program models).
- In addition to the RPG-EDS data, projects may need other data that define the focus population (such as substance being used, status of child welfare case [in out-of-home placement or at risk of one], or participation in substance use disorder treatment) to address the assessment questions.

Tips for summarizing RPG-EDS data to answer assessment questions

To answer the assessment questions, grantees should look for patterns in the data and compare the data to the characteristics of the focus population. Grantees that do not have many families enrolled can begin by directly reviewing the demographic and service data for each family. However, if the project enrolls a large number families, or the team needs to dig deeper into the data to answer their questions, this may not be efficient. Helpful steps toward answering the assessment questions include the following:

1. Determine the characteristics of the families enrolled in the project.

- Identify the demographic characteristics of adults and children that are of interest to the project. (The characteristics in RPG-EDS differ for adults and children.)
- Determine whether the data elements need to be combined to create the necessary characteristics. For example, if the project is designed to serve children younger than age 5 who live with their biological mother, the team will need to look at both the age of the child and the adults living with the child. If they do need to be combined, create a new variable that identifies whether families have all of the characteristics to calculate the percentage of families that align with that population.

2. Calculate the characteristics of the families enrolled in the project, and compare them to the project's intended focus population.

- Calculate the value of the characteristics (for example, the average age of children in the project) or the percentage of adults or children with each characteristic of interest (for example, the percentage of adults in the project who are unemployed).

> If the team does not have administrative data about foster care placements, and the focus population is at least partially defined by the child's placement status, the team could use residential information in RPG-EDS as a proxy for whether a child is living with a foster parent. For example, if a child is living with their biological mother or father in a private residence, classify that child as being in home. However, if a child lives in a group home, or a private residence with a non-relative foster parent, classify that child as being in foster care.

- Compare these values to the characteristics of the project's focus population.

3. Determine the characteristics of families participating in specific services.

- Determine which services offered by the project have their own unique focus population. For example, some program models the project uses may have focus populations identified by the developer.
- For each of those services, identify the characteristics of interest.
- Identify which adults and children in each family attended the service of interest by using the attendance data in RPG-EDS for each interaction.

4. Calculate the characteristics of the families participating in specific services, and compare them with the intended focus population for the service.

- For each service with a unique focus population, calculate the average value or percentage of the relevant characteristics for family members who attended the service.
- Compare these values to the characteristics of the project's focus population.

CHALLENGE 2. The grantee is concerned that some services offered by partners are rarely or never used. This could happen when, for example, grantees are coordinating services with many different partner organizations in different locations, or when there is staff turnover at key partners. Understanding how services have been used could help the partnership determine which ones are most useful to families.

Assessment questions

1. What percentage of services (overall and by type) are being provided by partner staff?

2. Are partners providing the expected types and amounts of services?

Table 3. Data elements for Challenge 2

Enrollment and demographics	Services
	Data collected on service interaction • Date of service • Family members in attendance • Length of interaction (in minutes) ✓ *Service provider* • Service location ✓ *Service type (such as support group, therapy or counseling, or parenting training or home visiting)* ✓ *Name of model or program used, if any* • Service focus (topics and activities, such as recovery planning, personal development, or life skills)

Relevant RPG-EDS data. The data elements in Table 3, from every service interaction recorded, could help answer the assessment questions. Check marks denote the elements that may be useful in answering these questions.

Other useful information to consider

- Additional data collected from partners (such as quantitative and qualitative information on referrals or eligibility for each service) could help the grantee understand why certain services are underutilized and identify areas where the partnership might be breaking down. For example, certain services provided by partners may have additional eligibility criteria that don't align with the project's focus population, which may result in fewer families receiving those services.
- Data from participants (via focus groups or satisfaction surveys) could provide information on why certain services are not appealing.

Tips for summarizing RPG-EDS data to answer assessment questions

The team may need to link different data files to answer these assessment questions. They may also consider investigating the percentage of families served by partners instead of the percentage of service interactions. Helpful steps toward answering the assessment questions include the following:

1. Identify who is providing the services.

- Link the service provider data from RPG-EDS, which distinguishes between grantee and partner staff, with the services data.

2. Calculate the percentage of services provided by partner staff.

- Count the number of service interactions provided by a partner staff member.
- Divide the number of those interactions by the total number of service interactions the project has provided. This is the percentage of service interactions provided by partner staff.

3. Calculate the percentage of service interactions provided by partner staff for each type of service.

- Separate the service interaction data by the type of service.
- Follow the same process as above to calculate the percentage of interactions for each type provided by a partner.

4. Compare the percentage of service interactions provided by partners with the project's expectations.

- Review the percentages of partner-provided interactions for each service type. Identify which types are often provided by partners.
- Compare these percentages, and the overall percentage of services provided by partners, against the project's expectations.

CHALLENGE 3. The project may experience lower retention and completion rates than expected or desired. Some families leave the RPG program without completing their planned services. These families may not feel engaged or interested in services, and service providers may rate the families' level of interaction with the service as low. Understanding the relationship between service completion and service engagement may help the project improve their retention and completion rates.

Assessment questions

1. What percentage of families are completing all expected RPG services?

2. Are families who complete RPG services more engaged in services they attended compared with those who did not complete RPG?

Table 4. Data elements for Challenge 3

Enrollment and demographics		Services	
.	**Data collected at time of exit from RPG** • Date of exit from RPG ✓ *Reason for exit from RPG* • Updated residence information (for children only)		**Data collected about family participation** ✓ *Level of engagement during service* ✓ *Reasons for lack of engagement, if applicable*

Relevant RPG-EDS data. The data elements in Table 4, from every service interaction recorded and from enrollment and exit, can help answer the assessment questions. Check marks denote the elements that may be useful in answering these questions.

Other useful information to consider

- It may be helpful to collect qualitative or quantitative data on service engagement directly from participants. For example, the team could conduct a survey or focus group on client satisfaction, or ask families to rate their own engagement or interest in each service they received.
- Information on the inputs of service provision (such as different service providers) where engagement is lower may help to identify reasons why engagement lags. For example, if service providers switch in the middle of the family's treatment, engagement could deteriorate.

Tips for summarizing RPG-EDS data to answer assessment questions

To investigate the role engagement plays in whether a family completes RPG services, the team will probably have to use statistical software. Helpful steps toward answering the assessment questions include the following:

1. Identify families who completed RPG services.

- Divide families into two groups using exit data: (1) families who successfully completed RPG and (2) families that left RPG without completing it for any other reason. Using this approach, families with open cases will be excluded from this analysis.
- To calculate the percentage of families who completed RPG services, divide the number of families in the first group by the total number of families with closed cases (summing families in groups 1 and 2). This percentage is the program's completion rate.

2. Summarize families' engagement in services.

- Engagement is measured in RPG-EDS for each service interaction, so the separate engagement ratings must be summarized into an overall level of engagement. Staff members score engagement on a three-point scale (engaged, somewhat engaged, not engaged). An average of this scale is difficult to interpret on a practical level. To create a summary score that is easier to understand, recode the scale score to a binary variable reflecting that a family was engaged (assign a value of 1 when the scale score indicates the participant is engaged) or not engaged (assign a value of 0 when the scale score indicates the participant is somewhat or not engaged).
- Calculate an average engagement score for each family by calculating the mean of all of the session engagement scores for that family. Table 5 provides a simple example of this.
- A team may wish to explore variation in engagement for individual families using more sophisticated methods (such as nested modeling). Describing these methods is beyond the scope of this brief.

Table 5. Example: calculating a family's average engagement score

Case ID	Session 1 engagement score	Session 2 engagement score	Session 3 engagement score	Session 4 engagement score	Session 5 engagement score	Average engagement score	Successfully completed RPG
000001	0	1	1	0	1	0.60	Yes
000002	1	1	1	1	1	1.00	Yes
000003	0	0	0	1	1	0.40	Yes
000004	0	0	0	0	0	0.00	No
000005	1	0	0	0	0	0.20	No
000006	0	1	1	1	1	0.80	Yes

3. Compare patterns in service engagement for families.

- Calculate an average level of engagement for families who complete RPG services and families who did not complete services.
- Compare the averages for the two groups to determine whether the families who complete RPG are more engaged.
- Project teams may wish to consider additional patterns to explore service participation and engagement. For example, the team could conduct the same analysis described above, focusing just on certain services and not the whole project, or look at the reasons for lack of engagement that are recorded in RPG-EDS. The team may also want to determine whether engagement declines over time before families drop out of RPG.

Moving forward with LI²

In the Learn phase, project teams and others engaged in the RPG project work together to determine areas to improve. This brief highlighted how grantees can use RPG-EDS data they are already collecting to inform these conversations by defining problems the project is facing. These and other data—from both RPG-EDS and other sources—also can be used in the other two phases of the LI² cycle.

It is beyond the scope of this brief to describe the details of the other phases, but briefly:

- During the Innovate phase, the team develops solutions to the problems identified in the Learn phase. For example, during the Learn phase, team members may have found out they are enrolling many families who do not align with those of their focus population. During the Innovate phase, the team might develop a plan that details how they will change their practices and processes to enroll families that are best suited for their services. This could mean establishing new referral partners or working with current partners to better identify eligible families.
- Once innovations are developed in the Innovate phase, they are implemented in the Improve phase. The data sources used during the Learn phase can be used to measure progress during the Improve phase. As the team implements the innovations, local evaluators can analyze the data to determine whether outcomes improved after the solution was implemented. For example, the evaluators can look at the characteristics of newly enrolled families to see if they better align with the project's stated focus population. Based on these findings, project teams can go through more LI² cycles to test modifications and new innovations.

As the team members continue to work together, a CQI framework such as LI² can become a regular part of program implementation and partnerships. This process will help strengthen both the partnerships and the program services, which should ultimately lead to better family outcomes.

ENDNOTES

[1] Kleinman, R., B. Keating, and E. Moiduddin. "Learn, Innovate, Improve (LI²): How Regional Partnership Grantees Can Use a Continuous Quality Improvement Framework to Support Program Implementation and Evaluation." Evaluation Technical Assistance Brief, No. 8. Washington, DC: Mathematica, 2022.

[2] Casey Family Programs. "Using Continuous Quality Improvement to Improve Child Welfare Practice." http://muskie.usm.maine.edu/helpkids/rcpdfs/CQIFramework.pdf.

[3] Kleinman et al. 2022. Additional resources about LI² can be found online at https://mathematica.org/toolkits/li-squared.

[4] Derr, Michelle, Ann Person, and Jonathan McCay. "Learn, Innovate, Improve (LI2): Enhancing Programs and Improving Lives." OPRE Report #2017-108, Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. Available online at https://www.mathematica.org/publications/learn-innovate-improve-li2-enhancing-programs-and-improving-lives.

[5] McCay, Jonathan, Michelle Derr, and Ann Person. "The Learn Phase: Creating Sustainable Change in Human Services Programs." OPRE Report #2019-15, Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. https://mathematica.org/publications/the-learn-phase-creating-sustainable-change-in-human-services-programs.

[6] Zuchowski, Ines, Debra Miles, Cindy Woods, and Komla Tsey. "Continuous Quality Improvement Processes in Child Protection: A Systematic Literature Review." *Research on Social Work Practice,* vol. 29, no. 4, 2019, pp. 389–400.

Hill, James E., Anne-Marie Stephani, Paul Sapple, and Andrew J. Clegg. "The Effectiveness of Continuous Quality Improvement for Developing Professional Practice and Improving Health Care Outcomes: A Systematic Review." *Implementation Science*, vol. 15, no. 23, 2020