BerryDunn

Enterprise Objective Monitoring and Control Services

Puerto Rico Medicaid Program Quality Management Plan Aid

Version 1.0

GOVERNMENT OF PUERTO RICO

Department of Health
Medicaid Program

Submitted by:

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Revision History

The Puerto Rico Medicaid Program's (PRMP) Program Management Office (PgMO) will store the approved Quality Management Plan Aid and any approved revisions on the PgMO SharePoint site. PRMP and the PRMP PgMO will make the plan available to project stakeholders as needed. Currently, BerryDunn provides PRMP PgMO services.

Table 1 presents the revision history for this document. When changes occur, the PRMP PgMO will increment the version number and the date. The PRMP PgMO will record the name of the person or entity making the change and a description of the change in the revision history.

Table 1: Revision History

Date	Document Version	Description	Authors
6/22/2022	V1.0	Initial delivery	BerryDunn PgMO Team

1.0 Introduction

PRMP is committed to successful projects for the residents of Puerto Rico and has established a Medicaid Enterprise Solution PgMO to provide guidance, support, and oversight for vendor projects within the Medicaid Enterprise.[1]

The Quality Management Plan Aid is a living document intended to provide PRMP vendors with guidance on PRMP's expectations regarding managing quality. PRMP expects vendors to develop and submit a Quality Management Plan for the project(s) for which they are providing services. Vendors should reference this document when creating their Quality Management Plans to help ensure PRMP's expectations are met and that there is a common understanding between PRMP and the vendor regarding managing quality. The PRMP PgMO will update this aid when new applicable standards (or versions of a standard) are released or when there are changes to PRMP policies that affect quality management.

If a vendor finds a contractual conflict with guidance provided in this plan aid, vendors should defer to their contract and/or any updated PRMP guidance.

The Introduction section of this document provides information on the Quality Management Plan Aid's purpose and objectives, scope, standards, assumptions, dependencies, and constraints. To help ensure an understanding of key terms, Table 2 provides definitions of quality management processes.

Table 2: Quality Management Processes

Term	Definition
Quality Planning	The process of managing and identifying quality requirements and standards for the projects and deliverables and documenting how the projects shall demonstrate compliance with the requirements and standards.
Quality Assurance	The process of translating the Quality Management Plan into executable quality activities that incorporate an organization's quality policies and stated vision into the project.
Quality Control	The process of monitoring and recording results that come from quality management activities.

Quality management helps ensure that an organization, product, or service is consistent with the defined quality objectives. Quality management has three main components: quality planning, quality assurance, and quality control. Per the *Project Management Body of*

[1] In this aid, "vendor" refers to vendors that implement and maintain systems within the PRMES, as well as contractors and other entities that provide non-solution-related PRMES services to PRMP.

Knowledge (PMBOK) Guide®, quality management falls into three processes: quality planning, quality assurance, and quality control. A Quality Management Plan documents the information required to manage quality effectively from project planning to implementation and/or administration. The plan defines the project's quality policies, procedures, criteria, roles, responsibilities, and authorities.

Quality can apply to process and product quality, which includes software, applications, and other services provided by a vendor in line with contract requirements. The project defines quality by identifying and documenting quality criteria. The quality criteria consist of standards and metrics based on compliance with the finalized contract and quality criteria proposed by vendors and approved by PRMP.

1.1 Purpose and Objective

The purpose of the Quality Management Plan Aid is to:

- Detail the processes that apply to quality management
- Establish PRMP's quality management expectations for vendors

The objectives of the Quality Management Plan Aid are to:

- Provide guidance to PRMP Medicaid Enterprise Systems (PRMES) vendors in the development of their Quality Management Plans. These plans shall demonstrate the vendor's processes for managing quality, including coordinating with PRMP project managers to identify, report on, and manage quality. PRMES vendors' Quality Management Plans shall include provisions to make all quality-related findings transparent to PRMP.

1.2 Scope

This section outlines the scope of a Quality Management Plan from the perspective of the vendor's responsibility. The PRMP PgMO and the PRMP Project Lead shall monitor and manage the effectiveness of the approach and methodology used by vendors as documented in this section.

PRMP expects vendors to follow a mature industry standard quality management methodology to manage project quality. At a minimum, vendors shall follow the quality management guidance described in the *Chapter 8: Project Quality Management—PMBOK*®*, Seventh Edition, Project Management Institute*® *(PMI*®*).* PRMP recognizes that there are other industry standard processes and methodologies, including, but not necessarily limited to:

- Define, Measure, Analyze, Improve, and Control (DMAIC) from American Society for Quality (ASQ) Total Quality Management (TQM)
- Plan-Do-Check-Act (PDCA) Cycle from ASQ TQM
- International Organization for Standardization (ISO) quality management procedures

A vendor may choose to follow one of the above quality management methodologies or another methodology with PRMP approval of the vendor's Quality Management Plan.

Within their Quality Management Plans, vendors shall adhere to the guidance provided in this Quality Management Plan Aid as well as:

- Define process steps
- Document when and how often they will conduct quality management processes
- Add related quality management activities to the project schedule

The vendor's Quality Management Plan shall address all aspects of quality management that might have an impact on project success. The quality management processes shall include the steps for prioritizing correcting errors or issues related to quality to allow project teams to focus on resolution of the highest-priority quality challenges. The Quality Management Plan should also include:

- **Templates:** A quality management memorandum, quality management log, or other documents that standardize information capture and communication related to quality
- **Processes:** Descriptions about how vendors manage risks and issues, including tracking, management, quality processes, reporting, and tools used
- **Standards:** Descriptions of the industry standards vendors employ to manage quality

1.2.1 In Scope

Vendors shall identify all the items subject to quality management as part of the overall project. Including project, product, and process quality as applicable to PRMP projects. Vendor-specific Quality Management Plans shall include, at a minimum:

- Items related to the guidance within this Quality Management Plan Aid
- Description of the vendor's chosen industry standard quality management methodology
- Details on managing the three main components of quality management: quality planning, quality assurance, and quality control

1.2.2 Out of Scope

Vendors shall list the items considered out of scope. Vendors will ensure that any scope exclusions are in alignment with the Request for Proposals (RFP), proposal, and the final signed contract.

1.3 Approach

This section describes assumptions, dependencies, constraints, standards, and references. The Quality Management Plan Aid takes into consideration the assumptions, dependencies, and constraints for projects as described in this section.

1.3.1 Assumptions

Per the *PMBOK Guide*®, an assumption is a factor expected to be in place or to be in evidence. The assumptions made related to the development of Quality Management Plans are:

- Vendors will use their own quality management processes to help ensure quality during a project's life cycle. Vendors shall coordinate the process with the PRMP Project Leads and will provide transparency to the PRMP. The vendor's own quality management processes will adhere to any guidelines provided in this document.
- The PRMP will have a complementary quality management process managed by the PRMP Project Leads and supported by the PRMP PgMO.
- The vendor shall provide a detailed list of all assumptions as they pertain to quality requirements and standards compliance in quality management across the projects being executed.

1.3.2 Constraints

Per the *PMBOK Guide*®, a constraint is a limiting factor that affects the execution of a project or process. There are no constraints identified for this Quality Management Plan Aid.

Vendors shall identify constraints related but not limited to:

- Quality management methodology
- Data quality
- Quality management tool access

1.3.3 Dependencies

Per the *PMBOK Guide*®, a dependency is a logical relationship between two activities, or between an activity and a milestone. For example, an activity that cannot begin until another activity has been finished has a dependency. Vendors shall identify, list, and describe dependencies in their Quality Management Plans.

The Quality Management Plan has dependencies on the following plans:

- **Cost Management Plan:** This plan addresses how the project cost will be planned, structured, and controlled.
- **Schedule Management Plan:** This plan includes the processes required to manage timely completion of project work.
- **Test Plan:** This plan includes the processes and procedures to verify and validate the requirements are accurately tested and defects are eliminated through various stages of the project life cycle.
- **Certification Management Plan:** This plan defines the approach to implementing the Medicaid Enterprise Certification processes as required to obtain CMS certification. This

plan is applicable to all PRMP projects that require support, administration, or oversight of federal certification activities.

1.3.4 Standards and References

This section provides a comprehensive list of standards and references applicable to the Quality Management Plan Aid. The PRMP PgMO, vendors are required to reference the appropriate standards and references.

- Chapter 8: Project Quality Management—*PMBOK® Guide*, Seventh Edition, Project Management Institute® (PMI®)
- Institute of Electrical and Electronics Engineers (IEEE®) Standard 730-2002 – Standards for Software Quality Plans
- ISO 9001:2015: Quality Management Systems – Requirements
- ISO 9000:2015: Quality Management Systems – Fundamentals and Vocabulary (definitions)
- ISO 9004:2018: Quality Management – Quality of an Organization – Guidance to Achieve Sustained Success (continuous improvement)
- ISO 19011:2018: Guidelines for Auditing Management Systems

Vendors are expected to update their Quality Management Plans when a new applicable standard (or version of a standard) is applied.

2.0 Roles and Responsibilities

This section describes the primary roles and responsibilities of the groups that consist of the project staff, sponsors, and stakeholders as they relate to quality management. Table 3 illustrates which stakeholders are responsible (R), accountable (A), consulted (C), and informed (I) (RACI), defined as:

Responsible: This stakeholder does the work to complete the task area. This stakeholder may also serve as an accountable stakeholder for some task areas.

Accountable: This stakeholder delegates work and is the last one to review the task area before it is deemed complete. According to best practice, one stakeholder (or the lowest number possible) should be deemed accountable.

Consulted: This stakeholder provides input based on how the task area will impact the future work of the project and the stakeholder's expertise.

Informed: This stakeholder should be aware of the progress associated with the task area.

Table 3: RACI Matrix for Quality Management

Task Area	PRMP Leadership	PRMP Program Director	PRMP PgMO	PRMP Project Lead	Vendor
Planning	C	C	C	A	R
Management: Quality Error Identification	I	C	I	A	R
Management: Quality Error Analysis	I	I	C	A	R
Management: Quality Error Responses	I	C	C	A	R
Monitoring/Reporting	I	I	I	A	R

2.1 PRMP Leadership

PRMP is the Medicaid agency responsible for administering the Medicaid Program in Puerto Rico, including the Children's Health Insurance Program (CHIP), and a waiver-based section 1915(a) program. PRMP is an agency within the Puerto Rico Department of Health (PRDoH). While leadership roles might vary between projects, in general, the PRMP Leadership stakeholder group refers to the PRDoH Secretary, PRMP Executive Director, and the Executive Steering Committee.

2.2 PRMP Program Director

The PRMP Program Director is a member of the PRMP PgMO.

An important aspect of the PRMP Program Director's role is to assess quality in terms of the quality management between PRMES projects and across PRMP, including whether any quality-related findings in a project have broader implications.

2.3 PRMP Project Lead

PRMP appoints a Project Lead to oversee each of the PRMES projects under PRMP programs utilizing the defined PRMP PgMO processes. The Project Lead collaborates with the vendor's project manager to help ensure the project execution and implementation is in accordance with the approved schedule and processes defined by the PRMP PgMO.

PRMP project leads, PRMP PgMO, and vendors shall be the initial implementers of the quality management processes defined in the Quality Management Plan.

The PRMP Project Lead will have joint responsibility with the vendor's Project Manager for maintaining and executing the quality management process.

2.4 PRMP PgMO

The PRMP has designated the PRMP PgMO to provide program and project management guidance and collaborative oversight for its IT initiatives. The PRMP PgMO shall support the PRMP Project Leads in approving the vendors' Quality Management Plans and for confirming adherence to the approved processes. As part of this responsibility, the PRMP PgMO has developed this Quality Management Plan as guidance for creating project-specific Quality Management Plans and processes.

The PRMP PgMO shall provide collaborative oversight on quality management to confirm that the project processes and quality criteria are being effectively managed.

2.5 Vendors

The vendors shall be responsible for producing and submitting project-specific Quality Management Plans that clearly define quality initiatives and measurements of quality as well as the approach to continual improvements. Additionally, there are requirements to create quality assurance and quality control plans for projects.

Vendors are responsible for managing projects effectively and controlling the quality criteria and objectives of the projects. Quality directly affects deliverables defined in the vendor's contract. It is important that vendors help ensure that deliverables are fit for use. To this end, vendors will create a performance metric dashboard and share it weekly via the vendors' weekly status reports.

3.0 Quality Management

The Quality Management Plan is important in the project life cycle. Through quality assurance and control, the Quality Management Plan helps identify and rectify the errors discovered throughout a project's life cycle including documents and artifacts created as project deliverables. Plan, manage, and control are the simplistic steps in a quality management process. Figure 1 provides an illustration of the quality management process, and the associated steps are described below.

The PRMP PgMO team reviewed the applicable standards as identified in the Standards and References section of this document, augmented industry best practices, and utilized the experience of the project team to develop the Quality Management Plan Aid.

Figure 1: Quality Management Life Cycle

Plan Quality is the process of managing and identifying quality requirements and standards for the projects and deliverables and documenting how the projects shall demonstrate compliance with the requirements and standards. This process is performed first during the planning phase and repeated at specified intervals throughout the project life cycle. One of the key benefits of this process is the guidance it offers for the management and verification of quality throughout the project.

Manage Quality is the process of translating the Quality Management Plan into executable quality activities that incorporate an organization's quality policies and stated vision into the project. Through this process, it becomes possible to improve the probability of meeting the quality objectives and to remove ineffective processes and the causes of poor quality. Manage quality uses the data and the outcomes from the control quality process to reflect the overall project quality status to project stakeholders. It becomes imperative to conduct this process throughout the project life cycle.

Control Quality is the process of monitoring and recording results that come from quality management activities. This process helps to assess performance and ensure that project objectives are complete, accurate, and meet the customer expectations and specifications. The control quality process verifies if the project output meets its intent and is in alignment with the specified standards, requirements, specifications, and regulations. To help ensure that the project metrics are within the defined thresholds, quality control is performed throughout the project life cycle.

PRMP expects vendors to describe their quality management life cycle and process in their projects' Quality Management Plan. The descriptions should include how the vendor plans, manages, and controls quality. These elements of quality management are described in the following subsections.

3.1 Define Project Quality

Define project quality is an important aspect of the quality management process. To define quality, the vendor shall use its project charter to identify the goals of the project and they are in alignment with PRMP's expectations. The most important part of this process is identifying any quality problems and goals. A process champion is required to champion the improvement goals and is supported by a process owner and accompanying team. Under the supervision of

the vendor or contractor project manager, project staff have specific tasks to complete actions needed to address the identified problems. The vendor's Quality Management Plan shall provide an approach that:

- Establishes a project charter
- Identifies quality problems and goals
- Defines project quality management

3.2 Measure Project Quality

In the measure phase, the team refines the measurements definition and determines the current performance, or the baseline, of the process. In this phase, it is imperative to identify desired metrics and related monitoring processes with which to measure quality standards, develop a plan for measuring quality, define methods of data collection and archiving, and document the time frame for measurements and metrics reporting. The vendor's Quality Management Plan shall:

- Describe the project quality measurement approach
- Identify data collection and archiving processes related to quality
- Provide a description of how and when the vendor will document measurements and metrics reporting

PRMP will work with each vendor to develop quality metrics for individual projects—these might be defined in the vendor's contract with PRMP and refined at project startup. Table 4 presents an example of the traffic light indicator (Red/Yellow/Green) commonly used in project performance measurement and reporting.

Table 4: Sample Quality Metric Measurement Indicators

Grey	Metrics are not measurable (readiness assessment pending)
Green	Metrics are on plan and no action is needed
Yellow	Metrics are deviating from the plan and need a response
Red	Significant deviation from the plan and needs a Corrective Action Plan (CAP)

3.3 Analyze Project Quality

The analyze phase focuses on how quality management work needs to be done, process mapping, process risks, and process inefficiencies that can potentially create new problems. The best approach to the analyze phase is for the team to identify the root causes of the problems and options to resolve them. In this phase, analysis of quality issues is key. Analysis is required on processes and data and should be completed before implementing solutions. In their Quality Management Plans, vendors shall include:

- The process for identifying quality issues and their root causes
- The tools the vendors use to analyze identified issues (e.g., what quality management tool is used, data that might inform identification of quality issues)
- The process used to analyze, mitigate, and resolve project quality issues

3.3.1 Tools and Techniques

Vendors are required to provide details related to the selected tools that are used for managing quality and metrics reporting. Additionally, the templates created and used in the project life cycle shall be indicated in this section of the plan.

The *PMBOK Guide*® Seventh Edition references the following seven basic quality tools frequently used in the quality management process across various phases in the project life cycle:

- **Cause and Effect (Fishbone or Ishikawa diagram):** A diagram that outlines the different steps in a process, demonstrates where quality issues might arise, and determines which resources are needed at specific intervals
- **Check Sheet:** A tool used for qualitative and quantitative data gathering and analysis
- **Control Chart:** A graphical tool used to understand how a process changes over time
- **Histogram:** A chart that shows the frequency distribution of different data values
- **Pareto Chart:** A bar graph that represents data frequency of problems or causes in a process
- **Scatter Diagram:** A diagram that depicts the correlation of pairs of numerical data
- **Flowchart/Run Chart:** A diagram that represents a workflow or process

PRMP expects vendors to use a selection of these tools (or similar tools) in their quality management processes.

3.4 Improve Project Quality

In the improve project quality phase, the project team brainstorms solutions, pilots process changes, and implements solutions. The team performs data collection to verify the improvements are measurable. A well-organized improvement effort results in innovative solutions that improve the baseline measurements and enhance the customer service experience. Vendors' Quality Management Plans shall describe:

- How the vendor will mitigate quality issues
- What quality improvement process(es) the vendor will employ
- How the vendor will measure quality improvement through metrics

- How the vendor will communicate quality improvement (e.g., via quality management reports, status reports, quality management memoranda)

3.5 Control Project Quality

In the Control Project Quality phase, the team is focused on creating a monitoring plan that shall continue measuring the success of the updated processes and develop a CAP in case performance decreases. The focus in this phase is sustainability to help ensure that the improvements made are sustained throughout the project. The project team plays a big role in helping ensure that the processes maintain the gains. Within the Control Project Quality section of the Quality Management Plan, vendors should, at a minimum, describe:

- The quality improvement process
- The communication methods used to control quality
- A description of a CAP template including, but not limited to:
    - Target of the corrective action
        - Quality error background
        - Description of the problem
        - Root cause
        - Processes, systems, or procedures impacted
    - CAP implementation strategy
        - Objective
        - Approach
        - Plan and milestones
        - Risks and issues escalation
    - Testing approach, if related to system quality issues
        - Testing approach
    - After-action activities
        - Performance measures
        - Follow-on activities
    - Support or actions needed from stakeholders
- The vendor's plan for helping to ensure quality is sustained after error resolution

4.0 Quality Assurance

Quality assurance is a process that helps ensure the work related to the production of project deliverables is on track and that vendors meet or exceed expectations. The quality assurance process should be proactive to help ensure that project remains on schedule and the maintenance of product and service quality. Vendors are expected to include a Quality Assurance Plan section in their Quality Management Plans.

4.1 Quality Assurance

Quality Assurance is comprised of administrative and procedural activities implemented in a quality system so that requirements and goals for a product, service, or activity can be fulfilled. A Quality Assurance Plan describes systematic measurement, comparison with standards, monitoring of processes, and an associated feedback loop to confirm error prevention. Quality assurance operates under two basic principles: 1) Fitness for Purpose, which means a product or service is usable for the intended purpose, and 2) Right First Time, which means defects are mitigated.

An important part of quality assurance is quality verifications. Verifications are performed to confirm that the processes and standards as defined in approved plans (e.g., the Quality Management Plan) are followed by the project team and focus on questions such as:

- Are the documented processes being followed?
- Are the documented processes working?
- Are the documented processes efficient?

Within its Quality Management Plan, a vendor shall produce a comprehensive Quality Assurance Plan detailing the process, standards, and resources required to support contract performance. The Quality Assurance Plan section shall include, at a minimum:

- Quality verification descriptions
- Quality verification approach
- Non-compliance and escalation process
- Quality verification reporting
- Quality verification closure

5.0 Quality Control

Quality Control provides a systematic and structured process to evaluate the services the vendor has committed to provide, including but not limited to, processes, methods, metrics, customer satisfaction surveys, service level agreements, and operational level agreements. PRMP shall utilize the results of the Quality Control Plan to document the vendor's quality assurance performance.

Vendors shall develop a Quality Control Plan section within their Quality Management Plans that defines the vendor's approach, processes, and procedures for ensuring the quality and reliability of its products and services throughout the project life cycle.

5.1 Quality Control Plan

The quality control process is introduced in the planning phase of the project and followed throughout the entire project life cycle. The process verifies that the project outputs are in alignment with the applicable standards, requirements, regulations, and specifications of the project. This is carried out by monitoring and recording results of the defined quality management activities such as performance assessments that validate that the project outputs are complete, correct, and meet customer expectations. The key benefit of this process is that it verifies the project deliverable and work products meet the requirements specified by the stakeholders for final acceptance.

Appendix A: Acronyms

Table 5 presents acronyms used in this document.

Table 5: Acronyms List

Acronym	Definition
CAP	Corrective Action Plan
CHIP	Children's Health Insurance Program
DMAIC	Define, Measure, Analyze, Improve, and Control
EOMC	Enterprise Monitoring and Control
IEEE®	Institute of Electrical and Electronics Engineers
ISO	International Organization for Standardization
IT	Information Technology
KL	BerryDunn KnowledgeLink
OIAT	Oficina de Informática y Avances Tecnológicos
PDCA	Plan-Do-Check-Act
PRDoH	Puerto Rico Department of Health
PgMO	Program Management Office
PMBOK®	*A Guide to the Project Management Body of Knowledge Guide*
PMI®	Project Management Institute
PRMES	Puerto Rico Medicaid Enterprise Systems
PRMP	Puerto Rico Medicaid Program
RACI	Responsible, Accountable, Consulted, and Informed
RFP	Request for Proposals