

Supporting Statement – Part B
Collection of Information Employing Statistical Methods

1. Respondent Universe and Sampling Methods

This is a new information collection request. The purpose of this data collection is to gather data from healthcare providers who received quality of care improvement services from the Centers for Medicare & Medicaid Services (CMS) through the Quality Innovation Network-Quality Improvement Organizations (QIN-QIO) contractors plus those who were eligible but did not receive these services. The information collected will enable the Program Monitoring and Evaluation (PME) Team to answer the following core research questions:

- What are the top sources of influence on improvement of quality of care?
- How satisfied are healthcare providers with technical assistance (TA) provided by QIN-QIO contractors?
- How do healthcare providers that do not engage with QIN-QIO contractors meet their quality improvement goals?
- What are the barriers to participating in the QIN-QIO Program?

The PME Team will recruit three distinct groups of healthcare providers to participate in the surveys: nursing home administrators, hospital administrators, and outpatient clinicians (or their delegates). The target samples for all three surveys will be divided into two groups: (1) facility administrators or outpatient clinicians supported by the QIN-QIO contractors and (2) facility administrators or outpatient clinicians with no participation with QIN-QIO contractors.

a) Sampling Method

Under the QIN-QIO Program (TO) 13th Statement of Work (SOW), CMS identified a list of service providers—called the Service Provider List (SPL)—for nursing home and hospital settings. The SPL is used to target QIN-QIO efforts using the most current data such as CMS 2025 Medicare claims data, Nursing Home Compare, Minimum Data Set (MDS) 3.0, and Centers for Disease Control and Prevention (CDC) National Healthcare Safety Network (NHSN) data. For nursing home setting, CMS selected providers for the SPL based on the following criteria: (1) poor performance on selected health care quality metrics; (2) CMS enforcement data (e.g., quality management infrastructure related emergency preparedness, inspection deficiencies, quality assurance and performance improvement, etc.); (3) entities not submitting quality reporting data; and (4) recommendations received from QIO contractors. For the hospital setting, the SPL includes Medicare-registered hospitals, specialty hospitals — including children’s hospitals, psychiatric hospitals, long-term care hospitals, and acute care hospitals operated by the Veterans Affairs (VA) and Department of Defense (DoD) — are excluded. Hospitals covered under the American Indian and Alaska Native (AIAN) SPL are also excluded. For outpatient clinical practice setting, the QIN-QIO program opens to all outpatient clinicians who expressed interest to partner with QIOs to improve their quality of care.

The sample universe for all three surveys (nursing home, hospital, and outpatient clinician), will include nursing home and hospital administrators or outpatient clinicians who are most

familiar with the quality improvement initiatives of their organizations and who represent organizations that are eligible to participate in the quality improvement networks being evaluated. Using CMS shared SPL data, the PME Team estimates that 8,481 nursing homes, 3,398 hospitals qualify to participate in these programs as of April 2026. These numbers may change slightly throughout the performance period. For example, in cases where some practices may be closed, replacement providers may be identified. For Outpatient Clinician Survey, the sample universe will be outpatient clinicians who provide services and are familiar with the quality improvement initiatives of their employment organizations.

The PME Team will maintain a list of all qualified and enrolled nursing homes, hospitals, and outpatient clinicians that are associated with the Tax Identification Numbers (TINs) enrolled with the QIN-QIO program. Prior to sampling, the PME Team will utilize the most updated enrollment data and remove individual providers that have been deactivated or facilities that have been closed from the sample frame so that it will represent active billing facilities only.

In the QIN-QIO Program 13th SOW, CMS defined the service engagement target as 90.0% for nursing homes and hospitals, and 50.0% for outpatient clinicians among qualifying providers. Based on lessons learned during the QIN-QIO TO 12th SOW, enrollment in the QIN-QIO Program did not necessarily mean that a provider received TA from the contractor. Depending on data availability, the PME Team may check QIN-QIO self-reported intervention data in the CMS QIO Platform (CQP) to improve the accuracy of identifying intervention and comparison groups. CQP is a CMS technology platform that supports the daily operational needs of the QIO program. It provides near real-time data modeling, data collection (under a separate PRA approval), and visualization to give CMS and stakeholders access to current operational and performance data.

For the nursing home and hospital surveys, the PME Team will collect 400 completed surveys each from facilities actively participating with QIN-QIO contractors or receiving program support. An additional target of 100 completed surveys will be allocated to the comparison group (i.e. facilities that are not enrolled, or enrolled but did not receive QIN-QIO Program support). For the outpatient clinician survey, the PME Team will collect 250 completed surveys annually from individual providers actively enrolled with the QIN-QIO Program. An additional target of 250 completed surveys will be allocated to providers in the comparison group. The samples are summarized in Table 1, Table 2, and Table 3 below.

Table 1. Summary of Sample Targets for Nursing Homes by Strata

Strata	Nursing Homes	Description
Intervention	400	Nursing homes enrolled with QIN-QIOs and receiving QIN-QIO Program support
Comparison	100	Nursing homes not enrolled with QIN-QIOs or enrolled but not receiving QIN-QIO Program support
Total	500	

Table 2. Summary of Sample Targets for Hospitals by Strata

Strata	Hospitals	Description
Intervention	400	Hospitals enrolled with QIN-QIOs and receiving QIN-QIO Program support
Comparison	100	Hospitals not enrolled with QIN-QIOs or enrolled but not receiving QIN-QIO Program support
Total	500	

Table 3. Summary of Sample Targets for Outpatient Clinician by Strata

Strata	Outpatient Clinicians	Description
Intervention	250	Outpatient clinicians receiving QIN-QIO Program support (e.g., associated with Tax Identification Numbers – TINs enrolled with QIN-QIO program)
Comparison	250	Outpatient clinicians not receiving QIN-QIO Program support
Total	500	

For the nursing home and hospital surveys and based on the 36.0% response rate observed in the 12th SOW, the PME Team determined that a minimum of 1,389 (main sample) surveys must be distributed to achieve 500 completed responses with each survey. In addition to the main sample, the PME Team also developed five replicate groups with 200 samples in each group. Survey fielding will begin with the 1,389 main sample. If the required 500 completed responses are not reached from the main sample alone, the replicate groups will be released sequentially, one block at a time. If fewer than 200 additional records are needed, replicate groups may be divided into smaller subsets. The survey will close once 500 completed responses are verified or upon reaching the CMS-approved end date.

For the outpatient clinician survey, we determined that a minimum of 7,936 base sample of outpatient clinicians will be needed to achieve the 500 completed response in each round of survey with an anticipated 6.3% response rate, like nursing home and hospital sample design we will draw five additional replication groups (1,500 outpatient clinicians each).

Upon completion of survey data collection, the PME Team will compare the key characteristics (such as medically underserved, number of beds, rural/urban location, profit/non-profit ownership, hospital type, participation type, etc.) between the responses received and the overall sample frame to check the covariate balance. If needed, matching or non-response weighting will be applied to ensure the validity of scaling survey findings to the study population.

b) Expected Response Rates

For nursing home and hospital surveys, the PME Team expects to achieve a response rate of 36.0% among facility administrators or directors of quality improvement programs. This anticipated response rate is based on observations during surveys in the 12th SOW. Response rates may vary by strata, with lower rates expected among unenrolled nursing homes and hospitals. These facilities have historically been more difficult to recruit as QIN-QIOs report difficulty reaching unenrolled facility administrators as a primary barrier for recruitment.

For the outpatient clinician survey, response rates with healthcare providers vary depending on survey content and type of provider contacted. This makes it difficult to estimate an anticipated response rate. Response rates may also vary by strata, and completion rates among non-enrolled providers are expected to be particularly low. QIN-QIOs have identified difficulty reaching outpatient clinicians as a primary barrier to recruitment. Based on the 12th SOW outpatient clinician survey, the PME Team expects to achieve a response rate of 6.3% for outpatient clinicians. The PME Team will employ a number of strategies to maximize response rates among this group including identifying CMS as the survey sponsor, communicating the public policy benefit of survey participation, and using multiple reminders via calls and emails.

2. Procedures for the Collection of Information

a) Statistical Methodology for Stratification and Sample Selection

The PME Team will conduct a stratified random sample for nursing home and hospital surveys (see Table 1, 2, and 3 above for targets).

For all three PME Provider Experience surveys, within each stratum, the PME Team will employ a systematic random selection that assures that the sample is representative of the population. The selection process can include several balancing variables such as, QIN-QIO region, facility performance (CMS rating in the Five-Star Quality Rating System), facility characteristics (e.g., urban/rural, size, etc.), participant entity type, community disadvantage factors (e.g., standings in the Area Deprivation Index and Social Vulnerability Index), CMS National Provider Identifier type (individual/organization), provider specialties, and program data (e.g., level of participation, aims, and sub-aims, etc.). Before drawing the sample, the PME Team will conduct analyses to determine which balancing variables to use for each survey, the categories/number of categories most relevant for each variable while limiting small cells, and the optimal sort order prioritization. This methodology will produce samples that are more representative across the balancing variables categories.

b) Estimation Procedure

The PME Team's evaluation plan outlines the analytic method for each evaluation question specific to QIN-QIO goals. The PME Team's analysis will begin with descriptive statistics, including percentages for categorical outcomes and means for numerical outcomes in total for each survey sample and across subgroups. The PME Team will employ appropriate statistical tests, including t-tests, chi-square tests, and analyses of variance (ANOVA).

c) Degree of Accuracy Needed for the Purpose Described in the Justification

For nursing home and hospital surveys combined across strata, the margins of error (MOE) with 95% level of confidence (500 completes) are +/-1.9%. The hospital survey gains precision due to the smaller population size. Based on the most recent population data, we estimate the weight adjusted sample size to be 471 for both the nursing home and hospital surveys. For outpatient clinician online survey, no sampling is needed as specified in Section 2.a. Therefore, the outpatient clinical practice setting is omitted from Table 4 below.

Table 4 shows the planned MOEs for different levels of estimates under the sample plans for the total sample of 500 and for the sub-sample of enrolled and non-enrolled facilities. The MOEs are corrected for their finite populations. Due to disproportional sampling for hospitals, a weight adjusted sample of 471 is used for the combined MOE. The maximum value is 95% with a maximum MOE of $\pm 1.9\%$ for both surveys when examining combined results. The MOEs do not account for any adjustments related to design effects resulting from the balancing methodology, nor do they incorporate weighting that may be applied by the PME Team to address differential unit non-response.

Table 4. Sample Size, Estimated Effective Sample Size, and MOE¹ for Nursing Home and Hospital Surveys

Setting	Population	Estimated Population	Sample Size	Adjusted Sample Size	Margin of Error at Given Proportion					
					50%	40% /60%	30% /70%	20% /80%	10% /90%	5% /95%
Hospitals	Full Sample	3,398	500	471	4.2%	4.1%	3.8%	3.4%	2.5%	1.8%
	Enrolled	3,058	400	-	4.6%	4.5%	4.2%	3.7%	2.7%	2.0%
	Non-enrolled	340	100	-	8.2%	8.1%	7.6%	6.6%	4.9%	3.6%
Nursing Homes	Full Sample	8,481	500	471	4.4%	4.3%	4.0%	3.5%	2.6%	1.9%
	Enrolled	7,633	400	-	4.8%	4.7%	4.4%	3.8%	2.9%	2.1%
	Non-enrolled	848	100	-	9.2%	9.0%	8.4%	7.4%	5.5%	4.0%

¹ Use of balancing methodology in the sample (described above) will result in slightly lower MOEs to the extent that the balancing criteria are predictors of survey responses.

Note: For outpatient clinical practice setting, the QIN-QIO program has updated its targeting strategy to expand participation to all outpatient clinical practices interested in partnering with QIOs to improve quality of care. Once enrollment sample size information becomes available, Table 4 above will be updated to include outpatient clinicians.

The sample sizes for each survey also provide sufficient power for testing between groups within the responses. Table 5 shows that for the sample size of 500 nursing homes, hospital administrators, or outpatient clinicians, the analysis will have a statistical power of 0.92 to detect an effect size of 0.15 (between a small to medium effect size) with a Type I probability of 5%.

Table 5: Sample Size, Power and Effect Size

Sample	Error	Effect Size (<i>f</i> -ANOVA Effect and Interaction)							
		Small						Medium	
		0.08	0.10	0.13	0.15	0.18	0.20	0.23	0.25
500	0.05	0.39	0.61	0.80	0.92	0.97	0.99	1.00	1.00
550	0.05	0.42	0.65	0.83	0.94	0.98	1.00	1.00	1.00
600	0.05	0.45	0.69	0.86	0.96	0.99	1.00	1.00	1.00
650	0.05	0.48	0.72	0.89	0.97	0.99	1.00	1.00	1.00
700	0.05	0.51	0.75	0.91	0.98	1.00	1.00	1.00	1.00
750	0.05	0.54	0.78	0.93	0.98	1.00	1.00	1.00	1.00
800	0.05	0.56	0.81	0.94	0.99	1.00	1.00	1.00	1.00
850	0.05	0.59	0.83	0.95	0.99	1.00	1.00	1.00	1.00
900	0.05	0.61	0.85	0.96	0.99	1.00	1.00	1.00	1.00

- d) Unusual problems require specialized sampling procedures.

The PME Team does not foresee any unusual problems that require specialized sampling procedures.

- e) Any use of periodic (less frequent than annual) data collection cycles to reduce burden.

The nursing home, hospital, and outpatient clinician surveys are intended to measure provider feedback annually between calendar years 2026 and 2031. The surveys will collect cross-sectional data, so the PME Team will not request information from the same participants more than once within the same calendar year. Each year, for the nursing home and hospital surveys, a new sample will be drawn using the same systematic random selection method and the same set of stratification variables as those in the first round of data collection. Prior to systematic sampling, the data will be randomly sorted each year using a different random seed.

3. Methods to Maximize Response Rates and Deal with Issues of Non-Response

a) Methods to Maximize Response Rates

Sending pre-survey notification letters that provide more information on a study increases respondent confidence in the validity and importance of the study. This generally results in higher response rates.¹ For all three PME Provider Experience (PE) Surveys, the PME Team will use a pre-survey notification letter to introduce and explain the data collection effort for nursing home, hospital, and outpatient clinician surveys. The content of pre-notification letters can be viewed in Appendices D.1 (nursing homes), D.3 (hospitals), and D.5 (outpatient clinicians).

For outpatient clinicians participating in the online survey, email reminders will be sent two to three days prior to the survey launch and again, on the day of the survey opens. For all three PME PE Surveys, up to six reminders will be sent to respondents with incomplete surveys after the survey launch.

Email invitations will be CMS-sponsored, prominently displaying their logo, to increase confidence and reinforce credibility of the study. Email invitation content is available in Appendices D.2 (nursing homes), D.4 (hospitals), and D.6 (outpatient clinicians).

CMS uses widely accepted data collection techniques and invests substantial resources in strategies designed to minimize non-response. Thus, the PME Team expects the survey response rate to be comparable or higher than that achieved for other healthcare administrator surveys conducted by the PME Team members in the past. The PME Team has conducted numerous surveys on a variety of topics that have achieved response rates comparable to, or exceeding, the response rate estimated for this survey.

¹ Dykema J, Stevenson J, Day B, Sellers SL, Bonham VL. Effects of incentives and prenotification on response rates and costs in a national web survey of physicians. *Eval Health Prof.* 2011;34(4):434-447. doi:10.1177/0163278711406113

b) **Methods to Deal with Issues of Non-Response**

Should a respondent refuse to complete the survey, the refusal will be classified into two groups: hard refusals and soft refusals. Hard refusals are defined as situations where respondents adamantly state that they do not wish to be called again. Records coded with this disposition do not reappear in follow-up reminder call or email queues for the remainder of the project. Soft refusals include situations where respondents do not respond to the online survey invitation, simply hang up on a telephone interviewer, or refuse the initial contact in a less aggressive manner. For example, the refusal is made by a gatekeeper (assistant, or receptionist) but not by the respondent, or it is an inconvenient time such as “I am not available now.” These cases are still considered “active,” but placed on hold and re-contacted as necessary as the number of respondents in the viable sample dwindles.

The PME Team will conduct a thorough non-response analysis upon completion of the data collection. This analysis will examine if there are systematic patterns in non-response that lead to the under or over representation of particular sub-populations. If such distortions are detected, the PME Team will apply non-response weights sparingly to address the distortions while managing the design effect of weights.

c) **Generalizing to the Universe Studied**

Since the PME Team is conducting a stratified random sample for nursing homes and hospitals and administering the survey to all eligible outpatient clinicians with valid email addresses, the information collected is expected to be reliable data and generalized to the universe sample frame as specified in Section 1.a., Sampling Method. The PME Team will develop weights that allow for projections to the total universe of eligible nursing homes, hospitals, and outpatient clinicians, based on the characteristics of entities included in the sampling frame.

4. **Test of Procedures or Methods to be Undertaken**

As part of survey instrument development, the PME Team and its survey partner, The Henne Group, will conduct internal beta-testing. Additionally, before full-scale implementation, the survey instruments will undergo external pre-testing. Once the pre-testing respondents agree to help refine the survey, they will be given an opportunity to schedule a cognitive interview. Once the cognitive interviews are completed, pre-testing respondent feedback will be gathered on potential improvements to the survey instruments and administration processes, which include clarifying ambiguities and addressing any issues that may affect comprehension.

Pre-testing will enable the PME Team to assess the hour burden per respondent and verify that the survey skip patterns follow logically. The PME Team does not anticipate this process to result in substantive changes affecting the survey content or length.

5. **Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing the Data**

Table 6 provides names and affiliation for those consulted on the statistical aspects of the survey design and those who will collect and/or analyze the information.

Table 6. Individuals Consulted on Statistical Aspects and Performing Data Collection & Analysis

Name	Affiliation
Jia Zhao, PhD	Booz Allen Hamilton
Cara Finley	Booz Allen Hamilton
Elyse Levine, PhD	Booz Allen Hamilton (independent consultant)
Qingkun Shang	Booz Allen Hamilton
Xiaoying Xiong	Booz Allen Hamilton
Peichang Shi, PhD	Booz Allen Hamilton
Elizabeth Fuller, PhD	Booz Allen Hamilton
Liqiang Zhang	Booz Allen Hamilton
Christine Booth	Booz Allen Hamilton
Lucas Quesnel	Booz Allen Hamilton
Dominic Shehtanian	Booz Allen Hamilton
Dave Cederquist	Booz Allen Hamilton
Andrew McCurdy	Booz Allen Hamilton
Lindsey Wagner	Booz Allen Hamilton
Kyle Nisbeth	Booz Allen Hamilton
Janaki Panchal	Booz Allen Hamilton
Adiam Tesfaselassie	Booz Allen Hamilton
Jia Shen, PhD	Booz Allen Hamilton
Jeffrey C. Henne	The Henne Group
Sergio Garcia	The Henne Group
Scott Schwartz	The Henne Group
Key Sibby	The Henne Group

Table 7 shows the names of the CMS staff members who advised on the survey design.

Table 7. CMS Staff Members Who Advised on Survey Design

Name	Affiliation
Jeff Mokry	Center for Clinical Standards and Quality
Confidence Gbarayor	Center for Clinical Standards and Quality
Shalon Quinn	Center for Clinical Standards and Quality
Colleen Frey	Center for Clinical Standards and Quality
Girlyn Cachaper	Center for Clinical Standards and Quality
Geoffrey Berryman	Center for Clinical Standards and Quality
Jennifer Johnson	Center for Clinical Standards and Quality