Supporting Statement for Paperwork Reduction Act Submission
"Home Health Quality Measures and Data Analysis"

Part B: Collections of Information Employing Statistical Methods

1. Description of the potential respondent universe and sampling/other respondent selection methods to be used.

The data will be collected from home health agencies (HHAs) in seven states: Connecticut, Massachusetts, Alabama, Georgia, Tennessee, Illinois, and California. A total of 570 HHAs (281 "Treatment" and 289 "Control") from these seven states volunteered to be part of the Pay for Performance (P4P) Demonstration. The assignment of HHAs into groups was done by the P4P Demonstration contractor, Abt Associates, Inc. The following table represents the total number of active HHAs identified on Home Health Compare (as of December 2007) distributed by state and the number and percentage (state) of volunteer HHAs in each "Treatment" and "Control" group.

State	Region	# State (Total)	# *(%)* State (Vol)	# *(%)* Treatment	# *(%)* Control
CT	Northeast	86	50 *(58)*	24 *(28)*	26 *(30)*
MA	Northeast	129	50 *(39)*	24 *(19)*	26 *(20)*
AL	South	146	55 *(38)*	26 *(18)*	29 *(20)*
GA	South	101	58 *(57)*	26 *(26)*	32 *(32)*
TN	South	139	89 *(64)*	47 *(34)*	42 *(30)*
IL	Midwest	490	132 *(27)*	67 *(14)*	65 *(13)*
CA	West	650	136 *(21)*	67 *(10)*	69 *(11)*

As can be seen in the previous table, the percentage of volunteer HHAs compared to the total number of active HHAs in a state ranges from a high of 64% in Tennessee to a low of 21% for California. The volunteer HHAs were randomly assigned in approximately even numbers to either the "Treatment" or "Control" group for each of the states.

As described elsewhere, the primary objective of this project is to evaluate the efficacy of the P4P approach to improving HHA performance based on seven publicly reported quality measures. Using a budget-neutral approach, HHAs can earn performance-based bonuses (absolute performance or improvement in performance) using these seven measures. One element in the evaluation is to determine what strategies (processes, policies) HHAs employed to improve their performance on these measures. The "Treatment" and "Control" survey questions will be used to gather data on these strategies.

We anticipate that 40 - 60 percent of the agencies that volunteered to participate in the P4P Demonstration will complete the on-line surveys. This expected response rate is based on our past experience on similar types of projects, the fact that these were volunteer agencies, and the simplicity and brevity of the instruments. In addition to the cover letter/invitation to participate in the survey, each HHA not completing the survey within a designated timeframe will receive at least one follow-up contact during the time period when the surveys are available on-line.

2. Procedures for the collection of information

a. Statistical Methodology for Sample Selection

The home health agencies were assigned to "Treatment" and "Control" groups based on the following characteristics of the HHA:

- density (urban vs. rural) according to their Metropolitan Service Area classification,
- size as defined by number of episodes (small, medium, large, or unknown),
- control status of the HHA, i.e., nonprofit, proprietary, and government control, and
- affiliation status of the HHA,, i.e., freestanding and hospital-based.

The P4P Demonstration contractor, Abt Associates, Inc, stratified each of the volunteer HHAs into one of 336 cells (state X density X size X control & affiliation). The HHAs in each cell were alternately assigned to either the "Treatment" and "Control" groups. The number of HHAs in the "Treatment" and "Control" groups were checked across the entire sample frame to see if there were approximately equal numbers of HHAs in the two groups (281 vs. 289 respectively). Abt's definition of small, medium, or large agencies was operationally defined based on the number of episodes reported from June 2005 through July 2006. The following operational definitions were used: small <1000 episodes; medium >=1000 and <=4000 episodes; and large >4000 episodes.

The analysis of the survey results will be conducted in aggregate across the entire sample frame. The "Treatment" survey contains 16 items that can be quantified using at least descriptive statistics, while the "Control" survey contains 9 items. There are nine items from each survey that can be compared using parametric or non-parametric statistics.

b. Estimation Procedure:

Based on the previous estimates of a survey completion rate of between 40 - 60%, we anticipate that between 112 - 168 "Treatment" surveys and 116 - 174 "Control" surveys will be available for analyses. We anticipate that the return rate for "Control" HHAs will be somewhat lower than "Treatment" HHAs in that the former group is not eligible for the monetary incentive in the P4P Demonstration. These HHAs may be somewhat less motivated than the latter group to share innovative clinical practices that occurred during the first year of the P4P Demonstration. We will produce separate descriptive analyses of the frequency of responses for each question for each of the two surveys. Additionally, we will compute the appropriate parametric or non-parametric comparative test for the nine items common to both surveys. Even using the lower estimates of response rates (assuming that the non-responses are distributed randomly across each of the four regions), the sample sizes will be sufficient to compute meaningful confidence intervals (see Table 1 in the next section).

c. Degree of Accuracy Needed:

Computation of the upper and lower limits (confidence interval) around the observed response rates (percentages) is a function of the sample size, observed rate (percentage), and confidence interval used, e.g., 90% or 95%. For comparison purposes, Table 1 provides some examples of how these three components influence the upper and lower limits of the confidence interval.

Table 1: Interaction of Sample Size, Observed Rates, & Confidence Interval					
Sample Size	**Obs. Rate (Percent)**	**Std. Deviation**	**Error in Estimate**	**95% Lower Limit**	**95% Upper Limit**
100	10	3.00	5.880	4.1	15.9
100	25	4.33	8.487	16.5	33.5
100	35	4.77	9.349	25.7	44.3
100	50	5.00	9.800	40.2	59.8
125	10	3.35	5.259	4.7	15.3
125	25	4.84	7.591	17.4	32.6
125	35	5.33	8.362	26.6	43.4
125	50	5.59	8.765	41.2	58.8
150	10	3.67	4.801	5.2	14.8
150	25	5.30	6.930	18.1	31.9
150	35	5.84	7.633	27.4	42.6
150	50	6.12	8.002	42.0	58.0
175	10	3.97	4.445	5.6	14.4
175	25	5.73	6.416	18.6	31.4
175	35	6.31	7.067	27.9	42.1
175	50	6.61	7.408	42.6	57.4
200	10	4.24	4.158	5.8	14.2
200	25	6.12	6.001	19.0	31.0
200	35	6.75	6.610	28.4	41.6
200	50	7.07	6.930	43.1	56.9

d. Unusual Problems Requiring Specialized Sampling Procedures:

No specialized sampling procedures were required for this project.

e. Use of Periodic Data Collection Cycles:

This is a one-time study using these two survey instruments. During the second year of the evaluation two different survey instruments will be used to assess the impact of being awarded a performance bonus vs. not being awarded a performance bonus. A separate PRA package will be created for these instruments.

3. Methods to maximize response rates and to deal with issues of non-response.

Maximizing response rates

Three studies were used to inform our approach to estimating and maximizing response rates for HHAs completing the survey. Sheehan (2001) reviewed more than 30 studies that compared email survey response rates with traditional postal mail survey response rates. She found that response rate for "business-to-business" surveys was strongly related to the length of the survey (fewer questions = higher response rate). While pre-notification may speed response time with little effect on response rates, Sheehan's (2001) review notes that reminder contact does dramatically improve response rates. However, the strongest predictor of response rate according to the studies reviewed by Sheehan (2001) is issue saliency, in this case participation by the HHAs in the P4P Demonstration. Kaplowitz, Hadlock, and Levine (2004) compared response rates for four different

pre-notification and reminder treatments for a Web-based survey versus a hard-copy mailed survey with university students (both undergraduate and graduate). Interestingly, the highest response rate was for the hard-copy mailed survey (31.5%), although this rate was not statistically different from the highest Web-based (29.7%). The top two Web-based response rates (29.7% and 28.6%) were not statistically different. These two treatments were Postcard, E-mail and Postcard, E-mail, Postcard, respectively. While there were no differences in responses to the survey questions among any of the treatment groups, there were two major differences between the hard-copy mailed surveys and the Web-based surveys. The average age of the hard-copy mailed survey group was much older (30.5 vs. 24.1) than the Web-based surveys, and the cost per response was much higher for the mailed surveys ($11 vs. <$2). The University of Texas provides the following guidance through their Instructional Assessment Resources about improving response rates for surveys:

- The better your respondents know you, the better your response rate
- Request participation from respondents in advance
- Give respondents a sufficient amount of time to complete the survey
- Provide clear instructions on how to complete and submit the survey when it is administered
- Design the survey so it is easy to read and follow
- For mail or online surveys, send reminders during the survey period thanking the respondents who have completed the survey, while reminding others about the deadline for completing the survey
- For online surveys, always provide a link to the survey and send a reminder a day before closing the survey
- Offer an incentive for participating

The expected response rate for the data collection activities is between 40 - 60 percent. Although we will not be providing any monetary incentive to complete the survey, we believe our approach meets each of the other items suggested in the University of Texas guidance and is consistent with the findings of the other researchers. The University of Colorado Denver, Division of Health Care Policy & Research has been involved with home health care research for more than two decades and is well-known within the health care community. Each of the Treatment and Control HHAs will receive a packet of materials announcing the survey and will contain the following items:

- a cover letter explaining the purpose of the survey and its connection to the HHA's participation in the P4P Demonstration,
- a hard copy of the appropriate survey (Treatment or Control),
- the URL for accessing the online survey on a secure Web site (including individualized passwords to gain access),
- the dates of the 30-day window when the online site will be available for their use,
- contact information (email and phone) for the University of Colorado Denver, Division of Health Care Policy & Research to address any questions they have, including access problems, and
- a business reply envelop with the option to complete the hard copy of the survey and return it to University of Colorado Denver, Division of Health Care Policy & Research for data entry.

When the HHA representative accesses the secure Web site to complete the survey online, the cover page of the online survey contains an abbreviated version of the purpose of the survey, the option to print a pdf version of the survey, and contact information for University of Colorado Denver, Division of Health Care Policy & Research.

In addition to the pre-survey packet of materials, HHAs that have not responded to the survey by the 14-day mark of when the survey is available online will be contacted by either phone or email with a reminder message. This reminder message will focus on the value that we place on their response and the brevity of the survey (estimated to take < 30 minutes to complete). This reminder message will be repeated at the 25-day mark, if needed. Each HHA that does complete the survey will receive a follow-up message thanking them for their submission.

Contractor staff takes very seriously the need to establish and maintain a positive rapport with participating HHAs. In virtually all cases, HHAs can expect a response to their email and phone questions within one working day at the latest--with quicker turn-around being more typical. Contact with the Demonstration contractor, Abt Associates, Inc, will be maintained throughout this evaluation process to identify if any of the original HHAs have dropped out of the study. Therefore, based on this plan of action for supporting HHA participation, we believe the projected response rate for this project to be a realistic estimate.

Non-response analysis

Non-response is a potential issue with any survey-based data collection effort. Given the level of detail and effort exhibited by Abt Associates, Inc in establishing HHA characteristics in assigning individual HHAs to either the Treatment or Control group, patterns of non-responsive HHAs will be relatively easy to identify. Although all analyses will be done at the aggregated levels of Treatment or Control groups, representation across these stratifying HHAs characteristics can and will be measured. If under-representation is identified and responses can be weighted (see Mandell, 1974) to ameliorate these variations, then the appropriate adjustments will be introduced into the calculations. If under-representation is observed and cannot be corrected using statistical adjustment, then the limitation in generalization will be noted in the discussion of results from the study. There is nothing inherent in the HHAs characteristics on which the HHAs were stratified that would suggest an *a priori* reason for non-response to the survey given its brevity and relevance to an on-going activity by the HHA.

4. Tests of procedures and/or methods to be undertaken

Estimation Rates Across Item Responses

Response rates for Treatment and Control HHAs will initially be characterized separately using percentages of HHAs choosing particular item response options. In some cases, we anticipate the need to collapse the number of item options into simpler groupings where appropriate, e.g., five-point Likert-type scales into three-point scales. In other cases, a Pareto analysis may suggest identifying the one or two most frequent options and then collapsing the remaining item options into an "Other" category. Confidence intervals around these estimates will be computed and displayed as appropriate.

Comparison of Rates between Groups

For the nine items that are common to both the Treatment and Control surveys, comparative bar or pie charts will be created to represent the rates from each group. Additionally, non-parametric statistics such as Chi-Square will be used to provide statistical measures of significant difference between the two groups. The interpretation of differences between Treatment and Control groups, and later between HHAs from the Treatment group that were able to demonstrate meaningful performance differences, will utilize these comparisons.

5. Individuals responsible for statistical design, data collection, and/or data analysis

Data will be collected and analyzed as part of Contract Number HHSM 500-2005-0022I, "Evaluation of the Home Health Pay for Performance Demonstration". The following table lists the name and contact information for individuals responsible for the design, collection and analysis of the data.

Name, affiliation	Area of responsibility	Contact information
Dr. William Buczko, CMS, DRTM	CMS Project Officer for the contract under which this study is being conducted	William.Buczko@cms.hhs.gov 410-786-6593
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Dr. Eugene Nuccio, UCD, HCPR	Co-Project Director - survey design and data analysis	Eugene.Nuccio@UCHSC.edu 303-724-2479
Ms. Angela Richard, MSN, UCD, HCPR	Co-Project Director - survey design	Angela.Richard@UCHSC.edu 303-724-2442
Mr. Don Keller, UCD, HCPR	Survey development and testing	Don.Keller@UCHSC.edu 303-724-2429

References:

Michael D. Kaplowitz, Timothy D. Hadlock and Ralph Levine (2004) "A Comparison of Web and Mail Survey Response Rates", Public Opinion Quarterly, 2004 68(1):94-101.

Lewis Mandell, "When to Weight: Determining Nonresponse Bias in Survey Data", Public Opinion Quarterly, 1974, 38(2): 247-252.

Kim Sheehan, "E-mail Survey Response Rates: A review" Journal of Computer-Mediated Communication, 2001, 6(2), np.

University of Texas, Instructional Assessment Resources
http://www.utexas.edu/academic/diia/assessment/iar/teaching/gather/method/survey-Response.php