ADULT PROTECTIVE SERVICES OUTCOMES STUDY

Supporting Statement for Paperwork Reduction Act – Part B
Collections of Information Employing Statistical Methods

1. Respondent Universe and Sampling Methods

This information collection ("the study") will consist of (1) a brief, anonymous APS client questionnaire and de-identified client data form, and (2) site visits and telephone communications to conduct interviews with APS clients, focus groups with APS caseworkers, and interviews with APS state and county leaders.

The interview and focus group component of the study will not employ statistical methods. States that participate in a site visit will be purposively sampled to achieve diverse representation in terms of APS program administration, U.S. Census region, rurality, and other key characteristics as determined with ACL and other stakeholders. Similarly, APS clients and caseworkers within states that participate in site visit activities will be purposively sampled for interviews and focus groups. Key client characteristics that will be used for interview sampling include age, maltreatment type, case substantiation, and type of intervention. Key caseworker characteristics that will be used for focus group sampling include years of experience working for APS and highest level of education. None of these sampling approaches will use statistical methods. Thus, we only address the client questionnaire and client data form component of the study in this document, given that Supporting Statement Part B focuses only on aspects of the information collection that employ statistical methods.

For the client questionnaire and client data form component of the study, sampling will be performed using a three-stage procedure. The three sampling stages include state-level, county-level, and client-level. We will use a phased or rolling sampling approach to reduce any potential delays that could affect our timeline for implementation. In particular, we expect the time requirements for state recruitment and enrollment to vary from state to state. For example, we expect larger states will require more time for communications, levels of review, and approval, while smaller states may have shorter, simpler procedures for providing a decision about participation in the study. For efficiency, we will perform second stage sampling (i.e., county-level) as soon as a state enrolls in the study. We will begin implementation in counties that enroll in the study as soon as we orient them to the study requirements and put all protocols and procedures in place.

<u>First Stage of Sampling – State Level</u>

In the first stage of sampling, we will draw a stratified random sample of nine states using a national sampling frame. From this sample, we will enroll a total of nine states to participate in the study. The sampling frame will include all 50 states and the District of Columbia. Although U.S. territories also provide APS services, they are expected to be very different from the 50 states and the District of Columbia in terms of their program designs, service populations and communities, and other contextual factors.

As such, territories will be excluded from the sampling frame.

The first stage of sampling will use three strata representing important factors that differentiate APS programs at the state level. We will use these strata to ensure we capture this important variation in the states that are selected. The three strata, and levels or categories within each stratum, include:

- *Administration of APS Program*. This stratum will include two levels: (1) state-administered (n=38 states), and (2) county-administered systems (n=13 states).
- *Agency Responsible for APS Program*. The agency responsible for the APS program is mostly relevant for classifying state-administered programs. Since this classification does not apply as meaningfully for county-administered systems, the stratum will only apply for states that have state-administered APS programs. This stratum will include two levels: (1) aging agency (n=13 states), and (2) other agency, including states with bifurcated systems (i.e., Massachusetts, Pennsylvania) where older adults and adults with disabilities are handled as separate client populations (n=25 states).
- *State Rurality*. The percentage of the state population living in rural areas is an important indicator of resource availability and access to services, which are expected to affect APS client outcomes. We will create a stratum for state rurality to ensure representation of states that fall into three, equally distributed levels: (1) low (n=17 states), (2) mid (n=17 states), and (3) high (n=17 states). States will be categorized into these three levels based on the percentage of the state population living in a rural area using the 2010 Decennial Census. We reviewed documentation from the U.S. Census Bureau[1,2] for guidance about categorizing states in terms of rurality, then assessed the distribution of these state percentages to identify natural groupings. Neither approach resulted in a clear direction for categorizing states on their percentage of the population living in rural areas. As such, we will use a three-level categorization based on tertiles, where "low rural" states are below the 33rd percentile for percentage living in rural areas (i.e., 0.0-16.0 percent), "mid rural" states are between the 33rd and 67th percentile (i.e., 16.7-33.6 percent), and "high rural" states are above the 67th percentile (33.7-61.3 percent). We believe this approach produces the fewest categories, to limit the complexity of the sampling stage, while still capturing meaningful differences in rurality across states.

The three strata to be used during the first stage of sampling produce nine possible combinations

1 Ratcliffe, M., Burd, C., Holder, K. & Fields, A. (2016). "Defining Rural at the U.S. Census Bureau," ACSGEO-1, U.S. Census Bureau, Washington, DC. Retrieved from: https://www2.census.gov/geo/pdfs/reference/ua/Defining_Rural.pdf

2 U.S. Census Bureau. Rural America. https://www.census.gov/programs-surveys/geography/data/interactive-maps/rural-america-map.html. Accessed 2 May 2019.

for categorizing states in the sampling frame. The table below organizes all 50 states and the District of Columbia according to the three strata. The actual percentage of the state population that lives in a rural area is listed in parenthesis next to each state name.

	State-Administered Aging Agency	State-Administered Other Agency	County-Administered (N/A)	Total (N/A)
Low Rural (**0.0-16.0** percent of the total state population lives in a rural area)	**n=4** Arizona (10.2) Nevada (5.8) Rhode Island (9.3) Utah (9.4)	**n=8** Connecticut (12.0) District of Columbia (0.0) Florida (8.8) Hawaii (8.1) Maryland (12.8) Massachusetts (8.0) Texas (15.3) Washington (16.0)	**n=5** California (5.0) Colorado (13.8) Illinois (11.5) New Jersey (5.3) New York (12.1)	**17**
Mid Rural (**16.7-33.6** percent of the total state population lives in a rural area)	**n=4** Georgia (25.0) Louisiana (26.8) Missouri (29.6) New Mexico (22.6)	**n=7** Delaware (16.7) Kansas (25.8) Michigan (25.4) Nebraska (26.9) Oregon (19.0) Pennsylvania (21.3) Tennessee (33.6)	**n=6** Idaho (29.4) Indiana (27.6) Minnesota (26.7) Ohio (22.1) Virginia (24.5) Wisconsin (29.8)	**17**
High Rural (**33.7-61.3** percent of the total state population lives in a rural area)	**n=5** Alaska (34.0) Arkansas (43.9) Mississippi (50.7) North Dakota (40.1) South Dakota (43.3)	**n=10** Alabama (41.0) Iowa (36.0) Kentucky (41.6) Maine (61.3) Montana (44.1) New Hampshire (39.7) Oklahoma (33.8) Vermont (61.1) West Virginia (51.3) Wyoming (35.2)	**n=2** North Carolina (34.0) South Carolina (33.7)	**17**
Total	**13**	**25**	**13**	**51**

In the first stage of sampling, we will enroll one state from each of the nine possible categories listed above. Since states are not required to participate in the APS client outcomes study, we expect half of all states to decline participation. To account for this challenge, we will sample nine states, one state within each of the nine possible categorizations. If a state chooses to decline, we will repeat the sampling procedure, replacing only the state that declined. We will continue with this sequential process until the quota are met for all nine possible categorizations. Our sampling approach is designed to capture the diversity of APS programs by sampling disproportionately, so that one state from each of the nine possible state categories is represented in the final sample. It is not designed to generate a sample that is proportional or representative to APS programs nationally.

North Carolina and South Carolina are the only two states that have county-administered systems with a high rural population. Should both states decline to participate in the study, we will enroll

the county-administered state with the highest rural percentage of the population not already enrolled in the study. For example, we would first attempt to enroll Wisconsin if it were not already selected as a county-administered system with a mid-rural population. We will apply this same approach to states within the other eight possible categorizations, if necessary.

Second Stage of Sampling – County Level

Once a state enrolls in the study, we will perform the second stage of sampling. In this stage, we will draw a stratified random sample of three counties in each of the nine selected states, for a total of 27 counties. The sampling frame will include all counties within the nine participating states. As with the first stage of sampling, we expect half of all counties to decline participation due to the voluntary nature of participation in the study.

The second stage of sampling will use one stratum representing rurality at the county level. Given the variation in population density within each state, we will stratify by rurality at both the state and county level. The rurality stratum for counties, and the three levels or categories with the stratum, include:

- *County Rurality*. Consistent with the state level definition of rurality, county level rurality will be defined as the percentage of the county population living in rural areas using the 2010 Decennial Census. We reviewed documentation from the U.S. Census Bureau[3,4] and assessed the distribution of all 3,143 county percentages to identify natural groupings. These approaches indicated a clear direction for categorizing counties using three levels: (1) completely rural – 100 percent of the county population lives in a rural area (n=702; 22 percent), (2) mostly rural – 50.0 to 99.9 percent of the county population lives in a rural area (n=1,183; 38 percent), and (3) mostly urban – 0.0 to 49.9 percent of the county population lives in a rural area (n=1,258; 40 percent).

The table below provides the number and percentage of all counties that fall within each of the three levels of county rurality for each of the 50 states and the District of Columbia.

State	**Completely Rural** (**100** percent of the county population lives in a rural area)	**Mostly Rural** (**50.0-99.9** percent of the county population lives in a rural area)	**Mostly Urban** (**0.0-49.9** percent of the county population lives in a rural area)	**Total**
Alabama	13 (19.4)	35 (52.2)	19 (28.4)	**67**
Alaska	16 (55.2)	7 (24.1)	6 (20.7)	**29**
Arizona	0 (0.0)	3 (20.0)	12(80.0)	**15**
Arkansas	16 (21.3)	40 (53.3)	19 (25.3)	**75**

3 Ratcliffe, M., Burd, C., Holder, K. & Fields, A. (2016). "Defining Rural at the U.S. Census Bureau," ACSGEO-1, U.S. Census Bureau, Washington, DC. Retrieved from: https://www2.census.gov/geo/pdfs/reference/ua/Defining_Rural.pdf

4 U.S. Census Bureau. Rural America. https://www.census.gov/programs-surveys/geography/data/interactive-maps/rural-america-map.html. Accessed 2 May 2019.

State	**Completely Rural** (**100** percent of the county population lives in a rural area)	**Mostly Rural** (**50.0-99.9** percent of the county population lives in a rural area)	**Mostly Urban** (**0.0-49.9** percent of the county population lives in a rural area)	**Total**
California	3 (5.2)	8 (13.8)	47 (81.0)	**58**
Colorado	24 (37.5)	10 (15.6)	30 (46.9)	**64**
Connecticut	0 (0.0)	0 (0.0)	8 (100.0)	**8**
Delaware	0 (0.0)	0 (0.0)	3 (100.0)	**3**
District of Columbia	0 (0.0)	0 (0.0)	1 (100.0)	**1**
Florida	3 (4.5)	22 (32.8)	42 (62.7)	**67**
Georgia	24 (15.1)	84 (52.8)	51 (32.1)	**159**
Hawaii	1 (20.0)	0 (0.0)	4 (80.0)	**5**
Idaho	12 (27.3)	16 (36.4)	16 (36.4)	**44**
Illinois	12 (11.8)	40 (39.2)	50 (49.0)	**102**
Indiana	10 (10.9)	44 (47.8)	38 (41.3)	**92**
Iowa	21 (21.2)	47 (47.5)	31 (31.3)	**99**
Kansas	44 (41.9)	23 (21.9)	38 (36.2)	**105**
Kentucky	41 (34.2)	51 (42.5)	28 (23.3)	**120**
Louisiana	9 (14.1)	24 (37.5)	31 (48.4)	**64**
Maine	2 (12.5)	12 (75.0)	2 (12.5)	**16**
Maryland	0 (0.0)	7 (29.2)	17 (70.8)	**24**
Massachusetts	0 (0.0)	1 (7.1)	13 (92.9)	**14**
Michigan	12 (14.5)	44 (53.0)	27 (32.5)	**83**
Minnesota	19 (21.8)	37 (42.5)	31 (35.6)	**87**
Mississippi	23 (28.0)	38 (46.3)	21 (25.6)	**82**
Missouri	30 (26.1)	53 (46.1)	32 (27.8)	**115**
Montana	31 (55.4)	9 (16.1)	16 (28.6)	**56**
Nebraska	52 (55.9)	17 (18.3)	24 (25.8)	**93**
Nevada	4 (23.5)	2 (11.8)	11 (64.7)	**17**
New Hampshire	0 (0.0)	7 (70.0)	3 (30.0)	**10**
New Jersey	0 (0.0)	0 (0.0)	21 (100.0)	**21**
New Mexico	6 (18.2)	6 (18.2)	21 (63.6)	**33**
New York	1 (1.6)	30 (48.4)	31 (50.0)	**62**
North Carolina	14 (14.0)	50 (50.0)	36 (36.0)	**100**
North Dakota	39 (73.6)	3 (5.7)	11 (20.8)	**53**
Ohio	1 (1.1)	42 (47.7)	45 (51.1)	**88**
Oklahoma	16 (20.8)	40 (51.9)	21 (27.3)	**77**
Oregon	5 (13.9)	4 (11.1)	27 (75.0)	**36**
Pennsylvania	4 (6.0)	26 (38.8)	37 (55.2)	**67**
Rhode Island	0 (0.0)	0 (0.0)	5 (100.0)	**5**
South Carolina	2 (4.3)	26 (56.5)	18 (39.1)	**46**
South Dakota	42 (63.6)	5 (7.6)	19 (28.8)	**66**
Tennessee	20 (21.1)	50 (52.6)	25 (26.3)	**95**
Texas	58 (22.8)	78 (30.7)	118 (46.5)	**254**
Utah	5 (17.2)	8 (27.6)	16 (55.2)	**29**
Vermont	3 (21.4)	10 (71.4)	1 (7.1)	**14**
Virginia	29 (21.6)	50 (37.3)	55 (41.0)	**134**
Washington	6 (15.4)	8 (20.5)	25 (64.1)	**39**

State	**Completely Rural** (**100** percent of the county population lives in a rural area)	**Mostly Rural** (**50.0-99.9** percent of the county population lives in a rural area)	**Mostly Urban** (**0.0-49.9** percent of the county population lives in a rural area)	**Total**
West Virginia	13 (23.6)	27 (49.1)	15 (27.3)	**55**
Wisconsin	12 (16.7)	34 (47.2)	26 (36.1)	**72**
Wyoming	4 (17.4)	5 (21.7)	14 (60.9)	**23**
Total	**702 (22.3)**	**1,183 (37.6)**	**1,258 (40.0)**	**3,143**

As with the first stage of sampling, we will use a sequential approach to enrollment. If necessary, we will exclude counties that decline to participate and repeat the sampling procedure for the county category of rurality until the quota are met.

Ten states in the sampling frame have zero counties for one or more county categories of rurality. For example, Arizona has a total of 15 counties, but all of them are either mostly rural (n=3) or mostly urban (n=12). If Arizona were to be selected and agree to participate in the study, we would fulfill the one county quota for the completely rural category using the alternative of enrolling the county with the highest rural percentage of the population not already enrolled in the study. For example, we would first select Apache County (74 percent rural population) before sampling an additional county from the mostly rural stratum for Arizona. We will apply this same approach to other states where the same considerations apply, if necessary.

Third Stage of Sampling – Client Level

The third stage of sampling will use a census approach, where participating counties will select all APS clients who meet the study inclusion criteria to complete the client questionnaire. Consecutive client sampling will occur for the duration of the data collection time period until the target sample size for the county is achieved. In order to maximize eligibility and capture the greatest amount of client diversity, the study will apply one basic inclusion criterion. Clients must receive at least an APS investigation to be selected into the sample. The purpose of this criterion is to establish a minimum level of interaction between clients and APS programs that is meaningful enough for the clients to respond to the questionnaire. This criterion will exclude individuals who only have brief encounters with APS (e.g., immediately declining APS services at first point of contact) that are not sufficient enough to form opinions about APS that are assessed by the questionnaire.

Beyond that, the study will apply two additional exclusion criteria. First, clients who have limited capacity to respond to the questionnaire and have no suitable proxy, will not participate. Second, proxy respondents will not participate if an eligible client dies before the caseworker distributes the questionnaire.

We assume a low response rate (about 33 percent) due to the method of administration of the client questionnaire (i.e., self-administered, paper-pencil form, mail-based submission). We further discuss sampling, including our approach to handling this expected low response rate, in the following section.

2. Procedures for the Collection of Information

In section one, we provide details about our stratified sampling methods. In this section, we provide statistical details about client level sample selection.

We performed sample size and power calculations to determine the total number of respondents needed to complete the client questionnaire for valid statistical analysis. We performed these calculations for our intended multivariate analyses, multilevel modeling that accounts for clustering in the data (i.e., clients nested in counties, nested in states). Both sample size and power calculations were performed in Mplus using the highly versatile Monte Carlo simulation feature[5,6].

The values for model parameters used in the simulation were based on available information from existing studies and our own judgment. Key available information to seed the current power analyses comes from Booker et al. (2018)[7], who conducted the first published study of APS clients using the CSQ-8. The authors found that in the APS "usual care only" group, the mean satisfaction score was 25.4 (out of a possible 32) with a standard deviation of 6.3. We converted this mean score into a proportion of APS clients who report some level of agreement (i.e., 0.79), which was used as a starting value around which we manipulated the marginal binary outcome proportion.

We did note, however, that this value seemed relatively high for our study. Booker et al. (2018) surveyed APS clients in Harris County, TX, one of the most populous counties in the country with a long history of APS program research and innovation. We will be selecting APS clients from a diverse set of states and counties in a national sampling frame. Additionally, our client questionnaire will provide a "neutral" response option for respondents who neither agree nor disagree with items in the tool. For these reasons, we expect more variation, and perhaps lower average ratings, from the respondents who complete the client questionnaire in our study.

Therefore, we chose a lower seed value of 0.50, around which we manipulated and simulated the marginal outcome proportion. Additionally, associations among client-level predictors were also manipulated from 0.0 through 0.4, as were their standardized relations with the hypothetical standardized continuum underlying the outcome. These were generally considered peripheral parameters, setting the context within which the predictive value of state level characteristics would be assessed.

Minimum marginal standardized effect sizes of these predictors were set at β=.10. Further, we were interested in assessing whether some of the focal predictive relations were moderated by

5 Hancock, G. R., & French, B. F. (2013). Power Analysis in Structural Equation Modeling. In G. R. Hancock, & R. O. Mueller (Eds.), Structural Equation Modeling: A Second Course (2nd ed., pp. 117-159). Charlotte, NC: IAP.

6 Muthén, L. K., & Muthén, B. O. (2002). How to Use a Monte Carlo Study to Decide on Sample Size and Determine Power. Structural Equation Modeling, 9, 599-620.

7 Booker, J. G., Breaux, M., Abada, S., Xia, R., & Burnett, J. (2018). Assessment of older adults' satisfaction with adult protective services investigation and assistance. *Journal of Elder Abuse & Neglect, 30(1),* 64-74.

specific conditions, which can be assessed through the formation of subgroups on key variables (e.g., client or proxy respondent, status of the case at questionnaire administration). Such analyses generally require greater sensitivity. We targeted having sufficient power to detect subgroup differences of $\Delta\beta$=.05 for key predictors.

Our sample size and power simulations assumed a minimum power level of π=.80, using α=.05 level significance tests assuming design-based corrections for the multilevel structure of the data. Based on these simulations, we recommend a total sample for the client questionnaire of approximately 2,000 respondents. This recommendation is strongly driven by a need to "drill down" to examine subgroups across which moderation may be occurring, while stabilizing corrections for the multilevel data structure. This target sample size will also allow us to accommodate missing data using full information maximum likelihood estimation, with corrections for nonnormality.

In order to achieve this size sample, we anticipate the questionnaire will need to be administered to a total of approximately 6,000 clients. We assume a low response rate (about 33 percent) due to the method of administration (i.e., self-administered, paper-pencil form, mail-based submission). This estimate is much lower than achieved by Booker et al. (2018) (about 77 percent); however, the authors of that study administered the CSQ-8 as a secondary effort within a parent study, in which clients were already engaged in data collection activities with the study team.

Based on a total sample of 27 counties, each county would administer an average of 223 client questionnaires during the period of data collection. Target sample sizes for each county will be tailored higher or lower based on the county's expected caseload and total duration of data collection. For example, a large county could reach 223 clients in a matter of days or weeks, while a very small county wouldn't reach 223 clients in the full eight-month period. We will work with each county to determine a target sample size that is appropriate and reasonable, ensuring that collectively, samples sizes from all 27 counties will produce a total of 2,000 completed client questionnaires.

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

The study includes several design features to maximize response rates and deal with issues of non-response.
These features are built into front-end implementation as well as data processing and analysis.

Once a county has enrolled in the study, we will conduct a webinar training with county caseworkers. This training will follow standard presentation slides, with adaptations for any modified protocols and procedures in place for the county. In advance of the training, we will provide all materials to the county including pre-populated forms and pre-paid and addressed envelopes. The materials will also include sample forms for caseworkers to practice with during vignettes in the webinar training as well as one-page quick reference sheets including tips, instructions, and contacts to help with questions. The webinar training will be recorded and the link will be provided to all caseworkers in case they were unable to attend or would like to refer to the information for refresher. The purpose of providing these materials and resources is to

reduce burden and facilitate implementation to maximize response rates.

At case closure, the caseworker will complete the client data form for all eligible clients. The form is short and captures information about the client gathered and recorded as part of normal APS processes. Caseworkers will then submit the data using Survey Monkey, for ease of submission for caseworkers and ease of data collection and management for the study team. If the county has a modified protocol, the caseworker will submit the form through an alternative method (e.g., mail, scan, e-mail, phone) that is easiest for them. These data collection instrument design and data submission features will reduce burden to maximize response rates.

Caseworkers will take several steps to administer the client questionnaires. First, caseworkers will make a key determination about the appropriate respondent type (i.e., client, proxy). In cases where the client has limited capacity to respond to the questionnaire, the caseworker may assign a proxy to complete the questionnaire on the client's behalf. Once the respondent type is assigned, the caseworker will hand deliver the client questionnaire to the client or proxy and explain the purpose of the form, how to complete it, and how to submit it. This is an important step in cueing the respondent to answer the questions in the questionnaire while considering APS services rather than services the client may have received from other entities. If the caseworker is unable to hand deliver the client questionnaire, he/she will mail the form to the appropriate respondent and attempt to contact that respondent through their normal means of client communication (e.g., phone, e-mail) to explain the form. The client or proxy respondent will complete the questionnaire, independently, by paper and pencil and then submit the form to the study team by mail using a pre-paid envelope. These procedures for administering the client questionnaire will increase client awareness and ease of participation to maximize response rates.

As the study team receives data, a team member will match submitted client questionnaires and client data forms using a unique, pre-populated, eight-digit form number. The form number is a combination of the following information: two-digit state FIPS code, three-digit county FIPS code, and three-digit sequential client (i.e., unique survey code) code. The form number will uniquely identify each client, within the sampled state and county, without using any client identifying information. Both the client questionnaire and client data form will use the same form number so that data from the two sources can be matched and merged in the final data file for analysis.

Using this data, we will create county-specific, bi-weekly reports following a standard template including the number and types of forms received, progress toward achieving target sample size, missing forms, patterns of missing data, and a list of any concerns. These reports will provide a touch-point with counties to show progress and identify any potential issues with implementation. If such issues arise, we will provide additional support, such as virtual technical assistance or refresher trainings for caseworkers on form administration, completion, and submission. Taking these steps will help improve implementation and track/capture missing data to reduce non-response.

We will also use several strategies during data analysis to handle issue of non-response. Once the final data are processed and ready for analysis, the study team will examine overall missingness

of the data. The purpose of this step is to examine the data for completeness, determine any patterns of missingness, and choose an appropriate approach to handling missingness issues. The missingness analysis will follow a multi-step process.

We will first examine missingness due to non-response, to see whether there is a differential likelihood of clients completing and returning the questionnaire based on underlying characteristics. This procedure will compare the response rates for various sub-groups of clients using cross-tabulations and statistical tests, such as the chi-square test. Sub-groups will be based on state, county, and client characteristics submitted through the client information form. If significant differences are found on non-response for characteristics, those characteristics and response rates will be used to compute a probability of response metric for each responder. The inverse of this probability of response metric will be used as a weighing variable for subsequent analyses, to adjust for the identified differential non-response.

To assess for missingness among the responses received, we will generate dummy indicators for each of the variables in the dataset, where "1" represents that a valid data value is present and "0" represents that a valid data value is missing. We will use this dummy indicator to calculate the percentage of complete data for each of the variables. This information will give us a general understanding of the completeness in the data. We will use a crude threshold of 80 percent to indicate that a variable has a high level of complete data.

Then, using the dummy indicators we will generate a correlation matrix to measure the extent to which data for pairs of variables are present together or are missing together (i.e., 0.0 to 1.0), or the extent to which data for one variable is missing and data for another variable is present (i.e., 0.0 to -1.0). We will identify strong correlations using coefficients r=0.70 and above and r=-0.70 and below. The results will help us determine any patterns of missingness in the data (e.g., missing at random, missing not at random) and the approach best suited to handle the pattern of missing data. If the correlation analysis provides evidence that variables in the analysis are not systematically missing together, we will use full information maximum likelihood estimation, to improve the precision of our analysis and reduce the potential for bias associated with alternative methods for handling missing data, such as simply excluding observations with missing values from analysis.

4. Tests of Procedures or Methods

We gathered input on this proposed data collection effort from three main sources outside of ACL: (1) public comments submitted through the 60-day Federal Register notice, (2) pilot testing, and (3) a Technical Expert Panel (TEP). We provide full details of our pilot testing procedures in "Section 8. Comments in Response to the Federal Register Notice" of Supporting Statement A. This section also includes a summary of the findings and list of our proposed changes, from across all three sources of input. For comment-level details from the pilot testing, please see Appendix A – APS Client Outcomes Study Feedback Tracking Sheet.

5. Contact Information for Individuals Consulted on Statistical Aspects of the Design

The following individuals consulted on statistical aspects of the design, and/or will actually collect and/or analyze the information for ACL:

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