

A Guide to Using the Right Staff at the Right Time for GAO Surveys

September 2012

This document is intended to support and enhance decision-making by Applied Research and Methods (ARM) specialists during the survey design process by identifying and recommending the timely participation of relevant staff at each stage of the process.

This guide has six major sections related to the “life” of many GAO surveys:

designing the survey,

pretesting the survey,

planning the data analysis,

conducting fieldwork,

data processing and analysis, and

reporting and documentation.

Each of these six sections includes a number of steps. To help determine which staff should be included when discussing the steps in each section, the guide suggests a triage:

Mandatory staff are always essential to the discussion of a task;

Conditional staff are essential to the discussion when certain conditions exist;

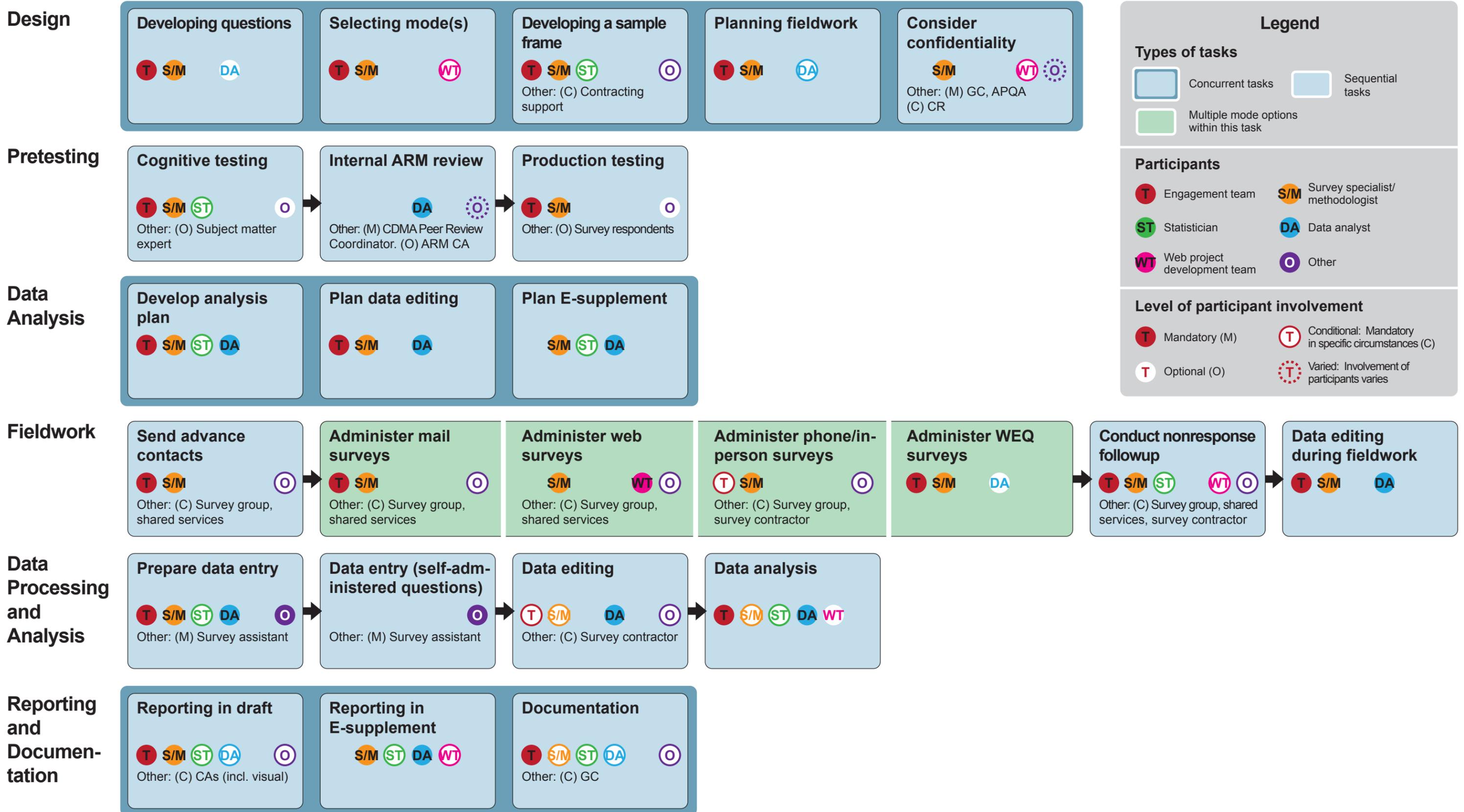
Optional staff are those whose participation in the discussion might be useful.

Page 2 of this guide graphically displays the six major sections, the steps associated with each section, and the staff that should be included when discussing each step. Details about each step are provided in the pages that follow. On those pages, the relevant section of the graphic is shown in the left hand column, and the specific step discussed on that page is highlighted. Each step’s headnote describes the step. The associated survey-related activities are then described in outlined tables suggesting mandatory, conditional, and optional specialists to perform them. Lists of useful guidance papers conclude each section.

This guide is intended to be a “living” document. It can and should change as survey practice, and GAO’s implementation of that practice, evolve over time.

Overview of Applied Research and Methods Survey Process

This graphic shows the general flow of the survey process in ARM. It provides a high-level overview of participants involved at each step and what the level of their involvement is. Mandatory participants for a step should always be consulted. Conditional participants should always be consulted if certain conditions exist at that step. Optional participants are those whose input might also be useful.



Design



Designing the Survey

A survey’s initial planning stages encompass several facets of its overall design. Developing questions is a useful starting point, because it outlines data points that can potentially be gathered from the survey instrument. The choice of survey mode and the quality of the sample frame help determine the questionnaire’s design as well as the survey’s reasonableness and feasibility. Developing a fieldwork plan helps determine how much time will be needed to design and implement the survey. If the survey will collect data that respondents generate from computerized information systems, then data reliability assessments should be considered in the fieldwork and analysis stages. Concerns regarding confidentiality should also be addressed in this early stage to consider both possible implications for the overall survey response rate or item-specific response rate and whether steps must be taken to ensure confidentiality.

Developing Questions

ARM’s survey staff develop items tied to the researchable questions throughout the survey instrument’s development but before fieldwork begins.

Table 1: Staff for developing questions

Level of involvement	Staff	Activity
Mandatory	Engagement team	Provides insight into the survey’s goals, the targeted population, and the topic of interest
	Survey specialists, methodologists	Work closely with the engagement team to draft survey questions that are reasonable and tied to the researchable objectives
Optional	Data analysts	Comment on how the proposed format of the survey questions will translate into a quantitative data set

Design

Developing questions

T S/M DA

Selecting mode(s)

T S/M WT

Developing a sample frame

T S/M ST O

Other: (C) Contracting support

Planning fieldwork

T S/M DA

Consider confidentiality

S/M WT O

Other: (M) GC, APQA
(C) CR

Selecting Mode(s) of Administration

The types of questionnaire items, the types of information the respondents will need to give and be given, and the respondents' characteristics will need to be identified before settling on the mode(s) of survey administration to use:

the survey may be administered on paper or the web, via e-mail, or in person, among other modes;

the choice may not be decided until after pretesting is completed;

in considering a mixed mode, staff should consult with the survey group and with ARM's web services group (if one of the modes of the survey is the web).

Table 2: Staff for selecting mode(s) of survey administration

Level of involvement	Staff	Activity
Mandatory	Engagement team	Advises on the best way to contact the population
	Survey specialists, methodologists	Provide guidance on the advantages and disadvantages of the available choices
Conditional	Web project development team	Consultation when a web survey is considered or if the population's e-mail addresses are available

Design

Developing questions

T S/M DA

Selecting mode(s)

T S/M WT

Developing a sample frame

T S/M ST O

Other: (C) Contracting support

Planning fieldwork

T S/M DA

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Developing a Sample Frame

If sampling is required, the team should give a statistician an appropriate sample frame which includes all the variables necessary for selecting the sample. Survey developers should make sure that questionnaire items are relevant for all groups in the sample; otherwise skip patterns or separate instruments should be used for different groups.

Table 3: Staff for developing a sample frame

Level of involvement	Staff	Activity
Mandatory	Engagement team	Works with ARM to identify essential subgroups in the target population, which helps inform the sample frame design; obtains contact information for the target population, except in special circumstances (such as a general household population survey)
	Survey specialists, methodologists	Help determine whether it is appropriate to take a census of the entire targeted population or a sample of respondents; they work with the engagement team to identify potential key subgroups within the target population
Conditional	Statisticians	Help design and draw an appropriate sample, when a sample is appropriate. If the survey involves a census of the full population (such as in a 50-state survey), statisticians may not be required.
	Contracting support	Contracting support may be needed if a sample frame/list needs to be procured

Design



Planning Fieldwork

During this step we determine the number and types of planned contacts with respondents and, if appropriate, devise a plan for data entry.

Table 4: Staff for planning fieldwork

Level of involvement	Staff	Activity
Mandatory	Engagement team	Works with ARM staff to draft a timeline for implementing the survey and contacting respondents
	Survey specialists, methodologists	Provide guidance on the appropriate timing and wording of contacts with respondents
Conditional	Data analysts	Advise on methods of data entry or data capture, if the choice of survey mode requires these activities

Design

Developing questions

T S/M DA

Selecting mode(s)

T S/M WT

Developing a sample frame

T S/M ST O

Other: (C) Contracting support

Planning fieldwork

T S/M DA

Consider confidentiality

S/M WT O

Other: (M) GC, APQA
(C) CR

Consider Confidentiality

Team members obtain the appropriate documentation, in designated steps, if respondents are to be given a promise of confidentiality.

Table 5: Staff for discussing confidentiality

Level of involvement	Staff	Activity
Mandatory	Survey specialists, methodologists	Assess the sensitivity of the situation and advise on appropriate actions and statement language
	Engagement team's stakeholder in Office of General Counsel	Reviews statements of confidentiality and advises on their appropriate use and wording
	Audit Policy and Quality Assurance	Approves (or not) the confidentiality provisions as per GAO's policy manual
Conditional	Web project development team	Consults on how to manage computer files if a web survey requires confidentiality measures
	Office of Congressional Relations	Advises when congressional help is requested on the destruction of records linking survey data to specific respondents

ARM Guidance Papers on Survey Design

[CAPI Surveys – Guide to Estimating Duration and Personnel Needs](#)

[Checklist for Questionnaire Designers and Reviewers](#)

[Developing and Using Questionnaire Update](#)

[Documenting Sample Design and Estimates](#)

[Nongeneralizable Selections Guidance](#)

[Probability and Nonprobability Samples](#)

[Slides with Commentary for Choosing a Survey Administration Mode \(ARM CPL course\)](#)

Pretesting



Pretesting the Survey

We pretest surveys to increase the validity and reliability of the testimonial evidence. Cognitive testing with survey respondents or their proxies helps ascertain whether they can understand the survey questions and can perform the tasks or supply the information that the questions require. ARM staff conduct an internal review for quality control and as an opportunity for a knowledgeable CDMA methodologist or survey specialist opportunity to suggest improvements. Electronic surveys are tested to ensure that they will work as intended, and paper surveys may be tested as well.

Cognitive Testing

Conducting cognitive testing for a survey entails:

- determining the optimum number of pretests,

- determining whether respondents from distinct subgroups in the population should be incorporated in the testing,

- considering the pretesting mode, and

- developing a pretest protocol.

Table 6: Staff for cognitive testing

Level of involvement	Staff	Activity
Mandatory	Engagement team	Attends pretests, takes notes, and provides context as needed
	Survey specialists, methodologists	Design and conduct pretests
Conditional	Statisticians	Consultation if the sample design or sample size influences the pretest design
Optional	Subject matter expert (internal or external)	Reviews the survey, depending on its complexity

Pretesting



Internal ARM Review

Following cognitive testing, the survey

is passed to relevant CDMA staff for a peer review of the survey draft, and

the engagement team discusses the resulting comments with a survey specialist or design methodologist to decide whether and how to edit the survey.

Table 7: Staff for internal ARM review

Level of involvement	Staff	Activity
Mandatory	Data analysts	Review the survey to ensure that data collection will facilitate reasonable data analysis
	CDMA peer review coordinators	Coordinate CDMA's peer review activity
Optional	Communications analyst	Can review the survey for wording consistency

Pretesting



Production Testing

After the questionnaire’s text is final, the team may test the instrument to ensure that the respondents can follow and understand the survey format. For web surveys in questionnaire programming language (QPL), a survey specialist or methodologist and the engagement team test the website to ensure that all questions, hyperlinks, menus, and the like are functional.

Table 8: Staff for production testing

Level of involvement	Staff	Activity
Mandatory	Engagement team	Attends pretests, takes notes, and provides context as needed; for web surveys, participates in testing by logging on and working through the questionnaire
	Survey specialists, methodologists	Design and conduct pretests. For web surveys, they participate in testing, logging on, and working through the questionnaire
Optional	Individual respondents	May participate in production testing

ARM Guidance Papers on Pretesting

[Checklist for Questionnaire Designers and Reviewers](#)

[Peer Review Guidance](#)

[Questionnaire Pretest Procedures](#)

Data Analysis



Planning the Data Analysis

A data analysis plan includes specifications for tables and statistical tools that will support the engagement questions; it includes data cleaning requirements and special provisions for preparing an e-supplement. An analysis plan describes key assumptions, decision rules, data elements for analysis, selection criteria, and tabulations to link in the product to the researchable questions. The plan is developed in parallel with the questionnaire’s design, which may change as analysis proceeds. Audits relying on GAO-generated computer analyses require a data analysis plan.

Developing the Analysis Plan

Developing a data analysis plan entails:

linking data analysis to the researchable questions,

thinking through what each proposed analysis will allow you to say,

considering how time and resources affect the quantity and complexity of the analysis,

planning coding and content analysis for open-ended questions, and

determining the need for advanced analysis and staff.

Table 9: Staff for developing the analysis plan

Level of involvement	Staff	Activity
Mandatory	Engagement team	Provides researchable questions; identifies new variables to be derived from the data and from content analysis
	Survey specialists, methodologists	Advise on appropriate data use
	Data analysts	Suggest analysis options and guidance and, perhaps, a template for a data analysis plan that works best for them
Conditional	Statisticians	Comment on reporting issues when sampling is involved, when there are reliability issues pertaining to sampled data, or when there is a need for advanced statistical analysis

Data Analysis



Planning the Data Editing

Determine decision rules and staff responsibilities for checking and editing data for, among other things:

invalid responses,

missing data,

internally inconsistent data,

skip patterns, and

recoding or collapsing answer categories.

Table 10: Staff for planning data editing

Level of involvement	Staff	Activity
Mandatory	Engagement team	Defines logical decision rules
	Survey specialists, methodologists	Advise on decision rules and appropriate corrections to response data, including holding follow-up conversations with respondents without introducing bias
	Data analysts	Advise on data quality checks and edits, documenting and managing data problems (such as skip pattern inconsistencies), and issues in mixed mode surveys

Data Analysis



Planning E-supplements

E-supplements accompany reports for use on the Internet. To create an e-supplement, the engagement team must create a data analysis plan that describes how each question will appear in the e-supplement.

Variations include

how missing or inconsistent answers will be handled;

whether the presentation has counts or percentages (and to what decimal place);

how sampling errors or confidence intervals will be reported for survey data;

whether subgroups must be presented; if so, will they be separate presentations or several rows of a table;

how open-ended questions will be presented.

Table 11: Staff for planning e-supplements

Level of involvement	Staff	Activity
Mandatory	Survey specialists, methodologists	Work closely with the data analyst to guide the presentation (suggesting, at a minimum, general do's and don'ts)
	Data analysts	Consult with the survey specialists so they can agree on the data analysis strategy; discuss with a survey specialist who plans to create an e-supplement the requirements for a "clean" data set so the data analyst can provide a usable file
Conditional	Statisticians	Consult with the team if it is necessary to report sampling errors or confidence intervals

ARM Guidance Papers on Data Analysis Plans

Data Analysis Plans

EAGLE section 4.8.2 has guidance (listed under "guidance,") and a checklist (listed under "tools and useful links")

Evaluating and Changing Problematic Responses in Questionnaires

Fieldwork



Conducting Fieldwork

Fieldwork—communication with and data collection from respondents—can begin when all project planning and sample designs are complete, when all contact lists have been developed, and when the survey instrument and other questionnaire materials are final. Fieldwork continues until no further responses are accepted or follow-ups made.

Fieldwork activities (which may vary depending on how a particular activity is conducted) may include making advance contacts to notify or select respondents; making contacts to obtain third-party endorsements; providing respondents with “Help Desk” support for technical or subject matter questions or problems; following up nonresponses (troubleshooting and making reminder or replacement questionnaire or interview attempts); and making post-receipt follow-up contacts to obtain missing item responses, clarify problematic responses, or verify responses for a subset of cases for quality assessment purposes. The project team must manage and track the sending and receipt of questionnaires and determining each sample case’s intermediate and final disposition. Data can be edited during fieldwork. Some preliminary processing and analysis can also overlap this step.

Making Advance Contacts

Making advance contacts entails:

- sending advance GAO notifications or a third-party endorsement message;

- making contacts to determine eligibility, identify target respondents, and obtain correct contact information; and

- considering modifying the fieldwork plan, depending on responses to advance contacts.

Table 12: Staff for making advance contacts

Level of involvement	Staff	Activity
Mandatory	Engagement team	Helps design and prepare materials and contacts respondents for small-scale phone surveys and tailored e-mail surveys
	Survey specialists, methodologists	Take the lead in designing and preparing materials; survey specialists will also conduct QPL and automated e-mail surveys
Conditional	GAO’s Survey Group or Shared Services staff	Conduct mailings, make in-house or survey contractor phone calls for larger samples or complex mailing packages

Fieldwork



Administering Mail Surveys

Administering a mail survey entails:

- preparing mail materials;
- managing the pre-, first, and follow-up mailings of letters, questionnaires, and postcards;
- tracking the sample disposition, especially if the mailing list changes;
- providing respondents “Help Desk” support; and
- adjusting fieldwork plans, depending on response patterns.

Table 13: Specialists for administering mail surveys

Level of involvement	Staff	Activity
Mandatory	Engagement team	Logs receipts and tracks case dispositions
	Survey specialists, methodologists	Design and conduct the survey
Conditional	GAO's Survey Group or Shared Services staff	Receive, sort, and store surveys when samples are large

Fieldwork



Administering Web Surveys

Administering a web survey entails:

making final the QPL instrument and its accompanying materials (respondent spreadsheet, e-mails texts, and so on);

sending prenotice, activation, and reminder e-mails;

tracking the sample disposition;

giving respondents “Help Desk” support; and

adjusting fieldwork plans, depending on response patterns.

Table 14: Staff for administering web surveys

Level of involvement	Staff	Activity
Mandatory	Survey specialists, methodologists	Design and prepare survey materials and coordinate with the Web Product Development Group
	Web Project Development Team	Reviews programming, the respondent spreadsheet, and other materials, advises and assists survey specialists, deploys the web survey, and sends out e-mails
Conditional	GAO's Survey Group or Shared Services staff	Produce and mail printed correspondence when prenotice letters or reminder postcards are used

Fieldwork



Administering Phone and In-Person Surveys

Administering a phone or an in-person survey entails:

preparing all questionnaires and computer-assisted telephone (CATI) scripts, including instructions for contacts, the questionnaire, frequently asked questions (FAQ), and other interviewer materials;

navigating through gatekeeper and respondent selection criteria steps; and

conducting telephone and in-person interviews with eligible respondents.

Table 15: Staff for administering phone and in-person surveys

Level of involvement	Staff	Activity
Mandatory	Survey specialists, methodologists	Prepare interview guides, scripts, and other materials
Conditional	Engagement team	Schedules and conducts field interviews if the survey is a small sample or population or is an elite population
	GAO's Survey Group or survey contractor	Programs CATI scripts, trains interviewers, manages calling schedules, and conducts interviews if the survey is a large sample of the general population or is a sample of businesses

Fieldwork



Administering an MS Word Enabled Questionnaire (WEQ)

Administering an MS Word questionnaire entails:

- putting the questionnaire into WEQ format;
- sending prenotice, questionnaire, and reminder e-mails;
- providing respondents with “Help Desk” support;
- setting up data entry and extraction methods.

Table 16: Staff for administering MS Word Enabled Questionnaires

Level of involvement	Staff	Activity
Mandatory	Engagement team	Sends out e-mails and tracks returned questionnaires
	Survey specialists, methodologists	Design and format the questionnaire
Optional	Data analysts	Help review and design complex questionnaires

Fieldwork



Following Up on Nonresponse

Following up on nonresponse requires:

making reminder telephone calls, or sending e-mails or mailings to nonrespondents to encourage participation or to provide replacement questionnaires;

contacting a sample of nonrespondents to collect information on the characteristics needed for a nonresponse bias analysis, if one is planned;

contacting all or a sample of nonrespondents to conduct an abbreviated questionnaire interview, if one is planned.

Table 17: Staff for nonresponse follow-up

Level of involvement	Staff	Activity
Mandatory	Engagement team	Helps design and prepare materials and makes nonresponse follow-up calls for small-scale phone surveys or tailored e-mail contacts
	Survey specialists, methodologists	Help design and prepare materials
Conditional	Statisticians	Design data collection activities for nonresponse bias analysis if needed
	Web Project Development Team	Sends e-mails to nonrespondents for web-based surveys
	GAO's Survey Group or Shared Services staff	Send mailings to nonrespondents if their number is large, for mail-out surveys
	GAO's Survey Group or contractor	Makes telephone or multimodal follow-ups if the number of nonrespondents is large, for telephone or multimodal surveys

Fieldwork



Data Editing During Fieldwork

Data editing during fieldwork entails:

reviewing returned questionnaires to identify noncompliance with skip patterns, out-of-range or incomplete answers, or answers that do not match required response formats;

diagnosing other potential response problems that can be corrected while the survey is in the field;

performing verification and validation recontacts on all or a subset of returns if data quality risk is high.

Table 18: Staff for editing during fieldwork

Level of involvement	Staff	Activity
Mandatory	Engagement team	Reviews and edits questionnaires and contacts some or all respondents if follow-up is necessary
	Survey specialists, methodologists	Design editing and recontact strategy and help in reviewing and editing questionnaires
	Data analysts	Design and conduct complex logical and relational diagnostics to help identify potential problems for the team to resolve

ARM Guidance Papers on Fieldwork Tasks

[Addressing Nonresponse and Nonresponse Bias Issues in Surveys](#)

[CAPI Surveys—Guide to Estimating Duration and Personnel Needs](#)

[Checklist for Web Survey Administration](#)

[Evaluating and Changing Problematic Responses in Questionnaires](#)

[Mail Surveys: Guide to Estimating Duration and Personnel Needs](#)

[Structured Interviewing Guidance For Interviewers](#)

[Survey Guidance: Letters, E-Mail Messages, and Introductions](#)

[Verification and Quantitative Assessment of Survey Questions](#)

Data Processing and Analysis



Data Processing and Analysis

The data that have been collected in the field are converted, if they were not part of a web instrument, to an electronic format for processing. For web surveys, response datasets are downloaded from QPL. Paper questionnaires are edited and prepared for data entry; they include mail, structured interview data collection instruments (DCI), and WEQ responses that are printed rather than being converted to data through electronic data extraction. When paper instruments are sufficiently large in number, they are sent in batches to the survey assistant for submission to the data entry contractor. Open-ended response data may require separate data entry and processing, particularly if coding and content analysis are planned. Once the data are electronic, they are edited and analyzed further as specified in the data analysis plan.

Preparing Paper Questionnaires for Contractor Data Entry

Preparing paper questionnaires for contractor data entry entails:

- reviewing hand-written responses and making necessary manual edits to prepare questionnaires for data entry;

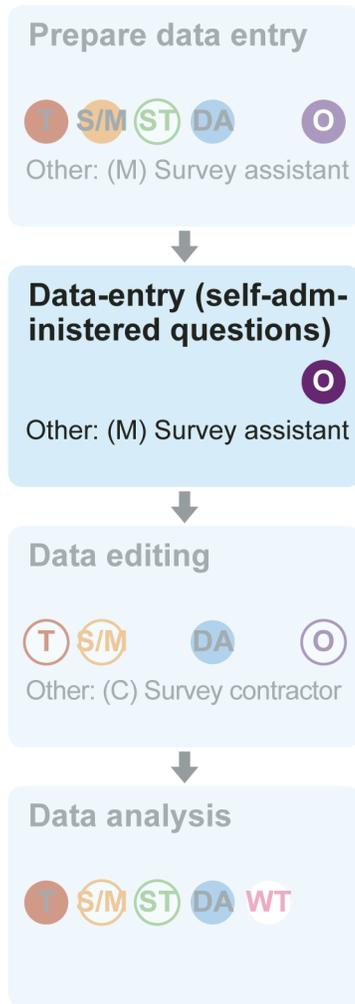
- clarifying how the data entry contractor will handle coding or invalid entries; and

- preparing paper questionnaires for contractor data entry.

Table 19: Staff for preparing paper questionnaires for contractor data entry

Level of involvement	Staff	Activity
Mandatory	Engagement team	Manually edits questionnaires and corrects unclear responses
	Survey specialists, methodologists	Advise the team on questionnaire editing procedures
	Data analysts	Advise on formatting and coding the data and on consistency of coding in mixed mode surveys
	CDMA's survey assistant	Provides keypunch guidance
Conditional	Statisticians	Advise on formatting variables for downstream statistical analysis when needed

Data Processing and Analysis



Entering Data for Self-Administered Paper Questionnaires

Data entry entails:

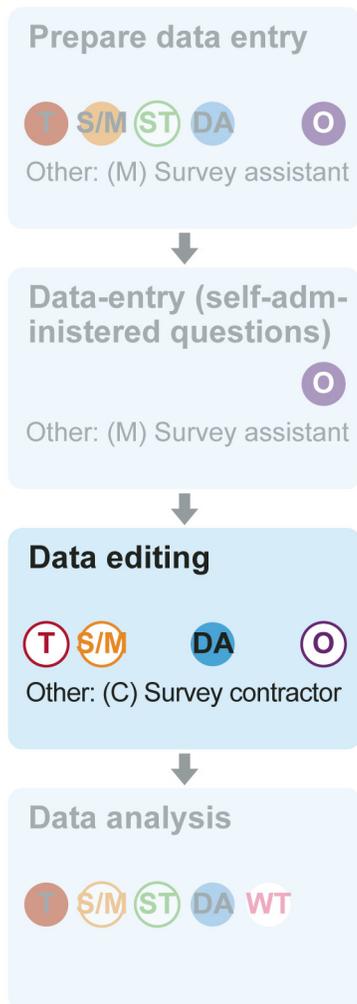
creating electronic data from paper copy survey responses—keypunching for paper questionnaires and either keypunching or automated extraction for WEQs;

verifying the keypunched data.

Table 20: Staff for data entry for self-administered paper questionnaires

Level of involvement	Staff	Activity
Mandatory	CDMA's survey assistant	Monitors data entry and verifies the data to ensure accurate data entry

Data Processing and Analysis



Data Editing

Data editing entails:

implementing data editing decision rules set out in the data analysis plan;

performing electronic diagnostics and testing (including data reliability testing as appropriate), which may include checking for skip pattern errors, item nonresponse, response range and format errors, and internal inconsistencies between questions;

preparing a report on skip pattern errors and internal inconsistencies for a survey specialist or methodologist and the team to review; and

working with the engagement team to resolve data issues.

Table 21: Staff for editing data

Level of involvement	Staff	Activity
Mandatory	Data analysts	Perform electronic testing and implement the data editing decision rules in the data analysis plan; notify engagement team members if unexpected data issues arise or give the team a list of data errors
Conditional	Engagement team	Decides how to handle data problems if they occur and modifies the data analysis plan accordingly
	Survey specialists, methodologists	Advise if data quality issues arise
	ARM survey contractor	For a phone survey, implements diagnostic and editing rules as specified in the statement of work

Data Processing and Analysis



Analyzing the Data

Data analysis entails:

merging response datasets from the different survey modes and questionnaire versions, obtaining file layouts and code-books as applicable from QPL-generated documents or a telephone survey contractor;

implementing data editing decision rules from a review of skip pattern error and a report on internal inconsistency;

conducting data analysis as specified in the data analysis plan;

meeting with the engagement team to interpret the analysis and advise on how to use the results accurately;

modifying the data analysis plan as needed;

generating e-supplement tables; and

preparing work papers for verification.

Table 22: Staff for data analysis

Level of involvement	Staff	Activity
Mandatory	Engagement team	Reviews the analysis, checking for unexpected results and refining it to fit the report; usually perform the coding for content analysis of open-ended responses
	Data analysts	Implement data editing decision rules from a review of skip pattern errors and internal inconsistency reports; analyze the data according to the data analysis plan, working with engagement team members to refine their analyses and review the results; create files for e-supplements using the special SAS program and macro library associated with the QPL survey package
Conditional	Survey specialists, methodologists	Advise on interpreting the analysis and help design coding and content analysis of any verbatim data; provide data analysts with the initial files and programs to generate tables for any e-supplement using QPL utilities and advise on its format
	Statisticians	Using appropriate methods, produce estimates and confidence intervals, and perform advanced statistical analysis as warranted
Optional	Web Project Development Team	The Web project development team may be of assistance in conducting content analysis of web surveys using QPL

ARM Guidance Papers on Data Processing and Analysis

Assessing the Reliability of Computer-Processed Data (Internal Version)

Calculating and Reporting Survey Response Rates

Evaluating and Changing Problematic Responses in Questionnaires

Interviews and Questionnaires

Reporting Results from Probability Samples

Using Probability, Nonprobability, and Certainty Samples

Verification and Quantitative Assessment of Survey Questions

Verifying the Accuracy of Electronic Data Entry

Verifying Data Analysis Documentation

Reporting and Documentation

In reporting and documentation, a draft product is developed; visuals, tables, and appendixes are designed and composed; an e-supplement, if applicable, is created; and the project's necessary documentation is compiled.

At this point, all survey fieldwork has been completed; no further survey responses are to be added to the database. Also, all survey-related data processing and analysis have been completed—except for analyses that may arise from additional reporting needs, as when additional analysis is brought up during message agreement. The three major steps in this section are producing a draft report, an e-supplement, and detailed documentation.

Reporting and Documentation



Reporting in Draft

Producing a draft report consists of much more than writing the first draft for a formal report or testimony or briefing slides. Producing a draft report also entails:

writing the report’s objectives, scope, and methodology section, typically the task of the engagement team with help from ARM staff;

developing products that contain the survey data, the combined job of the engagement team, ARM staff, and communications analysts (including visual);

ARM statisticians’ calculating sampling errors and other statistically related measures needed for reporting;

stakeholders’ review, along with that of the engagement team management, of all GAO product components;

ARM stakeholders’ ensuring (with possible input from the Survey Group) that the products contain no information that could identify individual respondents or small segments of the survey population.

Table 23: Staff for report drafting

Level of involvement	Staff	Activity
Mandatory	Engagement team	Writes the draft product, including its objectives, scope, and methodology; develops tables, graphs, and appendixes; reviews all drafts of the product’s components
	Survey specialists, methodologists	Advise on all product components
Conditional	Statisticians	Advise on the presentation of estimates, sampling errors, and other statistical measures if a probability sample is used
	Data analysts	Advise on the presentation of data and other analysis-related issues as needed
	Communications analysts (incl. visual)	Help develop tables, graphs, and other aspects of presentation for e-supplement

Reporting and Documentation



Reporting in an E-supplement

The creation of an e-supplement begins at message agreement, where the engagement team confers with stakeholders on whether to pursue an e-supplement. Deciding between producing an appendix for the primary product that may include questionnaire text or survey results and issuing a standalone e-supplement may be guided by whether readers would benefit more from seeing the entire questionnaire or just tables of the survey’s results—and by how long these materials would be. An e-supplement should be preferred if the basic report would be unduly lengthened by recreating a web questionnaire, for example. GAO seldom prints a blank survey at the back of a report. If a copy is made available, it is most often presented in an e-supplement.

Having decided to pursue an e-supplement, the next major step is adding this topic to the team’s Engagement Review Meeting (ERM) agenda so management can discuss and approve it (or not). As a separate product, an e-supplement requires its own job code, product number, and a draft background section that summarizes its contents and links it to the primary report.

A survey specialist or methodologist uses QPL to produce the basic SAS program and macro library for creating e-supplement files from the original questionnaire program. The data analyst then adapts them as necessary and inputs their final answer formats and results data. The data analyst and survey specialist or methodologist then work together to finalize the e-supplement.

Table 24: Staff for creating e-supplements

Level of involvement	Staff	Activity
Mandatory	Survey specialists, methodologists	Work with data analysts to begin the e-supplement programming process and to obtain approvals to issue an e-supplement
	Data analysts	Adapt SAS programs and macros to produce e-supplement files
Conditional	Statisticians	Advise on the presentation of sampling errors and confidence intervals if a statistical sample is used
	Web Project Development Team	Supports the data analysts if necessary in formatting and fine tuning the e-supplement

Reporting and Documentation

Reporting in draft

T S/M ST DA ○

Other: (C) CAs (incl. visual)

Reporting in E-supplement

S/M ST DA WT

Documentation

T S/M ST DA ○

Other: (C) GC

Documentation

Documenting the work of the survey’s creation and implementation should be preceded by acquiring all final reviewed survey-related workpapers from all stakeholders (including ARM). The engagement team has the primary responsibility for indexing all final products. ARM staff sometimes review the indexed documents when the survey-related work is complex—for example, an ARM statistician may index documents related to a complex statistical sample.

In developing an e-supplement, the engagement team should follow the quality assurance procedures it follows with all external GAO products. Office of General Counsel staff and ARM should review it, it should be referenced, agencies affected by its information should be given an opportunity to comment on it, and it should receive a second partner’s concurrence.

If matters of confidentiality require breaking the link between respondents’ identities and their responses, then GAO staff take data management steps to de-identify response data when the report is made final.

Table 25: Staff for documenting survey-related work products

Level of involvement	Staff	Activity
Mandatory	Engagement team	Indexes all final products
Conditional	Survey specialists, methodologists	Review any survey-related indexed documents
	Statisticians	Review any indexed documents related to sampling and other statistical procedures
	Data analysts	Review any indexed documents related to data analysis
	Office of General Counsel staff	Review any indexed documents related to legal issues

ARM Guidance Papers and Tools for Reporting and Documentation

[Evaluating and Reporting Nonsampling Errors in Surveys](#)

[E-Supplement Checklist](#)

[Guidance on Reporting Options for GAO’s Web-Based Surveys](#)

[Publishing Web-Based Technical Appendices and E-Supplements to GAO Products](#)

[Reporting on Questionnaire Surveys in GAO Reports, OSM Sections, and E-supplements](#)

[Reporting Results Based on Small Data Sets](#)

[Using and Reporting Rounded Numbers](#)

[Web Surveys: Reporting Options for GAO’s Web-Based Surveys](#)

[Workpaper Template for Documenting GAO Surveys](#)