

**A Practical Guide to Creating   
and Using Knowledge, Attitudes,   
and Practices (KAP) Surveys During an Ebola Response**

**Part 2. Developing and Conducting KAP Surveys**

Second in the series:

Part 1. Defining information needs and strategies

Part 2. Developing and conducting KAP surveys

Part 3. Model KAP surveys

Contents

[1. How to use this document 2](#_Toc99560185)

[2. Planning the resources needed for a KAP survey 2](#_Toc99560186)

[2.1 Personnel 2](#_Toc99560187)

[2.2 Time: Survey timeline 3](#_Toc99560188)

[2.3 Money: budgeting for a survey 4](#_Toc99560189)

[3. Selecting and adapting a model KAP survey 6](#_Toc99560190)

[3.1 Four important points about adapting these survey instruments 6](#_Toc99560191)

[3.2 Option A. Using one or more survey instruments as they are 7](#_Toc99560192)

[3.3 Option B. Modifying one or more survey instruments by removing questions 7](#_Toc99560193)

[3.4 Option C. Modifying one or more survey instruments by adding questions 7](#_Toc99560194)

[3.5 Summary: steps in modifying one or more survey instruments 11](#_Toc99560196)

[3.6 Testing the draft questionnaire with volunteers 12](#_Toc99560197)

[3.7 Ethical considerations 12](#_Toc99560198)

[3.8 Translation to local language 13](#_Toc99560199)

[4. Programming the mobile data collection tool questionnaire 14](#_Toc99560200)

[5. Piloting the survey with intended audience 15](#_Toc99560201)

[6. Selecting KAP survey participants 16](#_Toc99560202)

[6.1 Key concepts of KAP survey sampling 16](#_Toc99560203)

[6.2 Applying sampling concepts to a general population KAP survey 17](#_Toc99560204)

[7. Recruiting survey data collectors 24](#_Toc99560205)

[8. Training survey data collectors 24](#_Toc99560206)

[8.1 Purpose of the survey 25](#_Toc99560207)

[8.2 Protocol for selecting houses and selecting respondents 25](#_Toc99560208)

[8.3 Informed consent process 25](#_Toc99560209)

[8.4 Handling and recording refusals 25](#_Toc99560210)

[8.5 Questionnaire review 25](#_Toc99560211)

[8.6 Interpersonal communication 25](#_Toc99560212)

[8.7 Avoiding bias while asking questions 26](#_Toc99560213)

[8.8 Saving and transmitting data 26](#_Toc99560214)

[8.9 Role play 26](#_Toc99560215)

[8.10 Field testing 26](#_Toc99560216)

[9. Data collection 26](#_Toc99560217)

[9.1 Data collection plan 26](#_Toc99560218)

[9.2 Number of survey data collectors 27](#_Toc99560219)

[9.3 Daily schedule 27](#_Toc99560220)

[9.4 Field supervision 28](#_Toc99560221)

[9.5 Survey data collector preparedness 28](#_Toc99560222)

[9.6 Using the supplemental sample as needed 28](#_Toc99560223)

[10. Planning for analysis and reporting 29](#_Toc99560224)

[11. Documentation and storage 29](#_Toc99560225)

[12. Appendix 29](#_Toc99560226)

[12.1 List of Ebola KAP survey sources 29](#_Toc99560227)

# How to use this document

* Part 1. Defining information needs and strategies
* Part 2. Developing and conducting KAP surveys

This document is Part 2 in a series of guides. Before you develop a KAP survey, it is essential that you read Part 1, which will help you carefully think through what questions you are trying to answer and decide whether a KAP survey is the best way to answer these questions. It walks you through this process and helps you decide how many KAP surveys you might need and when they should be administered during the outbreak.

This document takes the next step by walking you through the process of creating and conducting KAP surveys. It provides examples of Ebola KAP surveys and helps you customize them for your use. You may decide that you don’t need to change any of the questions on the sample KAP surveys, or you may want to add or remove questions. If the surveys don’t meet your needs exactly, we will help you through the process of making modifications.

Regardless of what you decide, you will need to test your surveys locally to ensure that the people you are surveying can understand the questions (both the terminology and language), that the survey doesn’t take too long, and that that the instructions for the data collectors are clear and easy to follow.

This document outlines procedures for developing and carrying out KAP surveys during Ebola outbreaks, including how to:

* Plan for personnel and time needed for a KAP survey
* Create a budget for a KAP survey
* Define the survey population
* Decide which sample survey you want to use
* Adapt model surveys for your use
* Pilot the surveys
* Recruit and train data collectors
* Supervise data collectors
* Plan for analysing the survey data
* Archive documents

# Planning the resources needed for a KAP survey

Before beginning a KAP survey project, you need to understand the processes involved and the makeup and roles of the team.

## Personnel

Several different types of people play a role in the design and use of a KAP survey:

1. Project lead – This individual is responsible for the overall success of the survey. The lead’s role is to:
   * Work with collaborators (like local researchers, community leaders, and local government officials), and Ebola response leaders to define the goals of the KAP survey and to ensure the survey has sufficient funding and staffing.
   * Plan the survey, making sure there are adequate staff and time for the collection and analysis of the data.
   * Share the survey results with the partners who can use the results for action.
2. Ebola response teams, local and regional governmental structures, and other users of the information – These individuals play an important role at the beginning of the process. Their role is to:
   * Help define the KAP survey goals.
   * Help adapt the instrument to the local context.
   * Receive the survey results and apply it to their work in the response.
3. Behavioral scientists and statisticians – These technical experts can help you revise the sample surveys provided in this document. If possible, the survey team should have access to experts in behavioral science and statistics, even if they are not full-time members of your staff.
4. Technical team – Within this team there are members with several different roles. One individual may fill more than one role:
   * Survey adapter/designer –This personworks with the project lead to make all of the revisions to the survey instruments (including translations into local languages), creates the strategy, identifies the size and type of the KAP survey sample, and helps hire data collectors.
   * Data manager –Once the survey is final, this person programs the data entry software. The data manager manages the mobile data collection platform and cleans and codes data for analysis. This person will lead the analysis of data.
   * Field coordinator –This person is responsible for training survey data collectors, supervising field supervisors, and supporting survey data collectors as needed. This person also creates field packets that instruct the data collectors where to start their survey, what process to use going from house to house, and how to record refusals.
   * Field supervisor –Field supervisors go out into the field when data are being collected to support the data collectors and address issues that may arise. They ensure that data collectors follow the protocols, especially protocols for obtaining informed consent and asking the questions as written.
   * Survey data collectors –These team members conduct surveys with the population. If possible, they should be recruited from the local population and speak the same language, and teams should include both men and women.

## Time: Survey timeline

The following timeline is an example of the sequence of steps for creating and conducting a KAP survey and analyzing the findings. While the time it takes to accomplish each step may vary, it is important to take each step in order and to not skip any steps. This calendar assumes that financial support for the survey has already been obtained, as outlined in Section 4 below.

Table 1. Example of a timeline for KAP Ebola survey data collection and analysis

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Weeks (divided into 3-day halves) | | | | | | | | | |
| KAP Survey steps | Wk. 1 | | Wk. 2 | | Wk. 3 | | Wk. 4 | | Wk. 5 | | |
| 1. Recruit local social scientists, community leaders, others to collaborate on defining KAP goals and implementation - *Project lead* |  |  |  |  |  |  |  |  |  |  | |
| 2. Select/adapt KAP surveys - *Project lead, technical team* |  |  |  |  |  |  |  |  |  |  | |
| 3. Identify a KAP survey sample (size and characteristics) - *Project lead, statistician* |  |  |  |  |  |  |  |  |  |  | |
| 4. Translate the survey into local languages - Contract translators, possibly field coordinators and team |  |  |  |  |  |  |  |  |  |  | |
| 5. Pilot test the survey - Field coordinators, supervisors |  |  |  |  |  |  |  |  |  |  | |
| 6. Create final version of the survey - *Project lead, technical team* |  |  |  |  |  |  |  |  |  |  | |
| 7. Program survey for electronic data collection - *Data manager* |  |  |  |  |  |  |  |  |  |  | |
| 8. Recruit data collectors - *Project lead, technical team* |  |  | | | |  |  |  |  |  | |
| 9. Train data collectors - Project lead, field coordinators, field supervisors, data collectors |  |  |  |  |  |  |  |  |  |  | |
| 10. Collect the data and oversee quality control - Field coordinators, field supervisors, data collectors |  |  |  |  |  |  |  |  |  |  | |
| 11. Clean the data - *Data manager\** |  |  |  |  |  |  |  |  |  |  | |
| 12. Analyze the data - *Data manager* |  |  |  |  |  |  |  |  |  |  | |
| 13. Develop presentations - *Project lead* |  |  |  |  |  |  |  |  |  |  | |
| 14. Share results with stakeholders - *Project lead* |  |  |  |  |  |  |  |  |  |  | |
| *\*Note that the steps from “Clean the data” in this table and below are not covered in this guide.* | | | | | | | | | | |

## Money: budgeting for a survey

Before undertaking KAP surveys, it is important to understand the time and resources that will be needed and to make sure that you have an adequate budget. Using the sample timeframe above and one of the sample surveys (and with funding already in place), it took roughly 5 weeks to complete all 14 steps.

In addition to the time spent by your regular staff adapting and using the KAP surveys we have provided, you will need to have a budget to pay for hiring and training local KAP survey data collectors, as well as for any materials or services not provided by your agency. Creating this budget will require you to make some calculations about how many data collectors you will need, and the prevailing pay rate for these workers, as well as for transportation (and meals if these are typically provided). Below is a basic budget sheet that will help you plan for the costs associated with a KAP survey. If you have to request these funds, it should be done well in advance of undertaking the KAP survey. The table below will help you think through what needs to be included in a budget request for KAP survey funding. This example uses an estimate of 600 surveys with data collected over 5 days, using 12 data collectors and two field supervisors. You will have to determine local payment rates and local food and transportation costs to make your budget estimate.

Table 4. Sample budget to complete 600 30-minute KAP surveys in 1 health zone

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | **Cost per unit** | | **Number required** | **Cost** | | **Field supervisors (if not already part of your staff)** |  | | 2 |  | | 5 days of data collection plus 2 additional days for training  and pilot testing |  | |  |  | | daily pay x 7 days | $ | |  | $ | | food x 7 days | $ | |  | $ | | transportation x 7 days | $ | |  | $ | |  |  | | **subtotal** | $ | | **Data collectors** |  | | 12 |  | | 12 data collectors [teams of 2] = 30 interviews per day [5 days of collection] |  | |  |  | | 2 additional days for training (1 day) and final pilot testing (1 day) |  | |  |  | | daily pay x 7 days | $ | |  | $ | | food x 7 days | $ | |  | $ | | transportation x 7 days | $ | |  | $ | |  |  | | **subtotal** | $ | | **Translators** |  | | 2 |  | | 2 translators, 2 days [assuming the survey is no more than 35 questions, translated into two local languages; 1 day for translation, 1 day for review by volunteer native speaker] |  | |  |  | | daily pay x 2 days | $ | |  | $ | | food x 2 days | $ | |  | $ | | transportation x 2 days | $ | |  | $ | | **Office supplies,** printing and photocopying of materials | $ | | 300 | $ | | **Or** |  | |  |  | | **8 data collection tablets** (1 for each team, and 1 for each field supervisor) | $ | | 8 | $ | | [This assumes that data collection training, field visits for planning data collection, creation of data collector field packets, and any programming of tablets or printing of surveys are done by regular staff and don't need to be contracted out.] |  | |  | **$0** | |  |  | **Budget total** | | $ | |

# Selecting and adapting a model KAP survey

After reading Part 1. Planning KAP Surveys*,* you should have made a prioritized list of your information needs and identified which of those needs would be best filled through a KAP survey. However, to develop an entire KAP survey from scratch based on those needs may take more time than you have because ideally you would consult with survey design professionals and conduct extensive pilot testing. A more efficient approach is to review the sample Ebola KAP model questionnaires that we have created. We created these model surveys after reviewing a large number of previous Ebola surveys (See appendix C for a list of publicly available KAP surveys.)

As you may recall, in Part 1. Planning KAP Surveys, we recommended you follow this three-part strategy:

* In the first outbreak area, administer one KAP survey at the beginning of the outbreak and again every 3 months thereafter.
* In two or more other outbreak areas, after there is geographic spread of Ebola, administer a second KAP survey.
* If you need information on other populations, we also provided a model for an additional KAP survey.

Following that recommended strategy, we are providing three corresponding sample KAP surveys. The table below describes each survey and shows the information needs met by each.

Review this table with your list of information needs in hand to determine how closely they match.

Table 5. Two model surveys and the information needs they address

|  |  |
| --- | --- |
| Model survey | Information this survey provides |
| 1. Survey focusing on reasons for Ebola virus disease (EVD) spread and opportunities for community engagement for behavior change. [Administer in first outbreak location every 3 months throughout outbreak period.] | * Frequency of behaviors that spread EVD; knowledge, beliefs and attitudes that contribute to these behaviors * Social environment, cultural and linguistic factors that might contribute to these behaviors * In the initial survey: Trusted sources of knowledge/leadership on health; opportunities for community engagement |
| 1. Survey focusing on support and participation in the response, and also on comparing KAPs in different outbreak areas. [Administer in two or more new outbreak locations every 3 months throughout outbreak period.] | * Geographic differences in people’s participation in response activities (rotate which specific response activities are asked about) * Opportunities for community engagement in each geographic area * Any success stories of community engagement or behavior change * Any unintended consequences of response activities |

Model surveys 1 and 2 are included with this guide. Because each question is directly linked to at least one priority information need, you can decide delete sections that don’t meet your needs.

## Four important points about adapting these survey instruments

1. Limit survey questions to priority information needs – There is often a temptation to leave in unneeded questions or to add more questions because the information may be interesting. However, keep in mind that every additional question asked adds to the fatigue of respondents, and this will reduce the quality of their responses. Also, keeping people longer than necessary to help with the response is disrespectful of their time. In addition, overly long surveys add burden to the data cleaning and analysis process. Limit your questions to only those items that will help you answer priority questions and thus result in meaningful action during the response.
2. All questionnaires will need translation and pilot testing – No survey question is going to be worded in just the right way for every audience, but there are steps you can take to ensure that respondents clearly understand each question. Every time you get ready to collect data in a certain location, check to make sure that the wording of the questions, the response options, and any explanations or consent requests can be easily understood by respondents. This is true whether or not the survey is translated, but it is especially important if the survey is translated. Each draft survey question should be tested with volunteers as soon as it is chosen or adapted, and it should be tested again by data collectors as part of their training. This will allow them to gain experience collecting the data and anticipate what clarifications might be needed for participants.
3. Remember to include a method for tracking when people refuse to participate or are not at home – Tracking this information is important because you need it to calculate survey participation rates. You have several options:

* If data collectors are using tablets, you can make it easy for them to note every time someone refuses or is not at home by including   
  “refused” and “no one at home” check boxes at the beginning of the questionnaire. When these are checked, the survey is complete.
* If data collectors are using paper surveys, you can give them a separate notebook to record whether someone refuses or is not at home. This will save paper because they will not need to use an entire paper survey with just “refused” or “no one at home” checked.

## Option A. Using one or more survey instruments as they are

If your lines of inquiry and uses for the data largely match what has been proposed in Part 1. Planning KAP Surveys, then you can use one or more of the sample questions as they are. You still will need to review the response options with local experts or focus groups to make sure they are appropriate for your survey community. You can skip Sections 4.3 and 4.4, which describe adapting or modifying the model survey instrument, and move on to Section 4.5, which describes testing the draft questionnaire with volunteers.

## Option B. Modifying one or more survey instruments by removing questions

When you review Table 3, if you decide that you want to use one or more of the model surveys but there are portions of the questionnaire that you do not need, you can simply remove those questions from the questionnaire before you translate it and pilot test it. Each survey instrument contains a diagram showing what information needs are aligned with each question, so you should be able to easily identify what questions can be deleted.

## Option C. Modifying one or more survey instruments by adding questions

If you have information needs that are not met by one of the questionnaires, you may want to add questions to the questionnaire. This must be done carefully, because there are many ways in which questions can go wrong and not give you the information you need, or worse, provide incorrect or misleading information. For example, the following table shows some of the most common mistakes that make questions really challenging to answer:

Table 6. Common mistakes creating survey questions that result in inaccurate responses

|  |  |  |  |
| --- | --- | --- | --- |
| Question | Problem | How it affects the data or the respondent | What can be done  to solve the problem |
| “How would your coworkers/family members rate their fear of getting Ebola (on a scale of 1 to 10)?” | This question asks two questions at the same time: The person’s coworkers might have a very different rating of fear than the family. | You don’t know which question the person has answered. It may also frustrate the respondent. | Split the question into two questions or reword it so that that it refers only to one person (e.g. “How would your closest family member rate their fear of getting Ebola on a scale of 1 to 10? (with 1 meaning not at all afraid and 10 meaning extremely afraid”) |
| “If a person with Ebola goes immediately to a health facility, will he/she reduce the chance of spreading it to family or people living with him/her?” | This question pressures the respondent to answer the question a certain way. In this case, the pressure is subtle, but it’s clear from reading the question what the “right” answer is. | You may not get an accurate answer. It may also frustrate the respondent. | Reword the question. For example, ask, “What would be the benefits of a person with EVD going to an Ebola treatment facility?” and then in a separate question ask, ““What would be the disadvantages of a person with EVD going to an Ebola treatment facility?” |
| “What timeframe is optimal for the observation of a person suspected of having contracted Ebola virus disease or of having contact with a suspected case?” | This question uses language that respondents might not understand. | This will both irritate the respondent and lead to inaccurate information. | Reword using simpler language. For example, ask, “How many days will a health agent need to visit someone who has touched or been close to a person with Ebola?” |
| “What is your primary occupation? 1. Farmer  2. Taxi/bus driver  3. Trader  4. Unemployed  5. Student  6. Ebola response staff  7. Health staff (nurse/pharmacist doctor/traditional healer)  8. Other (specify)” | The question has a confusing set of response options because some people might fall into more than one occupational category. For example, a person could be both be a fisherman and unemployed. A person could also be a health staff member who is employed by the Ebola response. | This will lead to inaccurate information and may irritate the respondent. | Reword the question so that only one option could be chosen. For example, “What are you currently spending the majority of your days doing? Select one answer.” Also, you could change response #7 to say, “Health staff NOT involved with the Ebola response.” |

While these are common errors people make when designing survey questions, they are not the only mistakes that can affect the quality of your data. Carefully think about the following issues:

* Do respondents understand the questions you are asking?
* Even if they feel they understand the questions, are they interpreting the questions in the way that you mean them?
* Are you asking them to think about things or describe things in ways that are foreign to them?
* Are the ways that you are asking them to answer easy for them? Some things that could be difficult would be if you ask hypothetical questions, provide abstract scales like “how much do you agree or disagree”
* Do the response options capture all of the likely responses, with an “other” space for novel responses?

### Key concepts of survey design

1. Introducing the question: It is important that the respondent always understand what they are being asked. In some cases, this requires some introduction to the question. This introduction can be needed at the beginning of the survey, at the beginning of a new section, or when introducing a question that might be complex. Here is an example of a question that requires a brief introduction:

“Introduction: During an Ebola outbreak, health authorities stop the spread of the disease by identifying everyone who has touched or been near someone with Ebola, and by visiting them every day for 21 days to make sure they don’t develop Ebola disease. Question: Have you been followed for 21 days after possible contact with someone with Ebola?”

If this simple explanation of contact tracing wasn’t provided, the respondent might not know what they were being asked by the question. Orienting respondents puts them at ease, and improves the quality of the

1. How well the question captures the concept of interest: The main reason we ask colleagues and community volunteers to give feedback on questions is that sometimes we may not notice that a question doesn’t actually measure what we think it measures. For example, the following question measures whether a person’s practice is to avoid funerals, when what you really want to measure is whether the person is avoiding touching the deceased as part of a funeral:

“What steps can a person take to avoid becoming infected with Ebola?

* Avoid funerals
* [Other response options]”

The problem with this question is that during an Ebola response, when safe and dignified burials (<https://www.who.int/health-topics/marburg-virus-disease/technical-guidance/safe-and-dignified-burials>) are typically offered, family members do NOT touch the deceased individual. So the person might NOT report that they are avoiding funerals yet still be following appropriate self-protection practices. A better question to capture whether the person is avoiding touching the deceased individual during a funeral would be:

“What steps can a person take to protect themselves against being infected with Ebola?

* Avoid touching the body of the deceased, either at a funeral or any other time
* [Other response options]”

1. Response options: Survey question responses can be set up in any number of ways. The table below show five different response options for essentially the same question.

Table 7. Response options for KAP survey questions

|  |  |
| --- | --- |
| Question | Response options |
| 1. If invited, would you agree to be vaccinated against Ebola? | \_\_\_\_[free text response written]\_\_\_\_\_ |
| 1. If invited, would you agree to be vaccinated against EVD? | Yes / no |
| 1. If invited, would you agree to be vaccinated against EVD? | Definitely not / probably not / unsure / probably yes / definitely yes |
| 1. How much do you agree with this statement? “If invited, I would agree to be vaccinated against EVD.”\* | Strongly disagree / strongly disagree / neither agree nor disagree / somewhat agree / strongly agree |
| 1. If invited, would you agree to be vaccinated against EVD? | No, I have already been vaccinated / No, I don’t trust the response / No, my family would not approve / No, other reason / Yes, I believe it would protect me / Yes, I believe it would protect my family / Yes, I will do what health authorities recommend. |

*\*This is type of “how much do you agree” (Likert scale) question is used in many surveys in the United States and other industrialized countries. However, it is unclear how well this type of question will be understood in other languages and cultural contexts. We urge extreme caution and extensive pilot testing of any questions using this type of response scale*.

1. Structure of response options: In addition to the way that the response options are structured, for multiple choice response sets (question format #5 above), there are also a variety of ways that these response options may be offered to respondents. For example, any of the following can be used:
2. All response options may be read to the respondent, and they are asked to select one answer.
3. All response options may be read to the respondent, and they are asked to select all of the answers that apply.
4. They may be asked to answer in their own words, and the interviewer has to select one answer that best describes the respondent’s response.
5. They may be asked to answer in their own words, and the interviewer has to select all of the possible answers that apply.

In order not to influence the respondent’s answer, options c and d above are frequently used with KAP surveys in DRC. However, we recommend that with these type of response options, a blank line also be provided to the interviewer to write out the verbatim response first. This allows the interviewer to save time by reviewing the open-ended response after the interview is complete, and it allows the field supervisor to review the coding choices made by the interviewer to ensure accuracy.

1. Lead up and follow-up questions: For questions in the example above, you will also want to consider the possible value of additional information that might make the response more useful. For example, it might be useful to know *whether a person has already been vaccinated* (thus this question might not apply), or *whether the person has had any interaction with vaccination teams or other response teams* that might influence their opinion. You might also want to consider asking follow-up questions about why a person would or would not agree to be vaccinated. Before adding any of these additional questions, consider whether they would make the survey unmanageably long.
2. Skip patterns: One way to reduce the time respondents spend answering unnecessary questions is through skip patterns. A skip pattern is when the next question is either asked or skipped, depending on the respondent’s answer. For example, if the person responds “yes” to the question “If invited, would you agree to be vaccinated against EVD?” and the follow-up question is “If no, why not?” the interviewer would be instructed to skip that question. This is faster and makes more sense to both the interviewer and the respondent. However, with paper surveys, you also have to be careful that there are not too many skip patterns and that they are clear and easy for interviewers to follow. Confusing survey forms can add a lot of time to the interview (while the interviewer tries to read the directions) and can result in loss of important information.

## Summary: steps in modifying one or more survey instruments

|  |
| --- |
| Table 8. Steps to follow when modifying a model survey |
| 1. Identify the parts of the model surveys that you want to keep because they match up with your information needs. Delete the rest (leaving the introduction, informed consent, and refused/not at home sections). |
| 1. Look through the Ebola KAP survey question bank for questions that meet your additional information needs. |
| 1. Create your own questions where needed. |
| 1. Review your questions to be sure avoid the common mistakes described in Table 6. |
| 1. Select your response options. Look at existing questions on the survey or in the question bank for examples. |
| 1. Decide how you want your response options structured (see section 4 “structure of response options,” above). |
| 1. Include all of the questions in your draft survey and prepare to pilot test the survey with some volunteers in your office. |
| 1. Share the draft with your team and any available colleagues with survey experience to get feedback |

Recommended reading

The following articles on developing high-quality survey questions may be helpful:

* Martin, E. (2006). Survey questionnaire construction (Survey Methodology #2006-13). US Census Bureau. <https://www.census.gov/srd/papers/pdf/rsm2006-13.pdf>
* Story, D.A. and Talt, A.R. (2019). Survey research. Anesthesiology, 130, 192-202. <https://anesthesiology.pubs.asahq.org/article.aspx?articleid=2723295>
* Rattray, J. and Jones, M.C. (2005). Essential elements of questionnaire design and development. Journal of Clinical Nursing, 16, 234–243 <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.461.4200&rep=rep1&type=pdf>

## Testing the draft questionnaire with volunteers

Once you have created one or more draft surveys, you will need to test it with some volunteers. This is especially important if you have designed new questions yourself. There is no substitute for testing new questions, because you cannot know whether the questions you are asking are clear to others or whether the response options and the instructions will be understood by others. Ideally you should test your questions first in the language that they were written, and then again in other languages. This is especially important in areas with language diversity, where tools must be translated into relevant local languages. You should do this while the surveys are in their draft stages, *before* you pilot test the final survey with the data collectors.

One difference between this step of testing the draft survey and the later pilot testing of the final survey (ideally carried out by the data collectors themselves), is that in this step the participants don’t need to be people from the survey sample. While you do want them to match demographically as much as possible, it is acceptable to use local health officials, health researchers, or other individuals from the same nationality and culture as the people in the target community. It is important that these volunteers not be involved with the development of the survey, since you would like to know if the questions can be understood, *without prior knowledge of your information needs or the purpose of the survey*. To test the survey, the field coordinator will identify 5-8 local volunteers for the pilot. The pilot test can be done by phone if needed, and the entire procedure should last no more than 1 day.

For each question, the field coordinator:

* Asks the volunteer respondent the question.
* Allows the volunteer respondent to answer and then asks:
  + Can you explain in your own words what was asked by this question?
  + How did you come up with your answer?
  + How confident are you in your answer?
* Asks follow-up questions about specific terms used in the question (for example: "What did you understand the phrase ‘trusted sources of information’ to mean?”)

The field coordinator notes the phrases, questions, and nuances that caused difficulty and leads a team discussion to determine how to revise the question.

After finishing the interview, the volunteer respondent will provide feedback and suggestions regarding meanings conveyed and order of questions. The field coordinator will compile the researchers' feedback to rework the questionnaire where needed. The revised questionnaire will be reviewed and approved by the project lead.

## Ethical considerations

Ethical research means that the safety, rights, and dignity of community members are always a priority. First and foremost, any data collection done in a community should be for the purpose of helping the community,[[1]](#footnote-1) and it should be conducted in a way that maintains privacy, does no physical or social harm to anyone, and respects the right of individuals to decide whether to participate without pressure. Adherence to high ethical standards is particularly important during an Ebola outbreak, since there is likely to be increased community tension and suspicion, increased demands on community resources, strangers entering the community, and the potential for violence. To ensure that ethical principles are followed, you will need to take the following steps:

1. Make sure that purpose of the data collection is clear and that survey results are actually used for action that helps the community reduce the Ebola outbreak.
2. Limit the number of KAP survey participants to the minimum necessary to ensure validity, and keep the survey’s length reasonable to ensure you get the information you need and do not put too heavy a burden on respondents.
3. Make sure that informed consent is properly done:
   * At the beginning of the survey, prospective respondents should be informed about the survey purpose and how it is meant to help their community. They also should be assured that if they choose to participate in the survey, you will protect their privacy AND that they are free to decline to participate in the entire survey or to refuse to answer any question during the survey with no negative consequences.
   * Data collectors will need a script to read to prospective participants at the beginning of the interview to be sure that informed consent is clearly communicated. They will also be trained how to respond if prospective participants decline to participate or have questions.
4. During their training, emphasize to data collectors that ethical research goes beyond simply reading the informed consent document. Through training, data collectors also will learn the importance of:
   * Conducting the survey in a private locale if possible.
   * Respecting participants’ right to decline participation, skip a question, or end the survey.
   * Treating respondents with respect at all times.
   * Using language that conveys respect and does not influence respondents’ survey answers.

## Translation to local language

1. Importance of translating the surveys –To obtain the most accurate and consistent information, KAP surveys should be administered in respondents’ preferred language. As you know, accurate survey responses depend on respondents understanding what is being asked. Even if data collectors speak the respondent’s native language and translate the survey question by question, there is a serious risk that the translations will vary from one interview to the next and between data collectors. This is likely to result in unreliable results. One of the primary reasons that data collectors use a written survey to collect data is to ensure that every question is asked in ***exactly the same way by all data collectors.*** If questions are translated verbally (and not written), we have no assurance of consistently asked questions. For this reason, ***we strongly urge you to have a written questionnaire in every language likely to be spoken by respondents***. Project staff can work with translation teams including: Translators without Borders,[[2]](#footnote-2) translation teams at universities, and local researchers.
2. When translators aren’t available –When you do not have the resources to formally translate the survey into multiple languages, work with members of the local community to translate the questions and test them with community members to ensure they can understand the questions and key terms you use in the questions. What is most important is that these translations be written down and that all data collectors use ***the same translation***. To translate the survey with local community members who may not be comfortable with writing, you can organize a discussion group with the community members in which the questionnaire is read aloud and then translated verbally, with the data collectors then recording the questions in writing.
3. Back-translation as a final step –Regardless how your surveys are translated, when possible, it is helpful to have a second translator translate it back to the original language. This allows you to identify when the meaning of the original wording has changed and where in the survey you need to reword questions to ensure participants understand terms and special vocabulary. If this happens, it is helpful to have a discussion with two or more speakers of that language to reach a consensus on the best wording of the question.

# Programming the mobile data collection tool questionnaire

Once the questionnaire is updated with any changes made from the volunteer interviews and you have translated the questionnaire into all of the needed languages, you need to decide whether the survey will be administered on paper or electronically.

If you are using a paper survey, make sure that all questions are included and any skip patterns or considerations for administration are clearly indicated on the survey. (Practicing skip patterns will be an important part of the data collector training.)

If you are using an electronic survey, one person designated as the data manager will be responsible for programming and adjusting the mobile data collection tool. This person must:

* Follow the rules for naming variables (not following the rules can make the analysis program malfunction).
* Turn off the GPS function (to guarantee the anonymity of the households surveyed)
* Pay special attention to instructions for each question. For example, some questions require the respondent to choose one response or all that apply, and some questions have skip patterns, free text boxes, and other instructions.

Table 8. Six types of questions used with mobile data collection tools

|  |  |  |  |
| --- | --- | --- | --- |
| Type of question | Type of response | Example | When to use |
| Label | Survey title or note to participants | Thank you for your participation. | Use to add a title to the survey or to give instructions or other information to respondents. Does not allow any data entry. |
| Plain text | Free text | If other, please specify: | Use when asking questions that require the respondent to write a text response. |
| Integer | Whole number | What is your age? | Use when asking questions that require the respondent to write a number as a response. |
| Radio button | Single choice response | Participant gender: | Use when there are not many possible choices (*for example: gender*) |
| Drop down | Single choice response | In which health zone do you live? | Use when there are many possible choices, but the respondent can only choose one (*for example: Health Zone*) |
| Check box | Check-all-that-apply response | Among the following choices, what are the symptoms of EVD? | Use when respondent can choose more than one answer (*for example: symptoms of EVD*) |

Always offer a "don't know" ***and*** "refuse to answer" option on the mobile data collection platform. For these options to be chosen, the respondent should say “I don’t know” or verbally refuse to answer; do not assume these answers.

Some follow-up questions should automatically populate with “does not apply” when the respondent answers the initial question in a way that does not require the follow-up question. Using these options will allow you to alert the data collector when any question is left blank by mistake.

# Piloting the survey with intended audience

The pilot survey is the last step in preparing the questionnaire. The pilot test ensures that the mobile data collection tool (if you are using one) works properly and gives you an opportunity to assess the target population's understanding of the questions. It should last approximately 1 day (half-day for data collection, half-day for discussion).

This step is done by sending five experienced survey data collectors to the field to administer the questionnaire to the target population. Normally, participants surveyed during a pilot are not included in the final survey sample.

Each data collector should pilot the questionnaire with two people in the target population. ***For example: if there are five surveyors then a total of 10 people will be chosen***. After each individual survey, the data collector should note:

* If the respondent has difficulty understanding a question
* If the question formatting is appropriate: single choice, check-all-that-apply, free text, and skip logic
* If there is enough space to write answers (for paper surveys)
* The time it took to complete the questionnaire (should be less than 30 minutes)
* If the respondent finds the interview too long or boring

Major changes to your draft instrument are most likely made after pilot interviews are conducted. Pilot testing usually reveals issues with flow and sequence (e.g., skip patterns) which are minor but important changes. ***However***, if you make a lot of changes to the survey instrument based on the pilot feedback, you may need to share the revised instruments with partners or stakeholders to ensure the aims of the survey are still being met. You also may need to repeat pilot with potential respondents to ensure that questions are understood. Usually engagement with partners and audiences early in the survey creation process can minimize the number of iterations and the extent of revisions.

The pilot feedback should be sent to the data manager, who makes the final corrections to the questionnaire on the mobile data collection tool and paper version.Before finalizing the survey, the data manager should take the following important needs into account:

* Questions should be easily understood by respondents.
* The questionnaire should not take more than 30 minutes to complete.
* The respondents should remain comfortable during the interview.

At this stage, the questionnaire is ready to use and must not be further modified. The objective is to have one questionnaire to be used in all sample populations.

# Selecting KAP survey participants

One of most important steps in conducting a KAP survey is deciding how you will select your KAP survey sample of participants. If you want to use the survey to provide information about the entire geographic area, then you will need to select a sufficiently large sample and select your sample randomly from that area. Samples in which people are not randomly selected are sometimes used (called “convenience samples” and “intercept interviews”), however using this approach should not be used for a KAP survey. If you feel you need to collect information with a small sample size or using a convenience sample, it would be better to conduct a ***Rapid Assessment Survey***. See Part 1. Planning KAP Surveys, Section 5.5 and Appendix 4 to see the methods for this type of survey and how it should be interpreted.

## Key concepts of KAP survey sampling

Before providing specific guidance for estimating sample size and sampling participants, it will be helpful to read a brief review of some basic sampling concepts.

Estimating sample size – Because of known mathematical relationships between the size of the general population, the size of a survey sample, and an acceptable margin of error, you can estimate your sample size using a formula. The other elements that go into the formula have commonly used values that we can use here to keep it as simple as possible. (For a more in-depth explanation, follow this link: <https://www.wikihow.com/Calculate-Sample-Size>.)

Before making this calculation (using an online sample size calculator application, for example, Stat Trek Sample Size Calculator: <https://stattrek.com/survey-sampling/sample-size-calculator.aspx>), it is important to think about what your primary objectives are for the survey. Some important things to think about are:

* Who is in the population of interest (e.g. just adults or also children)?
* Are you interested in describing frequencies for the entire sample, or is it more important to keep groups separate to compare them?
* What about other subsets of the population such as ethnic or religious groups?

The simplest methods of estimating sample size assume you are trying to provide response frequencies that are generalizable to the entire population of interest. These are called descriptive statistics. If you also want to be able to stratify results by gender or by other characteristics, the sample size will need to be larger. One mistake people often make is that they estimate a sample size only large enough for basic descriptive statistics and then they try to stratify results by other variables or compare groups. If you do this, your sample will not be large enough for you to be confident in your results.

If you plan to stratify your results by gender, age, or other demographics, you will need to increase the sample size. This will be illustrated below when we suggest a specific sampling plan for the general population surveys using the two model questionnaires.

Sampling methods – Once you have calculated the survey sample size, you will also need to devise methods to number, select, and recruit respondents. Ideally, selecting participants is done by obtaining a list of everyone in the population of interest and then randomly selecting participants from this list. Sometimes such lists exist through public information or through local government, or you can assign numbers to potential respondents as you go door-to-door through a local area.

Once you have a list of all residents in the population of interest, identifying individuals to be recruited for interview is a simple matter of randomly selecting from the list. You have several options:

* You can assign a number to each individual and then use a random number generator such as this one (Stat Trek Sample Size Calculator: <https://stattrek.com/survey-sampling/sample-size-calculator.aspx>) to randomly select individuals.
* In more remote environments, you can simply put all the numbers in a bowl and select them randomly.

If it is not possible to obtain or create a list of every member of the population, alternative methods such as stratified sampling (sometimes also called representative sampling) can be used.

Stratified random sampling – When random sampling of the entire population is not possible, we can use alternative methods, such as randomly selecting villages, then neighborhoods within villages, houses within neighborhoods, and then individuals within selected households. As long as selections are made randomly throughout the process, this is also an acceptable method for respondent selection. This method also enables you to ensure that certain characteristics of your sample are consistent with the underlying population. For example, if 30% of the general population lives in rural villages, we can select 30% of our sample from rural villages.

In Section 7.2 below, we will provide an example of representative sampling for a general population KAP survey by first determining the proportion of the general population living in rural, small urban, and large urban locales. Then we will sample a proportionate number of villages of each type, then neighborhoods. Finally, houses, and individual respondents will be selected by data collectors while in each selected neighborhood.

## Applying sampling concepts to a general population KAP survey

Sample one health zone at a time –For your general population surveys, you will first need to determine the sample sizes for each health zone.

* If you are conducting a survey in a single health zone where the outbreak began, you will only sample that health zone.
* If you want to make comparisons between multiple health zones, you will need to calculate the sample size for each health zone separately.

With either of these strategies, follow these additional steps if you plan to analyze the data by sex:

* If you want to display findings for women and men separately on a range of frequencies, you will need to calculate a sample for women and men separately.
* However, if you sample men and women separately and then want to display frequencies for the entire population (not stratified by sex), you will need to weight the frequencies for men and from women according to the proportion of men and of women in your population of interest.

Begin by estimating sample size – For the example below, (using Beni health zone in eastern Democratic Republic of the Congo [DRC]), we will calculate a sample size for men and women separately so that survey response frequencies can be displayed separately. These separate frequencies will allow us to tailor community awareness efforts and organize community activities to meet the needs of men and women separately.

For this example, we will use population estimates found online in July 2020. You should work with your local Ministry of Health and local universities to obtain population estimates for the geographic area that you wish to survey. At a minimum, you will need: total population, percentage of women, percentage of the population who are children, and percentages of the entire population living in rural areas, in small towns/cities, and in large cities. This will allow you to make all the calculations you need for the sampling. While it is important that you have all of this information, keep in mind that you can use estimates.

Table 9. Information you will need to calculate sample size and to sample by small, medium, and large village/city using Beni Health Zone, DRC as an example

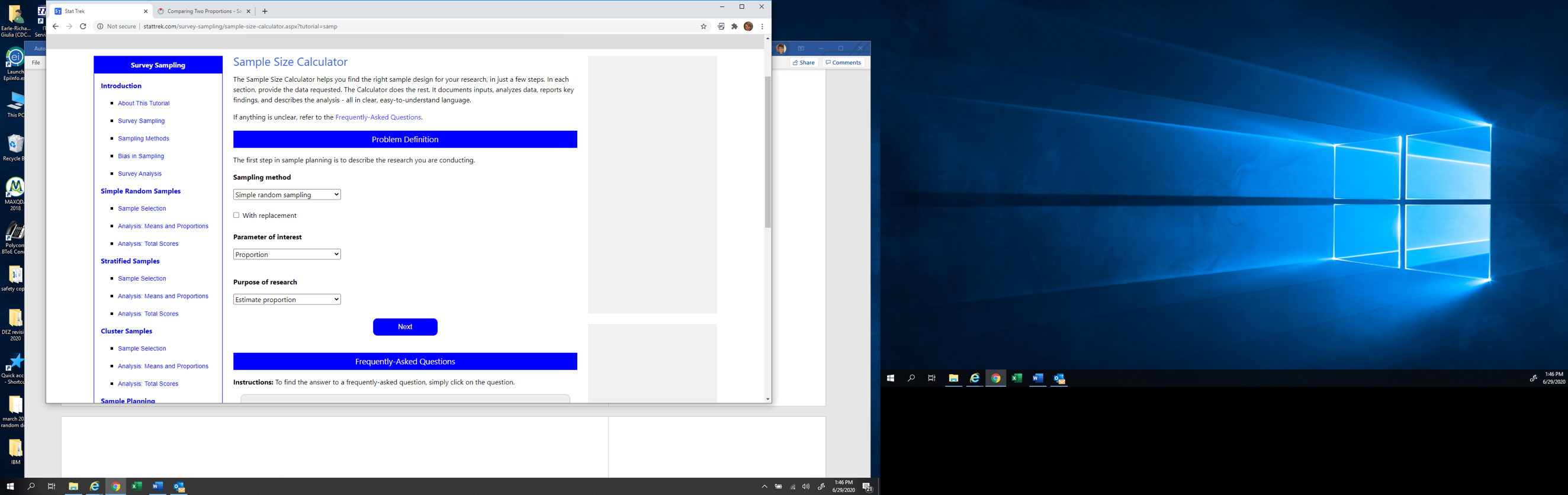
|  |  |  |  |
| --- | --- | --- | --- |
|  | Total N (%) | Men N (%) | Women N (%) |
| Beni health zone population | 260,000 (100%) | 127,400 (100%) | 132,600 (100%) |
| City of Beni population (urban population) | 120,640 (46%) | 59,114 (46%) | 61,526 (46%) |
| Medium sized villages population | 91,978 (35%) | 32,192 (35%) | 46,909 (35%) |
| Small village population | 45,989 (18%) | 22,535 (18%) | 23,454 (18%) |

We estimated the numbers in the table above from four numbers obtained online:

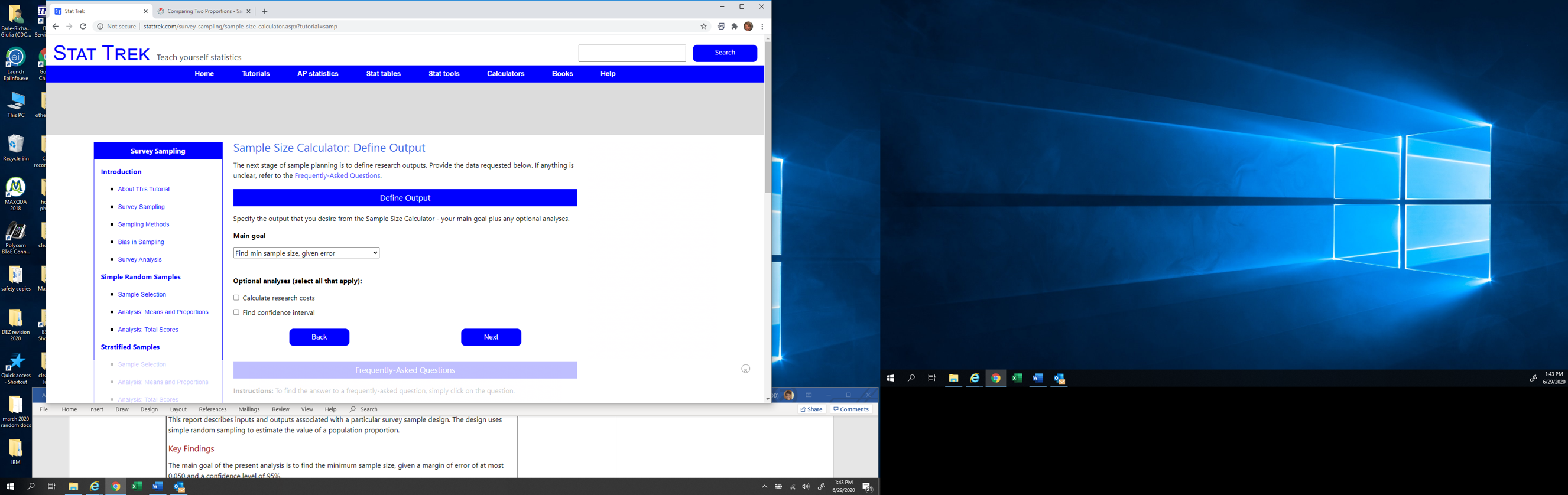
* The population of the Beni health zone: (<https://www.watercharity.org/book/beni-biosand-training-democratic-republic-of-congo-2/>)
* The percentage of the total DRC population who are women and the percentage who are children under 15: <https://africa.unwomen.org/en/where-we-are/west-and-central-africa/democratic-republic-of-congo>)
* The population of the city of Beni, the only major urban center in the health zone: (<https://www.cidrap.umn.edu/news-perspective/2018/07/news-scan-jul-31-2018#:~:text=The%20DRC%27s%20health%20ministry%20urged%20health%20workers%20to,Beni%2C%20which%20has%20a%20population%20of%20about%20232%2C000.>)

You will notice looking at these estimates that they are not precise. For example, ideally, we would want the proportion of children under 18 years, and we would want the proportion of the population that is female for Beni, not for all of DRC. However, if you are not able to access these precise figures, it is acceptable to make a rough estimate. Also, for this example, we calculated the percentage of the population living in urban areas by dividing the population of Beni City by the estimated population of the entire health zone. We assumed that twice as many people live in medium sized villages as in small villages. Creating a table with the best available information will help you both with the sample size estimation and the sampling planning.

Estimating the survey sample size for women **–** To start the process of sample size estimation for the women’s sample, we can go to an online sample size estimator such as Stat Trek Sample Size Calculator (<https://stattrek.com/survey-sampling/sample-size-calculator.aspx>) and follow it step by step. 1. First, we will estimate the sample size for women. Here is an example of the first screen you will see:

The options shown above are the ones you should select:

1. Sampling method: "Simple Random Sampling" (leave “with replacement” box blank)
2. Parameter of interest: “Proportion” – This means our results will be percentages and not numerical values in the form of means
3. Purpose of research: “Estimate proportion” – This means you are attempting to estimate values that represent the underlying population values rather than testing a hypothesis.
4. Select: “Next”

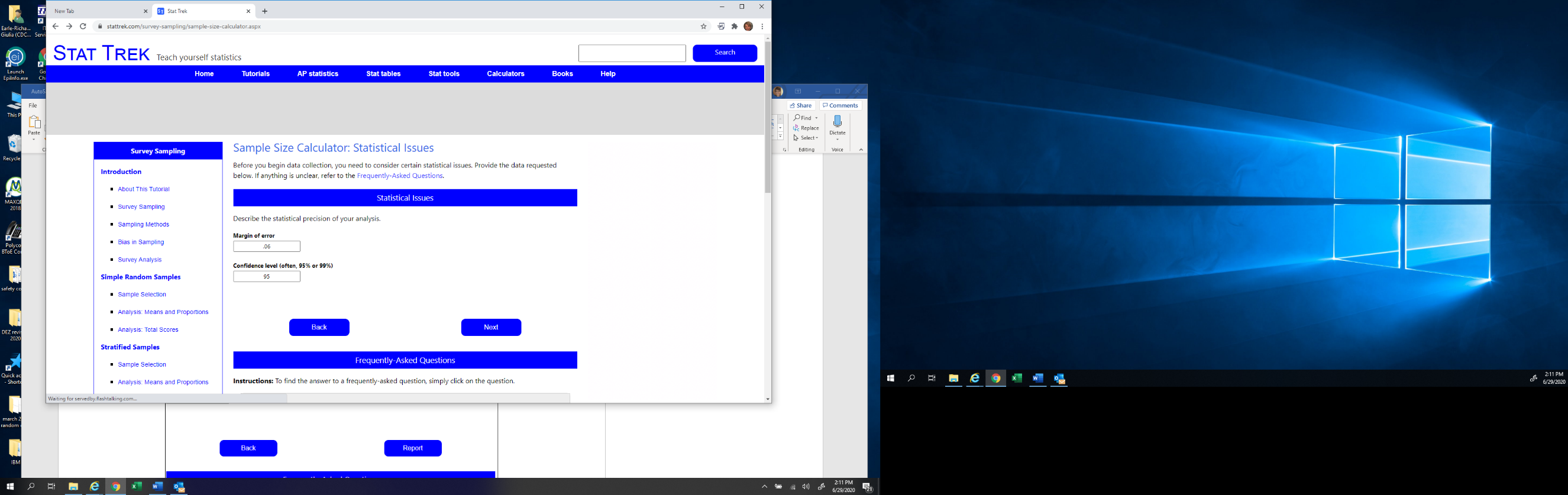
The next screen will be:

Select the following option:

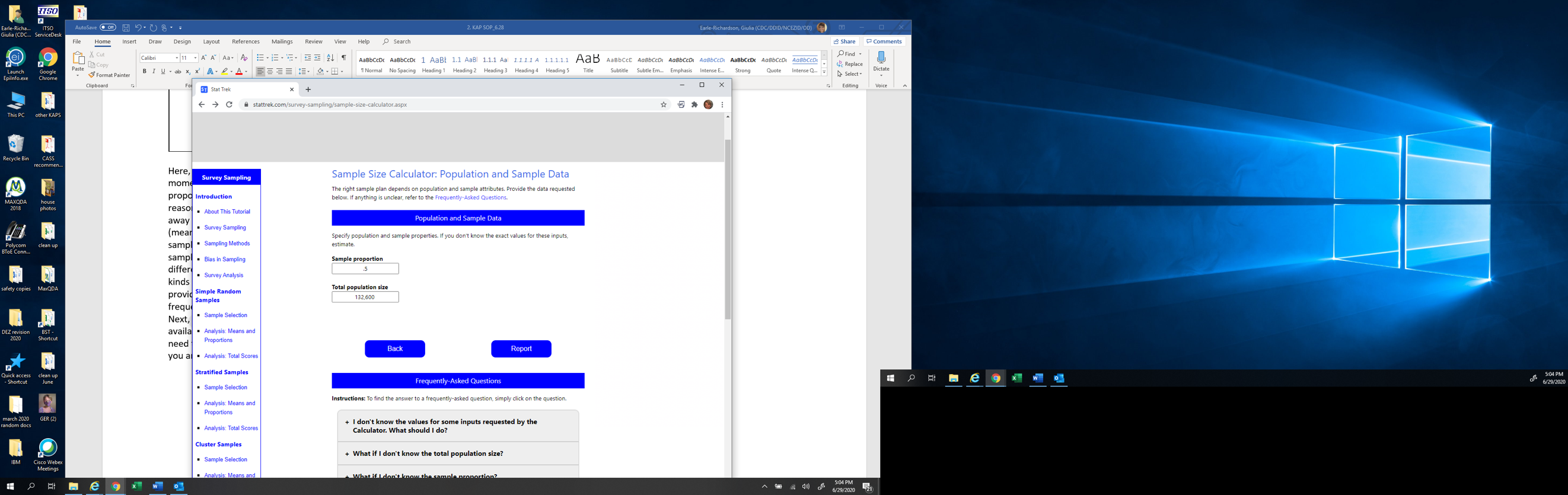
Main goal: “Find minimum sample size, given error”

Select: “Next”

The next screen will be:

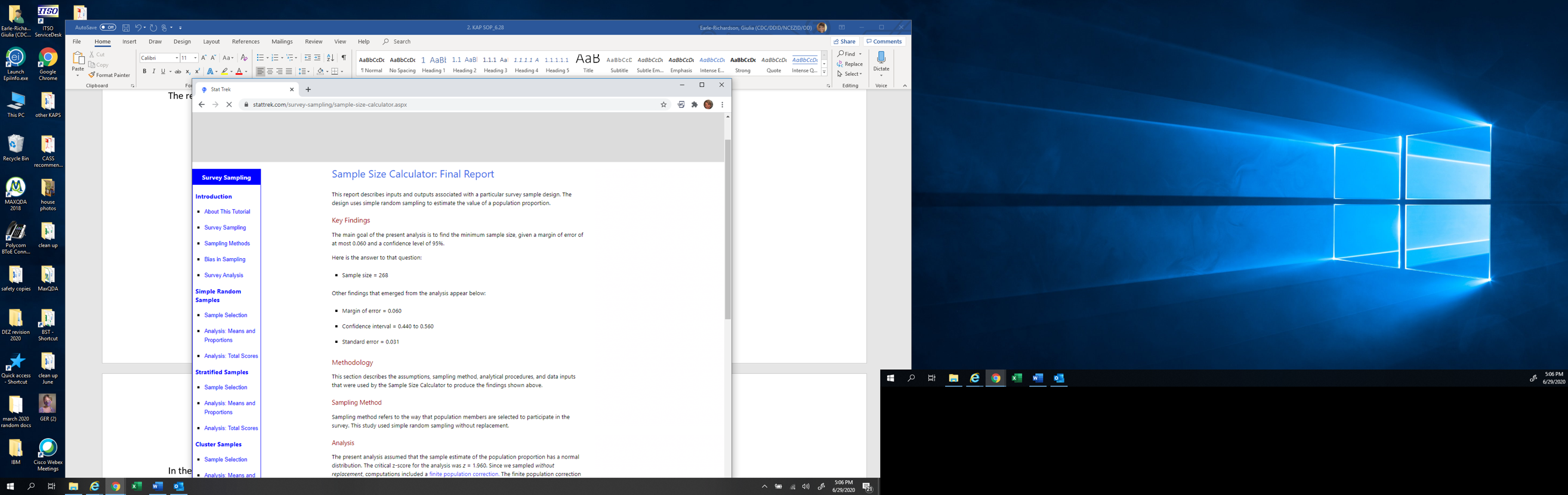


Here you see that we are entering “.06” for the margin of error. This means that your results, which will be in percentages, will have a margin of error of 6%. So you will say “the frequency is x% plus or minus 6%.” This is a relatively small margin of error because we want to have the ability to compare percentages for women versus percentages for men. However, you can adjust the margin of error that you want, keeping in mind that a smaller margin of error will require a larger sample size.

Fill in the above screen as is shown. The next screen will be:

Here, it first asks for the sample proportion. The value 0.5 means that you estimate that your sample size will be based on a question for which 50% of respondents answer “yes.” For reasons we won’t go into here, this is the best value to use when you don’t have an actual estimate of the expected frequency of your most important survey responses because it yields the largest sample size. This means that with the resulting sample size, you can be sure you have a large enough sample to do all of your analyses, regardless of what the actual frequencies turn out to be.

Next, it asks for the total population size. Referring back to Table 7 above, we see that the best available estimate for the adult female population of Beni health zone is 132,600. You will of course need to replace this value with an estimate of the total female population in the health zone that you are surveying. Then select “Report.”

The report will look like this:

In the above report, you see that the total sample of women is 268. That is the target number of women you would like to have complete your survey. Keeping in mind that there may be some cases with the door-to-door sampling that may result in women not completing the survey, or loss of some cases while alternating between male and female respondents, we advise that you increase the sample to 300 (an extra 12% in the sample).

Estimating the survey sample size for men –Once you have completed this estimation process for the survey sample for women, you will do the same for men. You will use all of the same steps outlined above, except this time you will use the total estimated population of men in Beni: 127,400. Because this population estimate for men is very close to the estimate for women, the sample size comes out to be 300 also.

Comparisons of demographic groups may require oversampling –While the model sampling plan samples both men and women equally so that results can be stratified by sex, if you want to compare outcomes by language or ethnic group, by location, occupation, education or other grouping, you should be sure to have a large enough sample of every group (a minimum of 30 of every group being compared) in order to make comparisons.

You have now completed the step of estimating the sample size. Now we need to identify how 300 women and 300 men from Beni will be identified and recruited.

Selecting survey participants

Simple random sampling – If you are able to obtain a list of all residents (with phone numbers or home addresses) in the population of interest, then you can perform simple random sampling. This is easy to do if you use a random number generator (for example a formula in Excel: "= randbetween (1; 10000)") or print numbers and select the numbers from a bowl. One challenge with this method will be that if the surveys are administered in person, respondents are likely to be located across a very wide area. One way to overcome this challenge is to conduct interviews by phone.

Representative sampling –If it is not possible to do simple random sampling, then you can select a random sample through different geographic groupings within the health zone or other area. The following series of steps illustrates how to conduct representative random sampling using villages, neighborhoods, and households.

Steps

1. For the purposes of this sampling process, we will assume that for each sampled health zone, we will sample 25 villages of different sizes. The proportion of those 25 villages that are small, medium, or large (by “large villages” we mean cities) will be different in each health zone.
2. To sample small, medium, and large villages, we need to estimate the proportion of the total population living in each size category. It is much more accurate to establish proportionate sampling based on what ***proportion of the population*** live in small, medium, and large villages than it is to use the number of villages of each type to create the proportions. This is because by definition, large cities contain many more people than small villages. If you sample based on the number of villages of each type, you will vastly over-sample rural respondents and under-sample urban respondents. This will make your sample a poor representation of the population.
3. Using the estimation table above, we know that small, medium, and large villages account for the following proportions of the population:

* Small: 18% of the total population, so 18%   
  of the sample of 300 or 54 women
* Medium: 35% of the total population, 35% x 300 or 105 women
* Large: 46% of the total population, or 46% x 300 or 138 women

(Due to rounding we have a total of 297 women, so we can add one more woman to each group to reach 300.)

1. Next, using 25 as the total number of villages, we will calculate the number of villages that will be sampled in each size category using the proportions calculated in step 3.

* Small villages: 18% x 25 or 5 small villages (54 women)
* Medium villages: 35% x 25 or 9 medium villages (105 women)
* Large cities: 46% x 25 or 11 cities (138 women)

One challenge that becomes apparent using this process is that depending on your definition of a large city, there may not be 11 different cities to sample. As you recall, we estimated the urban proportion of the sample just from the city of Beni alone. The important thing is that Beni is an urban setting, and the neighborhoods across the city should be randomly selected. Within the city of Beni, there are four large subdivisions, or communes: Beni, Bungulu, Ruwenzori, Muhekera. For this example, will use these fours subdivisions for sampling, and they will represent large cities. So our large city row now becomes:

* Large cities: 4 communes of Beni city (138 women)

Depending on the area you are sampling in, this adaptation may not be necessary, but it is a good example of how to adapt the general sampling model to your setting.

1. At this point, it is helpful to consider that you are sampling two populations, women and men, from the same populations and with identical sample sizes for each. For this reason, the most efficient data collection method may be to alternate between men and women when conducting door-to-door interviews. Combining the male sample and the female sample, we have:

* Small villages: 5 (55 women, 55 men)
* Medium villages: 9 villages (106 women, 106 men)
* Large cities: 4 communes of Beni city (139 women, 139 men)

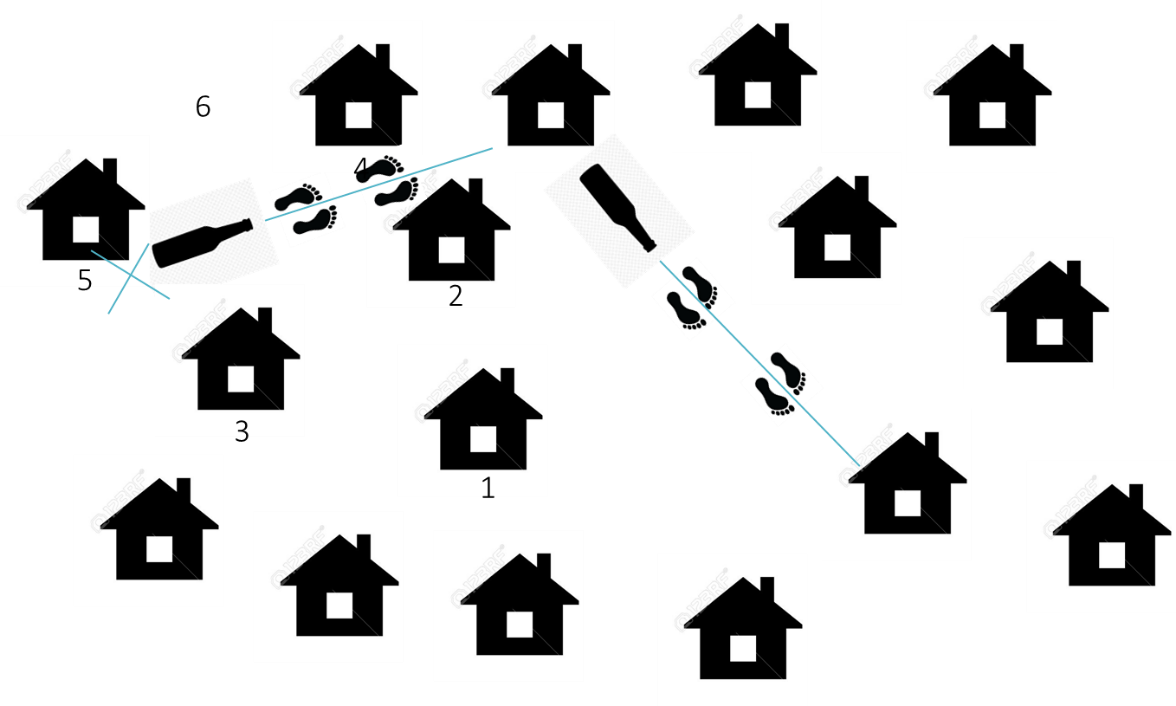
1. The next step will be to randomly select 5 small villages and 9 large villages. This will require a list of all of the small and large villages in your geographic area. If you have the lists of small and medium sized villages on an Excel spreadsheet (numbered), you can use the formula "= randbetween (1; 10000)" in Excel to generate the numbers of selected villages. For each sample drawn, select 3-5 additional replacement villages in case some reason arises (for example, insecurity or difficult access) that makes any selected village not possible for surveying.
2. Within villages and communes, you will need to decide whether it is more feasible to identify different neighborhoods and then randomly select them as well, or if the village is small enough to select households directly from the entire village.
   1. Small villages: (55 women, 55 men), a total of 110 households across 5 villages, or 11 households per village (with 3 possible replacement villages)
   2. Medium villages: (106 women, 106 men), a total of 212 households across 9 villages, or 24 households per village (with five replacement villages identified)
   3. Large cities: (139 women, 139 men), a total of 278 households across 4 communes, or 70 households per commune. (If possible, further randomize by neighborhood so that in 3 of your communes, you have 25 households per neighborhood.).
3. The next step is to randomly select houses while you are in each neighborhood.

*Selection of the first household* **–** In small villages and towns, begin by identifying the geographic center of the village (usually a school, religious center, or market). Follow these steps to select your first house to survey:

* Randomly identify a direction to walk in (either by spinning a bottle or throwing a pen into the air and seeing which way it is pointing when it ends).
* As you walk to the edge of the village in that direction, begin counting homes and assigning numbers.
* When you have finished assigning numbers to homes, put those numbers in a bowl and randomly select a number. Do the first survey at the house that was assigned that number.

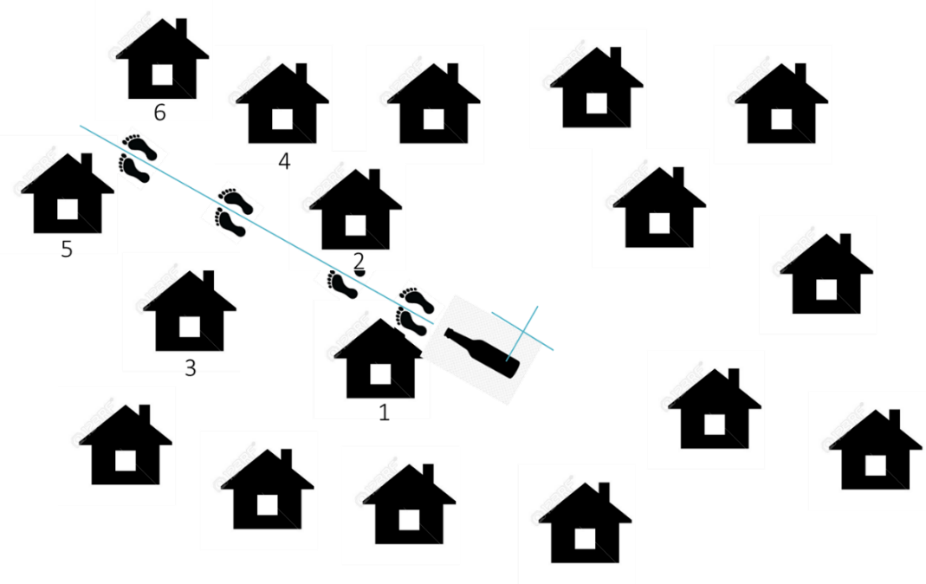
The diagram below shows how this is done. In Figure 1, the data collector starts at the middle of the village, randomly selects a direction, then walks straight in that direction, passing six homes until reaching the edge of the village.

Figure 1. Randomly selecting the first home for a KAP survey in a rural village

(This method is also used to begin random selection within randomly selected neighborhoods in larger villages and cities.)

*Diagram credit: UNICEF présentation d’échantillonnage pour les CAPs élaborée par la CASS (UNICEF) pendant la flambée  
 d’Ebola en RDC de 2018.*

After putting six numbers in a bowl, the data collector drew the number 5 (any method of random choice can be used) and conducted the first survey at house #5. As shown in Figure 2 below, the data collector spun the bottle again to find a new random direction. This time, the next interview was conducted at the next new house the data collector came to (houses #4 and #2 are passed by because they were already counted the first time).

Figure 2. Randomly selecting the next home for KAP survey

*Diagram credit: UNICEF présentation d’échantillonnage pour les CAPs élaborée par la CASS (UNICEF) pendant la flambée   
d’Ebola en RDC de 2018.*

When that survey is complete, the process is repeated until all the needed surveys are completed.

For large villages, you will have selected three neighborhoods at random within each commune, with five additional neighborhoods identified as back-ups in case any of the neighborhoods are not accessible. The selected neighborhoods should then be grouped geographically so that data collection teams can be assigned to neighborhoods as close together as possible. Then the process shown above in Figures 1 and 2 is repeated within each neighborhood to assure random selection of houses. Any neighborhood that is not visited due to security or other accessibility concerns should be noted and sent as a list to the project leader. As with refusals, inaccessible communities are part of the participation rate calculations, and should be recorded.

9. The next step is to select participants in households.If your strategy includes interviewing equal numbers of women and men, you can accomplish this by having each data collection team alternate between asking to interview a woman in one home and asking to interview a man in the next home. For this approach, it is most helpful to have one male and one female data collector so that surveys can be conducted by a data collector who is the same sex as the respondent as often as possible. If data collectors are visiting a household and need to interview a woman but no woman is present, they will continue to the next nearest household until a woman is home. It is important to respect the availability and wishes of participants. If the identified person cannot or does not want to participate in the survey, someone else must be sought, either in that household or elsewhere.

# Recruiting survey data collectors

Data collectors should possess the following characteristics:

* They come from the communities to be surveyed. This will maximize cultural competency and strengthen their rapport with participants during interviews.
* They have experience conducting KAP surveys.
* They speak the local languages and French fluently.

It is also imperative that you partner with the local health authorities to select data collectors.

The number of data collectors required will be determined by the geographic spread and size of the sample population to be interviewed. Generally speaking, you want to hire enough data collectors to have them go out into the community in teams of two (optimally one male and one female) and to be able to complete all of the surveys in approximately 1 week. The number of surveys that can be completed in 1 day will depend on how far apart the healthcare facilities (or other survey locales) are and how frequently respondents refuse to participate in the survey or terminate the survey in the middle. If you do not have a sense of the timing, you can send your team out to do 1 day of practice surveys, and you will see how many surveys can be accomplished in 1 day.

# Training survey data collectors

For every KAP survey, training of high-quality data collectors is critical to maintaining scientific integrity. Even if a survey has been thoughtfully developed and validated, if it is poorly administered by a data collector who has not received adequate training, you will end up with biased and invalid data. Comprehensive data collection training needs to be conducted in a language understood fluently by all participants (preferably the language in which the survey will be administered) and should contain the following elements:

1. Purpose of the survey
2. Protocol for selecting respondents
3. Informed consent process
4. Review of the survey questions
5. Handling and recording refusals
6. Interpersonal communication
7. Avoiding bias while asking questions
8. Saving and transmitting data
9. Role play
10. Field testing

Refer to Appendix B for an example of a training presentation that was developed for KAP survey data collectors.

## Purpose of the survey

It is essential that all team members understand why the KAP survey is being undertaken and how the results will be used to assist with the Ebola responses. Data collectors can do a better job dealing with unexpected situations if they understand ***why***they are conducting the survey. Data collectors also need to understand the purpose so they can explain the purpose to respondents.

## Protocol for selecting houses and selecting respondents

Survey data collectors should understand the sampling protocol. All data collectors should have written and verbal guidance on how homes are selected and which individuals to interview. These materials should be developed and provided by the field supervisor. If the protocol includes alternating the interview of men and women, this should be discussed as well as plans for what to do if a male or female is not present when it is their turn to be asked to participate.

## Informed consent process

Data collectors should be shown the introduction section of the KAP survey and should be oriented to the importance of clearly explaining the purpose of the survey, how long it will take, that it is confidential, and that respondents can refuse to participate, decline to answer any question, and terminate the survey at any time without any negative consequences. They should be taught why it is necessary before starting an investigation for them to present the objectives of the survey, answers all questions participants have, and obtain informed consent.

## Handling and recording refusals

If a survey respondent refuses or is unavailable to participate in the survey, this must be documented to calculate the participation rate. It will be important to review with data collectors how to record refusals on the questionnaire or in the tablet so that the number of “not at home” and “refused” participants is recorded. If data collectors are using paper surveys, you can give them a separate notebook to record whether someone refuses or is not at home. This will save paper because they will not need to use an entire paper survey with just “refused” or “no one at home” checked. If data collectors are using tablets, you can make it easy for them to note every time someone refuses or is not at home by including “refused” and “no one at home” check boxes at the beginning of the questionnaire. When these are checked, the survey is complete.

## Questionnaire review

During the questionnaire review, each question should be read out loud together. During this step, the survey data collectors explain each question to the field coordinator to make sure they have understood the questions. At this point, the field coordinator and data collectors will develop an explanation (and any further clarifications) for each question. This document will be approved and finalized by the project lead. This information will be part of a survey guide for data collectors.

Note that this guide and information cannot be changed after the first round of data collection. For subsequent rounds, the meaning of the questions should be discussed using the guide that was developed by the pilot team.

Data collectors must also be trained on the different types of responses such as single choice, check-all-that-apply, and free text. There also may be questions in which data collectors must not read the response options but rather listen to the respondent’s answer and mark the closest response option.

Finally, data collectors must understand the skip logic especially if the survey is administered on paper and the skip patterns are not automatically applied. We recommended that you train data collectors on the survey using practical exercises with the electronic and paper versions of the questionnaire. This step should not take more than 1 half-day.

## Interpersonal communication

Data collectors should be instructed that good communication with respondents is key to avoiding biases that could affect the survey results. Data collectors should seek to build trust by beingpolite, respectful, and patient. Before starting an interview, they should:

* Introduce themselves with their name and agency.
* Present the objectives of the survey and assure participants their responses will be anonymous and confidential.
* Allow respondent to ask questions.
* Obtain informed consent.
* Conduct the interview.

In addition, data collectors should be advised that respondents are likely to answer questions differently depending on whether they are surrounded by other people who are listening to the answers they are giving. Every effort should be made to make it possible for the respondent to complete the survey in private.

## Avoiding bias while asking questions

Make sure data collectors understand that they must ask questions in the order they are written. Note that any change in order, however small, may affect the responses.

Emphasize to data collectors the importance of not influencing people’s responses. For example, if the respondent is hesitant about a question, an answer should not be suggested. Explain that suggesting answers introduces a significant bias into the survey results. If the respondent refuses to answer a question, check “refuse to answer.”

## Saving and transmitting data

Once data collectors are familiar with the questionnaire and how to record responses either on paper or electronically, they must understand how to save the data after completing an interview.

* For a paper survey, the questionnaire must be checked over to ensure all questions are answered, and it should be delivered to the supervisor at the end of the day.
* For an electronic survey, the data collector must make sure the data are saved in a predetermined folder and format.

## Role play

After the training, data collectors should practice administering surveys in front of the group. This will allow supervisors to observe their performance and give feedback so they can improve their technique. The data collectors will each need to complete a survey by questioning a teammate in front of the group. This will help demonstrate effective surveying techniques while emphasizing interpersonal skills and communication.

## Field testing

After the training, data collectors should administer three “pre-test” interviews in the community. They will receive a list of health facilities that were not included in the survey sample to be investigated. Working in teams of two, they will conduct three interviews in the field.

After the field test, data collectors should meet in a group with a facilitator to discuss difficulties they encountered in the field and strategies to manage them. This discussion is an opportunity for the data collectors to master their administration of the survey and is not an attempt to validate the survey. At this stage, the survey has already been finalized.

# Data collection

## Data collection plan

Data collection should follow a detailed plan to ensure adequate quality and quantity of data. The data collection plan needs to be developed after sampling to allow for logical planning. This plan defines daily movements of the entire team so that data collection remains organized and supervisors can closely support data collectors.

To start the data collection plan, the number of days necessary to complete data collection must first be determined. This will depend on the number of surveys to be conducted, the number of survey data collectors available and their level of experience, distance between households, health facilities or other structures to be visited, and budget.

## Number of survey data collectors

The number of data collectors required will be determined based on the geographic spread and number of units to be visited. (For example, if there are 10 health facilities to interview within a 3 km radius, it may take less time than surveying 3 health facilities within a 15 km radius.) In addition, the accessibility of households/health facilities must be considered when determining the number of data collectors necessary to complete data collection within the specified time.

As noted earlier, if possible, send the data collectors in teams of two or more. This will depend on the budget. When assigning teams, it is wise to put a more experienced surveyor with one who is less experienced.

## Daily schedule

To plan daily data collection, a schedule should be developed for each team. Some considerations for planning include:

* The number of surveys that can be realistically conducted in a day given the field context (distance, accessibility, availability of transport) and length of the survey
* Rational assignment of interviews based on geographic proximity
* Movement of the team to maximize opportunities for supervision
* The familiarity of each team with the area to be surveyed (It is imperative to send data collectors who are familiar with communities and speak the local language.)

After determining the number of teams and their daily movements and activities, the plan should be summarized in a table to facilitate field supervision activities. An example can be found below.

Table 10. Example of a plan to collect data from the general population

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Team | Health Zone | Village | Interviews (male) | Interviews (female) |
| Team 1 (person A, person B) | Katwa | Kihumulire | 4 | 4 |
| Team 1 | Katwa | Matanda | 3 | 3 |
| Team 2 (person C, person D) | Butembo | Bwinyole | 5 | 5 |
| Etc... | Etc... | Etc... | Etc... | Etc... |

## Field supervision

Data collection should be overseen by a team of field supervisors. They are essential for ensuring data quality. Their role is to:

* Provide daily supervision of survey data collectors. Supervisors observe the administration of one survey for each team daily to provide feedback and give them an opportunity to ask questions. They should also review the surveys or the tablet data at the end of each day for completeness and legibility.
* Be available in case of difficulty. If a team member encounters difficulties in the field, the supervisor is available to find solutions.
* Communicate with the field coordinator if there are significant changes or concerns. The field coordinator will develop a daily plan to observe and support each data collection team at least once during the data collection. It is important to be in the field continuously and to alternate between teams in order to provide as much support as possible.

The field coordinator will oversee the supervisors and will provide:

* Information containing the names and contact numbers for each team of data collectors as well as the teams for which each supervisor is responsible
* The daily data collection plan
* Additional health facilities or households to survey if necessary
* Support in the event of a major problem

## Survey data collector preparedness

Data collectors need to know to which team and zones they have been assigned. Before starting field activities, field supervisors will give each data collector:

* A form with:
  + Itineraries with the names of the villages to visit
  + Calendar of visits (days and duration of the survey)
  + Field supervisor phone numbers
* Informed consent script
* Protocol guide (PowerPoint presentation)
* Question definition guide
* Translation guide
* Questionnaire (paper or electronic version)
* Field gear:
  + Boots
  + Rain jackets
* Other:
  + Notebook
  + Pen

## Using the supplemental sample as needed

It is possible that the official censuses and lists of health facilities will not be up to date. If it is discovered in the field that a sampled home no longer exists, data collectors will be instructed to survey one of the backup homes that were chosen for this purpose.

# Planning for analysis and reporting

If possible, you should outline your results tables and reports before the survey data are collected because it will alert you to any information needs that you may not have adequately addressed with the survey questions. This step will allow you to check one last time to ensure that your sample size is sufficient for all of your analyses.

# Documentation and storage

As you go through the process of developing your questionnaire, and planning and implementing your survey, keep copies of all of the documents you use throughout the process. This will help you describe your work later. Archiving also could be very useful for future social science work. For each KAP survey, be sure to save the following documents in the appropriate electronic folder:

* The questionnaire
* Raw database
* Cleaned database
* Analysis results (Excel)
* General report and PowerPoint presentation
* Translation guides

# Appendix

## List of Ebola KAP survey sources

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2. Translators without Borders: <https://translatorswithoutborders.org/> [↑](#footnote-ref-2)