

CHAPTER V

PREPARING FOR DATA COLLECTION

This section is written for survey coordinators and technical resource persons.

It tells you how to:

- ✓ Make logistics arrangements.
- ✓ Prepare the questionnaire and training materials.
- ✓ Select and train the field workers.
- ✓ Choose and prepare the equipment.
- ✓ Carry out the pilot study.
- ✓ Set up computers and hire data processing staff.
- ✓ Make arrangements for returning the questionnaires to headquarters.

MAKING LOGISTICS ARRANGEMENTS

In order to make logistics arrangements, you will have to (1) set up central local headquarters, (2) contact local authorities where the survey will be carried out, (3) decide on the size and composition of the field team, (4) arrange accommodations, transportation and security, and (5) arrange to obtain or prepare copies of local maps.

Setting Up Central and Local Headquarters

The study must have a central headquarters, preferably in the capital, from where the whole operation will be coordinated. It is often possible to set up this office at a government institution such as a Ministry of Health center. Usually, two to three rooms are needed for general administrative activities, in addition to meeting rooms where the training can take place. The headquarters office will hold the computing equipment and serve as the storage place for questionnaires. Telephone or radio facilities are necessary for keeping contact with the field teams.

Contacting Local Authorities

In some areas, the arrival of a team of strangers may be regarded with suspicion. In the past, the survey team's failure to contact the local authorities in advance, to let them know what they would be doing, has caused problems. In one extreme example in Latin America, the interviewers who had

not contacted the local authorities before arriving were arrested. You can avoid such problems by contacting local authorities and community leaders before beginning the study, to ask for their permission and to advise them of the team members' arrival dates. You can also ask them at this time to identify suitable local guides and, if necessary, translators. Another area in which local authorities may be helpful is in arranging accommodations and meals for the survey team.

Deciding on Size and Composition of Field Teams

The number of interviewers required depends on the sample size, on the number of days to be spent interviewing and the on the number of respondents one interviewer can interview in a day. You can estimate this number from the length of a working day divided by the amount of time it takes to complete one interview (determined when you pretest the questionnaire—see below), allowing some travel time. (Travel time will be substantially longer in rural than in urban areas.)

 **EXAMPLE:**

In chapter 4, an example was given in which each interview would last, on average, 18 minutes, plus 5 more minutes to move from house to house. Considering a 6-hour working day (to allow for transportation to and from the selected area and for a mid-day break), one interviewer would cover 15 households a day [(6 hours × 60 minutes) ÷ 23 minutes]. A two-interviewer team will cover 30 households a day, which then becomes the cluster size.

To estimate the total duration of your survey, you should also allow for travel time from town to town.

 **EXAMPLE:**

In chapter 2, we estimated that 20 interviewers would cover 4,500 households in 15 working days but we allowed a further five days for travel from town to town and for unpredicted delays.

You can calculate the number of interviewers needed using this formula:

$$\text{Number of interviewers} = \frac{\text{sample size}}{\text{number of days available} \times \text{households per interviewer-day}}$$

 **EXAMPLE:**

If the sample size is 4,800 and you want the work done in 20 days, and if each interviewer can do 15 interviews a day, the required number of interviewers will be $4,800 \div (20 \times 15) = 16$.

Do not use more than 15–20 interviewers per region. It will be difficult to ensure good quality training and supervision for a larger number. Furthermore, if the survey will be done by different teams in each region or district, ***make sure that the training for each team is the same.*** It is best to use the same trainers and training materials for *all* the survey field training.

Once you have decided how many interviewers are required, work out the team compositions. Each team will need one supervisor, one driver (unless public transportation is used) and interviewers. A common team composition includes six persons: supervisor, driver and four interviewers who may work in pairs, visiting alternate houses. This arrangement assumes that the vehicles will be large enough to carry six persons plus their equipment, questionnaires and personal luggage.

When in doubt, be conservative. If you are not sure whether each interviewer can do 15 or 20 interviews a day, choose the smallest number. Allow plenty of time for travel and for rest because field work can be very tiring.

Team morale is easier to maintain when the interviewers work in pairs (see chapter 6). Working in pairs also contributes to quality control because one interviewer will always be close to another and they will make decisions together on selection of households and other interviewing matters. It is also useful to rotate team members to avoid monotony.

Arranging Transportation, Accommodations and Security

Transportation may be provided by government offices or arranged privately—for example, by renting cars. When using government vehicles, ensure that they are well maintained and that there will be no conflicting demands for the vehicles during the field-work period. Allow funds in the study budget for fuel, maintenance and eventual repairs, or ensure that they will be covered by government funds. Estimate fuel needs by calculating the typical distances to be travelled from town to town and within each selected area.

It is often possible to arrange for the team's accommodations with local communities: teams may often sleep in church buildings, army quarters or even the mayor's house. If private accommodations are arranged, make sure that the interviewers get a daily allowance that is sufficient to cover their costs. Meals may also be arranged with the local authorities, as mentioned above. Many places have no commercial restaurants, so meal arrangements will have to be made in advance.

Make plenty of allowance for extra mileage, since the actual distances to be travelled are often underestimated.

Security issues are also important. Field work may take place in urban slums or in rural areas where there may be security problems. Local guides are often useful in indicating and avoiding

security risks. These issues must be considered in advance.

Finally, careful arrangements should be made for paying the field workers and supervisors, as well as providing them with "pocket money" for meals, accommodations and other unexpected expenses. Timely payment is essential for maintaining the team's morale.

Adequate arrangements for transportation, accommodations, meals and security are essential not only for ensuring high-quality and timely data collection but also for the psychological well-being of the interviewing team.

Obtaining and Preparing Copies of Local Maps

Before the field work begins, you should obtain copies of the maps indicating the large areas (states, provinces, districts, towns, etc.) as well as the small areas (villages, census enumeration areas, etc.) in which the survey will be conducted. These may be available from the Census Bureau or another government office. Army maps are often very useful, if it is possible to gain access to them. Make sufficient copies of all maps in advance.

PREPARING THE QUESTIONNAIRE

The questionnaires you need for conducting your survey are given in chapter 3. Before training begins, you will need to translate the questionnaire and the instructions for the interviewers into the local language. As explained in chapter 3, do not expect the interviewers to translate the questions as they ask them. Different interpretations of the questions will make the data useless.

The questionnaire should be translated by one person and then another translator must independently translate the questionnaire back into the original language. The two versions can then be compared. Discuss any words which seem to be ambiguous or confusing, and agree on the correct translation.

All the interviewers must ask the questions in the same way.

When more than one local language exists in the area to be surveyed, use this translation procedure for all the questions and the instructions, for each language that will be used. Remember to give the translators very clear definitions of all the terms used in the questions. The correct definitions are given in the Instructions for Interviewers (Appendix 1).

📎 EXAMPLE:

Make sure the order of the questions is not changed during the translation process. Take particular care over the translation of phrases such as "continue feeding or eating" and "since this time yesterday." Be careful, as well, when referring to answers from previous questions (e.g., "during this last episode of diarrhoea").

Finally, keep the questions simple and easy to understand. Useful suggestions for phrasing the questions are given in chapter 3 (Box 3.4).

Pretesting the Questionnaire

You must pretest the translated questionnaire in the field. The pretest should identify potential problem areas, such as dates of birth or of vaccinations, unanticipated interpretations and cultural objections to the questions. Apply the pretest to respondents similar to those who will be interviewed during the survey. The survey coordinator should do the pretest with the help of one or two future supervisors or interviewers. Do not make all the copies of the questionnaire for the survey until *after* you have pretested it.

Specifically, the pretest should answer the following questions:

- Are respondents willing to answer questions in the way you have asked them?
- Are any of the questions particularly difficult to answer or do they address sensitive issues?
- Are the questions well understood by the respondents?
- Can the interviewers follow the instructions easily, or do they misinterpret them?
- Is the questionnaire designed with adequate space and is the coding of answers clear?
- Is it necessary to create new codes for common answers which were not included in the original questionnaire?
- How long does an interview take? (This will help you to decide how many interviewers you will need.)

☞ Note that during the pretest the interviewers are still learning the questionnaire, so the time spent per interview is longer than it will be in the field after they become more experienced.

Discuss the results of the pretest with experienced colleagues and with the interviewers. Make any changes necessary to the Instructions to Interviewers (Appendix 1). If the pretest reveals that respondents refuse to answer the questions in the form in which they are given in the questionnaire, consult an experienced survey worker in the country in which you are working. These experts can help you to decide whether it is advisable to make changes to the questionnaire. If a significant number of respondents refuse to answer the questions, the survey will not be worth doing.

Once the questionnaire has been translated and pretested, you will need to make copies of it. When making copies, remember the following:

- Ensure that space for the identification codes appears on each page if your questionnaire is more than one page long. This will prevent any part of a household's questionnaire being lost.
- Use good quality paper. This will help you to write clearly and will prevent the questionnaires from tearing.
- Do not change the layout of the questionnaire. In particular, do not try to squeeze too many questions in a page. A good layout helps to reduce interviewer error in the field. If you use the layout given for the questionnaires, data can then be entered directly into the computer. This saves time and effort.
- Print more copies than you need. There will always be some wastage, and extra copies are needed for training. Allow a separate questionnaire for each household in your sample.

☞ Check that your questionnaire contains sections for:

- interview date
- interviewer's name (or number)
- a unique identifying number for cluster (e.g., 01), household (e.g., 02), mother (e.g., 1-0) and eligible child (e.g., 1-1)
- an introductory paragraph written for your survey, explaining the purpose of the survey, asking for permission to do the interview and stating that the information obtained during the survey is confidential
- introductory paragraphs to the different modules—for example: "I would now like to ask you a few questions about diarrhoea."

The interviewer guide should be translated with the same care as the questionnaire. Pretest it by giving it to potential interviewers, having them read it and discussing it with them to identify any instructions which are unclear.

SELECTING THE FIELD WORKERS

The quality of the information obtained from a survey depends on the quality of the work done in the field. Good survey organization and thorough field work are vital.

A team of interviewers and their supervisors will do the field work. A detailed description

of the interviewers' and supervisors' tasks is given in chapter 6, but a brief job description for each follows to help you identify potential candidates.

The *field supervisor's job* is to:

- identify the clusters to be surveyed
- supervise three to five interviewers as they perform the survey
- ensure that the interviewers follow instructions
- answer interviewers' questions as they arise
- control the data quality by checking for errors during the interviewing, by checking that forms are completed fully and correctly and by checking that all the respondents are answering the questions
- identify problems and retrain interviewers who are doing their job incorrectly

The *interviewer's job* is to:

- identify the specific households to be surveyed
- gain the consent of respondents to be interviewed
- conduct interviews using the standard questionnaire
- maintain standard procedures in conducting the interviews and recording the answers.

You must select the interviewers and supervisors for their ability and motivation to perform these tasks. Supervisors must understand the importance of adhering to survey instructions, and be capable of ensuring that interviewers follow instructions.

The interviewers and supervisors should be:

- intelligent and literate—educated to secondary school level or more
- willing to follow instructions precisely and accurately
- polite and able to establish a good relationship with the respondents
- fluent in the language of the respondents
- employed by an institution or organization that will use their training for this survey in future; this training will then be part of capacity-building for future surveys

Previous survey experience is not necessarily a positive factor. While participation in well-conducted surveys is surely an advantage, previous involvement in poorly planned and implemented surveys can lead to bad interviewing habits which may be hard to correct.

 **EXAMPLE:**

In many countries the standards of so-called market research are very poor. Interviewers with previous experience in these surveys may actually require more training than totally inexperienced candidates.

You should also try to avoid over-qualified interviewers, who may follow their own agenda and stray from the precise technique developed for conducting the survey.

 **EXAMPLE:**

In some countries medical doctors were used for data collection, often with disastrous consequences due to their inability or unwillingness to follow the questionnaire instructions precisely and their tendency to make medical diagnoses during the interview.

Use female interviewers if possible, and ensure that the age of the interviewers is adequate for the information you want. In some societies women may be reluctant to provide answers on sensitive issues such as pregnancy outcomes or breastfeeding to male interviewers or to interviewers who seem too young.

In addition to the above qualifications, supervisors should have previous field experience as interviewers in well-conducted surveys.

Always select more potential interviewers than you will need. Train all of them and select the required number at the end of the course. This will guarantee that only the best

**Always select more potential interviewers
than you will need.**

field workers will be involved in the study, and will also provide a few additional interviewers in case you need replacements. Provide those who were excluded with a training certificate.

CHOOSING AND PREPARING THE EQUIPMENT

Equipment must be purchased well in advance of the survey. Box 5.1 lists some of the main items of equipment that must be acquired. (Cluster forms and maps, which are not listed, are discussed elsewhere.)

Box 5.1
SAMPLE LIST OF EQUIPMENT FOR FIELD WORK

Notebooks for the supervisors	Pencil sharpeners
Clipboards	Envelopes for filing questionnaires
Backpacks or other types of bags	Paper clips and staplers
Blank growth charts	Weighing scales and accessories
Pencils and erasers	Length/height meters
	Salt iodine testing kits

☞ In addition to the above-mentioned equipment, field workers should also carry letters of introduction to the families, preferably on official letterhead, and identification cards with photographs.

Weighing Scales

The scale must be portable, resistant and capable of weighing children up to 25 kg. Ideally, each interviewer will have her own scale. Interviewers who work in pairs can share one scale, but this will slow down data collection. A few extra scales should be ordered in case of equipment breakdown, loss or theft.

Two basic scale models are available: electronic scales and hanging scales.

The **UNICEF electronic scale** (available beginning December 1994) is a floor scale for weighing children as well as adults (capacity 150 kg). It has a precision of 100 g and a digital display. The child may be weighed directly, if possible. Alternatively, if the child is frightened, the mother can first be weighed alone and then weighed while holding the child in her arms, and the scale will automatically compute the child's weight by subtraction. Unlike hanging scales, there is no stress to the child and there are no trousers to wash (see next paragraph). No calibration is required. The scale itself weighs 4 kg and is powered by a battery with a life of 10 years. It costs approximately US\$90.

Hanging scales are widely used in many countries and are generally quite accurate. UNICEF distributes a Salter type spring scale (UNICEF catalogue no. 01 455 50) with a capacity of 25 kg and 100 g gradations. The use of this scale requires that the child be dressed in a set of plastic or nylon trousers before being weighed—a procedure that may make children anxious. (The same trousers can be used for more than one child, but they should be washed daily with water and soap. At least five

sets of trousers per scale should be available.) The interviewers will need several pairs of these special trousers if they are going to use hanging scales. A hook for hanging the scale from a door or a ceiling beam may also be necessary. The scale, which costs about US\$30, should be checked periodically with standard 5- or 10-kg weights.

Length/Height Boards

Measuring length or height is optional in multiple-indicator surveys. Since children under two years will be measured lying down (length) while older children will be measured standing up (height), measuring boards should be adequate to both situations. As with scales, one measuring board per interviewer is desirable, but two interviewers working as a pair can share one board.

UNICEF distributes a model made out of wood (catalogue no. 01 145 00) adequate for children up to 130 cm, which is appropriate for the purposes of multiple-indicator surveys. It weighs 6 kg, measures 75 cm when collapsed and comes with a shoulder strap. It costs about US\$290. Alternatively, these boards may be manufactured locally at lower cost by skilled carpenters, but you should allocate plenty of time to this process since several adjustments in the early prototypes may be required.

Salt Iodization Kits

Each field worker should carry a salt iodization kit. Each kit is sufficient for testing at least 100 samples of salt. Test kits for potassium iodate (catalogue no. 05 860 00), at a cost of US\$0.40 per kit, will be required for most countries. In a few countries—such as Ecuador and Colombia—where salt is fortified with potassium iodide, a different kit (catalogue no. 05 860 02) is required, which costs US\$0.60. These kits must be ordered well in advance of the planned start of the field work.

TRAINING THE FIELD WORKERS

It is essential to have high-quality data. This will be possible only if you allow enough time to train the supervisors and interviewers thoroughly.

Before training starts, you should work out the field procedures to be followed during the survey. This means planning for supervisors to check completed forms and to fill out cluster control forms, for collecting completed

forms from the supervisors, for making transportation arrangements for teams and for making payments to field workers.

Decide which interviewers and supervisors are qualified to go on and dismiss those who cannot perform the tasks adequately.

☞ Remember to:

- plan ahead for the training course
- prepare interviewer guides (see chapter 3)
- make sure adequate space is available
- provide facilities for drinks and snacks (a good working atmosphere during the training course can help to motivate interviewers to perform well in the field)
- use audiovisual aids, such as overhead projection, during the training

Before you train the field workers you should also:

- translate and pretest the questionnaire, the instructions for filling in the questionnaire and the field procedures
- identify typical field locations for practicing household selection and interviews.

Table 5.1 provides an example of a five-day training course for both interviewers and supervisors. The latter will also need additional training (Table 5.2).

Table 5.1. Example of a five-day training course for interviewers and supervisors

Day 1	<p>Explain thoroughly the purpose of the survey.</p> <p>Introduce all team members, participants from the Ministry of Health and other organizations.</p> <p>Outline the whole survey procedure.</p> <p>Motivate the field workers by explaining the importance of the data to be collected and what will be done with it.</p> <p>Explain the administrative arrangements for the work.</p> <p>Give details of the working hours and pay, the survey schedule, transportation arrangements and everyday procedures.</p>
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(Table 5.1, continued)

Days 2–3**Discuss the survey procedures and questionnaire.**

Conduct a question-by-question discussion of the questionnaire.

Explain and discuss each question. There should be no unfamiliar terms. Give each field worker written instructions to take to the field.

Discuss interviewing technique. Explain how to gain the confidence of the respondent, how to avoid inducing answers, the importance of completing each assigned interview and of following standard procedures. Emphasize that the interviewers must ask the questions *exactly* as they are worded on the questionnaire.

Standardize anthropometric techniques. Spend at least half a day in a place with many small children (day care center or nursery).

Do a demonstration interview.

Practice recording data, managing forms, making preliminary tabulations.

Have role-playing interviews, where trainees interview each other. Use questionnaires completed in the pretest as examples.

Tape the practice sessions if possible, and provide constructive criticism of the different interviewers. Hold more demonstration interviews as the training proceeds.

Days 4–5**Conduct a field exercise and have further discussion of interviewing.**

Practice reading maps.

Discuss how to handle empty buildings and refusals.

Organize practice in the field. Each trainee should complete at least five practice interviews in the field. Observe all the interviewers' practice sessions and provide them with feedback.

Discuss the problem of the interviewer influencing the respondents' answers and other interviewer mistakes. Agree upon solutions to these problems.

Go over field practice questionnaires with individuals who have particular problems, and discuss problems as a group.

Ask the participants to share their ideas and suggestions for dealing with difficulties.

Table 5.2. Example of a two-day additional training course for supervisors

Day 1	<p>Household selection and map reading. Explain the procedures to be followed, and the importance of random selection of households. Provide practice and time for discussion.</p> <p>(If sketch-mapping will be used for segmentation of the small area, as described in chapter 6, then at least two additional days for training in the field will be required.)</p>
Day 2	<p>Quality control. Explain the need to monitor interviews and check interview quality on the spot. Discuss how to deal with interviewer errors.</p> <p>Explain what to do with the completed questionnaire, and how to deal with unanticipated problems.</p> <p>Emphasize that the supervisor should keep field notes, and go through what should be recorded in these notes.</p> <p>Discuss the survey schedule and the need for liaison with the survey coordinator.</p>

Briefing the Drivers

All persons involved in the survey should be briefed about its main purposes and the main methodological guidelines. Drivers who will work along with the team throughout the whole survey are a group in need of special attention. Drivers often fail to understand random sampling and may even refuse to take secondary roads or paths to reach scattered households. This preference for certain roads is known as "main road bias." Another common problem is that drivers often interfere in the interviews and prompt or induce certain answers from the mothers. A special session at the beginning of the field work may help prevent these problems.

CARRYING OUT THE PILOT STUDY

The pilot study is the final rehearsal for the survey. It should be carried out soon after finishing the training period, but at least a few days before beginning the actual field work. This will allow time for correcting any problems detected during the pilot study.

A properly conducted pilot study will identify the major problems with the survey methodology and help prevent them during the data collection phase.

The pilot study should cover both urban and rural areas. These areas should be selected to be representative of the situations the interviewers might face during the survey. The pilot study should last for three to five days and include the daily routine shown in Box 5.2.

Box 5.2
DAILY ROUTINE FOR THE PILOT STUDY

- ✓ Briefing at headquarters
- ✓ Transportation to field sites
 - ✓ Locating clusters
- ✓ Contacting local authorities and introducing yourself
- ✓ Selecting the households
- ✓ Interviewing and measuring
 - ✓ Recording data
- ✓ Managing data and tabulating preliminary results

The pilot study should be seen as an extension of the training program. Close supervision of the interviewers during this phase is essential.

SETTING UP COMPUTERS AND HIRING DATA PROCESSING STAFF

You must obtain the services of a computer programmer with experience in using the EPI INFO software package. (See chapter 7 for more information on EPI INFO.) You will need this person for at least two to three months. Copies of EPI INFO are available from the Planning and Coordination Office in New York.

Standard EPI INFO programs for entering, cleaning and analysing the data collected are described in chapter 7. However, these programs may have to be adapted locally, particularly if any changes are made to the questionnaire modules (chapter 3). Before the main survey begins, make sure that the programs have been properly adapted and are functional.

- ☞ Use the questionnaires of the pilot study for testing the data entry and analysis programs. Check the programs for the production of tables. Sort out any problems and make any corrections that may be necessary.

You will also need data-entry staff. Depending on the size of your survey, two or more data clerks will have to be recruited and trained by the computer programmer in using the EPI INFO software. This training should require no more than two days.

Arrange for the necessary office equipment, including computers, printers, diskettes and paper, and make sure the power supply is adequate. At least two computers are required for the survey work.

Remember—unless all arrangements for data entry and analysis are made before starting the field work, this process can lead to major delays in producing survey results.

MAKING ARRANGEMENTS FOR RETURNING THE QUESTIONNAIRES TO HEADQUARTERS

Instruct supervisors on the procedure for returning completed questionnaires to the data-processing headquarters.

If possible, the questionnaires should be returned daily so that data can be processed quickly. In the early stages of the survey this will also enable you to check for any systematic problems which may still be occurring in the field. To prevent losing the questionnaires, arrange for supervisors to photocopy completed questionnaires before sending them long distances, if at all possible. If this is not possible, at least arrange for small batches of questionnaires to be dispatched at any given time so that any losses will be minimized.

The prompt return of the questionnaires to headquarters contributes to quality control and allows early data entry.

EXAMPLE:

In one survey, an arrangement was worked out with the local bus companies that drove to each settlement in the country. No batches were lost, and no more than a few days were lost sending the questionnaires from the field to the data processing center.

ETHICAL CONSIDERATIONS

Household surveys typically raise a number of ethical questions, particularly surveys that pertain to the health of children and other household members. Such questions relate to individual rights to privacy, the need for informed consent, and responsibilities that arise upon uncovering potential health problems in a survey. It is important to consider such dictums as those enumerated in Box 5.3 during the early stages of planning a survey.

Box 5.3**ETHICAL ASPECTS OF CONDUCTING A SURVEY**

Ethical approval: The survey must abide by the laws of the country. If approval by an ethical committee is required, this should be requested at an early stage to prevent delays.

Confidentiality: All information provided to the interviewers is strictly confidential. Records should be securely stored. Computerized records should not include any names that might be used to identify the families, unless this is strictly necessary (for example, if follow-up visits are being planned).

Informed consent: Mothers and/or heads of families should be informed about the contents of the interviews and measurements to be carried out. They must understand the procedures and give their full approval. In some countries, written consent may be required.

Feedback to the families: Families have freely donated their time to the survey and are entitled to some feedback. Any important conditions discovered during the interview should be reported to the parents. For example, mothers should be advised when their children's vaccinations are overdue, when the child is malnourished, or when non-iodized salt is being used. In some countries, field workers carry ORS packets or plastic spoons for preparing sugar-salt solution to distribute to children with diarrhea who are not being treated properly.

Feedback to community: Before starting the survey, the coordinators should plan what type of feedback will be given to the communities. In most cases, the number of interviews per community will be too small for statistical validity, but even some general feedback is often appreciated by local authorities (for example, that 9 of the 40 children examined were found to be malnourished). If possible, this type of feedback should be given before the team departs to a new community.