

# CBHFA SURVEY GUIDE

International Federation of Red Cross and Red  
Crescent Societies

Adapted from

# **Reference Manual for Managers: LLIN Distribution Impact Survey**

International Federation of Red Cross and Red Crescent Societies,  
Geneva

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## Glossary

**Bias:** *Bias* refers to the difference between the estimated value of a health indicator from a survey and the true value found in the population. A method of estimation is *unbiased* if the average value of the estimate taken over all possible samples of a given size is exactly equal to the true population value. The effect of *bias* reduces the accuracy of the results. Bias cannot be reduced by increasing your sample size.

**Census:** There are many ways to collect data about a population. A *census* describes one method in which every member of the population is questioned to gain information about characteristics of interest. This type of data collection can take a great deal of time and money to complete.

**Confidence interval:** The *confidence interval* describes a range of values we expect will include the true value of the characteristic being evaluated. The *confidence interval* helps describe the reliability of the survey estimates.

**Confidence level:** Is a percentage value that describes how likely it is that the true value of the characteristic being estimated will fall into the confidence interval defined.

**Design effect (DEFF):** The *design effect (DEFF)* compares the precision of the sampling method being used to the precision of using a simple random sampling method for the same sample size. If the DEFF is larger than one, the sampling method being used is less precise than the simple random sample method. If the DEFF is less than one than the sampling method being used is more precise than simple random sampling.

**Non-sampling error:** One source of bias in a survey is *non-sampling errors*. *Non-sampling errors* are errors caused by poor coverage of the target population, response errors, non-response errors, faulty questionnaires, interviewer recording errors or data processing errors. These errors lead to bias in your survey results. *Non-sampling errors* are very difficult to estimate, but can be reduced by using the most simple design possible for your survey needs.

**Precision:** The data from a survey will not be as precise as taking a census. The *precision* means that if the survey was repeated many times the results would be slightly different each time since the entire population was not approached. You can improve the precision of your survey results by increasing the sample size.

**Sample:** A survey is a method of collecting information about a population which involves gathering data from only a part of the population and estimating what is occurring in the entire population. The part of the population that is selected is referred to as the *sample*.

**Survey design:** The *survey design* refers to the set of specifications that describe, in detail, the target population, sampling frame, the sampling units, the sample size, the sample selection, the estimation methods and the indicators you will use for your health survey.

*Sampling error:* The *sampling error* refers to the error in survey estimates that occurs because the entire population was not included in the sample. It means that each time the survey is conducted the results will not be exactly the same.

*Sampling frame:* The *sampling frame* is a complete list of all the sampling units that cover the target population. Your sampling frame is a critical element in the quality of your survey results. An inaccurate sampling frame can lead to bias.

*Sampling units:* The target population is divided into parts called *sampling units*. The entire population must be included in these sampling units, but the sampling units must not overlap.

*Target population:* The term *target population* refers to the entire population about which you want information.

## Background

Monitoring and evaluation of CBHFA interventions in populations is a critical aspect of the work of Red Cross and Red Crescent National Society CBHFA program managers. Accurate information about the impact of CBHFA allows national offices to:

- § Assess their intervention strategies
- § Improve their efficiency in delivering CBHFA programs
- § Make the best decisions in terms of spending
- § Meet reporting requirements for funding and most importantly,
- § Advance the health status of the population.

A health survey is one of several ways to gather information about the impact of a CBHFA intervention. Data is collected, organised and interpreted so that meaningful conclusions can be made. A survey sample is taken of the population so you can estimate what is happening in the whole population. Detailed planning means the survey can be completed as efficiently as possible so management responsibilities can be met, while respecting budget and time constraints.

## Objectives of the Management Survey Manual

This survey manual is specifically designed to be a management tool for National Society CBHFA program managers to achieve their management priorities. It is meant to be a simple and straightforward resource to empower National Societies to oversee the planning, implementation and analysis of a survey to measure the impact of CBHFA.

The sampling method described in this manual is based on unequal segment multi-stage sampling. This is a multi-stage cluster sampling technique that maintains the simplicity and inexpensiveness of the EPI cluster sampling method but addresses the bias which can arise when using the EPI method.

## Using this manual

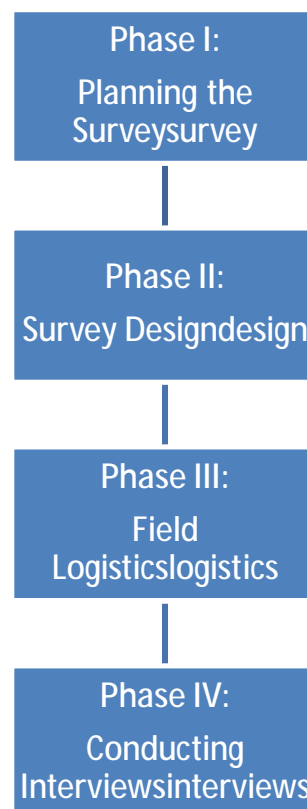
The intention of this manual is to provide a step-by-step process to lead you through conducting your own survey to measure outcome indicators related to behaviour change and knowledge for CBHFA. You will find a number of resources which will help you complete the tasks required.

The manual is divided into four phases:

- ✓ Phase I: Planning the survey
- ✓ Phase II: Survey design
- ✓ Phase III: Field logistics
- ✓ Phase IV: Conducting the interviews

*It is recommended that you read through this manual at least once to gain an understanding of the key concepts involved. This will greatly help you as you advance through each phase of your health survey.*

## Overview of survey phases



## PHASE I: PLANNING THE SURVEY

### *Survey objectives*

The first step in planning a health survey is to write a statement of your objectives. Clear objectives help you with explaining the survey to national authorities, interested partners, the survey team and the population.

Without a clear statement of objectives, it can be easy to get distracted by the details of the planning and make decisions that will not provide you with reliable results.

Your survey objectives should include statements about the following:

- ✓ Why the survey is needed
- ✓ What your survey will measure
- ✓ Who will be responsible for overseeing the survey
- ✓ The timeframe in which you would like to complete the survey and analysis
- ✓ How you will use the survey findings

Phase I of this manual is designed to help you answer these questions and gain a clear understanding of your survey objectives.

*One of the most important things to remember when considering your survey objectives is to keep the survey as simple as possible. You will only collect data for the indicators that you need to evaluate and intend to use. This will increase the effectiveness and reliability of your survey results.*

### *What this survey will measure*

Health indicators describe what your survey will be measuring.

A survey to measure the impact of a CBHFA intervention in a population will focus on the following types of key indicators:

- § Behaviour change
- § Knowledge change
- § Coverage (i.e. immunization, home visits etc.)

In addition the survey is designed to collect information about:

- § The study population (total number of individuals in the household, the number of children under five years of age in the household, the number of pregnant women in the household)



It is important to remember that if you are conducting a program-wide survey, you will analyze all the data collected to estimate the health indicators for the entire program area. You will not be able to compare results between clusters. For example, you cannot make regional comparisons based on the data collected from a program-wide survey. This would require separate surveys in each region to be conducted.

## *Preparing a time schedule for a CBHFA survey*

The planning phase of your survey should be started as early as possible. On average it is estimated that to complete all four phases of the survey will take between three to six months.

In deciding when to conduct your field interviews it is important to consider the following:

What factors influence behaviour and other indicators, for example:

- § A rainy season may increase cases of diarrhoea
- § Social mobilization activities

What factors influence the availability of your target population, for example:

- § Agricultural schedule
- § Academic schedule
- § Market schedule
- § Religious schedule
- § Migration
- § Security
- § Any other event like an election or major campaign launched by government.

## *Ethical considerations*

Your health survey should be conducted to the highest ethical standard possible. You should investigate to determine whether national policies on 'ethics for surveys involving human subjects' exists in your country. If so, ensure that you respect these policies throughout the planning and implementation of your survey. If a national body for the review of research initiatives exist in the country, then you should cooperate with this body to obtain the necessary clearance for your survey<sup>1</sup>.

It is critical that each member of the survey team understand the importance of protecting the rights of the survey respondents. This includes their right to informed consent to participate in the survey, their right to decline participation in the survey, their right to privacy, and their right to be treated without judgment throughout the interview process.

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<sup>1</sup> World Health Organization. Immunization coverage cluster survey-Reference manual. Department of Immunization, Vaccines and Biologicals, World Health Organization, Geneva, 2005, WHO/IVB/04.23, p 13.

## *Obtaining approval for the survey*

The manager of the health survey should discuss the nature of the health survey with the appropriate national and local authorities and receive approval for the health survey.

Obtaining approval from the appropriate authorities will involve visiting each community prior to conducting any field interviews. This step should be started as soon as possible to avoid any delays in the implementation phase.

## *Identifying the survey team*

Conducting a health survey requires a commitment of time and resources. The following section will detail the roles and responsibilities of a survey team. One member of a team may be able to take on more than one role depending on their skill set and availability. The manager will be able to use the work plans provided below to decide on the size of the survey team and prepare a recruitment strategy to ensure the team has the necessary skills to complete each component of the health survey. The manager will also be able to use this information to assist with the development of a timeframe for the survey.

### Survey coordinator

The survey coordinator is responsible for the overall organization and implementation of the health survey. The survey coordinator reports to the CBHFA program manager.		
<i>Responsibilities</i>	<i>Tasks</i>	<i>Timeframe</i>
Plan the health survey	<ul style="list-style-type: none"> <li>✓ Outline the survey objectives for approval by CBHFA program manager</li> <li>✓ Oversee the design of the survey</li> <li>✓ Collect necessary information to begin the planning phase of the survey, i.e. population data, maps</li> </ul>	
Identify clusters and segments	<ul style="list-style-type: none"> <li>✓ Identify clusters</li> <li>✓ Complete the segmentation and mapping of each cluster as appropriate</li> </ul>	
Seek technical guidance	<ul style="list-style-type: none"> <li>✓ Develop a network of statistical or survey experts that can provide technical input and guidance as required</li> <li>✓ Follow-up with any design related questions that may arise throughout the planning, implementation or report writing phases of survey</li> </ul>	
Develop a timeline	<ul style="list-style-type: none"> <li>✓ Prepare timeframe for each phase of the survey</li> <li>✓ Ensure work is meeting specified deadlines</li> <li>✓ Make necessary adjustments in guidelines for</li> </ul>	

	unexpected or unavoidable delays	
Hiring of survey team	<ul style="list-style-type: none"> <li>✓ Decide on size and structure of survey team</li> <li>✓ Decide whether survey team will be hired or whether current staff members will be used</li> <li>✓ Develop a recruitment strategy for hiring as necessary</li> <li>✓ Interview and hire survey team</li> <li>✓ Arrange payroll requirements</li> </ul>	
Training of survey supervisors and interviewers	<ul style="list-style-type: none"> <li>✓ Organise training for survey supervisors and interviewers</li> <li>✓ Prepare training materials</li> <li>✓ Facilitate training</li> <li>✓ Record learning and feedback from training</li> </ul>	
Oversee fieldwork	<ul style="list-style-type: none"> <li>✓ Ensure equipment, maps, materials, population data, etc are available to team</li> <li>✓ Ensure safety of survey team is maintained</li> </ul>	
Oversee data analysis	<ul style="list-style-type: none"> <li>✓ Develop a system of data management, and become familiar with automated data analysis procedures</li> </ul>	
Report survey findings	<ul style="list-style-type: none"> <li>✓ Prepare final report presenting survey findings, future action and learning</li> <li>✓ Distribute final report to CBHFA program manager and interested partners</li> </ul>	

### Field supervisors

The field supervisors are responsible for the field activities. They report directly to the survey coordinator.		
Responsibilities	Tasks	Timeframe
Announce/introduce survey	<ul style="list-style-type: none"> <li>✓ Visit local health and administrative officials in selected clusters areas to explain the survey and its objectives.</li> <li>✓ Answer any questions that arise concerning the purpose of the survey.</li> </ul>	
Ensure quality of data collected	<ul style="list-style-type: none"> <li>✓ Make sure interviewers understand their tasks and role</li> <li>✓ Prepare materials and equipment for each work day</li> <li>✓ Supervise the collection of data and interviews</li> <li>✓ Review questionnaires before leaving the survey area to check that forms are complete and no errors have been made.</li> </ul>	
Ensure safety of team members	<ul style="list-style-type: none"> <li>✓ Be aware of any security issues in the cluster area.</li> <li>✓ Ensure interviewers work in teams of two at all times.</li> </ul>	

	<ul style="list-style-type: none"> <li>✓ Ensure all members of the team return safely at the end of the day.</li> <li>✓ Review and understand safety guidelines and procedures in case of difficulties.</li> </ul>	
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## Interviewers

Interviewers are responsible for collecting the data according to the procedures outlined in their training. They report directly to the field supervisor.		
Conduct interviews	<ul style="list-style-type: none"> <li>✓ Work as a team of two to conduct the interviews</li> <li>✓ Understand the survey objectives</li> <li>✓ Introduce and explain the survey objectives to the respondents.</li> <li>✓ Obtain consent from the respondents to conduct the interview.</li> <li>✓ Maintain a non-judgmental and impartial manner when conducting the interview.</li> <li>✓ Conduct interviews in accordance with the information and training that has been provided to them.</li> </ul>	
Complete data forms	<ul style="list-style-type: none"> <li>✓ Ensure the questionnaires are fully complete.</li> <li>✓ Discuss any challenges that arise with the field supervisor.</li> </ul>	

## Drivers

Drivers are responsible for transporting field teams. They report directly to the field supervisor.		
Provide transportation to field teams	<ul style="list-style-type: none"> <li>✓ Working with maps, local guides, etc. become familiar with cluster areas.</li> <li>✓ Minimize loss of time by being aware of any challenges to accessing cluster areas.</li> </ul>	
Ensure safety of team	<ul style="list-style-type: none"> <li>✓ Have a valid drivers permit</li> <li>✓ Drive safely to ensure the well-being of field team members and pedestrians at all times.</li> <li>✓ Understand and abide by all transportation laws in place</li> </ul>	
Be aware of security issues	<ul style="list-style-type: none"> <li>✓ Drivers can play an important role in being aware of any security issues that may arise and presenting this information to the field supervisor.</li> </ul>	

## Local guides/translators

Local guides can be used to assist the survey team with identifying local authorities, organizations and geographic landmarks in a cluster area.		
Facilitate introductions	<ul style="list-style-type: none"> <li>✓ Introduce the field team to local authorities, community leaders, other relevant organizations</li> </ul>	
Provide knowledge of the area	<ul style="list-style-type: none"> <li>✓ The local guide can be a valuable asset in assisting the field team with identifying the cluster area</li> <li>✓ The guide could also provide important information for selecting and mapping segments</li> </ul>	
Translation	<ul style="list-style-type: none"> <li>✓ Translate the survey questions/answers for the respondent as precisely as possible.</li> <li>✓ The survey questionnaire should be thoroughly reviewed with the translators to ensure accurate interpretation of each question prior to starting the field work.</li> </ul>	
Remain impartial	<ul style="list-style-type: none"> <li>✓ It is critical that if a local guide/translator is used, they remain impartial during the explanation of the survey objectives, interviewing procedures and do not influence the implementation of the survey.</li> </ul>	

## *Determining the size of the survey team*

### Interviewers

It is necessary that an interview always be conducted by a team of two interviewers. It is preferable if the interview team is made up of one female and one male interviewer.

Two interviewers per team ensure:

- § a higher quality of the work since both interviewers can verify that all the information required has been recorded
- § the safety of the interviewers and respondents of the survey.

### *Calculation for number of interviewers*

A pre-test of your questionnaire should be conducted to estimate the time it will take to complete each interview and therefore each cluster. In most instances however, one interview team should be able to complete one cluster per day.

Therefore, a simple calculation can be completed to determine how many interviewers you will need for your survey.

$$\text{Number of interview teams} = \frac{\text{Number of clusters}}{\text{No. of days to complete the survey}}$$

$$\text{Number of interviewers} = \text{Number of interview teams} \times 2$$

It is always a good idea to have some extra interview team members trained to avoid delays in case you need to substitute interviewers unexpectedly.

## Field supervisors

There should be one field supervisor per survey team. The field supervisor must review the completed questionnaires of each team prior to leaving the cluster area.

## Drivers

You will need to consider the distances between each cluster to determine how many drivers you will need. For clusters that are geographically spread out, it may be necessary to have one driver per cluster.

## *Recruitment and training of field team*

The survey coordinator is responsible for recruiting and training the field supervisors and interviewers. The role descriptions provided above will help the survey coordinator to determine which qualifications are essential in hiring field supervisors and interviewers. In addition field team members should be adaptable and able to work well as part of a team.

The survey coordinator must decide whether volunteers involved in CBHFA should be involved in the impact survey being conducted. These individuals may be more prone to influencing the respondents during the interview process, resulting in bias in the survey results. On the other hand, these individuals may have a better understanding of the program activities and the goals of the survey and therefore may be more thorough and knowledgeable. The survey coordinator can deploy volunteers from different communities in order to minimize bias.

The training of the field supervisors and interviewers is an important step in ensuring accurate and reliable data is collected. A well-trained team is critical in producing meaningful survey results. For this reason, a great deal of care should be taken in planning the training of the field team. Training facilitators must explain in detail the survey

objectives, the interview procedures, the questionnaire, the mobile technology being used, and the reporting requirements.

The following is a sample training agenda which can be adapted to your CBHFA impact survey<sup>2</sup>.

## *Training for Survey Field Team*

### **Sample agenda**

#### **DAY 1**

9:00 – 10:15 am	Welcome and introductions Opening remarks Introduction of participants Icebreaker activity Overview of agenda Training ground rules Administrative Issues
10:15 – 10:30	BREAK
10:30-11:15 am	Introduction to the survey Interviewing techniques – do's and don'ts Background and purpose of survey Description of field team members Role and responsibilities of survey supervisor and interviewer
11:15-12:00	Introduction to the CBHFA programme, its goal, objective and information about geographical area  Distribution of questionnaire
12:00 – 1:00	LUNCH
1:00- 2:30	Survey questionnaire review The facilitators introduce the questionnaire, and lead a review of the questionnaire section-by-section. <ul style="list-style-type: none"> <li>• Study population and eligibility,</li> <li>• The definition of a household.</li> <li>• Informed consent</li> </ul>
2:30 - 2:45	BREAK
2:45 – 4:00	Survey questionnaire review - continued

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<sup>2</sup> Adapted from Healthbridge. Cervinkas, J. Evaluation of the Measles/Malaria Integrated Campaign in Cross River State, Nigeria-June 2005. Unpublished report for The Canadian Red Cross Society, June 2009 p 33.

- Sections of the questionnaire: Background information
- Topic 1

## DAY 2

9:00- 9:15 am	Welcome and ice breaker Go over any questions from day 1 and recap of day 1
9:15 – 10:30	Survey questionnaire review - continued <ul style="list-style-type: none"> <li>• Remaining topics<sup>3</sup></li> </ul>
10:30- 10:45	Break
10:45 – 12:30	Survey Questionnaire Review - continued <ul style="list-style-type: none"> <li>• Remaining Topics</li> </ul>
12:00 – 1:00	Lunch
1:00 – 2:00	Questionnaire role play Two surveyors will role play an interview in front of the others. Feedback will be provided at the end of the interview by the facilitators.
2:00- 3:00	Interviewing skills practice Exercise: Dealing with special situations Each small group will be provided with a set of case scenarios describing a household. The small groups will practice conducting an interview and recording data, using a simulated interview based on the facts provided in the case scenario(s). Facilitators will provide support and feedback.
3:00 – 3:30	BREAK
3:30 - 4:00	Debriefing the interview case scenarios
4:00 – 5:00	Field procedures There are a number of procedures that need to be carried out to ensure the success of the survey and to obtain high quality data. This section leads the surveyors through these procedures, and provides the chance to discuss issues that may arise and how to deal with them. The roles and responsibilities of interviewers and survey team leaders will be discussed. <ul style="list-style-type: none"> <li>• Contacting local authorities</li> <li>• Informed consent/rights of respondents</li> <li>• Working as a team</li> <li>• Understanding the household selection process</li> <li>• Carrying out the interview</li> <li>• Reducing non-sampling errors</li> <li>• Special situations/challenges</li> <li>• Reporting to team supervisor</li> <li>• Safety and security issues</li> </ul>

## DAY 3

9:00 – 9:30	Welcome and review
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<sup>3</sup> Time will depend on the number of topics selected for the interview



9:30 – 1:00	The mock survey
	All surveyors and their supervisors will take part in a field exercise near the training site. Teams will apply the field procedures and select enough households so each interviewer has the responsibility of conducting at least two interviews.
1:00 – 2:00	LUNCH
2:00 – 4:00	Debriefing the mock survey exercise
4:00 – 5:00	Preparation for fieldwork Assignment of teams Schedule of field work Description of clusters Maps Logistics, accommodation and transportation review Communications in field

## DAY 4

9:00-10:30	Welcome and debriefing <sup>4</sup> Go over any questions from Day 3 mock survey and previous training days.
10:30-11:00	Break
11:00-12:00	Group 1: Meeting for supervisors: Getting ready for the field The facilitators will meet with all the supervisors to discuss supervisor and team member responsibilities, and logistics (maps, schedules, troubleshooting, administrative issues, contacts).
11:00-12:00	Group 2: Topic-specific support to interviewers Focus will depend on the specific needs expressed. Facilitators will be available to provide coaching and support
12:00 – 1:00	Lunch
1:00 – 2:20	Group 1: Meeting for supervisors (continued)  Group 2: Topic-specific support to interviewers (continued)
2:20-2:30	Evaluation of workshop
2:30-3:00	Break
3:00 – 4:00	Final preparations and closing remarks

Quality of training and mock survey can be monitored by using following checklists provided in Annex 2:

- Checklist to monitor enumerator training
- Checklist to monitoring mock surveys during training and data collection

<sup>4</sup> If required, plan for more mock surveys on 4<sup>th</sup> day or extend training for 5 days.

## *Budgeting for the survey*

The survey coordinator is responsible for preparing a budget for the survey.

Important factors in developing an accurate budget include the number of interviewers and supervisors that will be required to complete the fieldwork within the specified timeframe.

It is equally important to budget for tasks such as the time required to gather population data, segmentation and mapping if required, and recruitment and training of the field team.

Finally, the budget should include unforeseen costs that could arise due to such issues as extra labour or logistical costs incurred due to delays during the rainy season.

The following is a list of items that should be included in your survey budget<sup>5</sup>.

Budget items to be considered	Units required	Unit cost	Estimated cost (units required X unit cost)
Administrative support (printing, photocopies, recruiting of staff)			
Training field supervisors			
Rental of training site			
Equipment for training (projectors, flipcharts)			
Allowances for survey coordinator			
Allowances for survey designer			
Allowances for interviewers			
Allowances for field supervisors			
Allowances for drivers			
Allowances for local guides			
Rental of vehicles			
Communications (meetings, final reports)			
Total			

<sup>5</sup> Adapted from World Health Organization. Immunization coverage cluster survey-Reference manual. Department of Immunization, Vaccines and Biologicals, World Health Organization, Geneva, 2005, WHO/IVB/04.23, Annex F.

## PHASE II: UNDERSTANDING YOUR SURVEY DESIGN

The next phase will help you understand how you will select the sample for your survey. There are four main points that will be considered:

- § Sample size
- § Sampling method
- § Selecting clusters
- § Selecting households to be interviewed

### *Determining the sample size*

The sample size describes how many individuals will be interviewed during your survey in order to estimate what is happening in the whole population. The larger the sample size, the more *precise* the survey results. The sample size chosen for health surveys is usually a balance between the *precision* required and the increased survey costs associated with obtaining a larger sample size.

Sample size can be computed by using the following formula:

$$n = Deff \times \frac{(Z_a + Z_b)^2 \times [P_b(1 - P_b) + P_e(1 - P_e)]}{(P_e - P_b)^2}$$

where

- Deff** Design effect; The design effect provides a correction for the loss of sampling efficiency resulting from the use of cluster sampling as opposed to simple random sampling
- $Z_a$**  Significance; the z-score corresponds to the probability with which it is desired to be able to conclude that an observed change of size  $(P_e - P_b)$  would not have occurred by chance;
- $Z_b$**  Power; the z-score corresponds to the degree of confidence with which it is desired to be certain of detecting a change of size  $(P_e - P_b)$ , if one actually occurred
- $P_b$**  The estimated level of an indicator measured as a proportion at the time of the first survey (baseline)
- $P_e$**  The expected level of the indicator at some future date (endline)

Recommended values for CBHFA survey:

Deff 1.5 or 2 (depends on the homogeneity of clusters)

$Z_a$  95%

$Z_b$  80%

$P_b$  The *baseline* value of an indicator expressed as proportions that is,  $P_b$  is ideally informed by information available from other surveys that have been conducted in a given setting (i.e. previous surveys that may have been conducted in the region or in a neighbouring country; data from the Ministry of Health or other government agencies; or, when such information is unavailable, “guesstimates” from knowledgeable persons based on the best sources available). In choosing a value for  $P_b$ , it is best to lean toward a value of .50. The reason for this is that the variance of indicators that are measured as proportions reach their maximum as they approach 0.50. The safest course would be to always choose  $P_b = 0.45$ , as this will ensure an adequate sample size irrespective of what the actual value of  $P_b$  is. This will, however, also result in samples that are larger than needed in the event that the actual value of  $P_b$  is very different from 0.45. Thus, the recommended approach is to make the best guess based upon available information, and lean toward selecting the value of  $P_b$  closer to .50. For example, if it were thought that an indicator was in the 0.30-0.40 range at the time of the baseline survey, 0.40 should be chosen.

$P_e$  Expected value of the indicators at the endline, for 10% change from baseline put 0.55 for 15% change put 0.60

This formula provides a sample size of large populations (more than 100,000). The sample size needs to be adjusted for smaller populations.

Sample size with finite population correction:

$$n = \frac{n_0}{1 + \frac{n_0 - 1}{N}}$$

Where

n = Adjusted sample size

$n_0$  = Original sample size (without adjustment)

N = Population

A simple excel sheet is attached with this manual to calculate sample size. However a common sample size is presented in the following table.

### Minimum sample size for various populations

$P_b = 0.45$	Deff = 1.5		Deff = 2.0	
Population	$P_e = 0.55$	$P_e = 0.60$	$P_e = 0.55$	$P_e = 0.60$
1,000	368	203	437	254
2,000	451	226	560	291
5,000	522	243	673	318
10,000	551	249	721	329
50,000	576	254	765	338
100,000 or more	583	255	777	340

Non-response is a fact of life in surveys. Although efforts to minimize the level of non-response are strongly encouraged, there are practical limits to what can be done. In order to ensure that target sample sizes for surveys are reached, allowances for non-response are customarily made during the calculation of sample size requirements. This normally involves increasing the sample size by a non-response *insurance* factor. Although this will vary somewhat from setting to setting, an allowance of 10 percent should prove adequate in most situations. Thus, if the sample size calculated for a survey called for  $n=1,000$  households and a 10 percent cushion for non-response were to be built in to the sample design, the revised target sample size for the survey would be  $n=1,100$  households.

The sample size presented in the table above does not include non-response or non-participation.

For example in order to achieve a sample size of 583 and to accommodate 15% non-response one should select 688 households.

Multiply sample size by 1.15 for 15% non response and by 1.10 for 10% non-response.

## Sampling method

### Multi-stage cluster sampling

There are many sampling methods that can be used in a sample survey. One method that is relatively easy and cost-effective is multi-stage cluster sampling. Multi-stage cluster sampling involves selecting small groups (clusters), from a larger population and then selecting units (e.g. households) within the clusters to be interviewed.

The number of clusters and number of households per cluster should be decided on three primary considerations<sup>6</sup>:

<sup>6</sup> Magnani Robert. Sampling Guide Food and Nutrition Technical Assistance Project (FANTA), 1997.

1. The first is the magnitude of the cluster sampling design effect (Deff). The smaller the number of households per cluster, the less pronounced the design effect. This is because elementary units within clusters generally tend to exhibit some degree of homogeneity with regard to background characteristics and possibly behaviours. As the number of households per cluster increases, sampling precision is lost.
2. Secondly, the numbers of households in a given cluster or site places a limit on how large the per-cluster sample could potentially be. The census listings or other materials that are to be used as a sampling frame should be carefully reviewed before deciding upon the cluster sample size to be used.
3. Third, the resources available to undertake the survey fieldwork dictate what is feasible. Transporting and sustaining field staff and supervisors constitute the major costs of carrying out survey field work, and these tend to vary more or less directly with the number of clusters to be covered. Accordingly, field costs are minimized when the number of clusters is kept small.

Because the latter two considerations are likely to vary substantially across applications and settings, only general guidance can be offered here. From a sampling precision point of view, smaller clusters are to be preferred over larger clusters. Thus, for a fixed target sample size (e.g., 600 households), a design with 30 clusters of 20 households each would be preferred to one with 20 clusters with 30 households, which is to be preferred over one with 10 clusters of 60 households. As a general rule, selecting no more than 40-50 households per cluster should be relatively safe. Of course, if resources will not permit clusters of this size, the “cluster take” could be increased, but it should be recognized that this will be at the cost of increased sampling error. Although the use of 30 clusters in population-based surveys has become popularized, there is in fact no statistical justification for 30 as a minimum or ideal number. It nonetheless serves as a rough working guideline, representing a figure adequate to ensure that samples of target group members are sufficiently well spread across enough clusters that survey estimates are not unduly influenced by a handful of clusters.

Suggested number of clusters = 20-30

### *Determining the number of households to interview*

It is best that each cluster have the same number of sample elements. One reason is that this ensures roughly the same workload in each cluster, making operational control over the survey fieldwork somewhat easier. A second reason relates to avoidance of estimation bias by helping to ensure a self-weighting sample.

The number of households you will visit during the interview process is based on a simple calculation of your sample size and the number of clusters you have.

*It is important to note that only one member in a household will be interviewed.*

$$\begin{aligned}
 \text{Number of households (HH) to select per cluster} &= \frac{\text{Sample size}}{\text{Number of clusters}} \\
 &= \frac{583}{30} \\
 &= 19.4HH / cluster
 \end{aligned}$$

Therefore, you have 19.4 households per cluster to interview to obtain the sample size needed for your survey. You would round this number to 20.

The following worksheet provides a summary of the survey specifications for a survey to measure the impact of CBHFA in a population. A blank planning worksheet is also provided if you need to change the sample size, confidence level, or number of clusters in your survey.

### Planning worksheet

<i>Summary of CBHFA survey</i>		
Health indicators	:	Awareness about danger sign for new born
Unit of observation	:	Individual
Design effect	:	1.5
Significance	:	95%
Power	:	80%
Proportions at baseline	:	45%
Expected value at endline	:	55%
Non-response	:	15%
Sample size	:	583
Number of clusters	:	30
Households to interview/cluster:		20

Planning worksheet		
Target population	:	_____
Health indicators	:	_____
		_____
		_____
Unit of observation	:	_____
Design effect	:	_____
Significance	:	_____
Power	:	_____
Proportions at baseline	:	_____
Expected value at endline	:	_____
Non -response	:	_____
Sample size:		_____
Number of clusters:		_____
Households to interview/cluster:		_____



## *Gathering population data*

Now that you know the sample size and number of clusters for your survey you will be able to select the clusters for your survey and the households that you will interview.

In order to select the clusters for your survey, you must know the total population of the area to be surveyed and the population of the provinces, districts, localities and/or enumeration areas in that survey area.

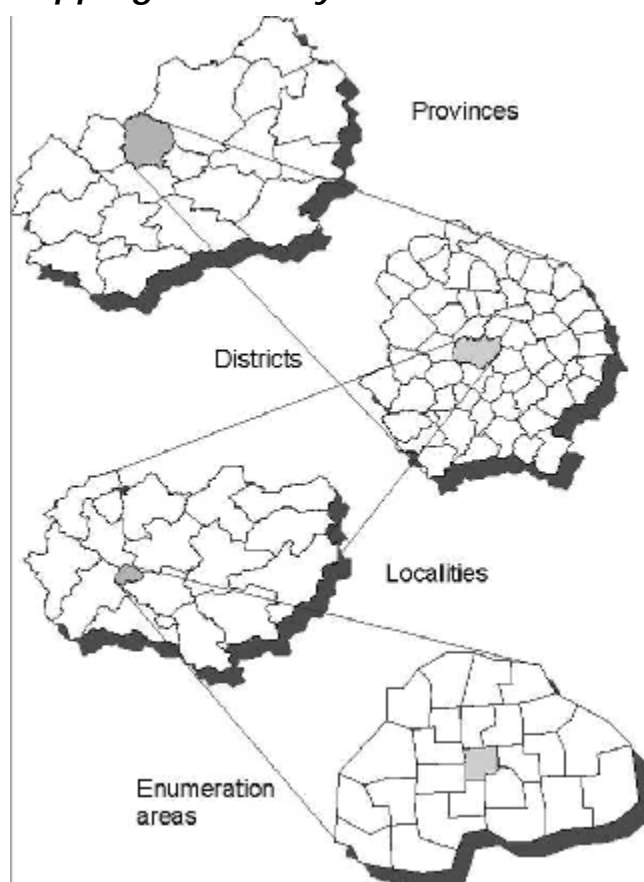
The population data can be obtained from the most recent national census, available from the government department responsible for national statistics.

Generally, census information is broken down into geographic or political areas. For your population data you will want to use the most complete and up-to-date population data.

A complete list of districts often provides an adequate and practical sampling frame for your target population.

The diagram below shows the general hierarchy of census data<sup>7</sup>:

### *Census Mapping Hierarchy*



<sup>7</sup> Source: stat. Taken from Health bridge. Cervinkas, J. Evaluation of the Measles/Malaria Integrated Campaign in Cross River State, Nigeria-June 2005. Unpublished report for The Canadian Red Cross Society, June 2009.

## Selecting clusters

As described above you will be selecting about 30 clusters for your survey. The list and population data for your district areas will be used to select individual clusters. The steps outlined below explain how to identify 30 clusters for your survey<sup>8</sup>. You may need to read through these steps and the example provided a couple of times to understand this process.

Steps to select your clusters
<p>1. Use a cluster identification form to list all communities areas included in the target population to be evaluated. The communities can be listed according to size, geographic location, alphabetic order, etc.</p> <p>2. List the most up-to-date individual population of each community.</p> <p>3. Calculate and write in the cumulative populations as each community is added. To obtain a cumulative population, you must add the population of the next community to the combined total of all populations in preceding communities. The final cumulative population is the same as the total population to be surveyed.</p> <p>4. Calculate a sampling interval by dividing the total population to be surveyed by the number of clusters you will have in your survey, round off the result to the nearest whole number.</p> $\text{Sampling interval} = \frac{\text{Total population to be surveyed}}{\text{Number of clusters}}$ <p><i>Example: Total population of 139,324</i></p> $\text{Sampling interval} = \frac{139,324}{20}$ $\text{Sampling interval} = 6966$ <p>5. Select a random number which is less than or equal to the sampling interval. The number must have the same number of digits as the sampling interval. This should be done using a random number table. <i>See Annex A for a description of how to use a table of random numbers.</i></p> <p>6. Identify the community in which cluster 1 is located. This is done by locating the first district listed in which the cumulative population equals or exceeds the random number. Write "1" beside this community in the column entitled "Cluster numbers".</p>

<sup>8</sup> World Health Organization. Immunization coverage cluster survey-Reference manual. Department of Immunization, Vaccines and Biologicals, World Health Organization, Geneva, 2005, WHO/IVB/04.23, Annex D.

7. Identify the community in which cluster 2 is located by adding the sampling interval to the random number (for the example sampling interval given above  $3311 + 6966 = 10277$ ). The cumulative population listed for that community will equal or exceed the number you calculate.

$$\text{Cluster 2 population} = \text{Sampling interval} + \text{Random number}$$

8. For subsequent clusters (cluster 3, cluster 4, cluster 5, etc.), identify the community in which that cluster is located by adding the sampling interval to the running total of adding the sampling interval to the random number.

The cumulative population listed for that community will equal or exceed the number you calculate. So the cumulative population for cluster 3 is  $10,277 + 6,966 = 17,243$ , for cluster 4 is  $17,243 + 6,966 = 24,209$

$$\text{Cluster 3 population} = \text{Sampling interval} + \text{Cluster 2 population}$$

$$\text{Cluster 4 population} = \text{Sampling interval} + \text{Cluster 3 population}$$

*If a single community contains more than one cluster, the community should be divided geographically into non-overlapping areas with clear boundaries.*

9. How to proceed if a cluster or community is found to be inaccessible after making the sampling frame and cluster selection:

a) If the problem is temporary (e.g. road blocked) and the place is expected to be accessible in the near future (say within a week or so), the survey there can be deferred unless there would be major problems in returning with that survey team later.

b) If the duration of the problem is not known, an alternative cluster may be selected by the field supervisor concerned, in consultation with the coordinator, in the next community listed on the sampling frame after the one containing the inaccessible cluster.

*10. Note: Remoteness of a community or finding that it is going to take longer than expected to get to it is not a reason for counting a cluster as inaccessible.*

*Advance planning must take account of the characteristics of the area to be surveyed, particularly if a large rural area, and provide for adequate time and logistic support to get to remote communities if they happen to be selected as clusters*

## Exercise to complete a cluster identification form

Using this population data for 20 communities<sup>9</sup>, try to fill out the blank cluster identification form provided below. An example is provided<sup>10</sup>.

<i>Community</i>	<i>Population</i>
Al Naser South	11,637
Al Naser South	18,181
Al Sinet	2,000
Hakib Alah	9,800
Arkaweet	4,000
Awoda	13,726
Helat Hasan	6,000
Al Dubasin	3,363
Al Omal	12,727
Al Qatati	2,000
Al Muneera	1,500
Al Mattar	2,000
Al Sudani	950
Al Shartta	9,000
Al Muwazafin	1,500
Al Zamalik	2,000
Dardig	11,000
Hai Nasir	9,800
Al Maki	4,350
Al Gazeera	9,800
Total	139,324

<sup>9</sup> Example is provided for 20 communities, for 30 or more communities it can be used in similar way

<sup>10</sup> Adapted from World Health Organization. Immunization coverage cluster survey-Reference manual. Department of Immunization, Vaccines and Biologicals, World Health Organization, Geneva, 2005, WHO/IVB/04.23, Annex D.

**Example:**

Sample cluster identification form					
Total Population: _____ 139,324 _____					
Sampling Interval: _____ 6,966 _____					
Random Number: _____ 3,311 _____					
	<i>Cluster population</i>	<i>Community</i>	<i>Population</i>	<i>Cumulative population</i>	<i>Cluster selected</i>
1.	Random number 3311	Al Naser South	11,637	11637	1,2
2	Random no. + sampling interval 10,277	Al Naser South	18,181	29,808	3,4
3	+ sampling interval 17,243	Al Sinet	2,000	31,808	5
4	+sampling interval 24,209	Hakib Alah	9,800	41,608	6
5	+sampling interval 31,175	Arkaweet	4,000	45,608	7
6	+sampling interval 38,141	Awoda	13,726	59,334	8,9
7	+sampling interval 45,107	Helat Hasan	6,000	69,334	10
8	+ sampling interval 52,073	Al Dubasin	3,363	72,697	
9	+sampling interval 59,039	Al Omal	12,727	85,424	11,12
10	+sampling interval 66,005	Al Qatati	2,000	87,424	13
11	+sampling interval 72,971	Al Muneera	1,500	88,924	
12	+sampling interval 79,937	Al Mattar	2,000	90,924	
13	+sampling interval 86,903	Al Sudani	950	91,874	
14	+sampling interval 93,869	Al Shartta	9,000	100,874	14,15

15	+sampling interval 100,835	Al Muwazafin	1,500	102,374	
16	+sampling interval 107,801	Al Zamalik	2,000	104,374	
17	+sampling interval 114,767	Dardig	11,000	115,374	16,17
18	+sampling interval 121,733	Hai Nasir	9,800	125,174	18
19	+sampling interval 128,699	Al Maki	4,350	129,524	19
20	+sampling interval 135,665	Al Gazeera	9,800	139,324	20
--	--	Total	139,324		
--					
--	--				
--	--				

**Blank form:**

Sample cluster identification form					
Total population: _____					
Sampling interval: _____					
Random number: _____					
	<i>Cluster population</i>	<i>Community</i>	<i>Population</i>	<i>Cumulative population</i>	<i>Cluster selected</i>
1.	Random number				
2	Random no. + sampling interval				
3	+ sampling interval				
4	+sampling interval				
5	+sampling interval				
6	+sampling interval				
7	+sampling interval				
8	+ sampling interval				
9	+sampling interval				
10	+sampling interval				
11	+sampling interval				
12	+sampling interval				

13	+sampling interval				
14	+sampling interval				
15	+sampling interval				
16	+sampling interval				
17	+sampling interval				
18	+sampling interval				
19	+sampling interval				
20	+sampling interval				
--	--				
--	--				
--	--				
--	--				



## *Selection of households to be interviewed*<sup>11</sup>

Ideally, sample households should be selected by creating a list or sampling frame of all households located within each cluster and choosing a sample of units using either simple random or systematic sampling. Creating such lists of households is likely to be unacceptably costly and time consuming, however. As a short-cut, three alternatives are described below: *segmentation* and two variants of a *random-walk* method.

### **Segmentation method**

The segmentation method involves dividing sample clusters into smaller segments of approximately equal size, choosing one at random from each cluster, and interviewing all households in the chosen segment. The size of the segment (i.e., the number of households in each) should be the same as the target number of sample households to be chosen per cluster. For example, if it had been determined that 30 clusters would be chosen for a given survey and 20 households would be chosen per cluster (yielding a sample size of  $n=600$  households), the target segment size under the segmentation method would be 20 households. Following are the steps involved in using the segmentation method.

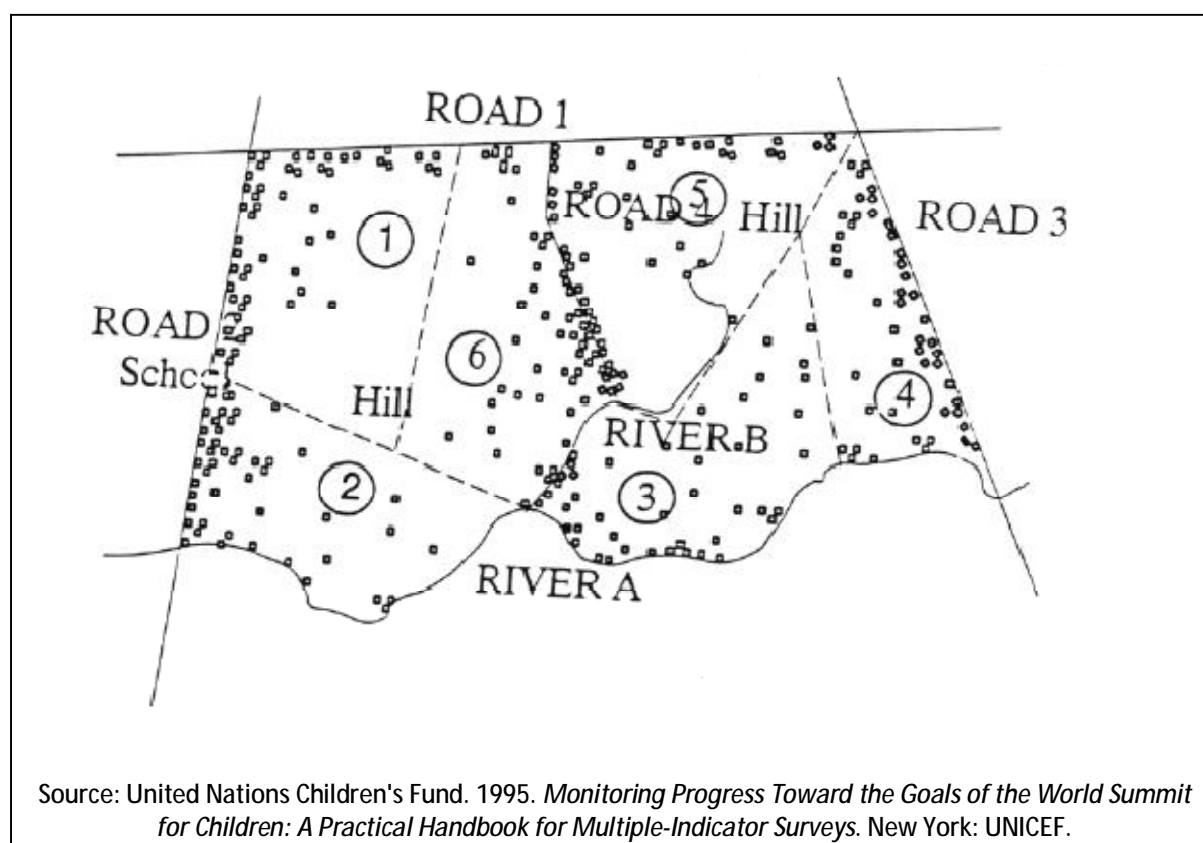
Steps in using the segmentation method to choose sample households

- (1) Calculate the number of segments to be created. Divide the number of households recorded in the last census by the target segment size. The result will be the number of segments to be created in the field. For example, if the last census indicated that there were 250 households in the cluster and the target segment size was 40 households, 6 segments would need to be created. (Note that in performing this calculation, decimal numbers of segments should be rounded to the nearest whole number).
- (2) Update the cluster map. Using a map of the cluster, verify/update the external boundaries of the cluster and enter any internal features that may be useful for dividing the cluster into easily recognizable segments.
- (3) Count and indicate the location of households located in the cluster on the map. This is intended to be a quick operation undertaken so that the cluster can be divided into segments with approximately equal numbers of households.
- (4) Based on the cluster map, divide the cluster into equal-sized segments. The number of segments to be used is the number determined in Step 1 above.
- (5) Choose one segment at random.
- (6) Interview all households located within the boundaries of the randomly chosen segment.

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<sup>11</sup> Adapted from Magnani Robert. Sampling Guide, Food and Nutrition Technical Assistance Project (FANTA), 1997.

### Example of a hypothetical cluster that has been divided into six segment



Field work in a given sample cluster in the segmentation method is considered complete when all the households in the segment chosen for the survey have been interviewed (irrespective of how many study subjects were actually found).

### Random-walk method

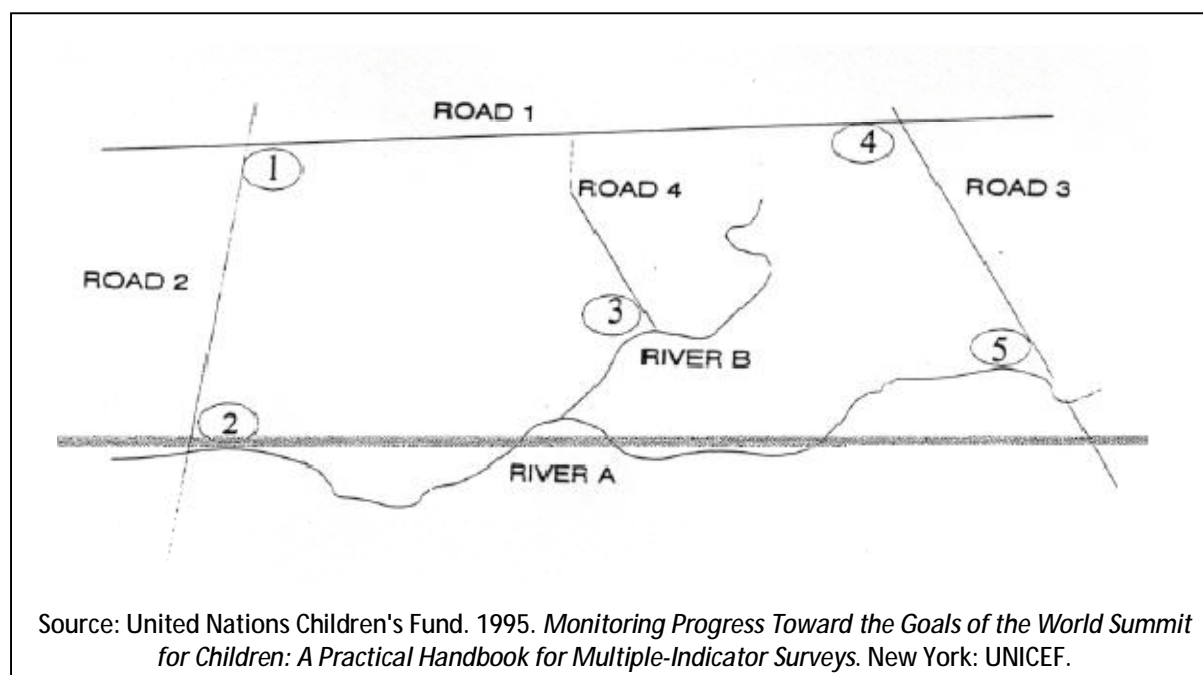
The random-walk method is used in EPI (expanded program of immunization) cluster surveys and thus is relatively widely known. The method entails (1) randomly choosing a starting point and a direction of travel within a sample cluster, (2) conducting an interview in the nearest household, and (3) continuously choosing the next nearest household for an interview until the target number of interviews has been obtained.

This approach can proceed in one of two ways, the only difference being in whether a map is available and how, as a result, the starting point is chosen. A summary is provided below.

#### Selecting the starting point from a boundary map

When a map of the sample cluster is available, a number of possible starting points should be selected at different, easily identifiable locations (see Figure below for an illustrative example), and from these a starting point should be randomly chosen. The advantage is that supervisory personnel can choose the starting point before the field work begins, reducing any risk of bias that might arise when starting points are chosen on the basis of convenience as opposed to randomly.

### Map of hypothetical sample cluster showing possible starting points



### Selecting the starting point using the EPI method

For EPI (Expanded Program on Immunisation) surveys, it is assumed that no map of the cluster exists and that field staff will choose a starting location. To do so, they will follow instructions that call for (1) going to a central location in the cluster and selecting a travel direction at random by spinning a bottle, (2) moving in a straight line in that direction and counting all of the households until the edge of the cluster is reached, and (3) randomly choosing a number between 1 and the number of households counted as the starting point for the survey.

Although neither variant of the random-walk method calls for a measure of size of sample clusters, an estimate of the number of households located in each sample cluster should be obtained to calculate sampling probabilities if required at a later date for analysis. Counting or estimating number of households does not have to be terribly costly or time-consuming. In most instances, a knowledgeable local informant can provide a reasonable figure. If not, a quick tour of the cluster can usually provide an acceptably accurate count. This type of *quick count* procedure is often used in cluster sampling.

If a random-walk method is to be used, a *quota* will need to be selected, i.e., the field worker will need to continue to contact households until a predetermined number of study subjects (e.g., children under five years of age) has been located. The quota should be the target number of *households* to be chosen per cluster rather than numbers of *study subjects* needed for different indicators (e.g. children < 24 months of age, children experiencing a diarrhoeal episode in the last two weeks, etc). Instead, if the target sample size per cluster is, for example, 50 households, the random-walk procedure would be followed until such time as this number of households had been interviewed. Quotas for households are tracked in preference to quotas for study subjects since keeping track of the latter would be difficult when multiple indicators are to be measured. As suggested above, quotas are not set for the segmentation method; rather field work in a given sample cluster is deemed

complete when all the households in the segment have been interviewed (irrespective of how many study subjects were actually found).

The three methods described above vary considerably with regard to exposure to the risk of bias. The segmentation method comes the closest to approximating a conventional two-stage cluster sample and is thus less prone to bias. Because sketching a map of the community is required to use the method, however, it may not be feasible in all settings. The next best method with regard to bias is the variant of the random-walk method in which the starting sample household is chosen from a boundary map. The least preferred is the EPI random-walk method.

### *Procedure for selecting individual survey subjects*

It is recommended that one and only one designated respondent within a sampled household be selected for CBHFA survey. This person is the one respondent in that household from whom data are to be gathered. Ideally, this person is selected randomly from among all eligible persons (as defined in the survey design) in the household.

The proper selection of a designated respondent is important if survey estimates are meant to represent parameters at the person level in the target population. If a systematic method is not used for selecting one respondent per household in such surveys, then the resulting sample will be comprised of the “most willing” and “most readily available” person at the sampled households. This in turn will yield an unrepresentative final sample of persons that contains proportionally too many (a) females (b) older adults, (c) those without fulltime employment and (d) those who in general, are more disposed towards cooperating with a survey request. It also may be unrepresentative in other ways that bias the final survey estimates because of the use of an unsystematic and/or non-random respondent selection method.

Thus it is important that surveys select one respondent per sampling unit by deploying a systematic approach to this selection-one that does not allow the “most willing” or “most readily available” person to select themselves. It also is important to avoid interviewers merely choosing whomever within the household they prefer to interview.

Following methods can be used to select a respondent in the household.

- a. Last/next birthday method
- b. KISH method<sup>12</sup>

### **Last/Next Birthday Method**

A way to choose one respondent randomly in a household by asking to interview the eligible person who last had a birthday (or who will next have one). It only works in households where everybody knows everybody else's birthday.

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<sup>12</sup> KISH grid is not included in the CBHFA questionnaire; you need to adapt the questionnaire if you are using this method. A sample is presented in Annex 3.

## KISH method

This is a table of numbers, named after the statistician who invented it. The number of people in the household is discovered, and a random number is chosen to select a particular person.

The KISH Method<sup>13</sup> is a technique that allows for the random selection of one individual from a household. The Kish Method can be used for selection within households regardless of the sampling method used to select the household.

The steps below provide detailed directions on how to implement the KISH Method in each household.

### Step Description

1. Ask for the age and sex of all adults aged more than 18 years old residing in the household. List these in the empty table on the questionnaire.
2. Assign a rank to each adult in the table. The ranks should be consecutive and begin with 1. Assign the ranks according to the following rules:
  - First assign ranks to males in order of decreasing age (oldest to youngest);
  - Next assign ranks to females in order of decreasing age.

An example is provided here:

Sex	Age	Rank
F	45	2
M	45	1
F	29	4
F	32	3

3. Look on the top left corner of the cover page of the Household Questionnaire for the last digit of the questionnaire<sup>14</sup> number.
4. In the table, circle the corresponding digit in the first row, which is labelled LAST DIGIT OF THE QUESTIONNAIRE NUMBER. Example: If the Questionnaire Number is 936, circle '6'. If it is 3,010, circle '0'. This is the column that you will work in.
5. Now check the total number of eligible women which you have listed on the above table (it is 4 in this example). Circle the corresponding number in the column at the top of the table below the label TOTAL NUMBER OF ELIGIBLE PERSONS THE HOUSEHOLD. Example: If there are two eligible persons in the household, circle '2'. If there are more than 10 eligible persons in the household, circle '10' in the column at the top of the table.
6. Now follow the row and the column that you have marked. Circle the number in the box where the two meet. Example: If the last digit of the questionnaire was '6' and the number of eligible persons in the household is 4, you will be in the box which has '3' in it. Circle the '3'.
7. Refer to the table above. The person with rank '3' will be interviewed for the survey.

<sup>13</sup> Adapted from WHO STEPS Surveillance Manual (<http://www.who.int/chp/steps/manual/en/index.html>)

<sup>14</sup> All questionnaires should be numbered in series at the beginning of the survey, if you wish to use this method for selection.

KISH selection table:

NUMBER OF ELIGIBLE PERSONS IN HOUSEHOLD	LAST DIGIT OF QUESTIONNAIRE NUMBER									
	0	1	2	3	4	5	6	7	8	9
1	1	1	1	1	1	1	1	1	1	1
2	1	2	1	2	1	2	1	2	1	2
3	3	1	2	3	1	2	3	1	2	3
4	1	2	3	4	1	2	3	4	1	2
5	1	2	3	4	5	1	2	3	4	5
6	6	1	2	3	4	5	6	1	2	3
7	5	6	7	1	2	3	4	5	6	7
8	1	2	3	4	5	6	7	8	1	2
9	8	9	1	2	3	4	5	6	7	8
10	9	10	1	2	3	4	5	6	7	8

### *Special considerations for CBHFA surveys*

CBHFA deals with a variety of topics in the community and a randomly selected adult may not be an ideal respondent in many cases. The table below summarises suitable respondents for various CBHFA survey topics.

For the topics where respondents are caretakers, or mothers of children under 2 or 5 years, you may need to interview all households with children under 2 or 5 years. Snowball sampling can be used to find suitable respondents for these categories.

### **Snowball sampling**

Snowball sampling uses recommendations to find people with the specific range of skills that has been determined as being useful.

Snowball sampling is a special non-probability method used when the desired sample characteristic is rare. It may be extremely difficult or cost prohibitive to locate respondents in these situations. Snowball sampling relies on referrals from initial subjects to generate additional subjects. While this technique can dramatically lower search costs, it comes at the expense of introducing bias because the technique itself reduces the likelihood that the sample will represent a good cross section from the population.

#### *Method:*

1. Decide the appropriate respondent (e.g. caretakers for children under 2 years of age)
2. Approach stakeholders in the community and ask for the households with children under 2 years of age.

3. Gain contacts and request them to participate in the survey.
4. Continue the snowballing with contacts to gain more children if necessary.
5. Ensure a diversity of contacts by widening the profile of persons involved in the snowballing exercise.

### Respondent for various topics of CBHFA survey

Topic	Respondent
Safe motherhood	Women with children under 2 years of age
Care of newborn	Caretakers of children under 2 years of age
Immunization and vaccination campaigns	Caretakers of children under 2 years of age
Nutrition	Caretakers of children under 2 years of age
Family planning	Married woman of age 15-49 years
Acute respiratory infections (ARI)	Caretakers of children under 5 years of age
Diarrhoea & dehydration	Caretakers of children under 5 years of age
Avian influenza	Any adult member of HH
Tuberculosis (TB)	Any adult member of HH
HIV & sexually transmitted infections (STI)	Any adult member of HH
Reducing stigma & discrimination	Any adult member of HH
Safe Water, hygiene and sanitation	Any adult member of HH
Malaria prevention & control	Any adult member of HH
Dengue prevention & control	Any adult member of HH
First aid	Any adult member of HH
Disaster risk and response plan	Any adult member of HH
Blood donation	Any adult member of HH
Road safety	Any adult member of HH
Excessive substance use	Any adult member of HH

When you decide about the numbers of communities to be selected for the survey, check the program area demographic details such as birth rate, percentage of children under 2 or 5 years of age in the population. Estimate the average number of children in the community and decide the number of communities based on this information.

## *Dealing with sampling operational problems*

Implementation problems can arise in even the best-planned surveys. Typical of these are inaccessible clusters, non-response, and an insufficient number of households in a given cluster.

### **Inaccessible clusters**

At times, it may be impossible to reach a sample cluster due, for example, to poor weather or impassable roads. Usually, the best approach is to replace the cluster with another randomly chosen cluster with similar characteristics. For example, if the cluster in question is located in the far northern part of the project area, it should be replaced with another cluster in the same general area, but one that *can* be reached during the period of survey fieldwork. To minimize the risk of bias, replacement clusters should be chosen from among similar clusters; convenience should not be an issue. Insofar as possible, supervisory personnel should make decisions on replacement clusters.

### **Survey non-response**

Non-response is a problem common to all surveys. Typically, non-response is encountered when no one is home at sample households or when survey subjects refuse to be interviewed. Prescribed procedures exist for dealing with these problems:

The field team should take into consideration such issues as market days, daily work routines, religious events, etc. and try to determine the best possible interview schedule.

**Not at home:** When there is no reply from a target household in a sample cluster, inquiries should be made from neighbours as to (1) whether the dwelling unit is inhabited and if so, (2) what time of day residents are usually home. If the dwelling unit is not occupied, no further action is required. If it is, at least one (and better still more) revisit(s) should be made, preferably at the time of day that the neighbour indicated that the residents were usually home.

If someone is not at home at the first visit, the interview team must revisit the house at least two more times. A message may be left with someone locally to explain when the interviewers will return. If the field team has made every attempt but has still not been able to conduct the interview at a selected house another house should be selected using the same method as described above.

**Refusal:** When the occupants of a target household refuse to be interviewed, at least one revisit, perhaps by another field team member or the team supervisor, should be made. The priority for revisits, however, should be for the not-at-homes. Although some level of non-response is built into calculation of sample size requirements, to the extent that it does occur, it can bias the survey results. This is because there are often systematic differences



between people who choose to respond and those that do not and these differences may be reflected in the indicators that are being measured. The best way to deal with such possible non-response bias is to minimize non-response to the extent possible. Accordingly, field operational plans should allow sufficient time for follow-up of non-responders. Because some level of non-response was already anticipated during sample size calculations, the impact of non-response on the ultimate survey sample size should in most cases be tolerable as long as the level of non-response does not substantially exceed the expected level across a large number of clusters.

*The cluster has an insufficient number of households to meet the target sample size*

If the sample size computations have been performed correctly and the sizes of clusters in available sampling frames have been taken into account, there should be enough households to meet the target sample size. Furthermore, if a *cushion* has been built in to the sample size calculations, the effects on the ultimate survey sample size have already been compensated for. In the event that this situation does arise, field teams should be advised not to choose additional households from nearby clusters. Instead, they should concentrate their efforts on minimizing the number of non-response households, and then move on to the next assigned cluster.

## *Contact with the respondents*

It is necessary that the field team conduct the survey with the utmost respect for the respondents. Every effort should be made during the training to discuss the importance that:

- ☐ The objectives of the survey are explained to the respondents
- ☐ The confidentiality of the responses are explained and maintained
- ☐ Their right to participate or refuse to participate in the survey is respected
- ☐ Informed consent to participate in the survey is explained and obtained
- ☐ The respondents are treated in a non-judgmental manner
- ☐ The local customs of the respondents are respected

## PHASE III: FIELD LOGISTICS

### *Logistics and preparation of materials*

The coordinator has to ensure that all requirements for the survey are arranged before the fieldwork starts. The success or failure of a survey may depend on logistical issues. When clusters are selected for inclusion in the survey the coordinator should obtain their key identifying characteristics such as: names of health facilities, names of notable persons in each cluster, boundaries and landmarks, and so on. Field teams will use this information and the maps to physically locate the clusters, helped by local guides.

The checklist below can be used to help organize fieldwork<sup>15</sup>.

Logistics checklist for survey fieldwork
<ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Transport:</b> Ensure that sufficient vehicles are available to transport the field teams and move them in the field as needed. The field supervisors should also have transport to be able to link up with the various field teams. (In rural areas, there should be one vehicle for each field supervisor.) The vehicles should be mechanically fit and well serviced for the duration of the fieldwork. Allowance should be made in the budget for fuel, maintenance and unforeseen repairs.</li> <li><input type="checkbox"/> <b>Accommodation:</b> Field teams' accommodation should be arranged for them rather than leaving teams or individuals to find their accommodation. The accommodation should, as far as possible, be conveniently placed to allow the teams to review their day's activities with their supervisor on return from the field.</li> <li><input type="checkbox"/> <b>Meals:</b> Field teams should be provided with either meals or food allowances for the duration of their stay in the field. Time can be saved if daytime meals are arranged for the teams instead of leaving individuals to arrange for their meals individually. Drinking water or other refreshments to be taken at work should be arranged for the field teams.</li> <li><input type="checkbox"/> <b>Security:</b> The security of the field teams should be ensured and not taken for granted.</li> <li><input type="checkbox"/> Local guides can be useful in advising the teams on places to be avoided and on local etiquette.</li> <li><input type="checkbox"/> <b>General protection from the environment:</b> Field teams should be provided with protective materials against rain or sun not only for their welfare but also to protect the data collection tools.</li> <li><input type="checkbox"/> <b>Remuneration:</b> Arrangements should be made for timely payments of remuneration agreed on between the survey organizers and the field teams to avoid breakdown of morale.</li> <li><input type="checkbox"/> <b>Maps:</b> It is important to have large and small-scale maps showing all the areas to be covered by the survey to be used in locating the clusters.</li> <li><input type="checkbox"/> <b>Survey materials:</b> There are basic materials each field team should have. They include: sufficient number of data collection forms, writing pad, clipboard, plastic watertight covers for the data collection tools, carry-bag that can be closed, ball pens <i>not</i> ink pens.</li> <li><input type="checkbox"/> <b>Background information:</b> Each field team should have information about the local authorities, who must be informed of their presence, carry a written letter of authorization to show local authorities, and understand how to obtain local permission when in the area to do the survey (usually requires a courtesy visit by the supervisor to local authorities).</li> <li><input type="checkbox"/> <b>Communication facilities:</b> Mobile phone or other means of communication between the coordinator and the field supervisors must be established for the whole duration of the data collection period.</li> </ul>

<sup>15</sup> Adapted from World Health Organization. Immunization coverage cluster survey-Reference manual. Department of Immunization, Vaccines and Biological, World Health Organization, Geneva, 2005, WHO/IVB/04.23, p 19.

### *Field procedures*

In addition to the logistical preparations, the field supervisors will be responsible to ensure that survey procedures are followed and each interview team is prepared to carry out their work. The following is a daily checklist for field supervisors concerning the survey procedures<sup>16</sup>.

Daily checklist for field supervisors
<ol style="list-style-type: none"> <li>1. Review the data collection plan with each interviewer and supervisor.</li> <li>2. Contact local authorities and local guides to explain survey objectives and cooperate with them throughout the process.</li> <li>3. Organize the survey materials at the beginning and end of each day</li> <li>4. Review each completed questionnaire before proceeding to the next cluster, and again at the end of each day, to confirm that they have been correctly filled out and are complete. Check for any <u>missing</u> information or responses.</li> <li>5. Make necessary corrections to the questionnaire and review with the interviewer any procedural problems. If information is missing, the interviewer should revisit the house to complete the questionnaire before going to another community.</li> <li>6. Confirm that the required number of questionnaires has been filled in for each cluster.</li> <li>7. Maintain daily contact with the survey coordinator to provide an update of the work completed, challenges encountered, security, etc.</li> <li>8. Follow data management procedures.</li> </ol>

### *Field activity reports*

Field activity reports allow the field team to properly manage their field responsibilities and keep a detailed account of the work completed. Field activity reports can be created by the

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<sup>16</sup> Cluster Sampling and KPC Surveys. Unpublished document, American Red Cross International Response and Programs. Date.

survey coordinator to meet his/her individual needs but some examples of report forms which may be useful include:

- § An interview schedule
- § A field expense sheet
- § A daily log (to record problems encountered or lessons learned for subsequent surveys)

The Survey Coordinator and Field Supervisors will need to work together to prepare and manage the mobile devices and technology required for the survey. The following checklist will help you to identify key responsibilities<sup>17</sup>.

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<sup>17</sup> Cluster Sampling and KPC Surveys. Unpublished document, American Red Cross International Response and Programs. Date.

## PHASE IV: CONDUCTING THE INTERVIEWS

Collecting, organizing, managing and analyzing the data you gather during your field work is a critical part of carrying out your survey. Phase IV of this manual will explain the procedures you will follow to complete this part of your field survey.

### *Introduce survey to local authorities*

Before you begin any field work you must plan to contact the local authorities in advance. This may be accomplished by sending a letter of introduction outlining the survey objectives, and requesting the local official's consent and support in contacting their community members.

Alternatively you may wish to conduct a preliminary visit to each survey area to introduce your survey to the local authorities in person. You may be able to conduct this preliminary field visit while completing the mapping and segmentation component of your field work.

The first step when you arrive in an area to start your field interviews would be to make contact with these officials and introduce your field team. A letter of authorization from the survey coordinator should be provided to each field supervisor to support their field activities.

### *Obtaining consent*

It is necessary for the field team to explain the survey to each respondent and obtain their informed consent before conducting an interview. Respondents have the right to refuse participation in the survey. The following form provides the field teams with some information they should provide to each respondent prior to starting an interview<sup>18</sup>.

#### INFORMED CONSENT FORM

"We are from [RC NS]. We are working on a project concerned with family health. I would like to talk to you about this. The interview will take about XX<sup>19</sup> minutes. This information will help the Red Cross/Red Crescent to help identify health priorities in your community and assess whether it is meeting its goals. All the information we obtain will remain strictly confidential and your answers will never be identified. Also, you are not obliged to answer any question you don't want to, and you may withdraw from the interview at any time.

"At this time, do you want to ask me anything about the survey? May I start now?" Thank you.

<sup>18</sup> Adapted from Health bridge. Cervinkas, J. Evaluation of the Measles/Malaria Integrated Campaign in Cross River State, Nigeria-June 2005. Unpublished report for The Canadian Red Cross Society, June 2009, p 39.

<sup>19</sup> Replace 'XX' by appropriate minutes after pre-test of questionnaire

## Ensuring the quality of the data

The quality of the data collected depends on many factors but the field team certainly plays an important role. The following list provides a guideline for effective interviewing techniques<sup>20</sup>:

Effective interviewing techniques
<ol style="list-style-type: none"> <li>1. Introduce yourself, your organization, and the purpose of the survey (show document or certificate if necessary).</li> <li>2. Maintain confidentiality: Do not interview the respondent in the presence of others (unless he/she indicates otherwise). Explain that all answers will be kept confidential.</li> <li>3. Ask questions exactly as written.</li> <li>4. Wait for a response; be silent, then follow-up <u>if necessary</u>.</li> <li>5. If the respondent doesn't understand or the answer is unclear, ask the question again, making as few changes in wording as possible.</li> <li>6. Do not suggest – by tone of voice, facial expression, or body language – the answer you want.</li> <li>7. Do not ask leading questions, questions that signal the correct answer or suggest the answer you would like.</li> <li>8. Try not to react to answers in such a way as to show that you approve or disapprove.</li> <li>9. If one answer is inconsistent with another, try to clear up the confusion.</li> <li>10. Try to maintain a conversational tone of voice; don't make the interview seem like an interrogation.</li> <li>11. Know the local words for sensitive/delicate topics.</li> <li>12. Use open ended, neutral follow-up questions (e.g., anything more?)</li> </ol>

## Interview questionnaire

Data collection, management and analysis can be performed in many ways. Traditionally, paper questionnaire forms are filled out in the field; the data is summarized and entered into a computer for analysis.

A draft survey questionnaire for 21 common topics is provided in the CBHFA M&E toolkit from which National Societies can pick topics of interest. However cover page, background characteristics and exposure of Red Cross/ Red Crescent should be included in all surveys.

If a National Society selects 3-4 topics, the questionnaire will be about 10-12 pages and on average it will take 20-30 minutes to complete one interview.

After selecting topics the questionnaire MUST be piloted:

- To test how long it takes to complete

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<sup>20</sup> Adapted from Cluster Sampling and KPC Surveys. Unpublished document, American Red Cross International Response and Programs. Date.

- To check that the questions are not ambiguous
- To check that the instructions are clear
- To see that the translation is appropriate and correct
- To see that the options are comprehensive and there is not more than 10% responses in “other” category
- To check that the skips are fine

The following checklists are provided in Annex 2 to ensure that the questionnaires meet minimum survey standards: .

- Checklist to review questionnaires
- Checklist to monitor questionnaire pre-tests

## *References*

Cluster Sampling and KPC Surveys. Unpublished document, American Red Cross International Response and Programs. Date.

Healthbridge. Cervinskask, J. Evaluation of the Measles/Malaria Integrated Campaign in Cross River State, Nigeria-June 2005. Unpublished report for The Canadian Red Cross Society, June 2009.

Magnani Robert. Sampling Guide Food and Nutrition Technical Assistance Project (FANTA), 1997.

Otten, M.W., Stevenson, J. Improving the EPI Cluster Survey Method Specifically Designed for Use in China. Unpublished document, Division of Immunizations Centers for Disease Control.

Snedecor, G. W. and Cochran, W. G. Statistical Methods, Eighth Edition. Iowa State University Press. Ames, Iowa. 1989.

Standard Quality Guidelines for Surveys. Unpublished document, American Red Cross Tsunami Recovery Program. 2009

World Health Organization. Immunization coverage cluster survey-Reference manual. Department of Immunization, Vaccines and Biologicals, World Health Organization, Geneva, 2005, WHO/IVB/04.23.

World Health Organization STEPS Surveillance Manual  
(<http://www.who.int/chp/steps/manual/en/index.html>)



## ANNEX

### 1. How to use a random number table

Choosing a random number is an important step in a coverage survey because it is the only way to ensure that there is no unconscious bias in the selection of houses and individuals to be interviewed. There are several ways to select a random number, but using a random number table is one common method. This annex gives two methods of using a table of random numbers and describes how to implement each method<sup>21</sup>.

#### Method A

**Step 1** Choose a direction (right, left, up or down) in which you will read the numbers from the table.

**Step 2** Select a starting point by using one of the following methods, (a) or (b):

- a) Using a currency note, select a single digit random number between 0 and 9 to identify a column. Select a two-digit random number between 01 and 25 to identify a row. (Note: The numbers 01–09 each count as two-digit numbers.) The five-digit number in the table that is at the intersection of the column and row you have selected is the starting point.
- b) Close your eyes, and touch the random number table with a pointed object. Open your eyes. The digit closest to the point where you touched the table is the starting point.

Check that the starting point will give a number which is going to be less than or equal to the sampling interval. If not, start again before going on to step 3.

**Step 3** Read the number of digits required (determined by the sampling interval) in the direction chosen in step 1. Because each individual digit in the table is random, the sequence(s) of digits can be used across spaces between the five-digit numbers. The number you end up with is your random number.

For example, let us say you decided to read numbers to the right, and by using method (b) in step 2 you identified your starting point as the number 3 in row 01, column 8 (see Table M-1 of random numbers in this annex). If the sampling interval had four digits, then your random number would be 3861. The numbers 6 and 1 come from row 01, column 9.

Note: Remember that the random number selected must be equal to or smaller than the sampling interval. If it is not, then another random number must be selected.

<sup>21</sup> Taken from World Health Organization. Immunization coverage cluster survey-Reference manual. Department of Immunization, Vaccines and Biological, World Health Organization, Geneva, 2005, WHO/IVB/04.23, Annex M.

Table A-1. Random numbers table

Row	Column									
	0	1	2	3	4	5	6	7	8	9
1	88008	13730	06504	37113	62248	04709	17481	77450	46438	61538
2	01309	13263	70850	11487	68136	06265	36402	06164	35106	77350
3	45896	59490	98462	11032	78613	78744	13478	72648	98769	28262
4	50107	24914	99266	23640	76977	31340	43878	23128	03536	01590
5	71163	52034	03287	86680	68794	94323	95879	75529	27370	68228
6	76445	87636	23392	01883	27880	09235	55886	37532	46542	01416
7	84130	99937	86667	92780	69283	73995	00941	65606	28855	86125
8	00642	10003	08917	74937	57338	62498	08681	28890	60738	81521
9	64478	94624	82914	00608	43587	95212	92406	63366	06609	77263
10	02379	83441	90151	14081	28858	68580	66009	17687	49511	37211
										11
32525	44670	57715	38888	28199	80522	06532	48322	57247	46333	12
01976	16524	32784	48037	78933	50031	64123	83437	09474	73179	13
67952	41501	45383	78897	86627	07376	07061	40959	84155	88644	14
38473	83533	39754	90640	98083	39201	94259	87599	50787	75352	15
91079	93691	11606	49357	55363	98324	30250	20794	83946	08887	
									16	72830
10186	08121	28055	95788	03739	65182	68713	63290	57801	17	40947
75518	59323	64104	24926	85715	67332	49282	66781	92989	18	44088
70765	40826	74118	62567	75996	68126	88239	57143	06455	19	19154
29851	16968	66744	77786	82301	99585	23995	15725	64404	20	13206
90988	34929	14992	07902	23622	11858	84718	22186	35386		
								21	24102	13822
56106	13672	31473	75329	45731	47361	47713	99678	22	59863	62284
24742	21956	95299	24066	60121	78636	61805	39904	23	57389	70298
05173	48492	68455	77552	87048	16953	45811	22267	24	63741	76077
44579	66289	88263	54780	76661	90479	79388	15317	25	17417	56413
35733	27600	06266	76218	42258	35198	26953	08714			
							26	85797	58089	91501
34154	96277	83412	70244	58791	64774	75699	27	65145	97885	44847
37158	54385	38978	20127	40639	80977	73093	28	24436	65453	37073
81946	36871	97212	59592	85998	34897	97593	29	20891	03289	98203
05888	49306	88383	56912	12792	04498	20095	30	81253	41034	09730
53271	92515	08932	25983	69674	72824	04456				
						31	64337	64052	30113	05069
54535	01881	16357	72140	00903	45029	32	35929	76261	43784	19406
26714	96021	33162	30303	81940	91598	33	34525	54453	43516	48537
60593	11822	89695	80143	80351	33822	34	27506	45413	42176	94190
29987	90828	72361	29342	72406	44942	35	92413	00212	35474	22456
76958	85857	85692	75341	32682	00546					
					36	76304	57063	70591	06343	38828
15904	79837	46307	40836	69182	37	17680	92757	40299	98105	67139
01436	68094	78222	61283	40512	38	43281	36931	26091	42028	62718
38898	64356	19740	77068	78392	39	30647	40659	23679	04204	67628
81109	73155	68299	62768	58409	40	26840	42152	80242	57640	19189
47061	44640	52069	98038	49113						

## Method B

Suppose you need to look for a random number between 1 and 5. Take the first number in the column labelled "1 to 5" in Table A-2, and use that. Cross it off, because it cannot be used again.

If you need to look for a random number between 1 and 8, look in the column labelled "1 to 10", and use the first random number that is not crossed off that is less than or equal to 8.

Table A-2: Random numbers by intervals

	1 to 5	1 to 5	1 to 10	1 to 10	1 to 20	1 to 30	1 to 40	1 to 50	1 to 100
1	3	1	3	7	9	4	12	36	24
2	1	1	6	8	2	19	27	4	86
3	1	3	3	1	20	28	38	5	100
4	3	3	7	7	14	24	27	17	50
5	5	1	5	8	17	15	23	33	37
6	5	3	9	1	17	22	1	1	5
7	1	3	5	1	17	10	16	50	71
8	2	3	1	4	17	6	40	13	4
9	4	3	8	1	7	27	37	41	66
10	2	3	6	3	19	1	12	22	47
11	5	2	2	10	18	15	14	12	36
12	3	4	9	3	14	24	36	8	72
13	4	2	9	10	17	24	39	11	100
14	4	2	1	2	15	2	13	39	44
15	4	5	5	9	1	2	22	27	14
16	2	3	3	8	11	5	19	15	70
17	4	2	2	4	9	20	21	37	2
18	5	2	1	8	15	14	8	47	60
19	3	5	9	5	2	14	36	7	88
20	3	5	3	7	14	6	6	43	90
21	5	5	6	7	18	22	5	41	77
22	2	2	5	1	20	22	14	1	56
23	2	2	4	6	16	19	26	8	34
24	1	5	5	6	5	3	38	35	46
25	4	4	2	1	7	9	5	11	17
26	1	1	10	2	15	8	11	37	84
27	1	1	9	1	14	5	20	20	93
28	2	4	2	8	15	18	32	17	32
29	2	1	5	6	18	30	37	9	29
30	4	5	1	6	12	9	16	4	81
31	5	3	8	4	17	28	29	21	44
32	2	4	10	1	14	30	1	32	83
33	4	1	1	8	20	12	32	15	100
34	1	1	2	10	6	2	10	6	48
35	4	4	1	9	3	15	24	36	52
36	1	4	9	9	2	11	19	36	67
37	5	1	4	1	13	21	8	27	57
38	2	2	6	2	10	23	38	8	20
39	4	3	3	6	3	6	24	11	45
40	3	3	10	10	5	26	33	40	71

### **Method C: Alternative: computer-generated random numbers**

If you are using a computer software package (such as Excel, Stata, SPSS or SAS) there are built-in random number generator functions. For selecting your clusters in the design of the survey, these can be very helpful. For use in the fieldwork portion of the survey, you should rely mostly on printed tables such as the ones given in this annex.

## 2. Checklists to ensure quality surveys<sup>22</sup>

### Checklist to review questionnaires

Use this checklist when reviewing questionnaires.

#### A. Questionnaire content

Cover page includes unique questionnaire number and household location.

Cover page includes interview result code (1-complete 2-absent 3-refusal 4-interruption...).

Cover page includes language code (if more than one language is used for the survey)

Cover page includes date of interview.

Cover page includes place for interviewer, field editor, supervisor and encoder signatures and codes.

Questionnaire includes appropriate informed consent text and place for confirmation.

Cover page does not include personal identification information (name, address, phone number).

All log frame indicators can be computed from data collected with the questionnaire.

All questions are unambiguous, short, use simple words.

All instructions are unambiguous, short, use simple words.

Questions flow like a normal conversation, with introductions, filters and transitions.

All questions are written. The interviewer does not need to say anything more than is written on the questionnaire to complete the interview.

*If one box is not ticked, explain why:*

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<sup>22</sup> Standard Quality Guidelines for Surveys. Unpublished document, American Red Cross Tsunami Recovery Program.

## **B. Questionnaire layout**

Question numbers are sequential and aligned vertically.

Questions are vertically aligned on the left.

Interview questions and instructions to interviewer use different formats (e.g. italics or bold or caps).

All sections use same format (font, styles for questions, instructions, answers).

All sections use same answer codes (1-YES, 2-NO, 9-DON'T KNOW).

Questions with multiple answers are clearly identified and always formatted in the same way.

Multiple answers include probes for the interviewer to read.

Divisions, districts, villages are precoded (after the name) to speed up data entry and avoid systematic data entry errors.

There are no open-ended questions except for "other – specify" -- and instructions are clear on these questions.

All filter questions skip to the correct question.

No backward skips.

All questions are in local language.

*If one box is not ticked, explain why:*

### **Checklist to monitor questionnaire pre-tests**

Use this checklist when pre-testing questionnaires.

Interviewers are comfortable with the questionnaire.

No respondent quit the interview.

Respondent feedback is positive.

Longest interview lasted less than one hour (if not delete questions or review filters).

Pretest answer codes: no more than 10% "other" for any questions.

No question was systematically missed.

All respondents understood all questions without additional explanations.

*If one box is not ticked, explain why:*

## **Checklist to monitor enumerator training**

### **Before training**

Enough enumerators are recruited, allowing for drop outs and dismissals.

Enough Field Supervisors are recruited, allowing for drop outs and dismissals.

Enumerators are of appropriate age and gender – recognizing that in some places it is inappropriate for a man to interview a woman in her home.

Field teams have appropriate language skills. There are enough enumerators for whatever language they will encounter).

Detailed training agenda is ready, translated into local language and includes all relevant modules (see next section) for both enumerators, supervisors and editors.

Training is planned for at least four days.

At least one day is spent in the field for mock survey.

Training evaluation tests are ready.

Arrangements are made for cash payments of per diems and housing of participants.

*If one box is not ticked, explain why:*



## **During training**

Project and stakeholders were presented.

Survey objectives and methods were presented and discussed.

Ethical guidelines and issues presented and discussed.

Informed consent presented and discussed.

Enumerators trained on how to select respondents.

Supervisors trained on how to select households.

Participants discussed and understand selection biases.

Participants trained on how to conduct an interview.

Participants practiced interviewing (role playing in pairs).

Participants discussed challenges with the questionnaire.

All issues with the questionnaire are resolved.

Participants trained in quality control.

Trainees were evaluated after each training module.

Mock survey was completed successfully.

*If one box is not ticked, explain why:*

### **At the end of training**

Interviewers completed the training evaluation form.

All issues recorded in the training evaluation form were addressed appropriately.

Interviewers know and understand the ethical guidelines perfectly (quiz).

Interviewers understand the survey objectives (quiz).

Interviewers know all the field procedures perfectly (quiz).

All the interviewers are comfortable with the questionnaire (observation).

All the interviewers conducted at least five interviews in the field (see questionnaires).

Problems encountered during mock survey were resolved in conformity with guidelines.

All interviewers were evaluated by field supervisors and/or team leader.

Interviewers that did not meet minimum standards were either retrained or dismissed.

*If one box is not ticked, explain why:*

### **Checklist to monitor mock surveys during training and data collection**

Interview team includes one supervisor and one field editor/assistant supervisor.

Supervisor enforced all field procedures.

Supervisor observed all interviewers at least twice.

Supervisor and/or editors spot checked 20% of interviews (blind re-interview part of the questionnaire).

No interview lasted more than one hour.

80% of the interviews lasted less than 40 minutes.

All questionnaires were edited on the field following consistency check procedures).

Supervisor has checked and signed all questionnaires.

None of the questionnaires signed off by the supervisor had missing data.

None of the questionnaires signed off by the supervisor had inconsistent data.

All questionnaires signed by the supervisor are legible.

Supervisor completed and signed the sample tracking form.

The tracking form total is consistent with the number of questionnaires in the cluster envelope.

Supervisor investigated all households that refused to participate.

Sample objective was met.

No questionnaire was left unattended at any time.

No identifying information was recorded on a questionnaire or tracking form.

Supervisor reported problems with respondent selection, including reasons for refusals.

Supervisor documented all fieldwork problems.

*If one box is not ticked, explain why:*

### 3. Sample questionnaire with KISH grid

Questionnaire Serial No 

## NS Logo

## Community Based Health and First Aid Household Survey Questionnaire Base Line Survey

Taluka	: _____	<input type="text"/>
Community	: _____	<input type="text"/> <input type="text"/>
PSU	: _____	<input type="text"/> <input type="text"/>
Structure No		<input type="text"/> <input type="text"/> <input type="text"/>
Name of the Head of the Household _____		

VISIT	1	2	3	FINAL VISIT
DATE				Day <input type="text"/> <input type="text"/> Months <input type="text"/> <input type="text"/> Year <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
INTERVIEWER'S NAME				INTERVIEWER'S Code <input type="text"/> <input type="text"/>
Result*				Result code <input type="text"/> <input type="text"/>
Next Visit				TOTAL NUMBER OF VISITS <input type="text"/>
Day				
Time				

\*Result Codes:

1 Completed	3 Postponed	5 Partly Completed	7 Other _____
2 Not At Home	4 Refused	6 Incapacitated	(Specify)

<b>SUPERVISOR</b> Name : _____ Code : <input type="text"/> <input type="text"/>	<b>OFFICE EDITOR</b> Name : _____ Code : <input type="text"/> <input type="text"/>	<b>KEYED BY</b> Name : _____ Code : <input type="text"/> <input type="text"/>
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"We are from [RC NS]. We are working on a project concerned with family health. I would like to talk to you about this. The interview will take about 30 minutes. This information will help the Red Cross/Red Crescent to help identify health priorities in your communities and assess whether it is meeting its goals. All the information we obtain will remain strictly confidential and your answers will never be identified. Also, you are not obliged to answer any question you don't want to, and you may withdraw from the interview at any time.

Do you agree to participate in the survey?

Respondent agrees to interview

**YES.....1** (Continue)

**NO..... 2** (End of interview with this household)

**Section 1: Household details**

(Administer this section with head of household, if head of HH is not available then ask these question to the available adult member of the family)

Name of Respondent for HH member: \_\_\_\_\_ Line number:

	Name	Relation Ship	Sex	Residence		Age
Line No	First, please tell me the name of each person who usually lives here in your household and guests of the household who stayed here last night, starting with the head of the household.	What is the relationship of (name) to the head of the household?	Is (name) male or female? 1 MALE 2 FEMALE	Does (NAME) Usually live here?	Did (NAME) stay here last night?	How Old is (NAME)
1	2	3	4	5	6	7
1.		<input type="text"/> 0 <input type="text"/> 1	1 2	1 2	1 2	<input type="text"/> <input type="text"/>
2.		<input type="text"/> <input type="text"/>	1 2	1 2	1 2	<input type="text"/> <input type="text"/>
3.		<input type="text"/> <input type="text"/>	1 2	1 2	1 2	<input type="text"/> <input type="text"/>
4.		<input type="text"/> <input type="text"/>	1 2	1 2	1 2	<input type="text"/> <input type="text"/>
5.		<input type="text"/> <input type="text"/>	1 2	1 2	1 2	<input type="text"/> <input type="text"/>
6.		<input type="text"/> <input type="text"/>	1 2	1 2	1 2	<input type="text"/> <input type="text"/>
7.		<input type="text"/> <input type="text"/>	1 2	1 2	1 2	<input type="text"/> <input type="text"/>
8.		<input type="text"/> <input type="text"/>	1 2	1 2	1 2	<input type="text"/> <input type="text"/>
9.		<input type="text"/> <input type="text"/>	1 2	1 2	1 2	<input type="text"/> <input type="text"/>
10.		<input type="text"/> <input type="text"/>	1 2	1 2	1 2	<input type="text"/> <input type="text"/>
11.		<input type="text"/> <input type="text"/>	1 2	1 2	1 2	<input type="text"/> <input type="text"/>
12.		<input type="text"/> <input type="text"/>	1 2	1 2	1 2	<input type="text"/> <input type="text"/>
13.		<input type="text"/> <input type="text"/>	1 2	1 2	1 2	<input type="text"/> <input type="text"/>
14.		<input type="text"/> <input type="text"/>	1 2	1 2	1 2	<input type="text"/> <input type="text"/>
Tick here if continuation sheet used				<input type="checkbox"/>		

**RELATIONSHIP TO HEAD OF HOUSEHOLD:**

01 = HEAD 02 = WIFE OR HUSBAND 03 = SON OR DAUGHTER 04 = SON-IN-LAW OR DAUGHTER-IN-LAW 05 = GRANDCHILD 06 = PARENT 07 = PARENT-IN-LAW 08 = BROTHER OR SISTER	09= BROTHER-IN-LAW OR SISTER-IN-LAW 10 = NIECE/NEPHEW 11 = OTHER RELATIVE 12 = ADOPTED/FOSTER/STEP- CHILD 13 = DOMESTIC SERVANT 14 = OTHER NOT RELATED 98 = DON'T KNOW
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**Just to make sure that I have a complete household listing:**

a. Are there any other persons such as small children or infants that we have not listed?		Yes <input type="checkbox"/> Add to table	No <input type="checkbox"/>
b. Are there any other people who may not be members of your family such as domestic servants, lodgers or friends who usually live here?		Yes <input type="checkbox"/> Add to table	No <input type="checkbox"/>
c. Are there any guests or temporary visitors staying here, or anyone else who stayed here last night, who have not been listed?		Yes <input type="checkbox"/> Add to table	No <input type="checkbox"/>

TABLE FOR SELECTION OF ADULT MEMBER

Sr. No	Line number of the adult <sup>23</sup>	Age (in descending order)	NUMBER OF ELIGIBLE PERSON IN HOUSEHOLD	LAST DIGIT OF QUESTIONNAIRE NUMBER									
				0	1	2	3	4	5	6	7	8	9
1			1	1	1	1	1	1	1	1	1	1	1
2			2	1	2	1	2	1	2	1	2	1	2
3			3	3	1	2	3	1	2	3	1	2	3
4			4	1	2	3	4	1	2	3	4	1	2
5			5	1	2	3	4	5	1	2	3	4	5
6			6	6	1	2	3	4	5	6	1	2	3
7			7	5	6	7	1	2	3	4	5	6	7
8			8	1	2	3	4	5	6	7	8	1	2
9			9	8	9	1	2	3	4	5	6	7	8
10			10	9	10	1	2	3	4	5	6	7	8

NAME AND LINE NUMBER OF THE SELECTED ADULT MEMBER: \_\_\_\_\_

 
<sup>23</sup> Adult usual resident between age 18-59 years