



A Trainers Guide

for Baseline Surveys and Regular Monitoring

**Using LQAS for Assessing Field Programs in Community
Health in Developing Countries**

June 2002

Joseph J. Valadez, PhD, MPH, ScD
William Weiss, MA
Corey Leburg, MHS
Robb Davis, PhD, MPH

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Additional copies may be obtained from:

NGO Networks for Health
2000 M Street NW, Suite 500
Washington, DC 20036
Tel. 202-955-0070
Fax 202-955-1105

www.ngonetworks.org
info@ngonetworks.org

Please send all comments about this document to:

Joe Valadez
NGO Networks for Health
2000 M Street, NW
Suite 500
Washington, DC 20036
[Jvaladez@ngonetworks.org](mailto:jvaladez@ngonetworks.org)

INTRODUCTION

This manual is for community health program managers, field supervisors, and others who need to monitor and evaluate their programs. Most often people who have such a responsibility, also have to collect data as one of their tasks. The manual will aid them to train others in a simple and rapid method for collecting data to use for monitoring and evaluation of community health programs. It is called Lot Quality Assurance Sampling. LQAS has been used for about 75 years for industrial quality control purposes. But it has been adapted for community health practitioners to use over the past 15 years. Now it is used all over the world to assess coverage in communities with programs in maternal and child health, family planning, and HIV/AIDS; to assess the quality of health worker performance, and even to assess disease prevalence. This manual presents LQAS in a very user friendly way so that they can train almost any supervisor or community health worker how to use the method for the first type of application – which is the most often used application.

This manual is written from the point of view of NGOs as the users. However, all of the materials can be easily adapted for any other user. We encourage Ministry of Health staff, UN Agencies and any others to use this manual. Where ever you read NGO or *NGO catchment area*, think of a large area that corresponds to your administrative unit. For example, an NGO catchment area could be a district or sub-district area.

The manual consists of two sections: (1) a manual for trainers—for anyone, that is, who wants or needs to train other people in the LQAS methodology; and (2) a participant's manual, which is a collection of all the overheads/handouts used in the training program. With the Participants Manual health workers and other trainees can follow the trainer during each session, and review later on what was presented.

The manual consists of five Modules, each with one or more separate Sessions, with each Module answering a key question about data collection. These questions are:

- MODULE ONE: Why should I do a survey and why should I use the LQAS method?
- MODULE TWO: Where should I conduct my survey?
- MODULE THREE: Whom should I interview?
- MODULE FOUR: What questions do I ask and how should I ask them?
- MODULE FIVE: What do I do with the information I have collected?

Each Session has the same layout:

- PURPOSE** The Session begins with a brief purpose statement which tells the trainer why he/she is doing this Session and where the Session fits in with the overall design of the training program. Trainers might also want to use some of the comments here when they introduce this Session to participants.
- TIME** This tells the trainer approximately how long it should take to complete this Session. Times will vary, of course, depending on the number and experience of participants, among other things.
- OBJECTIVES** This section describes what participants achieved in this Session.
- PREPARATION** This describes for trainers anything they need to do in advance of the Session.
- DELIVERY** This section leads trainers step-by-step through the entire Session and explains what they should do and say at each point in the Session.

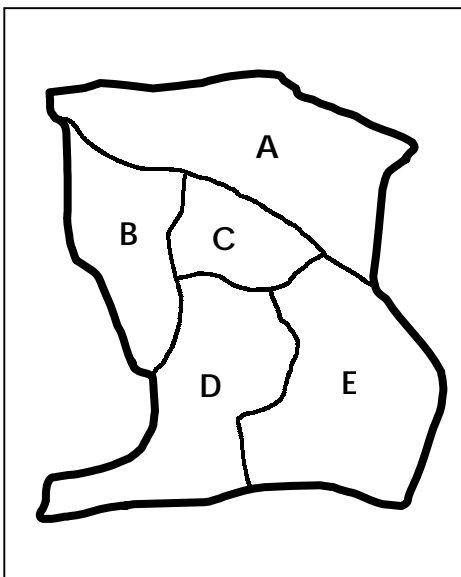
IMPORTANT: The most important thing for trainers is to be completely familiar with every step in every Session, including all the overheads, before they stand up in front of the group. Trainers should not be trying to figure out the Session at the same time they are delivering it!

A list of all the modules, Sessions and Session overheads/handouts appears in the Table of Contents.

Before the training begins, there are several things that need to be prepared in order for the workshop Modules to be successful. Go through the following list and carryout these tasks well in advance of the workshop.

TASK 1—Get a map of the catchment area where the NGO participants will be collecting the data.

This can be a formal map on which the NGO has marked clearly the boundaries of their program area – the catchment area. Try to find a map that gives you a lot of detail and has a small scale. It is even better if it has roads, community names, and geographical characteristics marked on it. You can often find maps at the Department of Statistics or the Census. If the Demographic and Health Survey has been conducted in your country, there are often maps available to use locally. Other sources of maps are tourist agencies, military institutes, and the Departments of Health and Education. School Districts often have maps. But if a map is not available then ask the NGO to sketch one by hand. It will be very useful for the training and for carrying out the survey.



TASK 2—Work with NGO managers to determine how to organize their program area or catchment area into supervision areas.

During this training we will use the phrase *supervision area* many times. Sometimes we will abbreviate it as *SA*. An NGO can make the monitoring and supervision of their program much easier if they subdivide their program catchment area into smaller management units. As shown in the figure to the left, Together, A, B, C, D, and E represent the **Catchment Area**. Individually, A, B, C, D, and E represent 5 **Supervision Areas**.

- A. Each management unit is called a *supervision area*. The data you obtain will be strongest – meeting accepted international standards – if you subdivide the program area into at least 5 SAs. But do not worry if you can only divide your program into to 4 SAs. But do try to have at least 3 SAs.
- B. The easiest way for an NGO to organize a program into SAs is to think about how many communities, a supervisor can supervise in a month or 6-weeks. Then group communities together that are natural grouping and that make supervision the most efficient. Those communities form your supervision area. Because monitoring is an activity that should be carried out regularly by a supervisor, and because this manual will teach supervisors how to collect data, encourage the NGO to define an SA that a supervisor can effectively manage. Once the NGO has done this, be sure they have identified supervisors who will do this work and will be committed to visiting the communities in that SA.

TASK 3—Develop a list of all the communities in the program area with their population sizes.

- A. Ask the NGO to make a list in one column of all the communities in their program area, organized by SA. In a second column ask them to write the approximate population size of each one. If they do not know how many people live in each one, they can write down the approximate number of houses or the numbers of babies that were born in each one. Health facilities may have this information. The NGOs will need some information that helps them determine the relative size

HINT: It will be much easier to use the list of communities later on if the NGO also indicates the district or province.

of each community. Don't worry too much if the estimates are not exact.

- B. In Module 3, participants will learn how to use the list of communities as a sampling frame to identify interview locations. The trainer should work with one program manager at the NGO to identify the communities where the sampling will take place. In other words, go to Module 3 now and apply the steps described to identify locations. Later in the training you can lead participants through this process and demonstrate how the actual sampling frame was developed.

TASK 4—Prepare the questionnaires.

This may seem like an obvious task, but it is very time consuming and complex. You only learn how complex it really is, by actually developing the questionnaire.

- A. Have the NGO write a list with each of the program's objectives related to improving health knowledge or practices. Under each objective, have the NGO write the key health message the project will promote to help achieve the objective. Under each objective, have the NGO write an indicator that can measure whether or not the objective has been achieved. The numerator and denominator of each indicator should be very specific as to gender and age group, and what is considered "correct" knowledge or practice.
- B. Have the NGO look for and select questions needed to measure each of the indicators written in the step above. The NGO can sometimes find the questions it needs by looking at a questionnaire that has already been used either by the NGO or by a colleague NGO. If the NGO cannot find a questionnaire locally, then they can download one from Internet resources. One example, the CORE Group website, was developed by NGOs for this very purpose. You can find a copy of an excellent questionnaire at their website (<http://www.childsurvival.com/kpc2000/kpc2000.cfm>).
- C. Have the NGO change the questions it has found, if needed, to reflect the health messages of the project; these are the health messages written in Step A above. In addition, change the questions to reflect the appropriate gender and age group, if needed. The NGO's questionnaire should be as short as possible and designed to collect only essential information for planning and managing their program. This can be achieved if the NGO limits questions to those needed to measure its program indicators.
- D. If the NGO cannot find a good question to measure an indicator, this may mean that the indicator is not measurable. If so, modify the indicator and return to Step B above.
- E. **Note:** When using LQAS methods it is ideal---for reasons that will become clearer following the training---if each question on a survey questionnaire is asked of all interviewees. We minimize the number of questions that are asked of only some interviewees. A question asked only of those interviewees with a sick child is an example of such a

question. Minimizing the number of questions asked of only a sub-group of interviewees helps us maximize the sample size and power of the survey---allowing us to determine if coverage varies significantly between Supervision Areas. By implication, we therefore minimize the number of indicators that require using questions of sub-samples of interviewees. This means an NGO might change one of its indicators to measure knowledge of all interviewees, when the original indicator measured a health practice that few informants would have had the opportunity to do (e.g., care seeking for a child with pneumonia).

F. Once they prepare the questionnaire the NGO may have to translate the questionnaire into a local language. Translation has four steps.

- (1) Firstly, the questionnaire should be translated by a native speaker of the local language and who also speaks and reads the language of the original questionnaire.
- (2) Then the questionnaire must be reviewed by other members of the team, health professionals who also speak and read the local language. This is to determine whether the questions are clear.
- (3) Then the questionnaire needs to be translated back into the original language of the first questionnaire. This is a very important step to determine if the questions are correct and have retained the original meanings.
- (4) Finally, the questionnaire has to be pre-tested. This means that you need to go to a local community and use the questionnaire and learn whether respondents understand the questions. If there are problems, the interviewee should work with the local respondent to construct a clear question. Then this suggestion and others can be discussed and new questions can be written. – **REMEMBER** that if you rewrite a question you have to pretest it again.

TASK 5—Ask the NGO to identify all of the participants that are participating in the workshop.

Ask them to tell you which participants are associated with each SA. Sometimes NGOs assign more than one person to an SA so that the sampling and interviewing goes even quicker. Compare the number of participants with the number of SAs to be sure the NGO has identified enough people to participate in the training. Be sure that the participants

are committed to carrying out the sampling as soon as the training session is finished.

TASK 6—Prepare and send these materials to participants:

Send a description of logistical arrangements (e.g., where the workshop is being held and where participants are staying).

TASK 7—In the workshop, the trainer will need materials.

These days you can find quite sophisticated machines that make the training easier to carry out.

- A. If you can use a computer and a *power-point* projector, arrange as soon as possible to have it available to you for the entire training and data collection period. The overheads in this manual can be projected on a wall with an LCD *power point* machine. Be sure to have one or more electrical extension cord(s) and at least 1 extra light bulb available.
- B. If a *power point* machine is not available then get an *Over Head Projector*. Many schools or agencies have one. You can copy all of the overheads included in the Participant's Manual onto transparencies (acetates). Be sure to have one or more electrical extension cord(s) and at least 1 extra light bulb available.
- C. If neither overhead nor PowerPoint are available, the trainer must prepare flip charts of each overhead. In addition, every training site—regardless of whether overheads/PowerPoint are available should have flipcharts available. Have several of these on hand, with several markers since they have a tendency to dry up rapidly in a hot climate. Also they are very useful for the field exercises.

TASK 8—Copy all training materials, the participant's manual, and enough questionnaires for the field practice.

Have all materials prepared and ready so that you can focus on the training rather than solving a crisis because your materials are not ready for the trainees to use.

* * *

Acknowledgements:

The authors would like to take this opportunity to thank all those in the field who have helped us in the creation of this manual. Your feedback during various field tests has greatly enhanced this product, and your patience and understanding made working with you a great pleasure. We hope you will take well-deserved satisfaction from knowing the important part you played in making this valuable tool available to your colleagues and friends around the world. In particular we would like to thank several networks of non-governmental organizations working in Nicaragua and Malawi who participated in using earlier versions of this manual and in making many useful suggestions about how to improve it. They include:

NICASALUD whose members include:

- ACTION ALREADY
- ADP
- ADRA
- AMLAE
- CARE
- Catholic Relief Services
- CEPS
- FUMEDNIC
- FUNIC
- FUNDESI
- INPRHU
- IXCHEN
- LET US SPEAK
- Partners of the Americas
- Plan International
- Project concern
- Project Hope
- Save the Children

UMOYO NETWORKS whose members include:

- Adventist Health Services
- Blantyre Christian Center
- Ekwendeni Hospital
- MACRO
- Malamolo Hospital
- St. Anne's Hospital

We first of all thank Fernando Campos of NicaSalud and Bernard Mijoni of Umoyo Networks for their hard work and collegiality. They worked with their Nicaragua and Malawi-based teams to field test early drafts of this manual. Special recognition is given to Babu Ram Devkota of Plan International, Nepal and his team working in the Child Survival Project in the Terai. Babu Ram, Eric Starbuck, and the Plan Program Supervisors tested most of the methods presented here. We also give our deep thanks to William Vargas of Costa Rica who used draft versions of this manual in Central and South America and in Malawi. Without his help and dedication this manual would not have been possible. We also thank La

Rue Seims for assisting in the field testing in Malawi and for transferring the probabilities to the new LQAS table used in this manual.

In the USA we thank Dr. Peter Winch, Dr. Eric Sarriot and other members of the faculty of the Department of International Health at the Johns Hopkins University Bloomberg School of Public Health for their recent review article of sampling methods which in addition to being an important contribution to Public Health, also created awareness among PVOs and NGOs that LQAS, as well as other sampling approaches, are important tools for improving the quality of community health programs. Among our donors we would like to thank Kate Jones and the staff of the Bureau of Humanitarian Relief's Office of Private Voluntary Cooperation at USAID. Craig Storti provided an immense service to us as our editor. And Brenda Bolanos helped the authors format the manual to make it more user friendly.

In conclusion, we express our gratitude to the many public health professionals who have been advancing the development of LQAS throughout Asia, Africa, and Central and South America. And to the members of the Child Survival Collaborations and Resources Group (CORE) for their support and interest which initiated the momentum to develop this manual.

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Participant’s Manual

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IMPORTANT: Each overhead cited in the trainer’s manual appears as a handout in the participant’s manual (which is simply a collection of these handouts). While the trainer works from the overhead, participants can follow along on their handout.

MODULE ONE

Why should I do a survey and why should I use the LQAS method?

Session 1: Introducing Participants and the Training/Survey

Session 2: Uses of Surveys

Session 3: Random Sampling

Session 4: Using LQAS Sampling for Surveys

Session 5: Using LQAS for Baseline Surveys

MODULE ONE/Session 1: Introducing Participants and the Training/Survey

PURPOSE This is the opening session of the training. The purpose is to introduce the training and the survey—the overall schedule and the daily schedule—and yourself (training staff) and give participants the chance to introduce themselves and interact before getting into the actual content of the workshop (which begins in Session Two). You should also deal with any site logistics (meals, telephones, transportation, etc.) at this time.

TIME One hour to 90 minutes, depending on group size.

OBJECTIVES By the end of this session, participants will have:

1. introduced themselves to each other
2. reviewed the overall schedule, for the training and the survey, and also the daily schedule
3. asked any questions they have about logistics

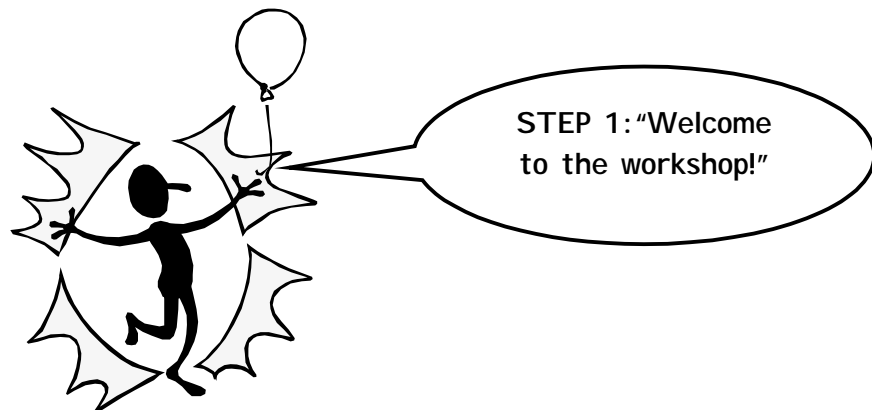
PREPARATION Before you begin this session, you will need to do the following:

1. Instruct all participating organizations to organize their program site into about 5 supervision areas (see page iii in the Introduction Section for a discussion on what supervision areas are). While more than 5 SAs is okay although it requires more work than may be necessary, at least 3 or 4 are needed to use LQAS. Each supervisor would be in charge of about 2 dozen communities or health workers. These supervisors should be the participants of the workshop.
2. Request a list of all participant names and the name of their supervision area.

3. Instruct all participating organizations to prepare a list of all communities in each supervision area, with their population size and detailed maps that will be included in the sampling (where available), or household lists (where available).
4. Prepare/adapt the participant interview overhead (Overhead #1) as necessary.
5. Prepare/adapt the purpose and skills statements (Overheads #2 and #3), the overview of the training (Overhead #4), and the daily schedule/agenda for the training and survey (Overhead #5) as necessary.
6. Prepare for the opening formalities (see STEP 1 below) as necessary.
7. Prepare the logistics presentation (see STEP 7 below).

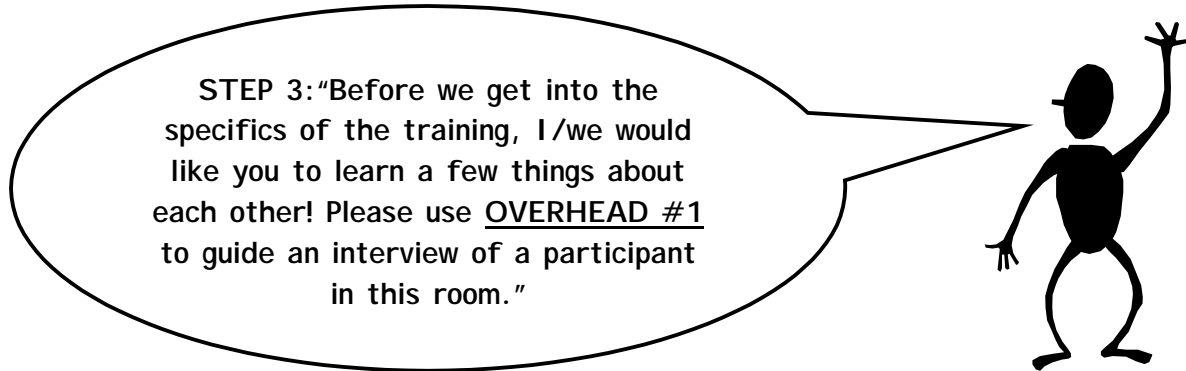
DELIVERY

STEP 1—Conduct the opening formalities. This would normally include a few words of welcome by the training workshop leader and the introduction of any speakers/guests you may have invited to this session. These might include political or community leaders, donor officials, training sponsors, government officials, senior officials of your organization, or any other relevant people. These people will then make brief remarks.



STEP 2—Introduce yourself. After speakers have departed (or finished their remarks), get things underway by introducing yourself.

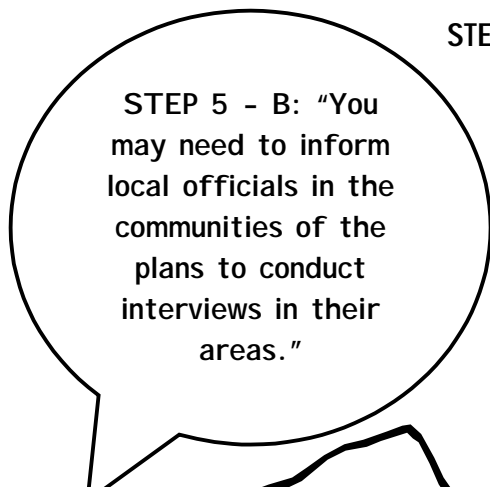
STEP 3—Ask participants to interview each other. Display Overhead #1: Getting To Know Each Other (refer participants to their copy) which contains the questions participants should ask each other in their interview. If they wish, they can record answers on notebook paper. Explain that after the interviews you will ask each participant to introduce his/her partner.



STEP 3: "Before we get into the specifics of the training, I/we would like you to learn a few things about each other! Please use OVERHEAD #1 to guide an interview of a participant in this room."

STEP 4—Have participants introduce each other.

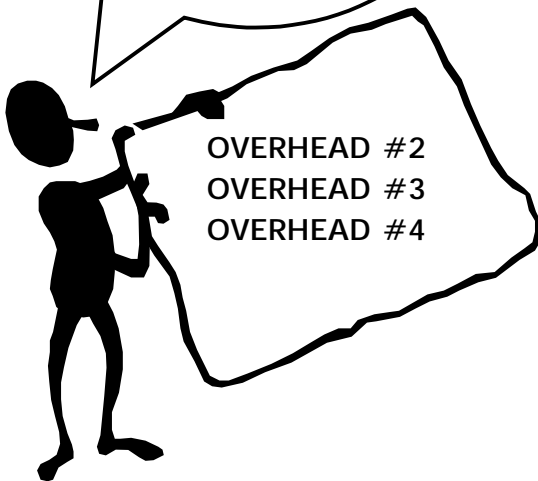
STEP 5—Review the overall design of the training.



STEP 5 - B: "You may need to inform local officials in the communities of the plans to conduct interviews in their areas."

A. Display Overhead #2: Purpose of the Workshop and Overhead #3: Skills To Be Learned (refer participants to their copy) and go through each point.

B. Display Overhead #4: Overview of the LQAS Training Program (refer participants to their copy) and go over the 5 modules and 14 sessions listed there. Explain the logic of the training, how it will unfold, and generally what participants will be doing as they complete each module. In discussing Module Four, advise participants that they will need to inform local officials in the community of the plan to come and conduct interviews in that area.



OVERHEAD #2
OVERHEAD #3
OVERHEAD #4

STEP 6—Go over the training schedule/agenda. Display Overhead #5: Training Agenda Summary.



NOTE: A sample of a DETAILED VERSION OF THE AGENDA is in the Appendix of the manual. After adapting the sample to your needs, copies should be made for each trainer and participant and put into the “participants’ manuals”.

Review both the daily schedule and the schedule for the entire training. Tell the participants that the tabulation workshop can be reduced to two days from three days if they think it is manageable.

STEP 7—Discuss training site and training logistics.

SUGGESTION: You or someone else should explain all administrative and logistical arrangements, for the workshop and for the field visits (such as details of transportation, per diem, meals, lodging, equipment, supplies, etc.). It needs to be clear who the point person is for participants to discuss concerns and questions.

If someone else gives this talk, it’s a good idea for the lead trainer to review the presentation with the speaker ahead of time to make sure all the information is accurate and clearly organized. This can save a lot of headaches later. If the important details can be provided on a handout, that’s even better.

STEP 8—Discussion of the field site where data will be collected.



A. Display Overhead #6: Defining Catchment Area and Supervision Areas. The catchment area for an NGO’s program, managers will have already organized into supervision areas. Each supervision area will have several communities. Take a few minutes so that a participant from each NGO present can show to the group on a map where their program catchment area is

located, and where each of their supervision areas is located too.

IMPORTANT: Use maps that are already available to show where the boundaries of the catchment area are, maps that show details about the terrain and roads are especially good to use. Now draw boundaries for each SA.

If a map is not available then draw one by hand.
– This is a good time to remind participants that they should have organized their program area into supervision areas by now!

B. On days 3 and 4 of the training, participants will go out to a field location to carry out practice exercises. Tell the participants where this will be and show them a map of the area. Also, make it clear who will be responsible for contacting the local leaders and making sure that the map is accurate!

MODULE ONE/Session 2: Uses of Surveys

PURPOSE

The purpose of this session is to demonstrate to participants what they will gain by going through this training. While they may understand in general the importance of having reliable information about the impact and results of their programs, many participants will not understand why they have to sit through a 4-day workshop on the subject of surveys. The point of this session, then, is to show them how they will be able to use the data that comes from surveys, with the expectation that once trainees see how helpful survey data can be, they will appreciate the value of and need for this training.

TIME

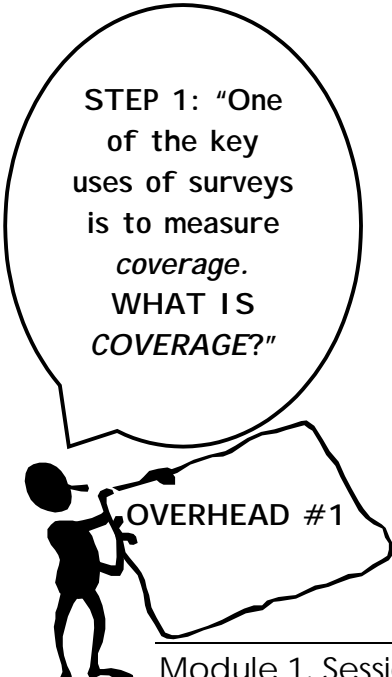
45-60 minutes.

OBJECTIVES

By the end of this session, participants will have:

1. described why coverage is important to know
2. listed how surveys will help them in their work
3. analyzed coverage in different scenarios and made recommendations based upon results.

DELIVERY



STEP 1: "One of the key uses of surveys is to measure coverage. WHAT IS COVERAGE?"

STEP 1—Define coverage. Begin this session by pointing out that one of the key uses of surveys is to measure "coverage." Then display Overhead #1 What Is Coverage? and ask for responses. Be sure you or someone else defines coverage correctly

IMPORTANT: **COVERAGE** is the percentage of people in any given area (a catchment area or supervision area) who know of and/or practice a recommended health behavior or who receive a particular service.

STEP 2: "And why is *coverage* important?"



STEP 2: Ask why coverage is important.

SUGGESTION: Be sure you or someone else makes the point that knowing the coverage---of various health knowledge and practices---helps us plan by allowing us to choose priorities. We can decide to focus our efforts on improving those health knowledge and practices that have low coverage. Over time, repeated measures of coverage show us if our efforts are leading to improvements in coverage. Additionally, knowing the coverage is especially poor in one or more supervision areas helps us choose priorities. We can decide to focus our efforts in those supervision areas with poor coverage.

To put it another way, knowing that coverage is poor in just a few supervision areas shows where you have pockets of risk and where you have to focus your efforts to reduce health risks.

STEP 3—Explain the consequences of measuring coverage. Display Overhead #2 What Surveys Can Show You and discuss the two points.

STEP 3: "What surveys can show you!"



SUGGESTION: Make sure you or someone else explains that when a survey reveals *large* differences in coverage among supervision areas, this identifies the areas that are not doing well and, all other things being equal should be your priority.

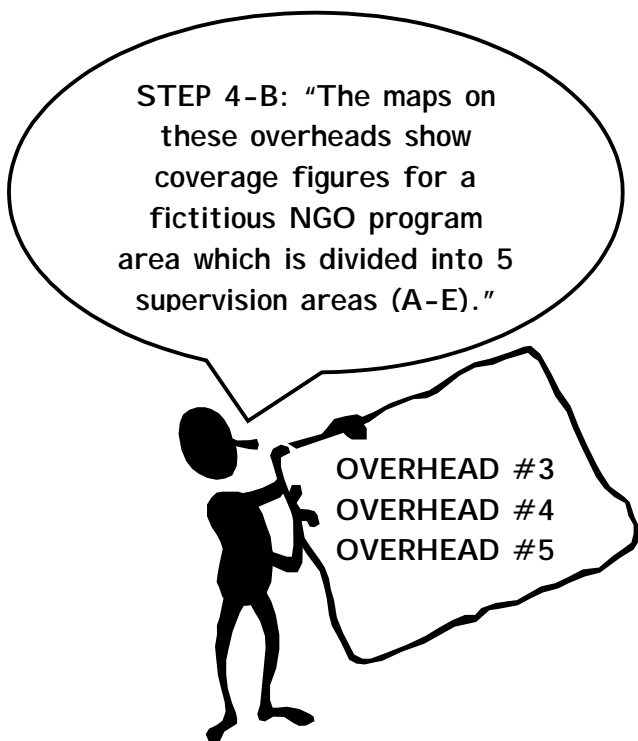
This usually means redirecting program resources away from areas that are doing relatively better and concentrating them in your priority areas.

SUGGESTION: Then explain that when the data from a survey reveals *little* difference in coverage among supervision areas, this tells you that you are having the same success (or lack of) in all areas. This would normally mean that you could continue to treat all areas the same.

(Naturally, if the survey shows that coverage is uniformly poor, then this means all areas need more resources; if it shows that coverage is uniformly good, then other interventions can be selected as priorities, even as the current one is maintained.)



STEP 4—Conduct the “three scenarios” exercise. Explain that participants will now do an exercise that illustrates the points just made about surveys and coverage. Proceed in the following manner:



A. Divide participants into groups of 3-4 people and explain that each group will work on a different scenario.

B. Display Overheads #3, #4, and #5, the NGO Program Area scenarios (refer participants to their copies). The numbers indicate the percent of women aged 15-49 who know at least two ways to prevent HIV transmission. Assign each of the three scenarios to one or more of the small groups.



C. Display Overhead #6: Displaying Survey Data (refer participants to their copy) and explain that in their groups they will use the data from their scenario to answer the questions listed under Analysis, thus showing how useful survey data can be to them in their work.

D. Give participants 20 minutes to discuss the data from their scenarios and answer the four questions.

E. Ask for a brief summary of their answer to question 4: What might you propose to do about HIV/AIDS in the program area? Ask a volunteer from each scenario to describe their group's conversation. Ask why the group decided to propose these particular actions.



F. If the group "got the point," that surveys help us set priorities, move on to the next session in this module. If they did not, try to find out where the group went wrong and correct any misunderstanding. (Better yet, ask other participants to correct the misunderstanding.) Display Overhead #7: Uses of Surveys to summarize the main points of this session.

Using Survey Data

Indicator: Percent of women (15-49) who know at least two ways to prevent HIV transmission

Possible Scenarios			
Supervision Area	Scenario One (1) True Coverage (%)	Scenario Two (2) True Coverage (%)	Scenario Three (3) True Coverage (%)
A	30	85	25
B	40	80	20
C	80	90	30
D	75	85	25
E	20	80	20

Analysis:

Look only at the true coverage figures within your assigned scenario (1, 2 or 3):

1. Discuss for a few minutes the differences in coverage between the 5 supervision areas *within your scenario*:
 - What is the difference in coverage between the 5 supervision scenarios?
scenario 1=60%; scenario 2=10%; scenario 3=10%
 - How different is this? Very different? Little difference?
1=very different; 2=little difference; 3=little difference
2. Does coverage for the overall program area appear HIGH, LOW, or MIXED? **1=MIXED; 2=HIGH; 3=LOW**
3. What may be possible reasons for why – in your scenario the program area has this coverage? **Discussion**
4. What might you propose to do about HIV/AIDS in the program area? **Discussion**

MODULE ONE/Session 3: Random Sampling

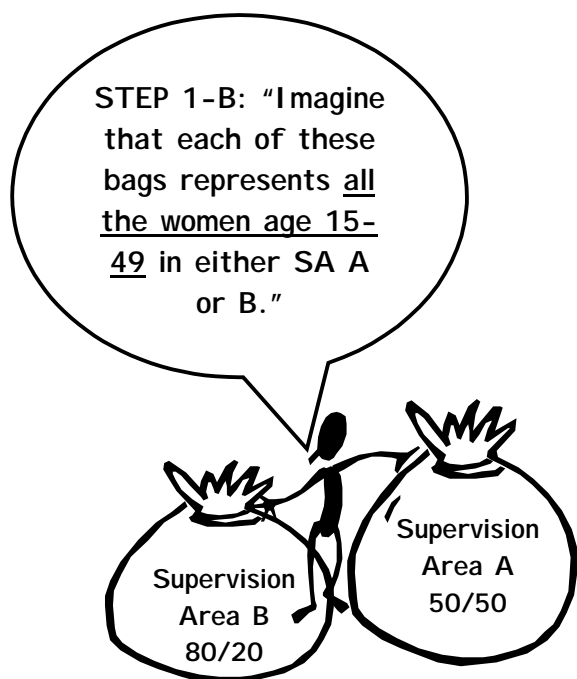
PURPOSE	<p>The purpose of this session is to explain the concept of random sampling as a survey technique and to demonstrate how it is carried out and why it works.</p> <p>By way of introduction, you will need to explain to participants that there is more than one way to collect the kind of information they used in their scenario in the previous session (Session 2). You can interview <i>all</i> the women in the program area and ask them if they know ways to prevent HIV transmission, or you can take what is called a random <i>sample</i>, interviewing fewer people and using their answers to give you a good idea of what women generally do. Obviously, interviewing every woman in the program area would be time consuming and costly and is not practical in many situations. Random sampling, however, makes it possible to get useful data more quickly and with less effort and cost.</p>
TIME	45 minutes.
OBJECTIVES	<p>By the end of this session participants will have:</p> <ol style="list-style-type: none">1. contrasted using a census versus a sampling approach to gaining information2. described problems with non-random sampling is3. committed to using random sampling in field work.
PREPARATION	<ol style="list-style-type: none">1. You will need to prepare two bags of marbles or painted stones of exactly the same size: one with 50 green and 50 red marbles (or any two other colors, though black and white can sometimes have racial connotations) and a second bag with 80 green and 20 red marbles. You may want to have a towel for the demonstration. Place the marbles on it so they don't roll away

2. You should also prepare the sign-up sheet described in STEP 6 below. At the top of this sign-up sheet write the following: "I commit to using random sampling throughout this survey and will ask questions whenever I need help."

DELIVERY

STEP 1—Demonstrate random sampling. Using the bags of marbles, lead participants through a demonstration of how to take a sample:

IMPORTANT: Complete these exercises one step at a time.



A. Sit in the center of the group (at a table or on the ground) with participants in a circle around you.

B. Show participants both bags of marbles and explain that each bag represents all the women in a supervision area age 15-49. Explain further that the 50/50 bag represents supervision area A, and the 80/20 bag area B.

C. Explain that a green marble represents a woman (15-49) in an area who knows at least two ways to prevent HIV transmission. And a red marble represents a woman in the same supervision area (age 15-49) who does not know at least two ways to prevent HIV transmission.

GREEN = women who know
RED = women who DO NOT know

STEP 1-D: "Now, we want to know what percent of women in these 2 SAs know 2 or more ways to prevent HIV transmission."

D. Explain that we want to learn how many or what percent of women know at least two ways to prevent HIV transmission but that we do not have this information.

"One way to get the answer would be to count ALL the green and red marbles in the bags, but let's assume we do not have the time or money to do this. Instead, we could select a SAMPLE of the women from each supervision area."



E. Ask for a volunteer to take a sample of 30 marbles from bag A (the 50/50 bag representing supervision area A).

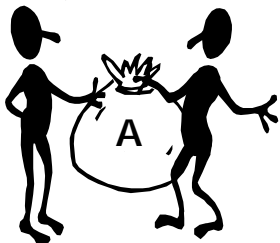
STEP 1-E:
"Could I please have a volunteer?"
"FIRST, with your eyes closed, please take out 30 marbles from the bag. NEXT, count, in a loud voice, the number of green and red marbles you removed. REMEMBER: GREEN IS GOOD!"

F. Then ask the volunteer to count the number of green marbles and red marbles removed from the bag (and write these numbers on a flipchart or where they can be seen by all). Remind participants that green marbles stand for women who know at least two ways to prevent HIV transmission and red marbles stand for women who do not.

G. Now ask the group to answer this question:

QUESTION: "Using this sample, would you say that most women in supervision area A (show the bag) know at least two ways to prevent HIV transmission; that few women do; or that somewhere in between 'most' and 'few' women do?"

ANSWER should be "somewhere in between".



H. Now ask the volunteer to count the marbles still remaining in the bag and state the actual total number of green and red marbles.

I. Ask the group how the sample of marbles compares to the count of all marbles.

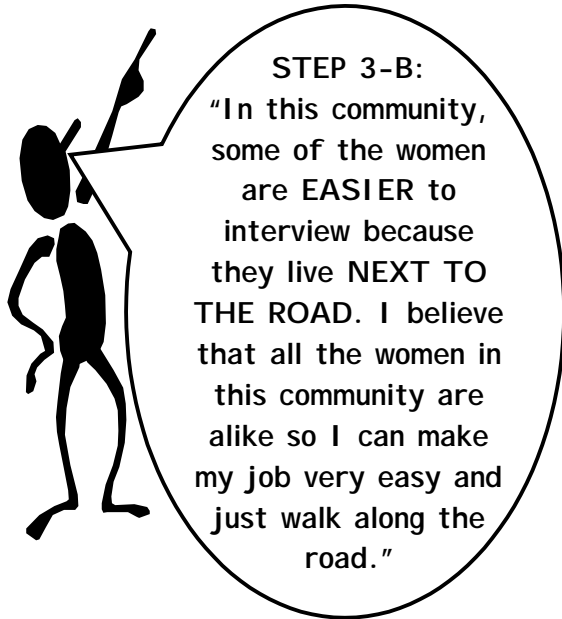
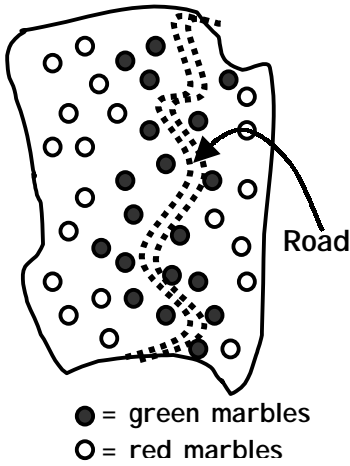
SUGGESTION: After the volunteer counts the marbles remaining in the bag, ask the group if they think the sample correctly describes the contents of the bag?

STEP 2—Repeat the demonstration with bag B (representing supervision area B). You can omit this step if the group seems to have caught on, (but you should probably not skip it if the first demonstration did not “work.”)

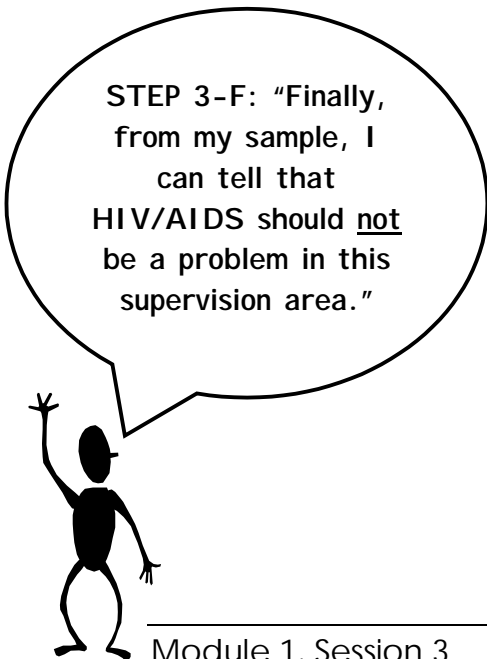
STEP 3—Demonstrate *non*-random sampling. Participants should understand why the sampling they do as part of LQAS must be random—and why non-random sampling does not yield reliable information on which to base program decisions. This demonstration will make the point quite effectively.

A. Empty the 50/50 bag of marbles on the ground/floor/table where all participants can see them.

SUGGESTION: It is helpful to place the marbles onto a rough surface (such as a towel) to prevent them from rolling away.



STEP 3-B:
 "In this community, some of the women are **EASIER** to interview because they live **NEXT TO THE ROAD**. I believe that all the women in this community are alike so I can make my job very easy and just walk along the road."



STEP 3-F: "Finally, from my sample, I can tell that HIV/AIDS should not be a problem in this supervision area."

B. Create a pretend community using marbles to represent women living in a different house. Separate the green marbles from the red, and place the green marbles near you and the red marbles just out of your reach.

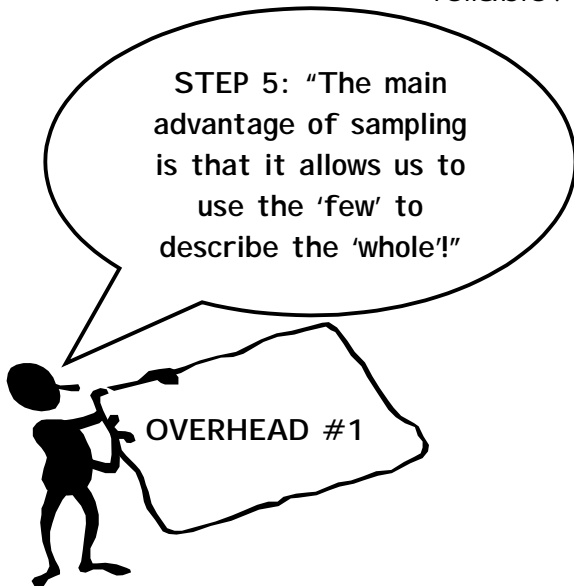
C. Explain that you will pretend to be a program official who has been asked to do a survey to find out what percent of women in a given supervision area know at least two ways to prevent HIV transmission. Explain that some of the women in this area are easy to interview since they live near a road (point to the green marbles near you and, if possible, arrange them in a line that borders an imaginary road) while other women live in remote areas and are harder to reach and interview (indicate the red pile, scattering them at further distances from you).

D. Explain that it has just started to rain in the village and you have decided all the women in the supervision area are alike and you do not, therefore, need to interview any women in the remote areas. You will just interview women who live close to a road, and thereby save a lot of time and money and stay out of the rain. And the information will be "just as good."

E. Take a few green marbles from the line near you, counting them aloud, and then announce that the survey findings show that all or most women in the supervision area know at least two ways to prevent HIV transmission.

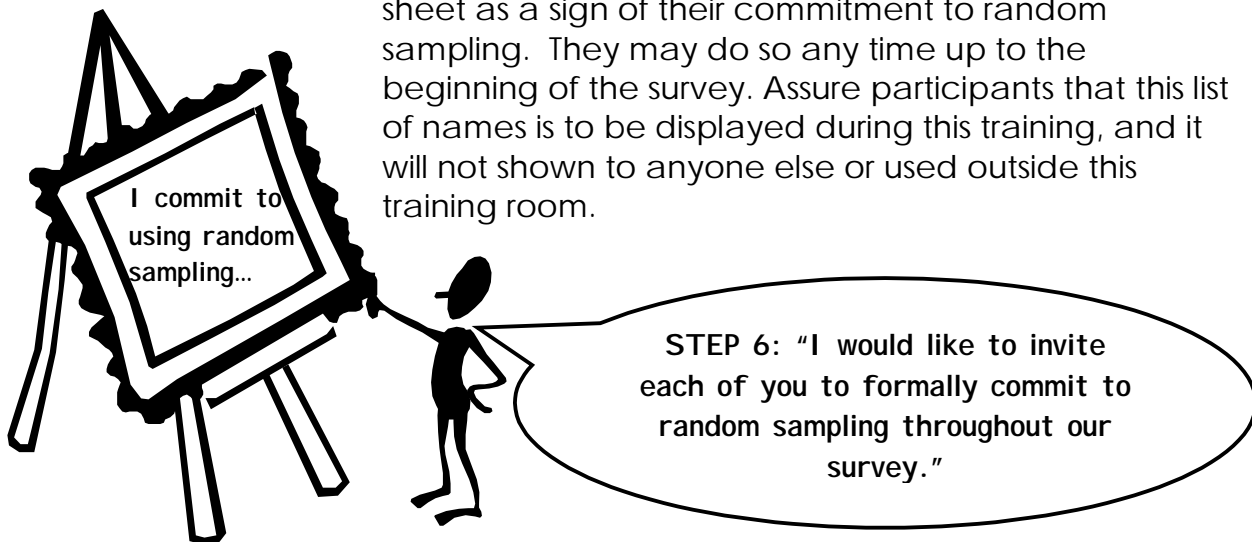
F. Explain, finally, still acting as the pretend program official, say that this means that HIV/AIDS should not be a problem in this supervision area and we can now spend our money on other interventions. Ask participants if they agree. They should disagree, but ask them to explain why.

STEP 4—Debrief the demonstration you have just completed. Ask participants their reaction to the demonstration. How are the results different from the random sample taken from the same bag? Why are they different? Are conclusions and program decisions based on this non-random sample going to be reliable?



STEP 5—Reiterate the advantages of sampling. Display Overhead#1: Why Sample? (refer participants to their handout) and review the contents. Be sure to repeat the point that the main advantage of sampling is that it allows you to use the “few” to describe the “whole.” (Alternative: Ask participants to state the advantages of random sampling *before* you post the Overhead.)

STEP 6—Invite participants to commit to random sampling. Explain that random sampling is such an important part of doing surveys. Post a sheet of flipchart paper on the wall (prepared earlier), numbered from “1.” through the total number of participants, and explain that you would like each person to write his/her name on the sheet as a sign of their commitment to random sampling. They may do so any time up to the beginning of the survey. Assure participants that this list of names is to be displayed during this training, and it will not shown to anyone else or used outside this training room.



MODULE ONE/Session 4: Using LQAS Sampling for Surveys

PURPOSE	This session introduces the LQAS technique. By way of introducing the session, be sure to relate it to the random sampling session just completed. Explain that now we are going to introduce a special type of random sampling called LQAS, an application that retains many of the advantages of random sampling but simplifies the process and makes conducting surveys more efficient for busy program people.
TIME	One hour.
OBJECTIVES	By the end of this session, participants will have: <ol style="list-style-type: none">1. practiced LQAS sampling on their own2. described how a sample size of 19 is adequate to distinguish between high and low coverage in a supervision area.
PREPARATION	Prior to beginning this session, do the following: <ol style="list-style-type: none">1. Prepare a bag of 100 marbles—50 green + 50 red—for every three participants in the class.2. Prepare a second bag of 100 marbles—80 green + 20 red—for every three participants. (You may use an alternative to marbles, such as painted stones, but the alternative item must come in two distinct colors and each piece must be of the exact same size and shape as other pieces, in short, being indistinguishable by touch from the other pieces.)3. For each group of three participants, bring a bag or jar or some other receptacle to hold marbles.

DELIVERY

STEP 1—Put this session in context. If necessary, briefly display Overhead #4 from Module One/Session 1 Overview of the LQAS Training Program to remind participants where they are and where this session fits into the overall design of this training.

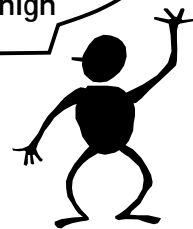
STEP 2—Introduce the topic. Using language like that in PURPOSE above, explain that we are now going to demonstrate LQAS sampling.

IMPORTANT PRINCIPLE: Remind participants that the overall goal we are all aiming for is to make the best use of limited resources by setting priorities, for indicators and for supervision areas, and that the LQAS technique presented in this session is one of the most efficient ways to collect the *coverage* information needed to establish such priorities.

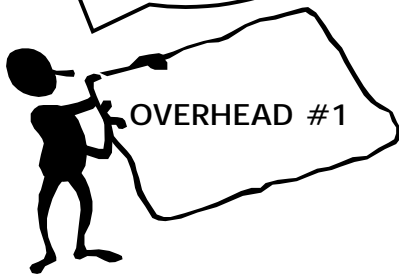
Then point out that for the purpose of setting priorities, we need only to distinguish areas that reach "coverage targets" from those that do not. [Explain that the term, "coverage targets," means the level of coverage---a specific number---you had earlier decided to reach by the time of the survey]. The ability to distinguish areas that reach coverage targets from those that do not is precisely the reason LQAS was developed. If we find this situation, we can give special attention to areas that have not yet met our coverage targets.

Finally, point out that a defining characteristic of LQAS is that it uses a sample size of 19 for each supervision area.

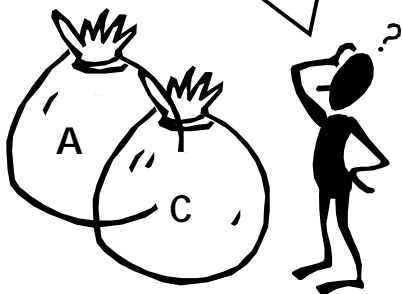
STEP 2: "A defining characteristic of LQAS is that it uses a sample size of 19 for each SA. In this session we will demonstrate that 19 is sufficient to distinguish between high and low coverage."



STEP 3-A:
"Again, we are working with a fictitious NGO Program Area."



STEP 3-B: "We don't know the coverage in SA 'A' or 'C' so we will do a survey interviewing 19 women from each of the 2 SAs."



STEP 3—Demonstrate LQAS sampling. Complete a demonstration of the LQAS technique as follows:

A. Display Overhead #1: showing an NGO Program Area (refer participants to their handout). Explain that we are working with the same fictitious NGO Program Area used back in Session 2. This time (as they can see) we do not know coverage for two of the five supervision areas, Area A and Area C, for the indicator "percent of women (15-49) who know at least two ways to prevent HIV transmission." Because we want to make decisions about deploying our program resources, we will need to do a survey of these two areas to see whether or not they need special attention.

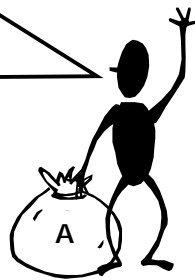
B. Explain that this time we will do our survey interviewing only 19 women from each area, which, as we will demonstrate, is adequate for our purposes of identifying priority areas.

C. Show participants the bag of marbles for Supervision Area A (with 50 green and 50 red marbles). Explain that the marbles in this bag represent all the women (15-49) in this area, that the green marbles represent all the women who know at least two ways to prevent HIV transmission, and that the red marbles represent those women who do not.

HINT: You can place the bag of marbles on top of area A on the overhead to emphasize this point.

STEP 3-D: "1st we are going to take 5 samples of 19 from SA A (show bag), and then you will do the same with SA C (show bag). You will record the results on OVERHEAD 2, and I will record the group results here."

D. Explain that you are going to take five samples from SA A and then you will be taking five samples of 19 from the other bag, SA C. You are going to record the results from each sample on Overhead #2: Sampling Results Scenario (which you should now display, referring participants to their copy).



HINT: Begin by shaking the marbles in the bag to ensure that they are randomly mixed. You can comment again on the importance of random sampling.

E. Take the first sample from the bag for Area A, removing 19 marbles a few at a time and place them in a clear jar (or some other receptacle).

F. Count the green marbles in the jar (women who know at least two ways to prevent HIV transmission) and write the number on Overhead #2 under the # Correct column, Area A, on the line for Sample 1. Ask participants to record this number in the same place on their copy of the overhead. Then return the 19 marbles to their original bag.

G. Divide participants into small groups, give each group an Area A type bag (with 50 green and 50 red marbles) and a receptacle and ask each group to repeat this same process, taking the second, third, fourth and fifth samples from the Area A bag, counting the number of green marbles in each sample, and recording the # correct on their own copy of the overhead.

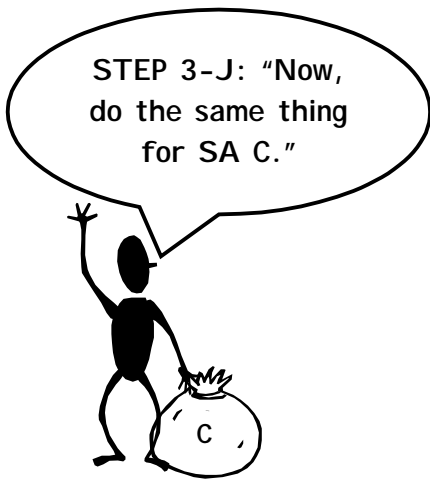
SUGGESTION: Once the groups have finished, the trainer should write the # correct from the subsequent samples of the groups on an overhead, so that all five lines on the overhead are filled in. Then wait a moment before discussing the results.

Green Marble Count	
<u>SA A</u>	<u>SA C</u>
8	9
10	7
7	8
9	7
5	.
8	.
10	.

H. After each group has finished taking five samples of 19 marbles and recorded the number of green marbles, ask each group to report their results to the large group. The trainer will record all these results on a single overhead or flip chart page. Save this sheet to continue the demonstration in STEP 3-J.

I. Now ask each group to count the total number of green marbles in the entire bag. Enter this number as the numerator in the "verify" space for SA-A on Overhead #2. Also ask them to count the total number of green and red marbles in the bag. Enter this number as the denominator in the "verify" space for SA-A and then calculate the percentage of marbles that are green.

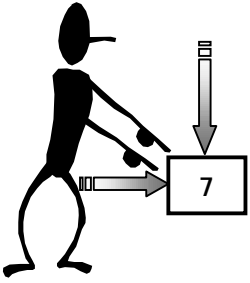
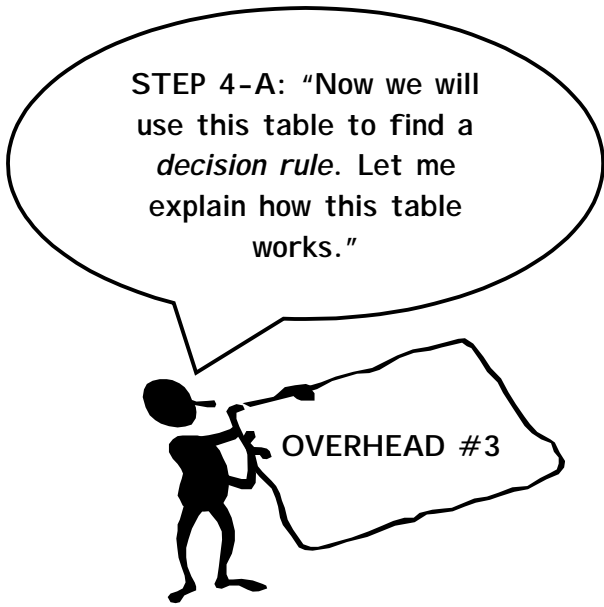
IMPORTANT: Verify that each group concludes that 50% of the marbles are green.



J. Give each group a bag for Area C (80 green and 20 red marbles) and have them repeat the entire process, taking five samples and completing the lines on the chart for Area C. (Once again, the trainer should record # correct on an overhead from each of the five samples from each group. Save this sheet to continue the demonstration in STEP 6.)

K. Repeat the process described in I above. This time, however, each group should conclude that the percentage of green marbles is 80%.

STEP 4—Demonstrate how to find the decision rule for the Area A samples in the following manner:



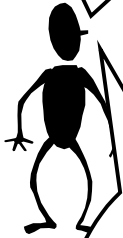
A. Display Overhead #3: The LOAS Summary Table and explain what the columns and rows mean. The first column (far left) is the size of your sample. Samples 12-30 are displayed. The percentages across the top of the page represent coverage targets, or average coverage (which is only used for baseline surveys and will be explained later.)

B. Show how to find the decision rule—that is, the minimum number of people who must have received an intervention in order to safely conclude that a supervision area has reached average or target coverage. Select the percentage column that is your target (we are using 50% for Area A) and go down that column until you come to the row with your sample size (in this case 19); the number that appears at the spot where these two lines intersect (7 in this example) is the decision rule (or minimum number for decision making purposes).

C. Now, using the sheet with the sampling results for all the groups for both SA A and C, ask the participants to inspect the # correct for each of the samples from Area A and whether it is seven or more. Circle the cases that are less than 7 (if there are any). In almost all of the samples, the number correct will be at least seven green marbles.

Green Marble Count			
<u>SA A</u>		<u>SA C</u>	
8	9	13	15
10	7	15	16
7	8	16	14
9	7	14	12
5	.	12	14
8	.	14	16
10	.	16	17
		17	13

STEP 5: "Now, do the same thing for SA C, the 80% area."



STEP 6: "And now let's compare SA 'A' and SA 'C'."

STEP 5—Find the decision rule for the samples from SA C. Repeat the process described under STEP 4 above with SA C. samples. Since 80% of the marbles are green, the coverage is 80%. Using overhead #3, the groups should find that the decision rule is 13 green marbles. Now, reviewing the group's sampling of the SA C bag, the participants should find that for almost all of the samples, at least 13 marbles were green in each of their samples of 19. This is because the decision rule is 13. The trainer should circle all cases (if there any) where the sample was less than 13 in the SA C bag.

SA A		SA C	
8	9	13	15
10	7	15	16
7	8	16	14
9	7	14	15
5	.	12	14
8	.	14	16
10	.	16	17
		17	13

STEP 6—Using the sheet, ask participants to compare the results of Areas A and C.

A. Ask them how many times in Area A did they have 13 or more green marbles. The answer is "Never" or "Almost never."

IMPORTANT POINT: Point out that Area A would never or almost never be mistakenly classified as an area with high coverage like Area C.

B. Now ask them how many times Area C. had fewer than 13 green marbles. Show them that this never or almost never happens. Area C, therefore, would almost never be classified as having low coverage.

C. Make the point (or have a participant do so):

IMPORTANT POINT: Once a target coverage has been selected, you can easily determine whether the target has or hasn't been reached with a sample size of 19.

STEP 7—Conclude with a review of what a sample size of 19 can tell us, what it cannot tell us, and why we use a sample of 19. Display Overhead #4: What a Sample of 19 Can Tell Us, Overhead #5: What a Sample of 19 Cannot Tell Us, Overhead #6: Why Use a Sample of 19, and go over the points with participants.

STEP 7: "In conclusion, let's review:

- why we use a sample of 19,
- what a sample of 19 can tell us,
- and what a sample of 19 can NOT tell us."



MODULE ONE/Session 5: Using LQAS for Baseline Surveys

PURPOSE The LQAS method can be used for various purposes. The previous session demonstrated the basic soundness of the LQAS concept (that 19 is a sufficient sample size for most surveys. In this exercise we demonstrate how to use the LQAS technique to determine (1) whether a supervision area has above or below average coverage for a particular indicator (STEPS 1 and 2), (2) which indicators *within* a supervision area are doing well and which are not (STEP 3), and (3) how supervision areas within a program area compare with each other (STEP 4)—three of the principal uses of a baseline and monitoring survey.

TIME 45 minutes

OBJECTIVES By the end of this session, participants will have:

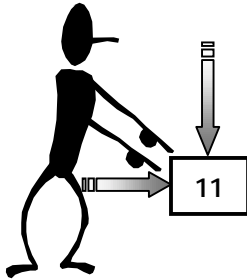
1. compared how the use LQAS for baseline surveys is different from using LQAS for program monitoring.
2. calculated coverage
3. compared indicators across supervision areas
4. Used coverage data helps them make program decisions.

DELIVERY **STEP 1**—Demonstrate using LQAS to assess whether at the baseline a supervision area has above or below average coverage for a particular indicator.

STEP 1: "Let's determine if an SA has above or below average coverage for an indicator."

A. Display Overhead #1: Five Supervision Areas and One Indicator explaining that it contains data for this particular indicator for all five SAs (collected through LQAS sampling).

B. Display Overhead #2: LQAS Concepts for Baseline Surveys and review the meaning of Average Coverage and Decision Rule.



C. Explain how average coverage is calculated (refer to item 1 on Overhead #1, below the chart), resulting in this case with a figure of 65.3%. Explain that this is the reason 65.3% is written in the space provided in Overhead #1 for the Coverage Estimate.

D. Answer question 2, "What is the Decision Rule?", by showing how the LQAS summary chart (Module One/Session 4/Overhead #3) was used to arrive at the number "11."

IMPORTANT PRINCIPLE: Display the LQAS chart again, put your finger on the top row and find 70%. (Explain that for purposes of using this chart, we always round up the coverage figure, 65.3% in this case, to the next highest 5% increment, 70% in this example.) Now move your finger down the 70% column until it meets the horizontal row for the sample size of 19. Where the column and the row cross, your finger will be on number 11. This means that as long as there were 11 or more correct answers to the indicator, coverage is not below average.

E. Show how question 3, "Is coverage generally below average?" was answered for each SA by noting whether the # correct was 11 or above, or below 11, for each SA.

See answer guide for correct answers to OVERHEAD #1

F. Ask participants to answer questions 4. and 5.

See answer guide for correct answers to OVERHEAD #1

STEP 2: "Now you try to do the second example on your own."



STEP 2—Have participants do the second example (display Overhead #3: Five Supervision Areas and One Indicator: Participant Worksheet) on their own copy of the practice sheet. Then go over the example with them to see if they have done it correctly or have any questions.

See answer guide for correct answers to OVERHEAD #3

STEP 3—Demonstrate using LQAS to assess the values of various indicators within the same supervision area.

IMPORTANT POINT: After information has been gathered for a number of indicators, it is possible to use LQAS to determine which indicators within a particular supervision area are reaching average coverage and which are not, thus making it possible for a supervisor to know which indicators to focus on in his/her area.

STEP 3-A:
"This chart is only dealing with SA 'A'."



A. Display Overhead #4: One Supervision Area and Five Indicators (refer participants to their copy) and work through it with participants. Point out that this chart deals with Supervision Area A only.

B. Explain that for indicator 1 of Area A the average coverage was calculated in STEP 2 of this session and the number 6 was likewise determined to be the decision rule (having rounded the average upward to 45%). They can then see that a number correct of 7 reaches the decision rule and therefore, they judge that Area A is at least of average coverage, and put "Y" in the last column.

C. Now have participants work through the other four indicators, filling in the boxes. They will need to keep the LQAS Decision Rule chart handy (Module One/Session 4/Overhead #3).

D. Go over the three questions below the chart.

See answer guide for correct answers to OVERHEAD #4

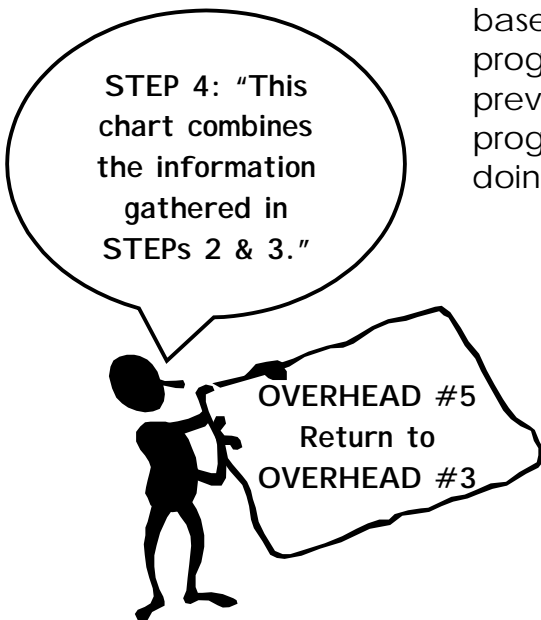
STEP 4—Demonstrate using LQAS results to compare the baseline conditions of all supervision areas within one program area. By bringing together results from previous STEPs, we can now take a look at our entire program area and see which supervision areas are doing well overall and which need support.

A. Display Overhead #5 Comparing Supervision Areas A, B, C, D & E (refer participants to their copy). Explain that this chart combines the information gathered in STEPs 2 and 3 above.

B. Begin by filling in the three empty boxes for indicator 1. Participants will have to go back to their handout of Overhead #3 from STEP 2 above, note what has been recorded in the far right column for Areas A, B, and C, and transfer this information to this handout.

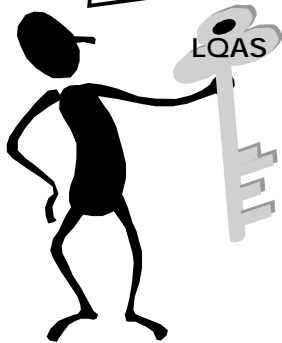
C. Now that the chart is completed, have participants answer the four questions at the bottom.

See answer guide for correct answers to OVERHEAD #5



STEP 5—Conclude this Session.

STEP 5: "This session has shown how to use LQAS for baseline surveys. However, using LQAS for regular monitoring is the most common use of LQAS. The procedures for analyzing the data collected in supervision areas, is slightly different. Using LQAS for monitoring programs is explained in a later session (Module 5 Session 3.) Nevertheless you know enough about LQAS now to collect LQAS data and understand what it tells you."



Answer Guide for Overhead 1

(Note: This answer guide should not appear in the participants' guide)

Five Supervision Areas & One Indicator

SUPERVISION AREA: A, B, C, D or E			
Indicator: Women who know 2 or more ways to prevent HIV transmission	# Correct	Coverage Estimate =	Equal to or Above? Yes or No
Supervision Area A	12	65.3%	Yes
Supervision Area B	9		No
Supervision Area C	16	Decision Rule = 11	Yes
Supervision Area D	11		Yes
Supervision Area E	14		Yes

1. Add Number Correct in all SAs: $12 + 9 + 16 + 11 + 14 = 62$
Add all Samples Sizes: $19 + 19 + 19 + 19 + 19 = 95$
Coverage Estimate = Average Coverage = $62/95 = 65.3\% = 70\%$
(Round upward to the nearest interval of 5 to find the Decision Rule)

2. Use table to find Decision Rule. **Decision Rule = 11**

3. Is coverage generally below average? Yes or No? **NO**

4. Can you identify Supervision Areas that are your priorities? **YES**

If yes which are they? If not, why can't you identify them? **Supervision Area B**

Five Supervision Areas & One Indicator: Participant Worksheet – For Baseline Surveys

Indicator: Women who used condoms each time with intercourse	# Correct	Coverage Estimate =	Equal to or Above? Yes or No
Supervision Area A	7	45%	YES
Supervision Area B	3		NO
Supervision Area C	2	Decision Rule (Using the LQAS Table) = 6	NO
Supervision Area D	13		YES
Supervision Area E	14		YES

Questions:

1. For baseline surveys, add number correct in all SAs:

$$7 + 3 + 2 + 13 + 14 = 39$$

$$\text{Add all sample sizes: } \underline{19} + \underline{19} + \underline{19} + \underline{19} + \underline{19} = 95$$

$$\text{Average coverage} = \underline{39} / \underline{95} = \underline{41.05\%}$$

2. What is the Decision Rule? **Decision Rule = 6**

3. Is coverage generally below average? Yes or No? **NO**

4. Can you identify Supervision Areas that are your priorities? **YES**

5. If yes which are they? If not, why can't you identify them? **SA B, and C**

Answer Guide for Overhead 4

(Note: This answer guide should not appear in the participants' guide)

Supervision Area A & Five Indicators

	Indicators	# Correct	Coverage Estimate	Decision Rule	Equal to or Above? Yes or No
1	Women who used condoms each time with intercourse	7	45%	6	YES
2	Men who used condoms each time with intercourse	4	20%	1	YES
3	Women who know how HIV is transmitted	4	45%	6	NO
4	Men who know how HIV is transmitted	13	65%	10	YES
5	Women who know where to get tested for HIV	6	30%	3	YES

Questions:

1. Which indicators in Supervision Area A are below average for the Program Area? **Indicator 3**
2. Can you identify indicators that are your priorities? **YES**
3. If yes, which indicators are they? If not, why can't you identify them?

Comparing Supervision Areas A, B, C, D, & E (for baseline survey)

Indicators		Supervision Area				
		A	B	C	D	E
1	Women who used condoms each time with intercourse	Y	N	N	Y	Y
2	Men who used condoms each time with intercourse	Y	Y	Y	N	Y
3	Women who know how HIV is transmitted	N	N	Y	N	Y
4	Men who know how HIV is transmitted	Y	Y	N	N	Y
5	Women who know where to get tested for HIV	Y	Y	Y	N	Y

Questions:

1. Which Supervision Area(s) appears to be performing the best for all 5 indicators: A, B, C, D, or E? **E and maybe A**
2. Which SA(s) appears to need the most support for their overall program: A, B, C, D, or E? **D and maybe B and C**
3. Which indicator(s) needs improvement across most of the catchment area? **Indicator 3**
4. Which indicator(s) needs improvement in only a few SAs?
Indicator 1 and 4 (2 weak SAs); Indicator 2 and 5 (1 weak SA)
5. For these weaker indicators:
 - Which SA(s) needs special attention? **D and maybe B**
 - Which SA(s) would you visit to learn possible ways to improve this indicator? **E and C**

MODULE TWO

Where should I conduct my survey?

Session 1: Identifying Interview Locations

MODULE TWO/Session 1: Identifying Interview Locations

PURPOSE	Now that participants are committed to random sampling and persuaded of the validity and usefulness of LQAS, they are ready to apply the LQAS approach in a survey. The first step in a survey is to identify the locations of the 19 sets of interviews that will eventually be carried out. Identifying these locations is the subject of this session.
TIME	90 minutes
OBJECTIVES	By the end of this session, participants will have: <ol style="list-style-type: none">1. calculated the cumulative population of a list of communities2. calculated a sampling interval for 19 interviews3. used a random number chart to define a random starting place for selecting communities4. identified the location for 19 interviews using a random process
PREPARATION	<p>NOTE: For a Training of Trainers (TOT) move to DELIVERY STEP 1.</p> <p>For the <u>participant's training</u> prepare the following:</p> <ol style="list-style-type: none">1. Copies of the sampling frames developed with the managers for each interview team.2. Adapt the following steps to cover the process used to develop the sampling frame with the managers.
DELIVERY	STEP 1 —Display Overhead #4 of Module One/Session 1 again (Overview of the LQAS Training Program) and show participants where we are in the overall design of the training.



STEP 2—Introduce the topic of this session: identifying interview locations. Display Overhead #1: Identifying Locations for Interviews (refer participants to their copy) and explain that now we are going to put LQAS to use in a sample survey that we will begin working on in this session. Describe the 5 steps on this overhead, showing participants that we will now go through this process in order to identify actual interview locations.

HINT: (If population figures are not available for this session, then find any other information that reflects the different size of communities or neighborhoods. The total number of houses is often a good substitute for population size.)

If no information is available then try to learn what the relative sizes of the communities are. See if you can determine if one community is one and a half times greater than another, or 2 times greater, etc.



STEP 3—Demonstrate the first step on the overhead: list communities and total population. Display Overhead #2: List of Communities and Total Population for a fictitious supervision area (refer participants to their copy of this list). Explain that the data could be for separate communities within an SA or, in the case of an urban area, data for various neighborhoods. Point out that for survey purposes we need to know only the total population of each community/neighborhood, not how many men vs. women, for example, or adults vs. children.

STEP 4—Demonstrate the second step: calculate the cumulative population.

STEP 4-A: "Now let's calculate the cumulative population for these communities."



A. Display Overhead #3: Calculate the Cumulative Population (refer participants to their copy) and begin by adding the population of the second community (Santai, **730**) to that of the first (Pagai, **548**) and writing the total (**548 + 730 = 1278**) in the first blank space in the far right column, 'Cumulative Population'.

B. Now repeat this process by adding the population of the third community (Serina, **686**) to that of the combined population of Pagai and Santai (**1278**) to get the new total (**686 + 1278 = 1964**) and write it in the blank space. Then do the same for the next community, Mulrose, adding its population (**280**) to the previous total (**1964**) to get the new total: **280 + 1964 = 2244**

C. Now let participants practice by filling in the 10 remaining blank lines at the bottom of the chart. When everyone is finished, have them call out their answers as you fill in the ten blank lines on your overhead.

STEP 5: "Next, we need to calculate the *sampling interval*."



STEP 5—Demonstrate the third step in Overhead #1: calculate the sampling interval. Display Overhead #4: Calculate the Sampling Interval, and take participants through this step, filling in the blank at the bottom of the overhead. The answer is **23489/19 = 1236.26**.

STEP 6—Demonstrate the fourth step: choose a random number. Explain that choosing random numbers is a common task when conducting a survey using a random process.

REMIND the group why *random* is important, and refer to the commitment sheet which they have had the chance to sign.

STEP 6: "Let's learn how to use a random number table. The sampling interval is 1236.26 so we need to find a random 4-digit number between 0001 & 1236."



In this particular instance we are using a random number to help us identify interview locations. Display Overhead #5: A Random Number Table (refer participants to their copy) that has 14 columns made up of rows of random numbers. You can use any randomizing process you wish, but using a random number table is recommended.

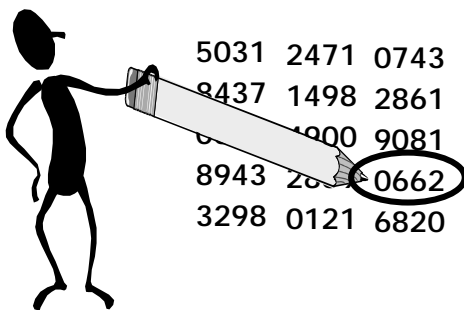
A. Restate the number of the sampling interval (1236.26) established in the previous step.

B. Explain that the random number has to be between 1 and the sampling interval, 1236. (The decimal point is not used in this step.)

C. Identify the highest possible number of digits in the random number, which in this case is 4, the number of digits in the interval (1...2...3...6).

D. Displaying Overhead #5: Random Number Table, you will now explain how to use it. First, notice that each row of random numbers has five digits. Have participants decide which of the five displayed on the table they will use in this particular case. (You should recommend that they use the first four.)

E. Now ask participants to close their eyes and hold a pencil in the air over the random number table. Then ask them to bring the pencil down on the table while keeping their eyes closed. The pencil should strike on or near a row of random numbers near one of the columns of numbers. Using the first four digits, ask participants whether the number is in the range of 1 and 1236. If it is not, have them move to the next row, and ask them to keep doing this until they find a 4-digit number in this range. When they do, *that* number is a random number that could be used in this example. Let's assume the random number selected is 0622.



STEP 7: "Now let's use this technique to identify the locations of the 19 interviews."



STEP 7—Demonstrate the fifth and final step in this process using a random number and sampling interval to identify locations of 19 interviews. Participants are now ready to combine the results of the third and fourth steps of this process to identify actual interview locations. Display Overhead #6: Identify the Location of Each of the 19 Interviews in a Supervision Area.

SUGGESTION: Take participants through the process for the first four interview locations.

A. Pointing to Overhead #6 row 1, explain: the location number of the 1st interview is the random number. For this demonstration, we are assuming that random number 622 was selected in the previous step.

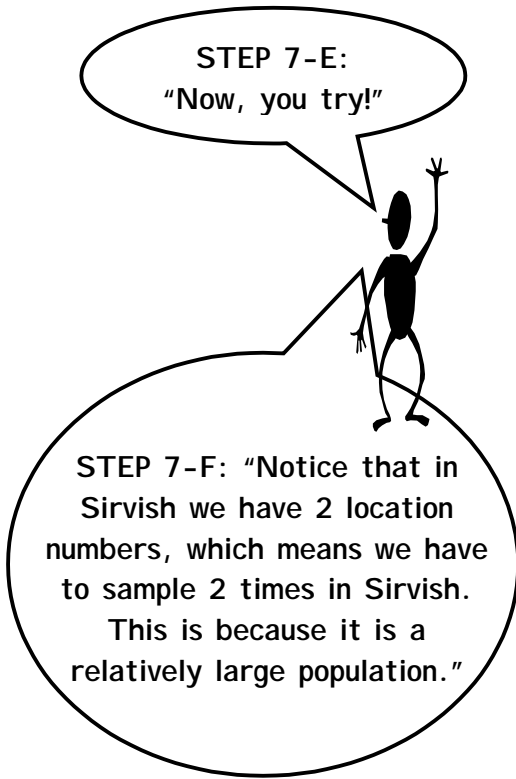
IMPORTANT POINT: The location of the first interview is the first community on the list with a cumulative population larger than the random number. In other words, find the community in Overhead #7 in which the 622nd person is located.

B. Pointing to Overhead #6 row 2, explain that the location number of the second interview is equal to the random number plus the sampling interval, in this case $622 + 1236.26 = 1858.26$ (for this step you always use the decimal.)

HINT: Now go to Overhead #7. The location of the second interview will be the first community on the list with a cumulative population equal to or larger than 1858 (note: the decimal is NOT used for identifying the location).

C. Pointing to Overhead #6 row 3, explain that the location number of the third interview is equal to interview location number 2 plus the sampling interval, or $1858.26 + 1236.26 = 3094.52$.

HINT: Now go to Overhead #7. The location of the third interview will be the first community on the list with a cumulative population equal to or greater than 3094 (note: the decimal is NOT used for identifying the location).



D. Repeat this process for the fourth interview location, explaining that this time the number will equal interview location number 3 plus the sampling interval ($3094.52 + 1236.26 = 4330.78$).

E. Now ask participants to repeat this process to find the interview location (number) for the 5th, 6th, 7th, 8th, 9th, and 10th interviews and to fill in the blanks that have been left for these interviews on their copy of Overhead #6. Allow 10 to 15 minutes for this task. The trainer(s) should walk around the room checking participants' work. If necessary, use the Answer Guide for Overhead 6, but do not show it to participants until STEP 8 is finished. Record the answers on Overhead #6.

F. Display Overhead #7. Look for the first community with a cumulative population larger than the first interview location number that is the number selected from the random number table (0622). The community is Santai. Show that the number for the first interview location has already been recorded in column 4 row 2. Now show them where the second interview location number is located. Find the first community equal to or less than 1858 (Serina.) Complete column 4 in a group or have participants complete individually. Check their work.

Explain the meaning of the two location numbers on the chart for the town of Sirvish (12984, 14220). Sirvish will be the location of two interviews (#11, #12) because of its relatively large total population (2115, second largest on the list), meaning that when the location number of the 11th interview (Sirvish) was added to the sampling interval (1236.26) to determine the location number of the 12th interview, we still had not reached a number greater than the cumulative population of Sirvish. Point out how this makes sense for doing a survey because we want to go to those places where most of the people we are serving live. (If you want to be

daring, don't give this explanation; ask, rather, if anyone in the group can give it.)

G. Finally, you can now fill in the far right column on Overhead #7 (Number of Interviews) for the various locations, depending on the location number. The total, of course, will be 19 locations.

STEP 8—If [adjustments need to be made to any of the sampling frames](#), assign participants the job of repeating the tasks practiced in this session using their actual supervision area.

SUGGESTION: Inform trainees that they will need to identify actual interview locations (using a random process) for the survey they will be completing later in this training. Therefore, over the next two days they should complete the eight steps demonstrated in this Session with the data from their own supervision areas, culminating in the selection of the locations for the 19 interviews.

Once they have chosen the 19 locations, they should then develop a travel plan (in conjunction with the NGO program manager and the lead trainers) for visiting each location on the days scheduled for the survey. (State the days.) Participants should review their calculations and their travel plans with the training workshop leaders.

SUGGESTION: As an alternative to doing this session with supervisors, managers of each organization participating in the training can complete this task of identifying interview locations for each supervision area they are responsible for.

Identify the Location of Each of the 19 Interviews in a Supervision Area

Random Number = 622 Sampling Interval = 1236.26

No.	Calculation	Interview Location
1.	Random Number	622
2.	RN + Sampling Interval	1858
3.	Interview Location Number 2 + Sampling Interval	3094
4.	Interview Location Number 3 + Sampling Interval	4330
5.	Interview Location Number 4 + Sampling Interval	5567
6.	Interview Location Number 5 + Sampling Interval	6803
7.	Interview Location Number 6 + Sampling Interval	8039
8.	Interview Location Number 7 + Sampling Interval	9275
9.	Interview Location Number 8 + Sampling Interval	10512
10.	Interview Location Number 9 + Sampling Interval	11748
11.	Interview Location Number 10 + Sampling Interval	12984
12.	Interview Location Number 11 + Sampling Interval	14220
13.	Interview Location Number 12 + Sampling Interval	15457
14.	Interview Location Number 13 + Sampling Interval	16693
15.	Interview Location Number 14 + Sampling Interval	17929
16.	Interview Location Number 15 + Sampling Interval	19165
17.	Interview Location Number 16 + Sampling Interval	20402
18.	Interview Location Number 17 + Sampling Interval	21638
19.	Interview Location Number 18 + Sampling Interval	22874

MODULE THREE

Whom should I interview?

Session 1: Selecting Households

Session 2: Selecting Informants

**Session 3: Field Practical for Numbering and
Selecting Households**

MODULE THREE/Session 1: Selecting Households

PURPOSE Now that participants have identified the general locations of their 19 interviews, they need to proceed to the next step in the process of selecting informants: selecting the actual household(s) they will visit at each location, which is the topic of this session.

TIME 90 minutes

OBJECTIVES By the end of this session, participants will have:

1. evaluated case examples of selecting households
2. selected a “household” at random as a starting point for a survey

PREPARATION Before you begin this session, prepare two large maps showing houses, rivers, roads, and other landmarks.

DELIVERY **STEP 1**—Introduce this session.

SUGGSTION: Explain that we are assuming that we have identified locations for interviews and have now gone to the first location. Our first task is to select a household at random, and this session will teach us how to do that.

NOTE: There are a variety of community/neighborhood scenarios presented in Appendix 4.

STEP 2: "Now we need to talk about how to number the households and choose one randomly. In this first case, we have a complete household list."



STEP 2—Explain how to assign numbers. Display Overhead #1: How To Assign Numbers to Households (refer participants to their copy) and briefly describe how to proceed in each of the three scenarios presented, as suggested below.

A. For the first row on the chart ("A complete household list/map is available"), explain that in this case participants need only number each household on the list/map, and the order of the houses is not significant.

B. For the second row on the chart ("If the community size is about 30 households or less"), display Overhead #2: Situation 2- Household List Not Available; Size about 30.

IMPORTANT: Explain that in this case the interviewer will have to draw a map of the households in that location, with the help of an informant (that is someone who lives in the community), and then assign numbers to the houses on the completed map. If a map is available, however, review it with the informant to make sure it is accurate and then assign numbers.



C. For the third row ("If the community size is more than about 30 households"), display Overhead #3: Situation 3-Household List Not Available; Size more than 30. The goal is to divide a very large area, with hundreds of houses, into smaller sections so we can easily count a few houses.

In this case, the interviewer will:

- (1) learn that there are more than 30 households in the community, let's assume there are 700 households;
- (2) subdivide the community into two or more equal sections of roughly 30 households each, and number each section;
- (3) select one of these sections at random;
- (4) if selected area is still too large, subdivide it again into 2 or more equal sections, number each section, and select one section at random;

The interviewer will . . . cont.

- (5) continue until you have one small section with less than 15 households
- (6) draw a map of the section with the help of an informant;
- (7) number the households in this section on this map (you only need to count the houses in the selected section); and
- (8) select one of these households at random.

STEP 2-D: "Here we have 27 households. We can number them 1-27 and then choose a random number from 01 to 27.

Can I ask a volunteer to help us?"



OVERHEAD #4

D. Display Overhead #4: Group of 27 Households Numbered for Random Selection of 1 Household (refer participants to their copy) and explain that now that we have numbered households in a particular location, we have to decide which houses to visit to find informants.

E. Review selecting a random number. Explain that we need to choose a random number in order to select the first household and remind participants that they have already learned how to do this (using a Random Number Table) in STEP 7 of Module Two/Session 1. Ask for a volunteer to describe the process, as he/she selects a random number from a Random Number Table. In this example the number must range from 1-27 because there are 27 houses. Remind the participants to use 2 columns only on the Random Number Table since the number 27 has 2 digits. Now find the corresponding house on the map.

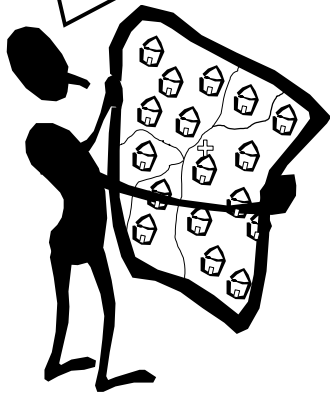
STEP 3—Do the "Green House" exercise to show participants how to select a household to interview.

A. Have participants gather around one of the two large maps prepared beforehand and now displayed on a table. The map should have houses (with doors), roads, rivers, or other natural features.

STEP 3-B: "Now let's use this map to do what we just learned:

- we divide the community
- locate the house
- knock on the door
- ... and NO ONE IS HOME!"

"WHAT DO WE DO NOW?"



B. Now go step-by-step through the exercise described above: dividing the community; numbering houses; randomly selecting a household. Pretend that no one is at this household you want to interview. Explain that when this happens they should continue to the next nearest household.

C. Now go to the second map and repeat this process. To increase interest, green houses from a Monopoly game can be placed on the maps (with doors painted on one side). You could also use painted stones.

D. Explain:

SUGGESTION: We will talk about going to the next nearest house in more detail in the next Session (on Selecting Informants).

STEP 4—Role-play on how to make a map in a community.

A. Once you are in the community, find a person who is willing to help you make a map. Often the community leader or the chief will help you, especially if you let the community know you are coming in advance.

B. Use a page from a flip chart to draw the map. Ask your helper to first tell you if there is a center of the community, often a plaza or a market. If there isn't a center ask the helper to describe a place in the community where about half of the people are to the north and half to the south. Or half are to the east and half are to the west.

C. Next, have the helper draw local landmarks (churches, mosques, schools, shops, football pitches) or other well known places. Also ask him/her where there are roads and footpaths. Draw all of these features on your map.

D. Next, using roads and other landmarks, divide the community into 4 sections and label them 1-4. Using a random number table, select one section randomly. Let's assume that section 3 is selected randomly.

E. Now ask your helper to give more detail about section 3; more information about paths, roads and other landmarks. At this point he/she may want to tell you where houses are located. Draw a small box to represent each house.

F. Now divide section 3 into 2 to 4 sub-sections that are of about the same size using paths and other landmarks. If this is difficult to do then go to section 3 and ask a person to take you to a place where about half the people are in front of you and half are behind you. Number the sub-sections and choose one randomly.

G. Continue until you have only a few houses remaining, few enough so you can easily count. Number them and choose one randomly.

H. Update your map, recording all the information collected about the community. Each time the NGO carries out a sampling activity in the community, they can refine the map. Since they will always choose sections and sub-sections randomly, they will almost always go to a different part of the community.

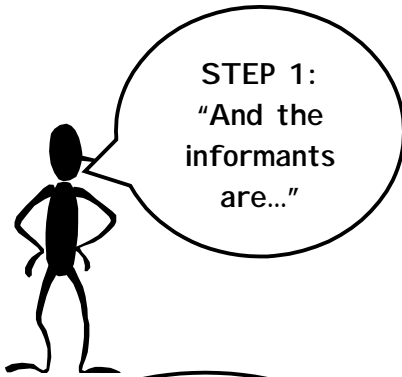
MODULE THREE/Session 2: Selecting Informants

PURPOSE	After participants have numbered households, and randomly selected them, they are ready for the last two steps in the process of identifying informants: selecting a household at random and selecting an appropriate informant in that household. These two activities are the focus of this session.
TIME	90 minutes
OBJECTIVES	By the end of this session, participants will have: <ol style="list-style-type: none">1. determined whether “households” did or did not have suitable informants2. selected the next nearest household to the random starting household
PREPARATION	<p>Before you begin this session, you will need to do the following:</p> <ol style="list-style-type: none">1. You will need to prepare the household composition scenarios used for the role-play in STEP 6 or use the scenarios already prepared (Overhead #2). If you prepare your own, they must be of two kinds: Those which <i>meet</i> the survey criteria, containing households with people who should be sampled (see below). Those which <i>do not meet</i> the criteria: different age, gender or family relationship than needed; empty house; informant absent or far away; can't find informant within 30 minutes of searching, etc.2. You will, of course, have to decide what the survey criteria are (what type of informants you are looking for) before you can create these scenarios. In this training, four types of informants are usually used:

- mothers with children 0-11 months
- mothers with children 12-23 months
- women 15-49, not pregnant
- men 15-49

3. Each scenario should be printed on a separate piece of paper, with its own unique number written on the back, and folded so that the scenario is not visible. The scenarios on Overhead #2 can be cut into strips and used for this exercise.

DELIVERY

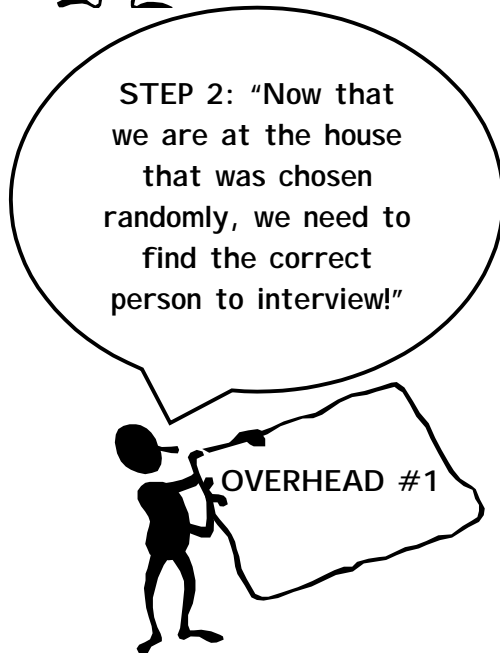


STEP 1:
"And the informants are..."

STEP 1—Introduce the topic of selecting informants. Present the types of informants to be interviewed in the survey. Explain that questionnaires have been prepared beforehand for each type of respondent (and in many cases there may only be one respondent type). If you are training several organizations at the same time, explain that not all organizations will necessarily be interviewing each type of respondent. The type of respondent depends on the health intervention.

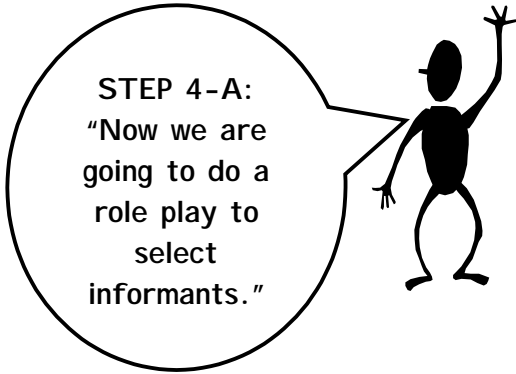
STEP 2—Display Overhead #1: Rules for Identifying Informants (refer participants to their copy) and briefly go through the four scenarios outlined there.

STEP 3—Display again Overhead #4 from Module Three/Session 1. Demonstrate how to select an informant.



STEP 2: "Now that we are at the house that was chosen randomly, we need to find the correct person to interview!"

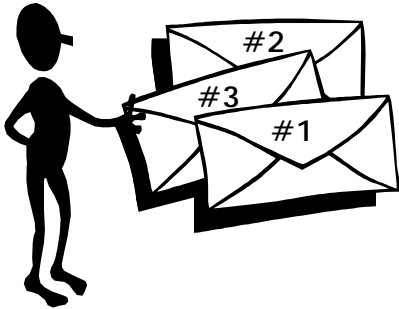
SUGGESTION: Go through several examples on the map in which no one that can be sampled lives in a house that has been selected. Show how it is possible to go to other locations in the community by following the rule of going "to the next nearest household from the front entrance of the household you are at." Practice going to the nearest household at least 5 times to show how this leads you through the community.



STEP 4-A:
"Now we are going to do a role play to select informants."

STEP 4—Role-play selecting informants. Explain that now we are going to role play/practice selecting informants.

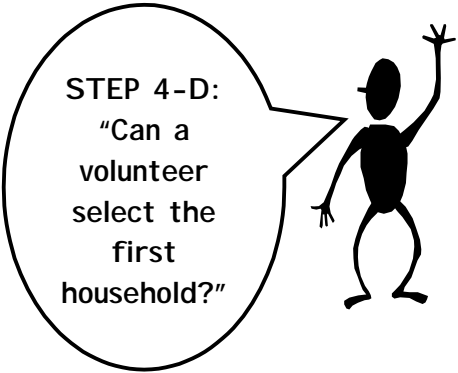
A. Divide the group into subgroups of 10-12 participants, assign a trainer/facilitator to each group, and have each group move to its own part of the training area (ideally a garden).



B. Give each group facilitator a set of household composition scenarios, one for each member of the group. Each scenario describes a household on one side and has a unique number on the back side (see Overhead #2).

SUGGESTION: Explain that each piece of paper in the envelope represents a unique household that has been assigned its own number.

C. Give a scenario to each participant and arrange the participants like houses in a pretend community.



STEP 4-D:
"Can a volunteer select the first household?"

D. Ask for a volunteer to select the first "household," using a random number, and then approach the person holding the scenario with that number.

IMPORTANT: Each time a random number needs to be selected review how to do it using the random number chart. Having done it for 4 digit numbers is different than doing it with 2 digit numbers.

E. Have the person holding the scenario read the description of this first household aloud and then:

SUGGESTION: Ask the volunteer whether anyone in this household qualifies as one of the types of informants. If not, what should the volunteer do? **GO TO THE NEXT NEAREST HOUSE.**

F. Have the volunteer move to the next nearest household, if necessary, until he/she finds an informant who qualifies.

G. After the first volunteer finds a household with an appropriate informant (or, if looking for more than one type, finds a household with each type of informant), have other volunteers practice the steps of this process, starting with selecting a random number, until most scenarios have been discussed.

SUGGESTION: Entertain questions/discussion before closing the session.

MODULE THREE/Session 3: Field Practical for Numbering and Selecting Households

PURPOSE	This session includes a field trip to a pre-identified community for the purpose of practicing numbering and selecting households.
TIME	3 hours
OBJECTIVES	<p>By the end of this session, participants will have:</p> <ol style="list-style-type: none">1. assigned numbers to households for the purpose of selecting one at random2. selected a household at random as a starting point3. identified the next nearest household to the starting point
PREPARATION	<p>This session <u>requires considerable advance planning</u> and effort on the part of the trainers. Prior to the start of this session, be sure to complete the following tasks:</p> <ol style="list-style-type: none">1. Ask a PVO/NGO trainee to identify a location that has enough sites so that participants can work in groups of 10-12. Each group will need its own site of at least 40-50 households. 100-200 households also make a good, but more complex exercise.2. Ask a trainee or a volunteer to develop a general map of the site(s).3. Identify and meet with appropriate "gatekeepers" for each site; that is, officials and others whose permission/approval is necessary before bringing participants into the site for the training exercise. Explain to them the purpose of the exercise, ask permission to bring trainees on the scheduled days, and determine that they or someone else can be available on those days to meet the trainees.

4. Assign participants to each of the sites (no more than 10-12 per site) and assign one facilitator to each group.
5. Arrange for transportation to the sites and all other logistics.

DELIVERY

STEP 1—Introduce the session. On the day of this field practical, bring the group together to introduce this session.

SUGGESTION: Explain the preparations you have made and explain that the goal of this exercise is to practice numbering and selecting households in an actual site.

STEP 2—Explain the protocol for entering the community. Have the person who made the arrangements for the field visit present the site map(s) (drawn in #2 under preparation) and explain with whom the group will be meeting in the community.

STEP 3—Review the steps of the field practical. Display Overhead #1: Process for Field Practical (refer participants to their copy) and discuss each of the steps. Inform participants which site they have been assigned to, any arrangements that have been made for meals, and the logistics of drop-off and pick-up. Also display and discuss the site maps developed for this exercise. Let them know that if once they are in their site they find that the map is not accurate, they will need to revise it or start again to make a new map.

STEP 3: "This is the process for this field practical. I would also like to tell you about the logistics for this exercise: meals, transportation, etc."



STEP 4—Once you are at the site, take your group through the field practical using the process presented in Overhead #1.

A. Meet with the community leader as prearranged.

B. Create and/or revise the community map. Ask the community leader or someone he/she selects to verify the accuracy of the map you are using and make any necessary revisions.

IMPORTANT: If you do not have a map, walk through the community with an informant and draw one now.

C. If necessary, the group should now subdivide the community into sections of 30 or fewer households. If the community is very large, ask someone to help you subdivide it into multiple sections of equal size. Number these sections and choose one at random. If this is still too large an area (too many households), then continue subdividing and choosing at random until you have a section with 30 or fewer households.

D. The group should then number the households in the community (or in the section they have chosen) and select a starting household at random using a random number table (or select two households if there are two interview locations in this site).

E. Proceed to the first household and ask the group what they should do next.

Answer: Determine if an eligible informant lives in this household.

F. Ask the group what they should do if an informant of the type they are looking for does not live in this household.

Answer: Go to the next nearest household.

G. Ask the group how to identify the next nearest household.

Answer: It is the household closest to the front entrance of the first household selected at random.

H. Ask the group what they would do if an informant does not live in the next nearest household either.

Answer: Go to the next nearest household.

I. Ask the group how they would identify this household.

Answer: This would be the house closest to the front entrance of the house nearest the household selected at random (or the house just visited in F. above).

J. Ask the group what they would do if there is an appropriate informant in a household but he/she is visiting a neighbor less than 30 minutes away.

Answer: Ask someone to take you to him/her.

K. Ask the group what they should do if the informant who lives in a household is visiting more than 30 minutes away.

Answer: Go to the next nearest household.

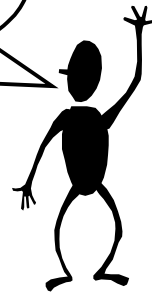
L. Continue the process as necessary or appropriate.

NOTE: When correctly using the 'next nearest house' rule, one may move from one house to the next and cross into other sections on the community map or into other communities/villages/towns. **HOWEVER**, you **NEVER** move into another SA.

(The questions listed here don't actually have to be *asked*; they are more of a checklist of procedures the group should be sure to practice. The trainer, in fact, should try not to intervene in the group's activities unless the group asks for help or makes a mistake.)

STEP 5—Debrief the field practical. After the groups finish their exercise and return to the training site (or while still in the village, if this is more appropriate), lead a discussion of the experience.

STEP 5: "What went well and what was challenging. What was the most important thing people learned from this experience. Are any questions..."



MODULE FOUR

What questions do I ask and how should I ask them?

Session 1: Reviewing the Survey Questionnaires

Session 2: Interviewing Skills

Session 3: Field Practical for Interviewing

Session 4: Planning for the Data Collection/Survey

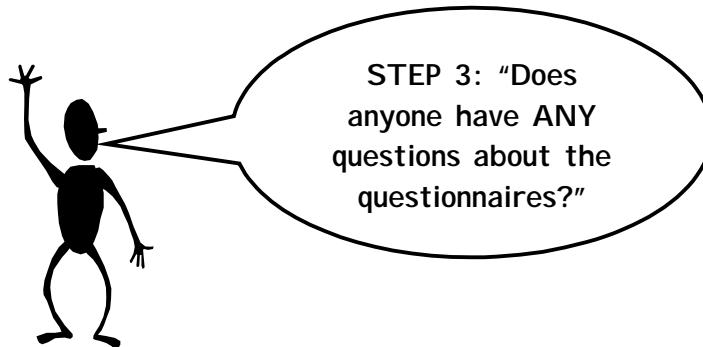
MODULE FOUR/Session 1: Reviewing the Survey Questionnaires

PURPOSE	In this session, participants prepare for their survey by reviewing the actual questionnaires they will be using and by practicing how they will fill out these questionnaires.
TIME	3 hours (<i>Note: the time will vary depending on the number of questionnaires to review</i>)
OBJECTIVES	By the end of this session, participants will have: <ol style="list-style-type: none">1. reviewed all the questions on each of the questionnaires2. Posed questions to clear up any confusion about the questions to be asked.
PREPARATION	Be sure to have the questionnaires that will be used in the survey available for this session, in more than one language if necessary. Participants will be using actual questionnaires in this exercise, which will have been prepared ahead of time by the managers and other PVO/NGO staff. These questionnaires will have been pretested in a local community similar to those where the survey will be carried out. This will ensure that most people will understand the questions and how they are phrased. Only minimal changes, if any, should have to be made to the questionnaire during this stage of the training.
DELIVERY	STEP 1 —Distribute questionnaires and describe how they were developed. <div style="border: 3px double black; padding: 10px; margin-top: 10px;">SUGGESTION: Be sure to explain that these questionnaires have already been developed, modified, and pretested by program managers from their organizations.</div>

STEP 2—Review the questionnaire. Go through the entire questionnaire as follows:

- A. Read through each question and make sure participants understand: (1) what information the question is asking for and (2) the purpose behind each question.
- B. Discuss all the possible responses to each question and explain what the interviewer should do in each case. Point out that some questions allow multiple responses.
- C. Explain the skip patterns in each questionnaire and what the interviewer should do in such cases.

STEP 3—Ask if there are any questions about the questionnaires.



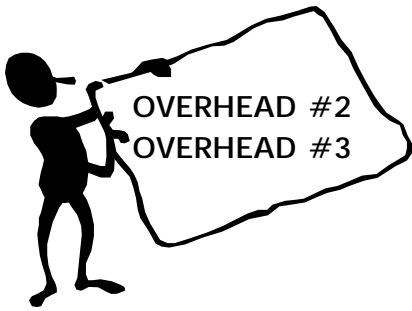
MODULE FOUR/Session 2: Interviewing Skills

PURPOSE	The purpose of this session is to review and practice effective interviewing techniques.
TIME	1 hour and 45 minutes
OBJECTIVES	By the end of this session, participants will have: <ol style="list-style-type: none">1. defined appropriate etiquette for interviewing2. asked questions using good interviewing techniques3. recorded answers on the questionnaire4. received feedback on their interviewing skills
PREPARATION	Be sure to bring samples of the questionnaires to this session for the practice in STEP 5.
DELIVERY	STEP 1 —Introduce the session. Display Overhead #1: Why Interviewing Is Important (refer participants to their copies) and review the key point.

Make the additional point that they should not be learning the questionnaires even as they are interviewing people. In this session, by practicing interviewing using the questionnaires, they will have a chance to become familiar with them. Then, in the next session they will have a field practice. They will be able to use all the questionnaires and ask all the questions on the survey.



STEP 1: "It is important for you to be familiar with the questionnaires before you begin the survey. In this session we will practice working with the questionnaires".

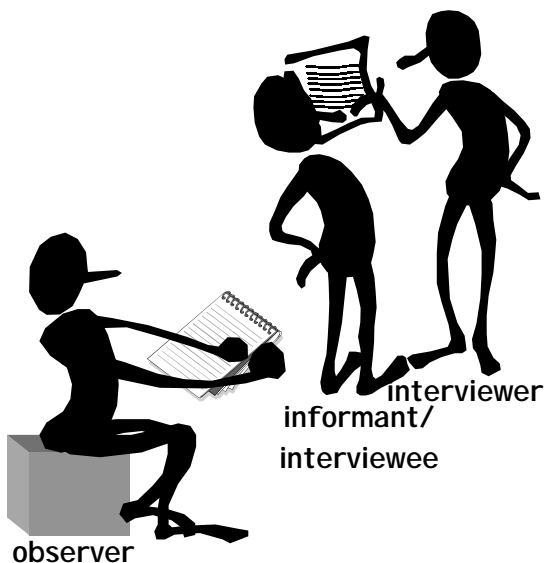


STEP 2—Discuss interview etiquette. Display Overhead #2: Interview Etiquette and go over the key points with participants. Ask them to add any other etiquette points appropriate for their country or circumstances.

STEP 3—Discuss effective interviewing techniques. Display Overhead #3: Effective Interviewing Techniques and go over each point with participants.

Give examples and/or demonstrate the techniques where appropriate. Ask participants to comment and to add other points from their experience.

STEP 4—Practice interviewing. With the actual questionnaires to be used in the survey, have participants practice interviewing in groups of three.



A. Divide participants into groups of three. (If more than one organization is in attendance, have participants from the same PVO/NGO work together.)

B. Have one participant play the role of the interviewer, one the role the interviewee or informant, and one an observer. The informant will pretend he/she is the type of informant needed for the interview. Select a questionnaire and have the interviewer ask questions of the informant and record the answers (in pencil if you want to reuse this questionnaire in the actual survey). The observer should make notes of any feedback he/she wants to tell the interviewer after the role-play. The observer should NOT interrupt the interviewer during the role-play.

C. Small group debriefing. After about 20 minutes, ask the participants to debrief the experience for about 5 minutes, with the observer and the informant giving feedback.

D. Have the three participants conduct/debrief a second interview for another 20 minutes, changing roles so that there is a different interviewer, informant, and observer. Then have them debrief again for 5 minutes.

E. Participants change roles one last time and conduct a third interview and debriefing for 5 minutes.

SUGGESTION: Each member of the group will have the opportunity to be the interviewer, the respondent, and the observer if time permits.

STEP 5—Large group debriefing. Reconvene the entire group and lead a discussion on what went well and what could be improved.

SUGGESTION: Be sure to discuss strategies for avoiding or dealing with any of the common problems that arose.

STEP 6: Encourage participants to practice more interviewing on their own before fieldwork begins. If you or the managers notice anyone having difficulty, suggest that that person, his/her manager, and one other person stay behind after the session to continue to practice.

MODULE FOUR/Session 3: Field Practical for Interviewing

PURPOSE	The purpose of this session is to give participants a chance to practice interviewing informants with the questionnaires before they do their actual surveys. It is important for participants to be as familiar as possible with the survey instruments and with actual interview circumstances before they conduct their own surveys. This is the time to make mistakes and become familiar with the questionnaires.
TIME	3 hours 45 minutes
OBJECTIVES	By the end of this session, each participant will have: <ol style="list-style-type: none">1. completed <u>at least two sets of interviews</u> (more if possible)2. received a debriefing on his/her interview skills
PREPARATION	Before you begin this session, make the following preparations: <ol style="list-style-type: none">1. Like all the other field practicals, the trainers will have to lay the groundwork for this session. You will need to identify a village near the training site and get permission to come there on the appointed day and conduct interviews. Be sure there are enough households with the type of informants required for the exercise.2. Make sure all the arrangements have been made to transport people to and from the site.3. Make sure each participant brings two copies of each questionnaire plus one extra as well as anything else needed to carry out the interviews (e.g., pencils, pencil sharpener, eraser, clipboard, bag to carry materials, random number table, a coin to flip, rain coat, etc.)

DELIVERY

STEP 1—Introduce the field practical. Explain the purpose of the exercise, the sequence of events, and any logistics.

STEP 2—Divide participants into groups of no more than three and assign a trainer/facilitator to each group.

STEP 3—Carry out the field practical. Transport participants to the site of the practical and proceed as follows:

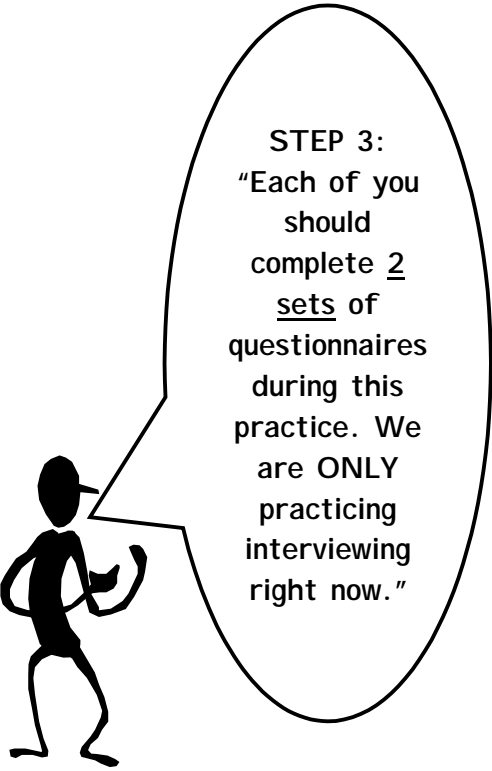
A. Explain that everyone should complete two sets of interviews using the questionnaires that will be used in the actual survey.

B. Explain that we are practicing interviewing *only* during this session so it will not be necessary to number households, make a map, select a house randomly, etc.

IMPORTANT: It is necessary, however, that interviewers are selecting interviewees properly, especially in cases where more than one person in the household fits the selection criteria. The trainers/facilitators should observe each participant in their group at least once and make notes for subsequent debriefing.

C. Have participants carry out two sets of interviews. Be sure each interviewer completes one set before beginning another set.

D. Debrief participants after each interview. As appropriate and possible, the trainer/facilitator debriefs his/her group members individually, away from the respondent, after the first one or two interviews. Be sure to communicate the strengths of the interviewer (“I like how you . . .”, and areas for improvement (“How about trying . . .”).



STEP 3:
“Each of you should complete 2 sets of questionnaires during this practice. We are **ONLY** practicing interviewing right now.”

STEP 4—Debrief the field practical in a group. At the site or back at the training venue, go over the experience, asking participants what worked well and what problems or difficulties they had. Be sure to discuss solutions for any problems that arose. Be sure that all participants think that the people interviewed understood the questionnaires. If not, determine if any essential changes need to be made to questionnaires. This is your last chance! But only make changes if absolutely necessary. (If changes are made to questions, the revised questions must be field-tested again.)

MODULE FOUR/Session 4: Planning for the Data Collection/Survey

NOTE: This "Session" is a set of checklists that should be taken into the field by data collectors and their managers. Each list is in the Participant Manual. This Session contains no new material and need not be discussed by the group; if there are any questions, however, facilitators should be prepared to answer them. The lists may need to be adapted according to specifics for the survey.

- PURPOSE** The purpose of this session is for interview teams to carry-out the survey.
- TIME** Four to seven days per team (schedule time as needed)
- OBJECTIVES** By the end of this session, each interview team will have:
1. completed 19 sets of interviews for each type of respondent
- PREPARATION** Before you begin this session, make the following preparations:
1. Make sure all the arrangements have been made to transport people to and within the project sites.
 2. Make sure each interview team has 19 questionnaires for each type of respondent, PLUS 2 extra (21 each). These should be stapled before the teams receive them.

IMPORTANT: During the survey phase of the training, managers, facilitators and workshop trainers should accompany participants to the field and spend the first one or two days making sure the interviews are going well and there are no other problems. Trainers and facilitators should always work through/coordinate their actions with the NGO program managers who will be in charge of this activity. Each facilitator should be assigned to an interview team for one or two days. If there are more interview teams than facilitators, teams can begin fieldwork at different times so that a facilitator can be available to accompany each one.

Remember: You can begin in any one of the selected communities and visit the communities in the order you prefer.

MODULE FIVE

What do I do with the information I have collected?

Session 1: Fieldwork Debriefing

Session 2: Tabulating Results

Session 3: Analyzing Results

MODULE FIVE/Session 1: Fieldwork Debriefing

PURPOSE The purpose of this session is to bring the group together to discuss their experiences while they were collecting the data. At this time you can also find out whether there are any data missing or any other problems that you may need to address.

TIME One hour

OBJECTIVES By the end of this session each data collector or team of collectors will have

1. Shared important lessons learned during the survey with each other.
2. Identified their needs for follow-up and planned to deal with outstanding issues.

Debriefing on these issues will be based on the following questions:

1. List what was difficult and easy about the data collection.
2. If you did not finish the data collection what support did you need to complete it?
3. What other issues must the manager address?
4. What suggestions do you have for dealing with these issues?
5. What did you learn about your community or your project through this process?

PREPARATION

1. If necessary, have boxes available to collect and store questionnaires.
2. Also have extra copies of the questionnaires for yourself available in case there are questions you need to answer about them.

DELIVERY



STEP 1—Have each NGO report on the status of their data collection. Display Overhead #1: Status Report on Data Collection from Each NGO (refer participants to their copy) and complete the boxes for each NGO.

SUGGESTION: Discuss each NGO's plan to complete any outstanding interviews and tabulation.

STEP 2—Discuss lessons learned from the data collection experience and record answers on a flipchart. Ask participants to discuss what went well and what was difficult. For each of the difficulties, discuss suggestions for overcoming or avoiding this problem in the future.

MODULE FIVE/Session 2: Tabulating Results

PURPOSE	The ultimate purpose of conducting a survey (except for baseline surveys) is to find out how the various health interventions in a given area are performing and as a consequence to be able to identify the best places (locations and/or specific interventions within the same location) to concentrate your resources. The first step after completing a survey, therefore, is to tabulate the results from your questionnaires.
TIME	Continue until finished. The length of time required will depend on the length of the questionnaire. One day, minimum, is encouraged.
OBJECTIVES	By the end of this session, participants will have: <ol style="list-style-type: none">1. described why it's important to tabulate2. tabulated each type of questionnaire used in the survey3. used a checklist to check for errors in tabulation
PREPARATION	This is a lengthy session which requires a lot of preparation. <ol style="list-style-type: none">1. Participants must be told to bring their completed questionnaires to this session.2. You will need to prepare a blank tabulation (or results) table <u>for each questionnaire</u> used in the survey to be used in STEP 3. These tables must be based on the actual questionnaires used in the survey and, therefore, may be several pages long.3. The correct response key (column 3 on the tabulation table) should already be included on these tabulation tables, but

will be open for discussion with all the participants.

4. Modify Overhead #1 to match a section of your blank tabulation table to be used for the demonstration.

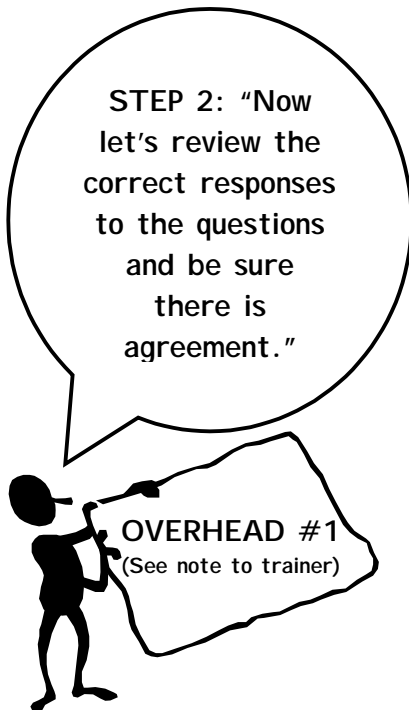
DELIVERY

STEP 1—Discuss why it's important to tabulate. Explain what tabulation is:

IMPORTANT: TABULATION is bringing together the information collected during the interviews in a form so you can analyze it. This information is called "data".

Then ask the group why it's important to do this. (Possible answers should be: to make program decisions; to identify priorities by SA or by program within an SA; to better allocate resources.)

STEP 2—Review correct responses. Explain that we will now review the "correct responses" to the questions on the _____ (*insert the name of the set of questionnaires to tabulate first, such as 'women 15-49 years'*). Display overheads, each page of the tabulation table, one at a time, for the first set of questionnaires to be tabulated. Cover both steps A and B below before proceeding to the next page of the tabulation table.



NOTE TO TRAINER: OVERHEAD #1 is only a *section* of a tabulation table. We have prepared only 1 overhead in the Participant Manual to conserve space, but to demonstrate the idea of the tabulation table. The actual tabulation table (which may be several pages) must be developed prior to tabulation and be based directly on the questionnaire being reviewed in this session.

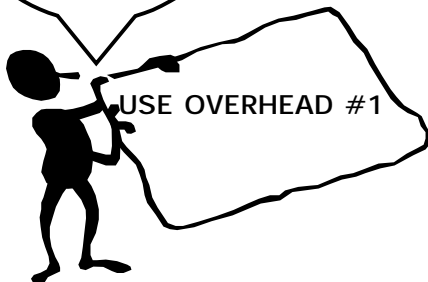
A. Read each of the questions and the correct responses already written in column 3.

IMPORTANT: Ask participants to stop you if they disagree and make any changes needed in the tabulation sheets to resolve any disagreements.

B. For any question that has “skip” as a consequence or which may already have been skipped, discuss why the blank response is equivalent to an automatic “incorrect” or “correct.” Most often an intentionally skipped response is equivalent to an “incorrect” response.

STEP 3—Demonstrate tabulation. Continue to display Overhead #1: Tabulation Table for A Supervision Area (or use a handout and refer participants to their copy) and lead participants through the following sequence of activities. **(Note: This manual contains only a sample table. The actual tables must be developed from the actual questionnaires used.)**

STEP 3: “Let’s begin tabulation! First, please organize the questionnaires by SA and informant type. Then, for the tabulation, it is best to work in groups of 3.”



A. Ask participants to gather all the completed questionnaires they have for one SA which correspond to this first table (that is, to the particular informant type named on this table). The questionnaires should be ordered LQAS # 1-19. It is possible in other settings that there will be one long questionnaire (perhaps in modules but all together and stapled) and that the tabulation table on the overhead will need to reflect one section of the long questionnaire. Therefore participants would need to flip the pages of the questionnaire to the section(s) corresponding to the sections on the overhead’s tabulation table.

B. Explain that whenever possible tabulation should be done in groups of three:

- The first person reads the correct answers from “column 3” of the tabulation sheet.

- The second person, simultaneously, looks at the answer on the questionnaire and determines if the response on the survey is “correct” or “incorrect”, and calls out the code.
- The first person then records the answer on the tabulation sheet.
- The third person verifies that the second person correctly determined if the answer should be coded “1” or “0” or “S” or “X” and that the first person recorded it correctly. If the response was intentionally skipped, then a code of “1,” “0” or “S” is possible.

Working in a group of three may seem tedious and unnecessary, but as tabulation progresses participants become tired and more errors will be made. The three people can change roles to share the work.
(The meaning or codes for “S” and “X” are described below in D.4.)

C. Fill in blank lines at the top of the table (such as NGO, name of SA, name of supervisor, etc.).

D. Begin tabulation with a demonstration. Organize a group of three people, including the trainer as one. Select one of the questions to be tabulated (one that is of particular interest to the audience) and carry out the process in the following manner:

- 1) Trainer reads the question number and answer(s) from the tabulation sheet.
- 2) Second person reviews the response on one questionnaire and calls out whether it is correct.
- 3) Trainer repeats this information.

<p>0 = incorrect answer</p> <p>1 = correct answer</p> <p>S = question was skipped according to instructions on the questionnaire</p> <p>X = missing response (where there should be a response)</p>

4) If not corrected (by third person), the trainer records the information on the tabulation table:

- Write a "0" for an incorrect answer.
- Write a "1" for a correct answer.
- If a question was skipped through instruction of the questionnaire, then any one of three values ("0", "1", or "S") could result.

On many occasions an "S" has the same meaning as a "0" and should be recorded as "0".

"0", FOR EXAMPLE: Usually a question is skipped because the interviewee did not know the answer to a filter question (e.g., have you ever heard of HIV/AIDS); in this case all the following questions are automatically incorrect and should be recorded as "0." For example, if the informant had never heard of HIV/AIDS, then she/he does not know ways to prevent HIV transmission.

On occasion a skipped question means the same as a correct response and should be coded as "1" because it is equivalent to a correct response.

"1", FOR EXAMPLE: There may be questions in which a positive response requires that subsequent questions are skipped. If we ask someone if he has experienced pain in the past 2 months, and he responds "No", then we skip the following question asking him if that pain prevented him from working or living comfortably. Because he has not had pain, the skipped response is automatically correct and coded as "1".

On other occasions a skip means the person should be taken out of the denominator altogether. These cases should be coded as "S".

"S", FOR EXAMPLE: If a set of questions concern a child who has had diarrhea within the last 2 weeks, and the informant's child has not had diarrhea then those questions would not apply. In this case, write an "S" in the table.

- Write an "X" to indicate no response is written on the questionnaire where there should be a response (i.e., a missing answer). An "X" means we do not know whether the response is a "1" or a "0". Later on, all of the "X's" will be eliminated from the analysis and from the denominator.

There should be very few missing answers. If there are too many, then the program manager or trainer should send the interviewer back to the communities to get the missing information.

- 5) Third person verifies that the information written down is correct.

E. Repeat this process for the remaining 18 questionnaires for that question. Occasionally, the trainer should repeat and/or write down the "wrong" information which the second person then has to correct.

IMPORTANT: It is very important to tell participants that we are recording the responses to one question for all 19 questionnaires *only for the purposes of this demonstration*. In actual practice, it is much better to code the responses to *all* the questions on one questionnaire before going on to another questionnaire.

We are only coding one question in this demonstration so we can show how to make an LQAS judgment.

F. Repeat this entire process again for another question. Use a different volunteer and have another participant assume the recorder role.

G. After you have completed two questions (the horizontal row) for all 19 questionnaires, demonstrate filling in the two boxes at the end of each row. These are the extreme right-hand columns.

Total Number Correct = count all the '1's

** if a skipped question is considered *correct* then count it in the total correct

1) For the column called Total Number Correct, add up all the boxes where there is a "1" and write this number in the box.



Total Sample Size = count all the '1's and '0's

** total should be 19 unless there is an 'X' or 'S' not counted as a '1' or '0'.

2) For the column called Total Sample Size, add up all the boxes where there is a "1" and a "0" and write this number in the box. The total should be 19 unless there is an "X" or an "S" that was not counted as a "1" or a "0."



REMEMBER that a skipped question should always be entered as a "1" or "0" if it is equal to a "1" or a "0".



STEP 4— Display Overhead #2: Tabulation Quality Checklist. Review each step, confirming with the participants that they understand each one. Ask them to review the checklist in their work teams, and to keep doing this during the tabulation.

STEP 5— Ask participants to work together to tabulate all the remaining questions from all questionnaires from 1 SA for the *first* informant type, according to the instructions in A.-F. below. While participants are doing this and all other tabulation work, the trainers should be sure to do the following:

- ✓ Check that teams are using the correct tabulation table and type of questionnaire.
- ✓ Check that teams are using an adequate procedure for calling out, recording, and verifying marks on the tabulation table.
- ✓ Check that teams are using the Tabulation Quality Checklist.
- ✓ Answer questions that arise.

A. Sit with other members of your own organization. If more than one organization participated in the training, it is best to work with your own group since your questionnaires and interests may be different.

B. Appoint a caller, a recorder, and a verifier.

C. Go through each questionnaire one at a time filling in the information for all questions in the tabulation sheet (in other words, move vertically down the page). Use the procedure described under STEP 3-D above.

D. Refer to the Tabulation Quality Checklist from time to time during the tabulation to be sure that you are still on track and following the procedure.

E. Stop after you complete the first questionnaire on your own and ask the trainer/facilitator to check your group's work, before you go on to the next questionnaire.

F. When you have completed all questionnaires (for all questions) for that informant type, fill in the two columns at the far right (Total Number Correct and Total SA Sample Size) as described under STEP 3-G above.

NOTE: As a general rule, allow 20-30 minutes to complete a single tabulation table.

STEP 6— Repeat STEPs 2 and 3 for the next questionnaire/informant type to be tabulated. Be sure to address any differences from the previous tabulation tables used. Review STEPs 3 and 4 as needed. Repeat STEP 5 and continue tabulating the second questionnaire/informant type. Some teams will have done more surveys than others and will have more tabulating to do.

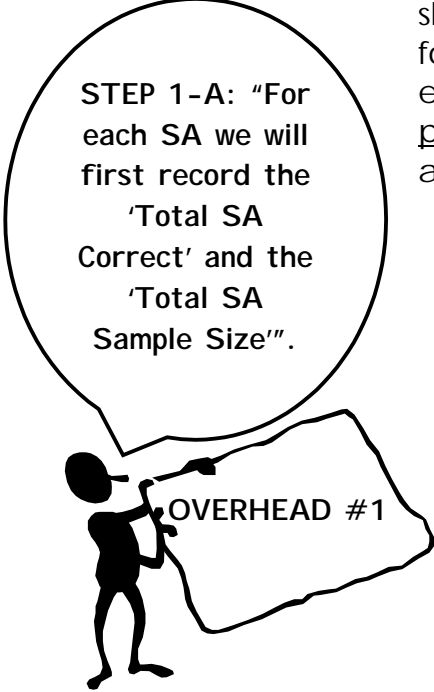
STEP 7—Repeat STEP 6 for each questionnaire/informant type.

MODULE FIVE/Session 3: Analyzing Results

PURPOSE	In this session, workshop participants will practice simple analysis of data and become familiar with a useful format for reporting data.
TIME	2 hours 15 minutes. Times vary according to the number of SAs for each organization and the number of respondent types. These two things determine the number of summary tabulation tables that the teams will have to complete. For example, if your survey set includes 4 questionnaires (one each for mothers of children 0-11 months and 12-23 months as well as one each for women and men 15-49 years) then you will need 4 separate summary tabulation tables.
OBJECTIVES	<p>By the end of this session, participants will have:</p> <ol style="list-style-type: none">1. used a summary tabulation sheet to identify low performing SAs for each indicator2. computed average coverage3. reviewed how to use an LQAS Table to judge SAs4. identified priorities among SAs and among indicators for the same SA using the summary results5. used a useful format for reporting survey findings
PREPARATION	<p>Before you begin this session, you will need to do the following:</p> <ol style="list-style-type: none">1. Summary tabulation sheets must be prepared in advance, based on the tabulation tables used in Session 2.2. The Baseline Survey Report Format used in STEP 4 should be modified as necessary.3. Calculators should be available for the use of participants.

4. Modify Overhead #10: Baseline Survey Report Format to suit the needs of the project.

DELIVERY



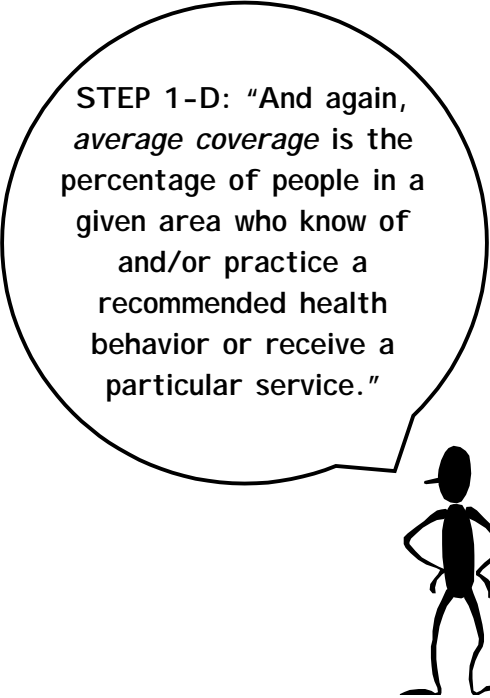
STEP 1-A: "For each SA we will first record the 'Total SA Correct' and the 'Total SA Sample Size'".

STEP 1—Demonstrate completing a summary tabulation sheet. Present Overhead #1: Summary Tabulation Sheet for Baseline Survey. This overhead is an example only. An example summary tabulation sheet for your own program should be prepared beforehand based on the actual questionnaires used in the survey.

A. Ask participants to gather all their individual tabulation sheets for one respondent type and organize them by SA.

B. Explain that for each SA we will first transfer the "Total SA Correct" and the "Total SA Sample Size" from the individual tabulation table to the appropriately labeled columns on the summary table. This information has already been totaled and is available on the individual tabulation sheets for each SA.

IMPORTANT: The "Total SA Correct" is recorded above the split row.



STEP 1-D: "And again, *average coverage* is the percentage of people in a given area who know of and/or practice a recommended health behavior or receive a particular service."

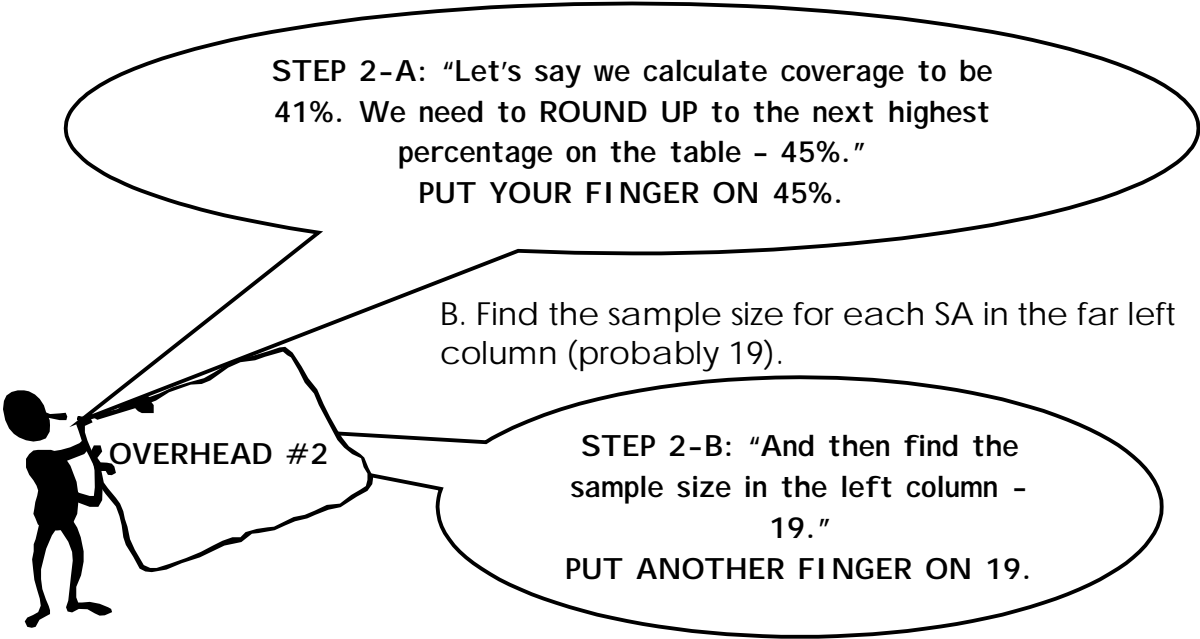
C. Using an overhead, have a participant read the "Total SA Correct" and "Total SA Sample Size" for each SA for one indicator and one questionnaire type while the trainer records the numbers on Overhead #1. Be sure the participant uses the set of tabulation sheets that corresponds to the respondent type in the summary table (for example, mothers of children 0 to 11 months should not be mixed with women 15-49 years).

D. Next add the total correct for all SAs together and record the results in the column "Total Correct in Program" for each indicator. Do the same for the "Total Sample Size in Program" by adding together the "Total SA Sample Sizes".

E. Compute the "average coverage" and complete that column. Explain again the concept of average coverage. Explain that the average coverage data are more accurate if data from at least five SAs are added together. Average coverage should not be computed for any indicator with data for fewer than three SAs.

STEP 2—Demonstrate how to determine which indicators in which SAs have below average coverage. Display Overhead #2: The LOAS Table. (This is the same table that is used in Module One/Session 4.)

A. Find the average coverage on the columns on this table.



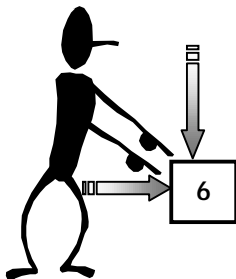
STEP 2-A: "Let's say we calculate coverage to be 41%. We need to **ROUND UP** to the next highest percentage on the table - 45%."
PUT YOUR FINGER ON 45%.

B. Find the sample size for each SA in the far left column (probably 19).

STEP 2-B: "And then find the sample size in the left column - 19."
PUT ANOTHER FINGER ON 19.

C. Bring the first finger down the page (at the 45% column) and the other finger across the page (from sample size 19).

IMPORTANT: Where your fingers meet is the decision rule (or 6 in this example).



D. Now find and record to decision rule for all other SAs and indicators, which is 6 in this case.

E. In the split row, record the decision rule below the total correct for the corresponding SA (on Overhead #1). Ask participants to circle indicators for any SA that are below the decision rule.

SUGGESTION: Explain that these are indicators and SAs needing special attention because they have below average coverage.

*****IMPORTANT!! *****

Proceed to **STEP 3** below only if you are carrying out routine monitoring. If you are carrying out a baseline survey go to **STEP 4**, skipping **STEP 3**.

STEP 3—Demonstrate how to determine whether interventions are reaching coverage targets. Display Overhead #3: Defining Program Goals and Annual Targets. Explain that during routine monitoring participants can use LQAS to determine whether interventions are reaching coverage targets established for a particular period. Display Overhead #4: Summary

Tabulation Table for Monitoring. Point to the last column of the summary table marked "Coverage Target". Have them write the coverage target for each indicator in the space provided.

Review with the participants the current performance targets, which have been discussed and set by program managers and their teams. If the program does not have annual targets, the participants should calculate the average coverage and identify SAs that fall below it.

A. Display Overhead #2 again (the LQAS Table). Find the coverage target on the percentage columns on this table. Let's assume an annual

STEP 3: "During routine monitoring you can use LQAS to determine whether interventions are reaching coverage targets established for a particular period."

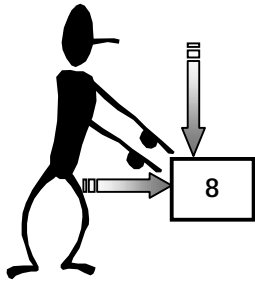


coverage target of 55% for women (15-49 years) who know two or more ways to prevent HIV transmission. Ask participants to find the column labeled 55% and put a finger there.

B. Find the sample size for an SA (19) in the far left column and put another finger there.

C. Bring the fingers together to find the decision rule (where the fingers converge), which is 8 in this case.

D. Record below each split row the decision rule for each indicator for each SA. Display Overhead #5: Worksheet - Summary Tabulation Sheet for Monitoring. Have them write the *coverage target* decision rule next to and at the right of the decision rule you already entered for average coverage.



STEP 2-D: "Please circle the indicators that are below the decision rule."

"... Explain that these are indicators and SAs needing special attention because they are below the 55% performance coverage target."

OVERHEAD #5

E. Mark with a star (*) each SA in which the number of correct answers is less than the *coverage target*. These are the SAs that have not reached the performance target.

F. Display Overhead #6: How to Identify Priority Supervision Areas. Tell participants that they can find the highest priority SA among those already circled because they did not reach a coverage target or because they are below average (as already discussed earlier in STEP 2). Do so in the following manner:

- 1) Display Overhead #7: Using LQAS to Assess One Indicator. If an SA is circled because it is below average, and is marked with a star (*)



because it has not reached the coverage target, it is the highest priority SA.

- 2) If the SA is marked with only a star (*) or a circle then it is the next highest priority.

IMPORTANT: SAs with both a circle and a star have the lowest coverage of all since they are both below the annual coverage target and below average.

- 3) Display Overhead #8: Monitoring Targets and Average Coverage Over Time: In a Catchment Area. This overhead is a graphical representation of Overhead #7 and can be used to reinforce the idea of monitoring a project's goals and progress over time.



STEP 4—Have participants practice using the summary tables to analyze data and identify priorities. Ask participants to form small groups with the other members of their organization. If one organization has many participants, they can divide into subgroups based on experience or common interests (safe motherhood, child health, etc.). Then display Overhead #9: How To Analyze Data and Identify Priorities Using the Summary Tables and have each group discuss the points described on this overhead. Have overhead transparencies and/or flipchart paper available for participants to use to present their findings to the whole group.

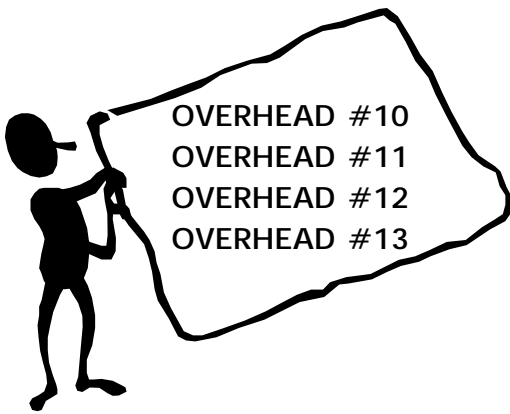


STEP 5—Display Overhead #8: Monitoring Targets and Average Coverage Over Time: In a Catchment Area. This graph compares planned annual targets to the measured annual average coverage for a catchment area. Explain that repeating data collection, analysis, and program planning in the future produces this kind of information.

EXPLAIN: Through data collection, analysis, and planning, teams are able to adjust their program goals, refocus their resources, and maximize their achievements over time.

STEP 6—Have participants discuss and plan average targets for the coming year.

STEP 7—Have participants prepare their reports.



A. Display Overhead #10: Baseline Survey Report Format and review each section heading and page limitation. This format should be modified beforehand to suit the needs of the project.

B. Display Overheads #11: Methodology, #12: Main Findings, and #13: Action Plans/Goals/Coverage targets to provide more detail for these three sections of the report.

C. Ask participants to select key indicators on which they want to have an impact in the next 12 months. Based on the findings of their baseline/monitoring study, ask the groups to establish or revise annual performance targets for each indicator.

SUGGESTION: Ask participants to establish annual coverage targets for the coming year and to include them in their reports.

D. Display Overhead #3 again and review the program monitoring cycle and the concept of program goals/coverage targets.

E. Give participants a reasonable deadline to submit their reports, with annual coverage targets, project goals, and a time for the next monitoring of their program with LQAS.

APPENDICES

Appendix 1:	Sample Workshop Agenda	Page A-2
Appendix 2:	LQAS Table with <i>Alpha</i> and <i>Beta</i> Errors n=19	Page A-7
Appendix 3:	Additional Random Number Tables	Page A-8
Appendix 4:	Alternative Neighborhood/Community Scenarios	Page A-11
Appendix 5:	How to Calculate Weighted Coverage and Confidence Intervals	Page A-13
	- using hand tabulated results	
	- using a computer	

**Detailed Agenda for Module 1-4:
Sampling and Data Collection Workshop
Day 1**

Time	Topic	Responsible
8:00 - 8:15 a.m.	Opening Of Workshop	
8:15 – 8:45 a.m.	Participant Introduction	
8:45 – 9:00 a.m.	Administrative And Logistical Arrangements	
9:00 - 9:30 a.m.	Purpose & Agenda: Skills To Be Learned	
9:30 – 9:45 a.m.	Coffee/ Tea Break	
9:45 –10.30 a.m.	Uses Of Surveys	
10:30 – 11:15 a.m.	Random Sampling	
11:15 - 12:15 p.m.	Using LQAS Sampling for Surveys: <ul style="list-style-type: none"> • Usefulness Of 19 as a Sample Size • LQAS Sampling Exercise 	
12:15 – 1:15 p.m.	Lunch	
1:15 – 2:00 p.m.	Using LQAS Sampling for Baselines Surveys: <ul style="list-style-type: none"> • Using LQAS to Monitor Coverage. • What A Sample Of 19 Can And Cannot Do 	
2:00 – 3:30 p.m.	Identifying Interview Locations: <ul style="list-style-type: none"> • Process for Selecting Locations of Interviews • How to Calculate the Cumulative Population • How to Calculate The Sampling Interval • How to Choose A Random Number • How to Use A Random Number And Sampling Interval To Identify Locations Of 19 Interviews 	
3:15 – 3:30 p.m.	Coffee/Tea Break	
3:30 – 5:00p.m.	Selecting Households: <ul style="list-style-type: none"> • Importance Of Updating Maps • Process For Numbering/Choosing Households • House Selection Exercises • Examples Of Numbering/Choosing Households: Green Houses Exercise • Learning Experience 	

Day 2

Time	Topic	Responsible
8:00 – 9:30 a.m.	Selecting Informants In A Household: <ul style="list-style-type: none"> • Process For Selecting The Starting Household Process For Identifying Informants • Role Play For Selecting Informants: Garden Exercise 	
9:30 – 9:45 a.m.	Coffee/Tea Break	
9:45 – 12:30 p.m.	Field Practical for Numbering & Selecting Households <ul style="list-style-type: none"> • Process For Field Practical • Field Practical 	
12:30 – 1:30 p.m.	<ul style="list-style-type: none"> • Return To Workshop Site For Lunch 	
1:30 – 2:15 p.m.	<ul style="list-style-type: none"> • Review Of Field Practical Sampling And Lessons Learned 	
2:15 – 3:45 p.m.	<ul style="list-style-type: none"> • Reviewing the Survey Questionnaires 	
3:45 – 4:00 p.m.	<ul style="list-style-type: none"> • Tea Break 	
2:30 – 5:00 p.m.	<ul style="list-style-type: none"> • Continue Reviewing Survey Questionnaires 	

Day 3

Time	Topic	Responsible
8:00 – 9:30 a.m.	<ul style="list-style-type: none"> • Continue Reviewing Survey Questionnaires 	
9:30 – 9:45 a.m.	<ul style="list-style-type: none"> • Coffee/ Tea Break 	
9:45 – 12:30 p.m.	<ul style="list-style-type: none"> • Interviewing Techniques • Role Play With Survey Form 	
12:30 – 1:15 p.m.	<ul style="list-style-type: none"> • Lunch 	
1:15 – 5:00 p.m.	<ul style="list-style-type: none"> • Field Practical For Interviewing 	

Day 4

Time	Topic	Responsible
8:00 – 9:30 a.m.	<ul style="list-style-type: none"> • Review Of Field Practical For Interviewing And Lessons Learned 	
9:30 – 9:45 a.m.	<ul style="list-style-type: none"> • Tea Break 	
9:45 – 11.45 a.m.	<ul style="list-style-type: none"> • Improvement Of Interview Technique Using Role Plays, If Needed 	
11:45 – 12:30 p.m.	<ul style="list-style-type: none"> • Develop Of Final Plan For the Data Collection/Survey 	
12:30 – 1:30 p.m.	<ul style="list-style-type: none"> • Lunch 	
1:30 – 2:30 p.m.	<ul style="list-style-type: none"> • Develop Of Final Plan For Data Collection 	
2:30 – 3:00 p.m.	<ul style="list-style-type: none"> • Workshop Certificates Awarded & Closing 	

Conduct Survey: AS LONG AS IT TAKES

Sample Agenda Module 5: Tabulation and Data Analysis Workshop

Day 1

Time	Topic	Responsible
8:00 – 8:15 a.m.	Opening: Welcome Back	
8:15 – 8:30 a.m.	New Participant Introduction / Logistical Arrangements	
8:30 – 8:50 a.m.	Reviewing The Agenda For The Tabulation Workshop	
8:50 – 9:00 a.m.	Reviewing The Training Flow Chart	
9:00 – 9:30 a.m.	Fieldwork Debriefing <ul style="list-style-type: none"> • Number Of SAs In Which 19 Sets Of Interviews Have Been Completed • Number Of SAs With Data Collection Remaining – If Any • Confirmation That All Completed Sets Of Questionnaires Have Been Brought To The Workshop • Contingency Plan For Finishing Tabulation Of Remaining Questionnaires 	
9:30 – 9:45 a.m.	<ul style="list-style-type: none"> • Tea/Coffee Break 	
9:45 – 10:15 a.m.	<ul style="list-style-type: none"> • Lesson Learned During Data Collection: What Went Well And What Was Challenging 	
10:15 – 11:15 a.m.	<ul style="list-style-type: none"> • Agreement On Correct Answers To The Questionnaires 	
11:15 – 11:20 a.m.	Purpose Of Tabulation	
11:20 – 12:00 p.m.	How To Use The Tabulation Tables: Reviewing The: <ul style="list-style-type: none"> • SA Table, • Summary Table, • Variables Not Included In The Tabulation Tables 	
12:00 – 1:00 p.m.	Lunch	
1:00 – 1:30 p.m.	<ul style="list-style-type: none"> • How To Calculate Average Coverage And Why Is It Important 	
1:30 – 2:30 p.m.	Two Exercises: Using The Tabulation Tables To: <ul style="list-style-type: none"> • Enter Results For One Indicator In Each SA • Calculating Average Coverage For That One Indicator Using The Summary Table • Reviewing The Work Of Each NGO 	

	Repeating The Above Three Steps With A Second Indicator	
2:30 – 3:45 p.m.	Tabulation Starts In Stages <ul style="list-style-type: none"> • Completing The SA Table For Women • Completing The Summary Table And Calculating Average Coverage For Women • Identifying SAs That Are Average/Above Average From Those That Are Below The Average For Women 	
3:45 – 4:00 p.m.	Tea/Coffee Break	
4:00 – 5:00 p.m.	Continue Tabulation In Stages	

Day 2

Time	Topic	Responsible
8:00 – 9:45 a.m.	Continue Tabulation In Stages	
9:45 – 10:00 a.m.	Tea/Coffee Break	
10:00 – 12:00 p.m.	Continue Tabulation In Stages	
12:00 – 1:00 p.m.	Lunch	
1:00 – 5:00 p.m.	Continue Tabulation In Stages	

Day 3

Time	Topic	Responsible
8:00 – 9:45 a.m.	Continue Tabulation In Stages	
9:45 – 10:00 a.m.	Tea/Coffee Break	
10:00 – 12:00 p.m.	Continue Tabulation In Stages	
12:00 – 1:00 p.m.	Lunch	
1:00 – 2:00 p.m.	Continue Tabulation In Stages	
2:00 – 3:00 p.m.	How To Analyze LQAS Data And Identify Priorities Using The SA Tables And The Summary Tables: <ul style="list-style-type: none"> • Priorities Within An Individual SA When Considering Several Indicators • Priorities Among Several SA's When Considering One Indicator • Exercise 	
3:00 – 3:15 p.m.	Tea/Coffee Break	
3:15 – 3:45 p.m.	Preparing A Baseline Survey Report: <ul style="list-style-type: none"> • Purpose • Basic Outline: Data Analysis And Program. Planning Implications • Setting Annual Goals 	
3:45 – 4:15 p.m.	Next Steps: <ul style="list-style-type: none"> • Archiving Data At Umoyo Networks In A 	

	<p>Computer Data Based</p> <ul style="list-style-type: none"> • Umoyo-Wide Analysis Of The Data 	
4:15 – 5:00 p.m.	<p>Planning Other Steps:</p> <ul style="list-style-type: none"> • Baseline Results Presentation To The NGOs, To Donors, And To Other Stakeholders • Qualitative Community Assessments • Health Facility Assessments 	

Decision rule for an LQAS sample of 19 for average coverage/coverage target and lowest likely estimates ranging from 20-95% and 0-75%, respectively, with corresponding producer and consumer risks (a and b errors).

		AVERAGE COVERAGE (Baselines) / ANNUAL COVERAGE TARGET (Monitoring and Evaluation)																				
		20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%					
LOWER THRESHOLD	0%	1 0.014 0.000	2 0.031 0.000	3 0.046 0.000	3 0.017 0.000																	
	5%		3 0.111 0.067	3 0.046 0.067	4 0.059 0.013	4 0.023 0.013																
	10%				4 0.059 0.115	5 0.070 0.035	5 0.028 0.035	6 0.032 0.009														
	15%					5 0.070 0.144	6 0.078 0.054	6 0.032 0.054	7 0.034 0.016													
	20%						7 0.173 0.068	7 0.084 0.068	7 0.034 0.068	8 0.035 0.023												
	25%							8 0.180 0.077	8 0.087 0.077	8 0.035 0.077	9 0.035 0.029											
	30%							8 0.180 0.182	9 0.184 0.084	9 0.088 0.084	9 0.035 0.084	10 0.033 0.033										
	35%								9 0.184 0.185	10 0.186 0.087	10 0.087 0.087	10 0.033 0.087	11 0.029 0.035									
	40%									10 0.186 0.186	11 0.185 0.088	11 0.084 0.088	12 0.077 0.035	12 0.023 0.035								
	45%										11 0.185 0.184	11 0.084 0.184	12 0.077 0.087	13 0.068 0.034	13 0.016 0.034							
	50%											12 0.182 0.180	12 0.077 0.180	13 0.068 0.084	14 0.054 0.032	14 0.009 0.032						
	55%												13 0.175 0.173	14 0.163 0.078	14 0.054 0.078	15 0.035 0.028	16 0.013 0.008					
	60%													14 0.163 0.163	15 0.144 0.070	15 0.035 0.070	16 0.013 0.023					
	65%														15 0.144 0.150	16 0.115 0.059	16 0.013 0.059					
	70%															16 0.115 0.133	17 0.067 0.046					
	75%																	17 0.067 0.111				

A Random Number Table

87172	43062	39719	10020	32722	86545	86985	04962	54546	23138	62135	55870	97083	67875
28900	50851	30543	89185	16747	95104	49852	26467	58869	79053	06894	23975	34902	23587
86248	71156	55044	13045	33161	95604	57876	23367	10768	78193	60477	70307	06498	48793
10531	51391	41884	69759	32741	70072	01902	96656	90584	59263	49995	27235	40055	20917
02481	90230	81978	39127	93335	74259	25856	52838	49847	69042	85964	78159	40374	49658
23988	13019	78830	17069	58267	69796	94329	34050	25622	55349	10403	93790	77631	74261
37137	47689	82466	24243	10756	54009	44053	74870	28352	66389	38729	80349	50509	56465
38230	82039	34158	90149	82948	60686	27962	39306	53826	47852	76144	38812	76939	03119
98745	08288	19108	84791	58470	59415	45456	44839	86274	25091	42809	56707	47169	95273
44653	58412	91751	14954	87949	81399	51105	29718	82780	11262	23712	99782	42829	26308
88386	66621	16648	19217	52375	05417	26136	05952	71958	25744	52021	20225	01377	47012
50660	58138	01695	69351	25445	20797	74079	60851	47634	36633	93999	96345	58484	12506
36732	74234	84240	46924	62744	39238	78397	60869	26426	55588	56963	59506	17293	45096
34187	78277	83678	34754	46616	45250	25291	04999	19717	60324	66915	03473	98329	82447
26095	98131	79362	39530	53870	87445	26277	90551	28604	39865	40686	05435	74511	69866
00067	74289	20706	74076	28206	36960	09231	82988	57062	35331	08212	68111	52199	05065
42104	26434	30953	15259	76676	63339	75664	23993	63538	34968	47655	44553	61982	13296
82580	46580	87292	23226	21865	60338	04115	33807	38395	98484	40387	69877	24910	13317
89266	14764	17681	68663	66030	12931	17372	35601	63805	55739	42705	30549	31697	33478
47100	92329	89435	69974	40783	52649	93444	41317	02749	19052	34647	92814	88046	34020
59566	26527	44706	85670	96223	36275	82013	82673	60955	62617	90214	24589	59715	57612
10946	24676	66513	56743	96911	89042	08263	70753	89045	39189	04306	06090	94515	17772
34013	69250	27977	84597	55192	65088	55739	35953	18533	39339	78037	32827	68269	69218
21606	11751	30073	71431	53569	27865	90215	34772	21779	11734	64313	49764	30816	56852
56620	92612	77157	90231	90144	29781	01683	52503	60080	73703	70080	80686	47379	33279
49238	90475	84356	87159	21222	40106	02671	52684	38514	68434	16407	58164	13341	48142
50738	21999	73539	51802	78179	27872	57937	29696	67783	29373	96563	74619	77099	17190
58761	21571	71692	19723	25088	10483	71430	47068	78378	80237	32113	09381	62931	29243
55335	71937	22025	33538	04648	74232	57839	62431	61835	04784	06732	34202	93497	72070
26515	31143	83795	78445	32869	31489	81587	90354	97672	70106	35008	37899	36246	97805
32625	36806	00082	26902	26250	28919	38054	49027	22209	42696	46980	17065	61288	30208
20311	96089	20141	30362	04980	32703	04202	91080	28660	89691	84660	73433	70169	11273
10941	73003	87930	85620	06956	38719	88711	61454	64076	13316	02203	54437	54306	78229
56982	46636	34070	30803	39095	80387	08971	25067	07377	70704	13629	68474	99229	05535
14661	10670	15811	00454	81124	46977	89983	48836	48182	17054	06344	24267	16686	21401
52760	78118	23277	29760	00099	97325	54762	43117	73199	19621	24599	11030	64809	35088
48874	20831	02286	73635	93771	54264	49801	22653	01524	84621	91023	64028	29278	15987
44817	77408	48447	25934	22912	43086	68126	92970	91833	26418	72454	97636	94593	07880
17896	79375	70883	70135	21589	51181	71969	32951	35036	17219	27357	96517	55307	84470
27166	22347	92146	92189	16301	15747	72837	59174	75024	39459	54910	95335	95013	47068
13665	30490	63583	73098	19976	03001	94645	40476	43617	85698	66512	42759	20973	98759
58644	73840	08103	97926	57340	63077	08114	10031	35668	21740	33787	44756	20527	65367
72570	36278	06602	56406	85679	85529	08576	50874	59706	01019	29980	56742	05356	04810
92041	68829	02163	59918	83041	71241	90678	79835	86324	13075	29913	99831	25688	53648
71240	74119	53090	23693	14007	90107	68804	54927	68964	26535	28184	21630	12362	67990

A Random Number Table

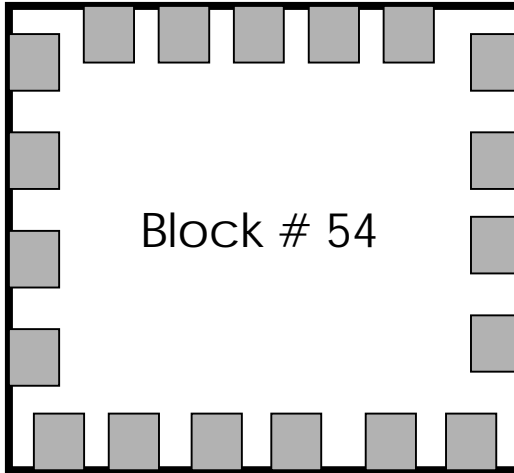
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86248	71156	55044	13045	33161	95604	57876	23367	10768	78193	60477	70307	06498	48793
10531	51391	41884	69759	32741	70072	01902	96656	90584	59263	49995	27235	40055	20917
02481	90230	81978	39127	93335	74259	25856	52838	49847	69042	85964	78159	40374	49658
23988	13019	78830	17069	58267	69796	94329	34050	25622	55349	10403	93790	77631	74261
37137	47689	82466	24243	10756	54009	44053	74870	28352	66389	38729	80349	50509	56465
38230	82039	34158	90149	82948	60686	27962	39306	53826	47852	76144	38812	76939	03119
98745	08288	19108	84791	58470	59415	45456	44839	86274	25091	42809	56707	47169	95273
44653	58412	91751	14954	87949	81399	51105	29718	82780	11262	23712	99782	42829	26308
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82580	46580	87292	23226	21865	60338	04115	33807	38395	98484	40387	69877	24910	13317
89266	14764	17681	68663	66030	12931	17372	35601	63805	55739	42705	30549	31697	33478
47100	92329	89435	69974	40783	52649	93444	41317	02749	19052	34647	92814	88046	34020
59566	26527	44706	85670	96223	36275	82013	82673	60955	62617	90214	24589	59715	57612
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56620	92612	77157	90231	90144	29781	01683	52503	60080	73703	70080	80686	47379	33279
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50738	21999	73539	51802	78179	27872	57937	29696	67783	29373	96563	74619	77099	17190
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55335	71937	22025	33538	04648	74232	57839	62431	61835	04784	06732	34202	93497	72070
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23988	13019	78830	17069	58267	69796	94329	34050	25622	55349	10403	93790	77631	74261
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71240	74119	53090	23693	14007	90107	68804	54927	68964	26535	28184	21630	12362	67990

Selecting the first house: blocks or districts

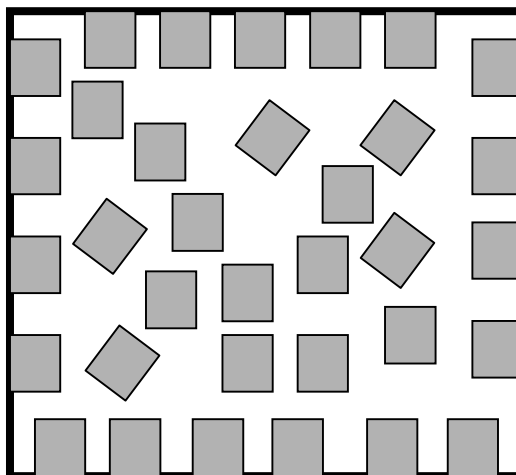
- Block #54 was selected as the approximate location for the first interview.
- The interviewer arrives, and now what?



Selecting the first house: crowded blocks or districts

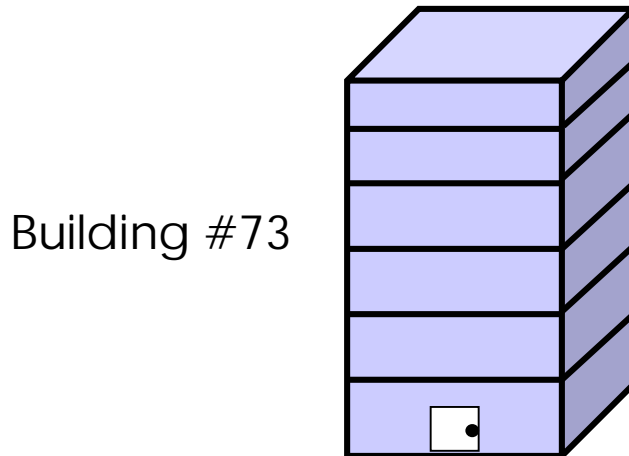
- Block #9 was selected as the approximate location for the first interview.
- The interviewer arrives, and now what?

Block # 9



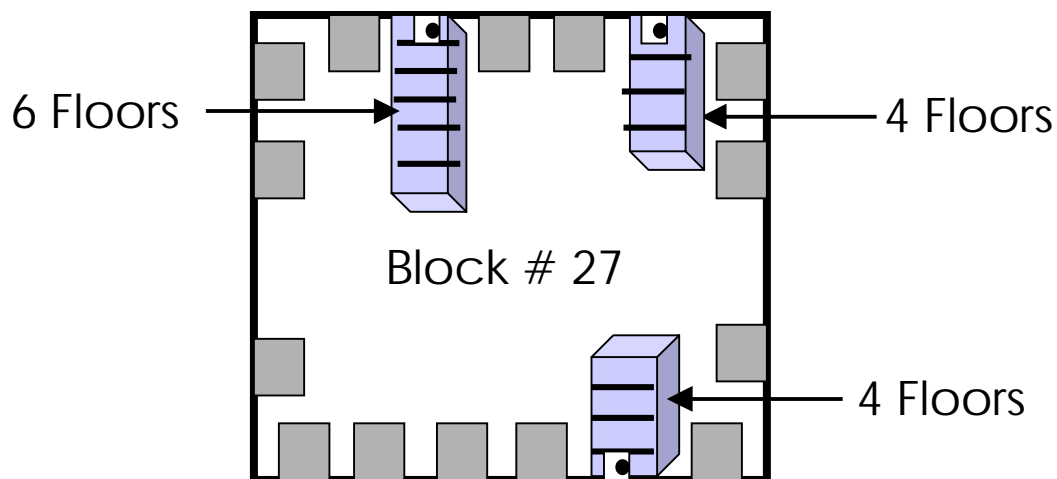
Selecting the first house: an apartment building

- Building #73 was selected as the approximate location for the first interview.
- It is an apartment building.
- The interviewer arrives, and now what?



Selecting the first house: Apartments and houses together

- Block #27 was selected as the approximate location for the first interview.
- There are both apartments and houses in this block.
- The interviewer arrives, and now what?



Weighting Data

Data can be weighted by SA population sizes using the *direct adjustment method*. While weighting is not needed when making LQAS judgements of an SA, it can be used when calculating coverage for an entire catchment area or geographical area. Let's assume that a sample of 19 interview sets was carried out in each of 5 SAs in a PVO's catchment area. To calculate coverage you add together all of the "correct" answers to use as a numerator. The denominator is the total number of people sampled. Without weighting, this measure of coverage can either overestimate or underestimate the coverage for the PVO catchment area. Weighting the data allows us to remove this distortion.

Calculating Weighted Coverage Proportions with a Confidence Interval by Hand

Most Ministries of Health at national and regional levels want District Health Management Teams to present estimates of coverage for various interventions. They are less concerned with knowing which Health Centers have service delivery problems than knowing what overall coverage is. One reason for this situation is that they are not responsible for making day to day management decisions at the level of a health facility. While LQAS data, as we have seen, is quite useful to identify SAs, and interventions that reach coverage standards and which do not, it can also be used to calculate coverage proportions. This is not its primary purpose, but nevertheless it can be used this way. And it is a useful bi-product since reporting systems often want this information.

To calculate coverage using the LQAS data he used the example presented in Table 1.

Health Center (SA)	SA Sample Size = n	Number Correct=a	$p = a/n$	N	$wt = N_i / \Sigma N$	$wt * p$
Thika	19	7	0.37	10,718	0.245	0.09
Kiambu	19	14	0.74	6,379	0.146	0.108
Muthari	19	5	0.26	9,379	0.215	0.056
Nyeri	19	16	0.84	9,731	0.223	0.187
Naivasha	19	4	0.21	7,500	0.172	0.036
Totals	95			43,707		
Coverage =						0.478

Column 1 lists the 5 SAs that form the entire PVO catchment area. Column 2 is the sample size of each SA (19 in this case). As an example let's say that Column 3 is the number of women in the sample that did have up-to-date growth charts. Column 4 is a mini coverage proportion (p) for each SA. This is calculated by using the number of women covered by the intervention as a numerator, and the number of women in the sample as the denominator (i.e., 19). Therefore, $7 / 19 = 0.37$ in the case of Thika. Column 5 is the size of the population in each SA; this can be an estimate because wide fluctuations in this number have little influence on the overall calculation. Column 6 is a *weight* which is calculated as the population in each SA divided by the total population of all the SAs in the entire catchment area. Therefore, the weight for Thika is $10,718 / 43,707 = 0.25$. Column 7 is the final calculation which multiplies the *weight* and the mini-coverage proportion in each SA. Adding these numbers together gives the overall coverage estimate for the catchment area. In this case, the coverage in the catchment area is 47.8%.

The final step in measuring a coverage proportion is to calculate the confidence interval (CI). This measure is needed because the coverage is an estimate and will not be precise. A 95% CI is the range in which we are 95% confident that our coverage estimated is within. Table 2 demonstrates this calculation.

Health Centers (SA)	wt^2	$p \times q$	$\frac{wt^2 \times (pq)}{n}$
Thika	0.060	0.233	0.001
Kiambu	0.021	0.194	0.000
Muthari	0.046	0.194	0.000
Nyeri	0.050	0.133	0.000
Naivasha	0.029	0.166	0.000
Totals			0.002
CI = $(1.96 \times \text{SQRT}(0.002)) = \pm 0.083$			

Column 2 uses the *weight* from Table 13 and then squares it. Column 3 uses the value p , the mini-coverage proportion referred to in the previous table. The value of q is $(1 - p)$. The last column multiplies the values of columns 2 and 3, and divides them by 19 (the sample size, n). This procedure results in very small values that have more than 3 decimal

places. That is why some row values are 0.000. When they are added together they result in a value of 0.002. The final step is to multiply the square root of 0.002 by 1.96; the resulting value, $\pm 8.3\%$, is the confidence interval.

Therefore, the coverage in the catchment area is 47.8%, $\pm 8.3\%$. In other words, the PVO manager is 95% confident that the true coverage in his district is between 39.5% and 56.1%.