

AGENCY FOR INTERNATIONAL DEVELOPMENT PPC/CDIE/DI REPORT PROCESSING FORM

ENTER INFORMATION ONLY IF NOT INCLUDED ON COVER OR TITLE PAGE OF DOCUMENT

1. Project/Subproject Number	2. Contract/Grant Number	3. Publication Date

4. Document Title/Translated Title

5. Author(s)

- 1.
- 2.
- 3.

6. Contributing Organization(s)

7. Pagination	8. Report Number	9. Sponsoring A.I.D. Office
162 p.		

10. Abstract (optional - 250 word limit)

Development of baseline survey for child and maternal health project in Chad -- includes questionnaires in french and english.

11. Subject Keywords (optional)

1.	4.
2.	5.
3.	6.

12. Supplementary Notes

13. Submitting Official	14. Telephone Number	15. Today's Date
E. J. Tynan	301/951-5546	5-15-90

..... DO NOT write below this line

16. DOCID	17. Document Disposition
	DOCRD [] INV [] DUPLICATE []

PNABF-311

66603

SAMPLE SURVEY AND QUESTIONNAIRE DESIGN
FOR THE
BASELINE DATA COLLECTION AND EVALUATION
OF THE CHAD CHILD SURVIVAL PROJECT

(No. 677 - 0064)

Submitted to: William Deese
Program Officer
USAID/Chad
NDjamena, Chad

Submitted by: Ellen Patterson Brown
Norman Beller

Representing: DEVRES, INC.
7201 Wisconsin Avenue
Suite 500
Bethesda, MD 20814
(301) 951-5546
Telex: 440184 DEVR UI
Fax: (301) 652-5934

Contract No.: 677-0064

April 28, 1990

TABLE OF CONTENTS

	<u>Page</u>
PREFACE	i
LIST OF ACRONYMS AND ABBREVIATIONS	ii
CURRENCY EQUIVALENTS AND WEIGHTS AND MEASURES	iii
LIST OF TABLES	iv
LIST OF ANNEXES	v
EXECUTIVE SUMMARY	vi
I. SAMPLE DESIGN	1
A. Frame Construction	1
1. Review of available frames	2
a. Tax roles	2
b. Population census and voter lists	2
c. BSPE village list	2
2. BSPE village list as an initial sampling frame	3
3. Constructing area sampling frames for sample quarters	4
a. Sampling unit (cluster) size	4
b. Procedures for constructing the frame	5
4. Handling possible incompleteness of village list	7
5. Frame construction summary	8
6. Summary of recommendations	8
B. Estimation	9
1. Notation	9
2. Estimates of Means and Totals	11
3. Variance Formulations	13
4. Replicated sampling as a method of approximating variances	14
a. Definition of replicated sampling	14
b. Calculation of estimates and variances	14
c. Design strategies	15
d. Providing estimates for low level data	16

5.	Paper strata	16
6.	Advantages of replicated sampling	18
	a. Unbiased estimation with less than a complete sample	18
	b. Use in subsequent surveys	18
	c. Management of sample over time	18
	d. Lower level estimates	18
	e. Use for other surveys	19
C.	Sample Size and Design Effects	19
1.	Size of population	19
2.	Estimation of sample size for a simple random sample	19
3.	Design effect	20
4.	Recommended sample size taking into account possible design effects	20
5.	Stratification of urban and rural areas	24
6.	Incompleteness in the village list	24
7.	Sample design summary	25
8.	Summary of recommendations	25
II.	SURVEY METHODOLOGY AND IMPLEMENTATION	27
A.	Total Error of a Sample Estimate	27
B.	Quality Control Considerations	28
C.	Field Operations	29
1.	Vehicle support and training	29
2.	Frame construction and data collection	31
	a. The minimal steps to be used in area frame construction	31
	b. Conducting the interviews	33
	c. Supervisor review	33
	d. Rough estimates of manpower required in the field	34

6

D.	Pretest of Questionnaires, Instructions and Field Procedures.	34
1.	Developmental phase	35
a.	First round (completed)	35
b.	Second round	35
c.	Pilot survey	36
d.	Finalizing the survey	36
e.	Interviewer instructions	36
f.	Importance of the developmental phase	37
2.	Management activities	37
3.	Summary of recommendations	38
III.	DESIGN OF QUESTIONNAIRE	39
A.	Purposes for Which Baseline Study Is Designed	39
B.	Units of Analysis and Eligible Respondents	39
1.	Definitions	39
2.	Housing unit	39
3.	Family unit	41
4.	Eligible respondents	41
C.	Reasons for Selecting These Units of Analysis	42
D.	Rules of Eligibility	42
1.	Interview only those who slept here last night	43
E.	Design of The Questionnaire	44
1.	Translation	44
2.	Length of questionnaire	44
3.	Layout of the questionnaire	45
F.	Populations for Which the Questionnaire Has Been Designed	45
G.	Some Questions Frequently Asked in Questionnaires About Maternal and Child Health, Family Planning and ORT Have Been Left Out of the Questionnaire	46
H.	Information For Which the Questions Were Designed	46

1.	Housing unit questionnaire	47
2.	Eligible respondent questionnaire	47
I.	Ethnomedical Information	50
J.	Summary of Recommendations	51
IV.	INFORMATION, EDUCATION, AND COMMUNICATION	53
A.	The Use of the Questionnaire for Designing Information, Education, and Communication Materials (IEC)	53
1.	Information available on IEC	53
2.	Information to be obtained on the questionnaire about IEC	53
B.	Communication	53
1.	Posters	54
a.	Posters get people's attention	54
b.	One picture is worth a thousand words	54
c.	Pictures are highly sought after	54
d.	Posters using a series of pictures/designs to tell a story are more self-explanatory	54
e.	Posters showing contrasts are more self- explanatory	55
f.	Diffusing posters should be a priority	55
2.	Radio	55
a.	Radio is popular in the Moyen-Chari	55
b.	Music is more popular than talk	55
c.	Only Radio Ndjamen reaches everywhere in the project area	55
3.	Newspapers and magazines have limited circulation	56
4.	Films and television are available only in big cities	56
5.	Traditional theatre and other forms of entertainment are few	56
6.	Public meetings are hard to get off the ground	56

h

7.	Culturally appropriate messages	56
	a. Malnutrition	57
	b. Childhood diarrhoea	57
	c. Childbirth	57
	d. Sterility	57
	e. Family planning	58
C.	Information	58
D.	Conclusions on Information, Education and Communication . . .	59
E.	Recommendations on IEC	59

e.

PREFACE

The report contains 7 basic sections: Survey Design, Survey Planning, Basic Concepts Used in Questionnaire Design, Discussion of Information, Education and Communication Materials, Questionnaires in English, Questionnaires in French, and BSPE Lists of Cantons and Villages.

These sections should cover all the information necessary for the contractor who will implement the survey to begin work. They should also provide basic information for the group which will design materials for communicating health messages.

The major objectives of this study are to establish a baseline from which project impact can be measured and determine the health status and knowledge of the population. The study will identify why people in the Moyen-Chari target area (Sub-Prefectures of Koumra, Sarh Rural and Sarh Urbain) do or do not use the available health facilities. Is it because of the facilities themselves, lack of money for medical care, or because of their attitudes towards and knowledge about health problems?

More specifically, the study is to concentrate on knowledge, attitudes and practices concerning childhood illnesses (especially diarrhea) pregnancy, delivery, aftercare and child spacing; and preventive health care.

The data obtained from this study can also be used to learn more about the demographic characteristics of the Moyen-Chari. From birth histories and mother's verbal autopsies (their ideas of the cause of death), approximate child mortality rates can be derived. Approximate child morbidity rates can also be derived from people's diagnoses of the illnesses their children have suffered within a given time period. Also some indication of the rates of certain problems fertile women have with their pregnancies can be derived. We will not attempt to determine the frequency of death caused by pregnancies in this study since we will, in the main, be interviewing live women for their birth histories rather than collecting birth histories about all women.

LIST OF ACRONYMS AND ABBREVIATIONS

ASV	Village Health Center
AVF	Trained Traditional Midwife
BSPE	Statistics Planning and Research Office (Ministry of Health)
CNNTA	National Center for Nutrition and Food Technology
IEC	Information, Education, and Communication
MASPF	Ministry of Social Work and Women's Affairs
MSP	Ministry of Public Health
ONDR	National Rural Development Office
PSU	Primary Sampling Unit
S-P	Sub-Prefecture
ORT/ORS	Oral Rehydration Therapy/Oral Rehydration Salts
UNICEF	United Nation International Children's Emergency Fund

CURRENCY EQUIVALENTS AND WEIGHTS AND MEASURES

US \$1.00 - 280 CFA

LIST OF TABLES

Table 1. Illustration of Paper Strata	17
Table 2: Standard Error of Estimated Percentages for Various Sample sizes (Design Effect = 1)	21
Table 3: Standard Error of Estimated Percentages for Various Sample sizes (Design Effect = 2)	22
Table 4: Standard Error of Estimated Percentages for Various Sample sizes (Design Effect = 3)	23

LIST OF ANNEXES

ANNEX 1: English Identification Sheet

ANNEX 2: French Identification Sheet

ANNEX 3: English Housing Unit Questionnaire: Maternal and Child Health

ANNEX 4: English Eligible Respondent Questionnaire: Maternal and Child Health

ANNEX 5: French Eligible Respondent Questionnaire

ANNEX 6: French Housing Unit Questionnaire: Maternal and Child Health

EXECUTIVE SUMMARY

The major objectives of this study are to establish a baseline from which project impact can be measured and to determine the health status and knowledge of the population. The study will identify why people in the Moyen-Chari target area (Sub-Prefectures of Koumra, Sarh Rural and Sarh Urbain) do or do not use the available health facilities. Is it because of the facilities themselves, lack of money for medical care, or because of their attitudes towards and knowledge about health problems? The study will provide the only population-based health information available for Chad and, as such, should be made available to the Chadian Government and other International organizations.

More specifically, the study is to concentrate on knowledge, attitudes and practices concerning childhood illnesses, especially diarrhea; pregnancy, delivery, aftercare and child spacing; and preventive health care.

Once this information has been collected, the project can plan its health interventions. Knowing which of the problems lie in the realm of health care delivery and which lie in the domain of knowledge, attitudes and practices, the project can attempt to change health care delivery or modify peoples' knowledge, attitudes and practices through information, education and communication.

One of the first steps in conducting a survey is selecting a sampling frame. Unfortunately, there is no ready made frame available in Chad. Therefore a sampling frame will have to be constructed in order to provide a survey with unbiased results. The procedure recommended in this report is to select a sample of villages with probability proportional to estimated population from the BSPE list. Quartiers will be subsampled from selected villages and an area frame developed. Frame construction materials are limited and thus a substantial amount of field work will be required. The area frame procedure will provide an unbiased sample for the Moyen-Chari. It can be used for subsequent evaluation or for research for other projects in the same area.

The sample design being recommended is a stratified one stage cluster design with the clusters defined as groups of approximately 10 housing units. A total sample size of 124 clusters is recommended which will provide estimates with an error of 15 percent or less. Limited information indicates the frame construction and data collection activities will require approximately 42 man weeks of supervisory personnel and 168 man weeks of interviewer personnel during a 7 week data collection period.

The field work will combine frame construction and data collection activities and be accomplished by teams of four interviewers and a supervisor to which will be assigned a vehicle for the duration of the survey. A sound procedure, has been recommended for developing and testing survey materials including the questionnaire.

The questionnaires have been developed in English and French. The first round of pretesting has been completed with findings incorporated into the recommended versions. The primary respondents for the survey are women of childbearing age (12 - 49) and mothers 50+ of children under five.

This report should contain all the information necessary for a subsequent contractor to implement the survey. No recommendations on office procedures and edit programs have been included. This was beyond the scope of work. However, the report discusses these major activities. The report also provides basic information for the group which will design materials for communicating health messages.

I. SAMPLE DESIGN

The procedures to be discussed in this chapter are rather complicated and often times difficult to understand. The statement of work indicates that a second contractor will be selected to carry out the survey work. For these reasons, the report is written with more detail than one would normally find. Hopefully, this report is clear enough and detailed enough so that the subsequent contractor can follow it easily.

The sample design recommended for this survey is a single stage cluster design. There is no readily available frame in Chad that would provide unbiased results and therefore, a sampling frame will have to be constructed. The sampling frame will be constructed on only the portion of the universe that is sampled and is discussed under this section. Subsequently the estimating formulations for the design will be presented. It is entirely possible that the sampling materials and identifiable boundaries in the field will be such that the clusters defined as the primary sampling units will be so large that a two-stage cluster sample will be required and therefore, the estimating formulations will be presented for that design as well. Estimation from a two-stage design is cumbersome and time consuming particularly if there are a large number of data items in the survey. Therefore, a short cut approximation for calculating variances known as replicated sampling will be discussed. Replicated sampling has a number of excellent qualities which are pointed out. The section will close with suggested sample size and design effect considerations.

A. Frame Construction

One of the first steps in conducting a survey is selecting a sampling frame. Once the sampling unit has been defined, one must find a procedure of developing a complete list of current sampling units with no duplication or omission. In most countries, particularly developing countries, no ready made frame exists that will produce unbiased estimates. Therefore one must construct a sampling frame. This is normally a very time consuming process and produces little or no information itself. Most survey takers are dismayed at how much effort the frame construction process can take and invariably look for short cuts. These short cuts generally create problems later in the survey process and can invalidate survey results. Thus, it is important to spend the time and resources required to construct an adequate sampling frame. Hopefully, once such a frame is constructed, it will be easy to update and can be used for subsequent follow-up surveys and for entirely different surveys.

1. Review of available frames

a. Tax roles

Tax roles exist in each Sub-Prefecture and Canton. There is a law that each person over the age of 18 must be on the tax roles. The eligible age of marriage for most ethnic groups in the Moyen-Chari is from 15 to 20 years for women and 17 to 25 for men. Also, not everyone waits until reaching the "proper" age for marriage. Thus, some married couples are missing from the tax roles. In addition, when a couple is married, they are expected to live together as a separate economic unit. Other similar studies concerning knowledge of proper health care procedures have found that there is a fairly strong correlation between age of mother and extent of health care knowledge. The younger mothers seem to have the least amount of knowledge and therefore, use of the tax roles could create serious biases. Moreover, Dr. Ellen Brown made a limited check on the availability of tax records on a recent field trip and in some instances was denied access as the records were regarded as confidential.

In summary, it appears that the tax records would be incomplete, particularly of couples under age 18 who are also less knowledgeable than the balance of the target population, and as such tax roles to select individuals would not be a good choice as a sampling frame.

b. Population census and voter lists

The last Population Census was conducted in 1962 and as such provides no assistance. Several other census lists are available but each seems to have its own set of problems. Some of the lists include only taxpayers and exclude those not healthy enough to pay taxes, students and mothers with 5 or more children. Some of the lists do not contain names but only the number of people that pay taxes. Most lists of villages were developed for administrative purposes and do not distinguish whether a village is split in separate geographical areas, which in turn could cause problems of incompleteness.

There is also a list called "liste de votants" which contains all males and females, 18 years old and older, who came to the voter registration centers in 1989. It is incomplete since those who were unwilling, or unable, to come to the voting center are not on the list.

c. BSPE village list

The Bureau Statistique de Plannification et Etudes (BSPE) in the Ministry of Health has developed an administrative village list using several different sources and a projected 1990 population. A substantial amount of work was put into developing the frame and the BSPE is reasonably sure that it is complete. Work on constructing the frame has just been completed and so it is current. Actually the list is so new that it has not been printed as of yet. Hopefully, we will be able to review a listing prior to submitting this report. It appears

that this is our best source of a list frame of villages. One should check on the completeness of the list while conducting the survey.

Recommendation 1: The BSPE village list should be used as an initial sampling frame to determine which villages will be in the final sample. Final sample villages will be selected using probability proportional to estimated population.

2. BSPE village list as an initial sampling frame

A sample of villages will be selected with probability proportional to size (projected population provided) from the BSPE list (the probability of a specific village is proportionate to its projected population). The list will be ordered by numbering the Cantons that make up a health district in a serpentine fashion starting in the upper right hand corner of the health district. The villages within a Canton will also be ordered in a serpentine fashion. The serpentine fashion of ordering the Cantons and villages will ensure a good geographical dispersion of the resulting sample housing units. It is expected that some of the larger villages will have multiple samples. Each village having one or more samples will be assigned a number of clusters by dividing the measure of size by an expected average cluster size. For example, if there were 2000 housing units in a village and we selected an average cluster size of 20 housing units, then $2000/20 = 100$ clusters.

Since the BSPE list is an administrative list, many of the villages will have small groups of people broken off geographically. These groups are called quartiers, the same terms applied to areas within villages. Special care must be taken to insure that all quartiers associated with a sample village are accounted for. Thus, in the villages selected in the first stage of sampling, one would contact the village chief and make a sketch of the village showing all associated quartiers. The quartiers would then be numbered in a serpentine fashion and a list would be developed of all the quartiers with their respective administrative head and the approximate number of people residing in the quartier. It may be necessary to contact some of the quartier administrative heads to obtain a reasonable measure of size. Once this list is developed and ordered by measure of size, a second stage of sampling using probability proportional to size procedures would select quartiers in which additional sampling will be required to obtain the final sample housing units.

After these steps have been carried out there are three possible methods that could be used in selecting the final sample housing units.

- o The first would be to contact the quartier administrative head and ask him to make a list of all housing units which could subsequently be sampled. Use of this procedure is not recommended as the quality of such a list would vary from quartier to quartier depending on how the administrative head reported. Also, the survey definition of what constitutes a

housing unit for data collection purposes may not be clearly understood by the administrative head.

- o The second possible method would entail a screening of the entire quartier by field interviewers to develop a list from which the final housing unit sample would be selected. While this procedure is theoretically correct, it would be very labor intensive and result in collecting a substantial amount of information that would be used only to select a small number of housing units for the final sample. As such, this procedure has been discarded.
- o The third possible method is to use area sampling within quartiers in order to obtain an unbiased sample of housing units. The procedure to be used in developing an area sampling frame for each sample quartier is discussed in the next subsection.

Recommendation 2: Quartiers within villages will be selected with a two stage sampling procedure using probability proportional to size methods.

Recommendation 3: Use area sampling procedures within quartiers.

3. Constructing area sampling frames for sample quartiers

For the purposes of the current survey an area frame may be thought of as a listing of small land areas (clusters of housing units) within selected quartiers. It implies the existence of visible boundaries both on maps and on the ground. To the extent that boundaries do not exist and/or maps are not available, additional work will be required in the field for frame construction. There are several considerations to take into account when deciding on the size to make the sampling units. These factors are discussed below. The balance of this section is devoted to how such a frame should be constructed. While the procedure described below appears to require a great deal of effort, the resulting frame will be capable of providing a sample that will allow for unbiased estimates if adequate sampling and data collection procedures are carried out.

a. Sampling unit (cluster) size

It is possible to reduce the amount of work during the frame construction process by using larger clusters for data collection. For example, clusters for enumeration may be developed so as to contain 40 to 60 housing units. The resulting clusters are then screened during data collection by listing each housing unit in the cluster and then subsampling a lesser number for enumeration (generally 5 or 6). This procedure reduces the effort involved in frame construction but serves only to shift the work from frame construction to the data collection screening activity. In addition, variances are normally much more difficult to calculate if this procedure is used,

since one must calculate a variance for each cluster (within cluster variance) in addition to the variance between clusters. Variance calculations will be discussed later under the estimation subsection.

An important factor for consideration in constructing an area sampling frame is the size of the resulting clusters of housing units (land area). Many factors go into optimizing the cluster size. A small compact cluster in which each housing unit in the cluster is included in the sample is preferable to larger clusters involving subsampling because it is more efficient during data collection and substantially eases variance calculations if the standard variance calculations are used.

The compact cluster is smaller than if subsampling is carried out within the cluster. The smaller cluster has implications on the scope of the field work required during the frame construction process. The smaller cluster requires more work during frame construction and less work during data collection. However, there is not a one-to-one correspondence between the size of the cluster and the amount of work required for frame construction i.e. cutting the size of the cluster in half does not double the field work. Greater effort expended constructing the sampling frame is generally an efficient use of resources. The procedure should be tested in the field before a final decision is made on the target size of the clusters for area frame construction.

Recommendation 4: A target cluster size for data collection will be 10 housing units.

Recommendation 5: The procedure for constructing an area frame within sample quartiers should be field tested for procedures and to determine the size of cluster that is feasible.

b. Procedures for constructing the frame

Frame construction work will take place only in the selected quartiers within villages having one or more sampling units. This will involve obtaining whatever mapping material there is for the village and in most, if not all, cases traveling to the village and constructing sampling units averaging approximately 10 housing units. The entire quartier does not have to be mapped into clusters averaging 10 housing units. By using multiple stages of sampling or point sampling the number of clusters that actually have to be subdivided into actual clusters can be reduced substantially. Point sampling (selecting a point by randomly selecting longitude and latitude and then physically constructing a sampling unit around the point) is usually frowned upon but can produce usable results if correctly completed and fairly accurate maps with a coordinate system are available. The scarcity of mapping material and the difficulty in controlling biases precludes its use in our situation.

Once the sample quarters have been selected we must go to each and locate it correctly on a map or make a sketch that is accurate with the assistance of the administrative quarter head. At this point we have only an estimated population. A study, completed by Dr. Ellen Brown, used a random sample of 1200 dwellings in Bekamba and Beboro (S.P. Koumra), and found that the average housing unit had a mode of 2 people and a mean of 4.2. In the absence of any other information I have chosen an average of 3 people per housing unit. We therefore, can calculate the number of housing units per sample quarter by dividing the estimated population by 3. For example, a particular sample quarter has an estimated population of 458 people. We divide the 458 people by 3 and obtain an estimate of 152 housing units ($458 / 3 = 151.6$ rounded to 152). We then obtain the number of sampling units (clusters) by dividing the estimated number of housing units by the target cluster size. In our example it is $152/10 = 15.2$ rounded to 15 sampling units (clusters). Many of the villages will be small enough that subsampling will not be necessary. For example, if the estimated number of housing units in a particular village is 43 we would divide the village into 4 parts and select one for enumeration.

The procedure of subsampling so that only a portion of the quarter is mapped into clusters is accomplished by splitting the quarter in equal parts, normally called "count units" (groups of 5 to 8 clusters to each count unit), and selecting a count unit at random, using simple random sampling procedures. The goal is to obtain a count unit of 50 to 80 housing units, 5 to 8 clusters, one of which can be selected for enumeration. Thus, the quarter is first divided into a number of large sections (normally from 2 to 6) and a section is then selected at random for additional subdivision. The selected section may then be further subdivided and a second subsection is selected at random. This procedure may be continued until the final size is such that the last subdivision results in each section containing from 5 to 8 count units. One of these count units is then selected, using simple random sampling, and mapped into the appropriate number of clusters. One of these is then selected randomly for enumeration.

At each stage of sampling each of the sections should be as much alike as possible in terms of the number of housing units, land area, economic well being, proportion of children, type of housing unit structure, etc. This is done by observation and discussions with the chief and is not a rigid or absolute requirement but to the extent we can achieve similarity our resulting variances will be smaller. We are not concerned about a bias at this point because of our random selection procedure. It is not necessary or even possible due to limitations of observable boundaries to construct each sampling unit to have exactly 10 housing units. It is possible that some of the sampling units will have 7 or 8 housing units while others will have 12 or 13 housing units. This will not bias survey results if sample selection is done strictly at random at each stage of subsampling.

It should be noted that the number of housing units in a quarter was estimated by dividing the estimated population by three. In the earlier

example of an estimated population of 458 people, we estimated that there were $458/3 = 152$ housing units and with an average desired cluster size of 10 housing units yielded 15 clusters. The 152 housing units is only an estimate and could be substantially in error depending on the accuracy of both the estimated population and the estimated average number of people per housing unit. This error again will not cause any bias if proper procedures are followed. The proper procedure in this example is to divide the quartier into three count units as equally as possible using all observable characteristics and to select one of the count units at random. The selected count unit would contain $15/3 = 5$ clusters (which agrees with the guideline of 5 to 8 clusters per count unit) and thus would need to be divided into 5 parts (clusters) after which one is randomly selected for enumeration. The selected cluster may have 5 or 20 housing units and yet provide unbiased estimates if the proper procedures were followed. On the other hand, biases will result if the frame construction process is shortcut. For example, if the field team wanted to cut down the amount of work and just drew out a single cluster of 10 dwellings, it is obvious that the resulting estimates would be seriously biased and worthless. Thus, the frame construction process in the field needs to be strictly followed. Close supervision and review is a must.

Generally an accurate sketch will be needed for each final cluster. The sketch will clearly show the sample cluster boundaries, roads and paths leading to the cluster and clear instructions on how the cluster can be located on subsequent visits for data collection. It may even be necessary, and perhaps desirable to place numbers on the dwellings or on a portion of the dwellings where no other boundaries or means of identification are available. If we do resort to placing numbers on the dwellings, we should try to induce the respondents to leave the number there so we can locate the area on return trips. Such an inducement could be reimbursement on each return trip.

Recommendation 6: Use three as the estimated average number of people living in a housing unit and determine the estimated number of housing units in sample quartiers by dividing the estimated population by three.

4. Handling possible incompleteness of village list

The list for the initial selection of villages is new and we have no exact knowledge dealing with its completeness. Most local sources feel that it is complete but really have little or no experience with the list. We therefore need to make some effort at checking it for completeness. A suggested procedure is to ask each sample village chief to review the list when we first contact them to see if there are some villages not on the list. Each new village that is located during this procedure will be placed in a separate group for additional samples.

Recommendation 7: Ask each village chief to review list of villages and obtain names of missing villages. Develop a list of all such villages for additional sampling.

5. Frame construction summary

Each of the procedures discussed above is rather labor intensive. However, an adequate sampling frame is an absolute requirement to obtain useable and defensible survey results. Frame construction often suffers shortcuts which result in biased survey results that are meaningless and indefensible should any questions arise. The suggested procedure will provide an unbiased sample. A frame constructed as recommended in this report can be used on subsequent surveys and yet requires substantially less effort than if the entire country were broken into sampling units prior to the first stage of sampling. The re-useability of the sample frame is a particularly attractive feature since the proposed survey is being used to establish a base line against which future progress or lack of progress can be measured. The frame and or sample can readily be adapted to fulfil other survey needs.

The procedure recommended (see Recommendation 1) is to select a sample of villages with probability proportional to population from the BSPE list. The chiefs of the selected villages are to be contacted and a sketch of all associated quarters developed with their respective administrative heads. An estimated population of the quarter is also to be determined. A probability proportional to size sample of quarters (equal to the number of final samples selected for the village) will be selected. The number of housing units is then determined by dividing the estimated quarter population by the average housing unit size of three people. An accurate sketch of each selected quarter is then developed with the quarter administrative head, using all available mapping material and on-sight inspection. An area sampling frame will be constructed for each selected quarter, using subsampling procedures if the size of the quarter warrants it. Finally, clusters of housing units are selected randomly for data collection. The area frame construction procedure should be field tested prior to determining the final methodology.

6. Summary of recommendations

Recommendation 1: The BSPE village list should be used as an initial sampling frame to determine which villages will be in the final sample. Final sample villages will be selected using probability proportional to estimated population.

Recommendation 2: Quarters within villages will be selected with a two stage sampling procedure using probability proportional to size methods.

Recommendation 3: Use area sampling procedures within quarters.

Recommendation 4: A target cluster size for data collection will be 10 housing units.

Recommendation 5: The procedure for constructing an area frame within sample quarters should be field tested for procedures and to determine the size of cluster that is feasible.

Recommendation 6: Use three as the estimated average number of people living in a housing unit and determine the estimated number of housing units in sample quarters by dividing the estimated population by three.

Recommendation 7: Ask each village chief to review list of villages and obtain names of missing villages. Develop a list of all such villages for additional sampling.

B. Estimation

Estimation is the process by which survey data are translated into meaningful results with measures of reliability. We will first define a form of a two stage design in which the second stage units are the units of analysis. Once this is accomplished, we can easily show what changes are required if in fact we use a one stage design. This procedure may also help explain statements made earlier in this report. It will be useful initially to define the notation that will be used.

1. Notation

M . . . is the number of first stage clusters in the universe (generally called primary sampling units (PSU))

m . . . is the number of PSUs selected in the sample

N_i . . . is the number of second-stage units (for example housing units) in the ith cluster, and:

$$\bar{N} = \frac{1}{M} \sum_{i=1}^M N_i \quad \dots \text{ is the}$$

population average of the number of second stage units per first stage unit

n_i . . . is the number of second stage units selected for the ith cluster, and:

$$\bar{n} = \frac{1}{m} \sum_{i=1}^m n_i \quad \dots \text{ is the sample average number of second stage units per first stage unit}$$

²
sigma(b:x) is the between-cluster variance of the X characteristic (variance between cluster totals)

We can now define the between cluster variance of the X characteristic as follows:

$$\sigma^2(b:x) = \frac{1}{M} \sum_{i=1}^M (X_i - \bar{X})^2$$

where: \bar{X} is the average value of the X characteristic per first stage cluster (not per second stage cluster)

The average value of the X per first stage cluster can now be defined as:

$$\bar{X} = \frac{1}{M} \sum_{i=1}^M X_i$$

where: X_i is the total in the i th cluster

Finally, the total for X in the i th cluster can be defined as:

$$X_i = \sum_{j=1}^{N_i} X_{ij}$$

where: X_{ij} is the value of the j th X in the i th cluster

Similarly,

$\sigma^2(B:N)$ is the between cluster variance of the number of units contained in the cluster and is defined as:

$$\sigma^2(B:N) = \frac{1}{M} \sum_{i=1}^M (N_i - \bar{N})^2 ; \text{ and}$$

$\sigma(B:X,N)$ is the between cluster covariance (covariance between the cluster totals for the X characteristic and the number of units contained in the cluster) and is defined as:

$$\sigma(B:X,N) = \frac{1}{M} \sum_{i=1}^M (X_i - \bar{X})(N_i - \bar{N})$$

Finally:

$\sigma^2(w:i)$ is the within cluster variance in the cluster for the X characteristic, which is defined as:

$$\sigma^2(w:i) = \frac{1}{N_i} \sum (X_{ij} - \bar{X}_i)^2$$

where: X_{ij} = the value of X for the jth unit within the ith cluster; and

\bar{X}_i = the average of the x characteristic for the ith cluster and is derived as follows:

$$\bar{X}_i = \frac{1}{N_i} \sum_{j=1}^{N_i} X_{ij}$$

2. Estimates of Means and Totals

Now consider that we have m clusters that were selected from M clusters by simple random sampling and n_{ij} units were selected from the N_i units in the ith sample cluster using simple random sampling.

Within the ith cluster, the mean per unit is given by:

$$\bar{x}_i = \frac{1}{N_i} \sum_{j=1}^{N_i} X_{ij}$$

Since the units within the cluster were selected by simple random sampling an unbiased estimate of the mean is:

$$\hat{x}_i = x_i/n_i ; \quad \text{where:} \quad x_i = \sum_{j=1}^{n_i} x_{ij}$$

These estimates of the cluster unit means from the m sample clusters must then be combined to estimate the overall population total (X) and the population mean per unit

$$\bar{X} = X/N.$$

An unbiased estimator for X_i , the ith cluster total, is given by:

$$\hat{x}_i' = N_i x_i = (N_i/n_i) x_i$$

An unbiased estimator for the population total is then given by:

$$x' = M/m \sum_{i=1}^m x'_i = M/m \sum_{i=1}^m (N_i/n_i)(x_i)$$

Similarly, the estimate of the total number of units of analysis in the population is estimated by:

$$n' = M/m \sum_{i=1}^m N_i$$

The population mean per unit is:

$$X' = X/N = \frac{\sum_{i=1}^M X_i}{\sum_{i=1}^M N_i}$$

An estimator of X is:

$$x' = x'/n' = \frac{\sum_{i=1}^m (N_i)(x'_i)}{\sum_{i=1}^m N_i}$$

As can be seen, this estimator is a weighted mean of the m sample means per unit, where the weights are the corresponding cluster sizes. This estimator is also appropriate for estimating proportions.

To make this somewhat more clear, think of the numerator as the estimated number of women with children having knowledge of a certain health treatment and the denominator as the estimated total number of women with children. The resulting ratio is then the estimated proportion of women with children having knowledge of the health treatment.

3. Variance Formulations

The variance of x' , the estimator of X , and of n' , the estimator of N , are respectively:

$$\sigma^2(x') = \frac{M(M-m)}{m(M-1)} \sigma^2(B:X) + \frac{M}{m} \sum_{i=1}^M \frac{(N_i - n_i)^2}{n_i(N_i - 1)} \sigma^2(w:i)$$

and

$$\sigma^2(n') = \frac{M(M-m)}{m(M-1)} \sigma^2(B:N)$$

The variance of the estimator of X is the sum of the two terms. The first term is the contribution of the variance arising from the selection of the first stage units (clusters). The second term is the contribution from the selection of second stage units (sampling housing units within clusters).

The variance of x' , the estimator of X , is much more complex and is given approximately by:

$$\sigma^2(x') = \frac{(M-m)}{N(M-1)} \left[\frac{1}{m} \left(\sigma^2(B:X) + \frac{X^2}{m} \sigma^2(B:N) - 2X \sigma(B:X,N) \right) + \frac{1}{mM} \sum_{i=1}^M \frac{(N_i - n_i)^2}{n_i(N_i - 1)} \sigma^2(w:i) \right]$$

Again, the preceding variance formulation contains terms arising from differences between clusters and terms arising from differences between housing units within clusters. In the situation where the housing units within the cluster are completely enumerated the variance component arising from differences between housing units is zero and as such the calculation of variances is greatly simplified. The result is single stage cluster sampling and the correct variance formulations are merely the first terms of the formulations given above.

The variance formulations for cluster sampling are rather cumbersome, particularly if two or more stages of sampling are carried out. The existence and quality of available mapping materials and the absence of sufficient visible boundaries may make it difficult to construct clusters small enough to use single stage cluster sampling and as a result we would be forced to subsample within clusters i.e., use two

stage cluster sampling procedures. In this situation short-cut approximations are often used to reduce the amount of work, particularly if variance estimates are to be computed for a large number of characteristics. One such approximation is called replicated sampling and is discussed below.

4. Replicated sampling as a method of approximating variances

Replicated sampling is a highly useful procedure in complex sample designs or when the survey has a great many variables. It's characteristics are:

- o it greatly reduces computations
- o yields unbiased estimates and unbiased variances
- o in some cases such as with systematic sampling, it is an improvement in the variance estimation
- o allows unbiased variance estimation for complex sample designs where theoretical derivations are difficult to develop
- o moves one step closer to the common assumption of hypotheses testing i.e., simple random sampling, and is useful in survey management.

a. Definition of replicated sampling

The replicated sampling method consists of dividing the total sample into a number of (r) subsamples; each subsample is then used to make an estimate of the mean, total etc.. Each of the subsamples will reflect the various steps of the sample selection procedure so that the estimate from each group is an estimate of the total with the same sample design as the entire sample (but with a much smaller sample size). In a multi-stage sample, the subsamples are usually formed by placing the entire sample from a PSU in a single group.

b. Calculation of estimates and variances

In computing the estimates of variance, it is exactly the variance between different possible estimates of the total or mean in which we are interested. Therefore, this method, which provides a number of different estimates of the total or mean, each with some degree of stability (that is, the number of cases in a group should not be too small), is a realistic procedure for estimating variances. In essence, it does away with the aggravating problems of variance estimation associated with complex sample designs and replaces it with the simplicity of simple random sampling.

In summary if the sample is divided into (r) replicates with associated estimates of T1, T2, T3,Tr, then the survey estimate is T/r which is given by:

$$T = \frac{\sum_{j=1}^r T_j}{r}$$

which has a variance of:

$$ST_j^2 = \frac{\sum_{j=1}^r (T_j - T)^2}{r(r - 1)}$$

In other words if one were going to enumerate a sample of 180 clusters, one could set up 9 independent samples of 20 clusters each. Nine independent estimates of a total or mean would be calculated and the official estimate of the total or mean would be the average of the 9 estimates and the variance is calculated between the 9 different estimates. Essentially the variance can be calculated easily and quickly by hand.

c. Design strategies

Normally, the following design strategies are used when selecting replicated samples:

- o Choose replicates of equal size. This condition is not necessary but variance calculations can become more complex when the replicates are of different sizes.
- o Determination of the optimum mix of r (the number of replicates) and p (the number of PSUs per replicate) for a fixed sample size of n = rm.

For example, if n = 24:

- r = 2, p = 12; or
- r = 3, p = 8; or
- r = 4, p = 6; or
- r = 6, p = 4; or
- r = 8, p = 3; or
- r = 12, p = 2.

Theoretical work shows that the more accurate variance is obtained when p = 2, and thus the number of replicates is maximized. However,

other considerations may point to a large p as more important. Other considerations may include: the use of paper strata (defined later) to make lower level estimates for areas such as health districts; the use of replicates in a rotation scheme where a portion of the sample is replaced for subsequent surveys to relieve respondent burden on repeated surveys; and survey management considerations.

d. Providing estimates for low level data

In actual practice when one uses the area sampling frame approach there is usually a lack of information in the country where the survey is being conducted. Therefore, it is only natural to want more information than the sample can provide at a reasonable cost. For example, a country may want health district level estimates. The relative variation of the district estimates will necessarily be larger than for the country level estimates. There is often a desire to stratify by size of village and by different groups of people within a health district. If one were to then use replicated sampling to ease variance calculations the variances are likely to be somewhat less stable and somewhat overstated due to a relatively large decrease in the number of degrees of freedom. A more practical procedure is to use replicated sampling across health districts and then use paper strata to approximate health district boundaries and calculate estimates and their respective variances at the district level. The advantages to this procedure is that you obtain the best estimate of precision at the total area level but you can also obtain district level estimates. Generally, the variances are not additive across districts -- that is, the variances summed across paper strata will not equal the variance based on replicated sampling at the higher level. It is now time to define paper strata.

5. Paper strata

Paper stratification is a concept often used with replicated sampling. It is a technique for creating substrata which are referred to as "paper strata" to increase sampling efficiency without requiring the detailed information on auxiliary variables or variances which is normally needed for detailed stratification and optimum sample allocation. For example, if after a number of clusters is allocated to a particular stratum you wish to make estimates for certain health districts within the stratum you would use the concepts of paper strata. The following example explains how this is done.

Assume we have a population of 20 units and we wish to draw a sample size of 8 using 2 replicates of size 4. The sampling interval is $Ni/ni = 20/4 = 5$. We now select two random numbers between 1 and 5 for the random starts to select the replicates systematically -- say 2 and 4. With systematic sampling we add the sampling intervals to each of the random starts to determine the two replicated samples. Replication 1 will include sample observations 2, 7, 12, and 17; while replicate 2 will include observations 4, 9, 14, and 19. This may be somewhat clearer by studying the illustration in Table 1.

Table 1. Illustration of Paper Strata.

Population	Sample Selected
1	
2	(2)
3	paper strata 1
4	(4)
5	
6	
7	(2+5)
8	paper strata 2
9	(4+5)
10	
11	
12	(2+5+5)
13	paper strata 3
14	(4+5+5)
15	
16	
17	(2+5+5+5)
18	paper strata 4
19	(4+5+5+5)
20	

Now let us assume we wish to make estimates for each of the 4 substrata. Paper strata corresponding to these substrata occur in groups of five within the population. The population with paper stratum 1 includes population elements 1 through 5; in paper strata 2 - 6 through 10; etc. Sample units 2 and 4 can be used to estimate for paper strata 1; 7 and 9 for paper strata 2; etc. One can use simple random sampling techniques to develop these estimates as well as their respective variances within each paper stratum and sum them across all paper strata to obtain total estimates (stratified sampling). Note however, that the variance from this procedure will be somewhat biased and should not be used. The variance based on replicates is the one that can be published.

6. Advantages of replicated sampling

Replicated sampling has many advantages besides making calculating variances of complicated sample designs an easy procedure. Most of the advantages lie in the area of survey management.

a. Unbiased estimation with less than a complete sample

Each replicate provides an independent unbiased estimate of the population parameters. Thus if one can not complete the entire job as anticipated due to budget restrictions, lack of vehicles, poor weather, etc. but is careful to complete a portion of the replicates in their entirety an unbiased estimate can still be made. If one were unable to complete a survey when using a regular design the situation becomes very bad since all the resources would have been expended with no useable results.

b. Use in subsequent surveys

The capability of conducting subsequent surveys of smaller size than used in a baseline study may be done by just selecting a few of the replicates. It can be very useful in monitoring a particular program.

c. Management of sample over time

Respondent fatigue can become a problem if a particular sample is used on several surveys over a period of time. Replicated sampling facilitates rotation of clusters. For example, one could replace 25 percent of the replications each survey and yet retain the control of costs by not being faced with the cost of drawing a complete new sample. Also 75 percent of the sample could be used for estimating changeover time.

d. Lower level estimates

Paper strata estimates provide lower level estimate for management use i.e., small areas within health districts etc. For

example, if two or three paper strata make up a health district, one could compare the paper strata estimates to help plan their delivery service.

Use for other surveys

Not only does replicated sampling allow for follow-up or evaluation studies of the same population (sampling the same respondents or selecting new clusters of respondents), it provides a framework which can readily be adopted to surveys for other purposes or projects.

Recommendation 8. The sample should be selected using the replicated design.

C. Sample Size and Design Effects

1. Size of population

The BSPE published the "Liste des Cantons et Populations" on 4/01/90. The estimated population was developed by reviewing several other sources of information. The list shows population of 366,600 residing in approximately 940 localities in the area the proposed survey will cover. The sampling unit for this survey is the housing unit. It is somewhat difficult to estimate the total number of housing units in the area. As discussed earlier, by assuming that the average housing unit (as defined for the proposed survey) has an average of three persons per housing unit, one obtains an estimate of approximately 122,000 housing units.

2. Estimation of sample size for a simple random sample

When one estimates the sample size required there are several items of information which are required as shown by the following formulation for determining the sample size to provide an estimate with a given level of confidence using simple random sampling:

$$n(\text{rel}) = \frac{K^2 N Q}{K^2 Q + P N E^2}$$

where: K - the number of standard errors within which you wish to state your confidence level. In our case we will use K=2 which gives us a 95 percent confidence level.

N - The total number of units in the population. There is an estimated 122,000 housing units in the area to be surveyed.

E - The level of error one is willing to accept in the resulting estimates. In our

situation we will accept an error of ten percent (E = .1)

P = The proportion we are estimating (p = .3)

Q = (1 - p) = (1 - .3) = .7

therefore:

$$n(\text{rel}) = \frac{4(122,000)(.7)}{4(.7) + .3(122,000)(.01)} = 928$$

This indicates that a simple random sample of 928 housing units would provide us the reliability we asked for i.e., to be within plus or minus 10 percent of our estimate of 30 percent, 95 percent of the time.

3. Design effect

The indicated sample size of 928 housing units would be required to meet our constraints if we were using simple random sampling. We are however, planning on using a cluster design with a targeted cluster size of 10 housing units because of limitations on vehicles and the amount of work involved in frame construction. The design effect that we are discussing is caused by certain attitudes and health practices perhaps being conditioned by close neighbors who make suggestions, critical observations or spread information to people nearby. In other words one will not receive 10 times the amount of information from interviewing 10 adjoining housing units as from 10 housing units scattered across a village. To partially adjust for this feature of a cluster design, one can attempt to calculate a design effect. Table 2 indicates the standard errors one could expect for various sample sizes using simple random sampling. Tables 3 and 4 indicate what the effect on the resulting standard errors would be with the design effect taking on the values of 2, and 3.

Study of the preceding tables indicates that the design effect could be rather significant. For example, if one to assume a design effect of two and were calculating the standard error of a proportion of 20 percent, the 95 percent confidence interval for the estimate would be 16.8 - 23.2 percent (20 plus or minus 2(1.62)) or plus or minus 15 percent. This level of precision would require a cluster sample size of 1200 housing units. Experience in similar situations is that the design effect is somewhat less than two.

4. Recommended sample size taking into account possible design effects

As shown above, a sample size of 1200 housing units with a design effect of two would provide estimates of proportions of 20 percent in magnitude with a possible 15 percent sampling error. This is greater than the 10 percent restriction that we originally prescribed.

Table 2: Standard Error of Estimated Percentages for Various Sample Sizes (Design Effect = 1)

Respondent size (n)	Percentage (P%)		
	50	20	5
400	2.50	2.00	1.09
800	1.75	1.42	.77
1000	1.58	1.26	.69
1200	1.44	1.15	.63
1600	1.25	1.00	.55

Table 3: Standard Error of Estimated Percentages for Various Sample Sizes (Design Effect = 2).

Respondent size (n)	Percentage (P%)		
	50	20	5
400	3.55	2.82	1.54
800	2.45	2.00	1.09
1000	2.23	1.78	.98
1200	2.03	1.62	.89
1600	1.75	1.42	.77

Table 4: Standard Error of Estimated Percentages for Various Sample Sizes (Design Effect = 3)

Respondent size (n)	Percentage (P%)		
	50	20	5
400	4.35	3.46	1.89
800	3.05	2.44	1.34
1000	2.13	2.18	1.20
1200	2.49	1.99	1.09
1600	2.15	1.74	.95

However, one could assume that the design effect would be somewhat lower than 2 and, as such, the magnitude of sampling error would be somewhat less than 15 percent.

One should ask at this point if such a sampling error is acceptable. Of course this question can only be answered in the context of the use of the survey results. Survey results are to be used to guide the health delivery system and to provide a base from which effectiveness of an educational and health delivery system can be measured over time. It would seem doubtful that a health delivery system would change their program substantially if the awareness of a prescribed technique was 17 percent versus 20 percent. Also, one would expect the long term effect of a health delivery system to be greater than from 20 to 23 percent for some specific issue. As such, this level of precision would appear sufficient for the purposes of the use of the data even though it is greater than we originally prescribed in our requirements.

Recommendation 9: Recommend a total sample size of 1200 housing units.

5. Stratification of urban and rural areas

The "Liste des Cantons et Populations" report shows the population of Koumra to be 76,000 and of Sarh to be 24,000. This is a total of 100,000 population out of a total of 366,600 or 27 percent falling in the two cities. Somewhat better coverage of the rural areas could be achieved by stratifying urban versus rural and using different sampling rates in for each of the resulting strata. In addition, one might expect differences in survey results between urban and rural areas due to perhaps a higher education level of urban dwellers, better access to health facilities, improved economic situations which provides the resources to obtain better health care etc. Thus it is proposed to allocate 20 clusters to the urban strata and 100 segments to the rural stratum. Health district stratification within the rural stratum is not proposed since a substantial amount of local information can be achieved from the paper strata created by replicated sampling.

Recommendation 10. Create urban and rural strata by placing the cities of Koumra and Sarh in an urban stratum and allocate 20 sample clusters to the urban stratum and 100 clusters to the rural stratum.

Recommendation 11: A replicated sample of 4 replicates of 5 clusters each will be selected in the urban stratum and 8 replicates of 13 clusters will be selected in the rural stratum. This will result in a total sample size of 124 clusters.

6. Incompleteness in the village list

There is no measure of incompleteness in the recently developed list of villages. There is reason to believe that there may be some incompleteness in the list of villages. For example, Ellen Brown was told by the Deputy Sub-Prefect that there were 37 villages in Canton

Bekamba while the BSPE list shows 28. In Sub-prefecture Maro, the head doctor told Ellen Brown that there were 84 villages which agrees with the BSPE list. Thus during the frame development process an effort should be made to update the list of villages. Any such villages would be placed on a separate list and subsampled to estimate for list incompleteness. No sample has been allocated to this group because we don't know for sure that it exists. If it does exist, one would suspect it to be rather small and would probably want to sample it with a minimum of 8 clusters. Again, one would make a complete a list as possible, sample the villages, and construct the sampling frame as with the other strata.

7. Sample design summary

The sample design being recommended is a stratified one stage cluster design with the clusters defined as groups of approximately 10 housing units. Housing units are defined as groups of people who inhabit a dwelling and normally sleep there. Two strata are suggested i.e., urban and rural. A replicated systematic sample of 4 by 5 = 20 clusters for the urban strata and a 8 by 13 = 104 clusters for the rural strata. This implies an overall sample of 124 clusters. The variances as estimates are to be computed as discussed under replicated sampling.

8. Summary of recommendations

Recommendation 8. The sample should be selected using the replicated design.

Recommendation 9. Recommend a total sample size of 1200 housing units.

Recommendation 10. Create urban and rural strata by placing the cities of Koumra and Sarh in an urban stratum and allocate 20 sample clusters to the urban stratum and 100 clusters to the rural stratum.

Recommendation 11: A replicated sample of 4 replicates of 5 clusters each will be selected in the urban stratum and 8 replicates of 13 clusters will be selected in the rural stratum. This will result in a total sample size of 124 clusters.

II. SURVEY METHODOLOGY AND IMPLEMENTATION

Conducting a survey is a long, hard and exacting process. Even with an excellent sample design a survey can result in failure unless the survey is carried out properly. It is envisioned that the same data collection personnel will first do the frame construction operation and then the actual data collection while in the same village before moving to the next cluster. Before discussing these matters in detail, it will be useful to start this section with a brief discussion of total error and quality control. The section will then review the elements of an effective operating design and end with a discussion concerning questionnaire development and pretesting.

A. Total Error of a Sample Estimate

The total error in a survey generally comes from two sources. The first major source of error is that which arises from sampling and is inevitable if one is measuring only a portion of a population. The second source of error is generally referred to as nonsampling error and includes errors arising from insufficient population frames, biased sampling techniques, improper data collection procedures, poorly designed questionnaires, data handling and summary errors and improper estimation procedures. These nonsampling errors can be minimized by proper survey design, good survey management and quality control.

Unfortunately, unlike sampling errors, there is no simple and direct method of estimating the size of nonsampling errors. These errors can be classified into two groups - random types (where the effects of the errors tend to cancel out with fairly large samples) and biases (errors which can cumulate in the same direction over an entire sample). With large samples, the possible biases are the primary cause for concern about the quality of a survey.

Biases can arise during any aspect of the survey operation. Special care must be taken at each stage of the operating design to control these biases. The main factors contributing to biases need to be considered and procedures developed to minimize these sources of errors while developing the operating design. Some of the main factors contributing to bias are:

- o sampling operations
- o noninterviews
- o adequacy of respondents
- o understanding the concepts and definitions
- o lack of knowledge on behalf of respondents
- o concealment of the truth

- o loaded questions which influence the respondent
- o processing errors including coding, keying, programming, office editing and procedures
- o conceptual problems
- o interviewer errors caused by misreading or rephrasing questions

B. Quality Control Considerations

Quality control is the totality of procedures used to identify, assess and control the quality of collected data and the resulting estimates made from these data. It enters into all stages of a survey in such areas as checking the sample selection, verifying interviews and checking the editing, data entry, data processing procedures, etc. In particular, faulty definitions, poorly worded questions and sloppy execution of the survey in the field can occur which have disastrous effects on the resulting data and thus render the survey estimates useless or misleading.

An overall quality control program consists of all efforts to minimize and manage the nonsampling errors that can affect a survey. It involves carefully checking and testing each part of the survey process. For example, one of the first places to initiate quality control after carefully checking the sampling design, is in the questionnaire design phase of the survey. With a series of pretests, one needs to determine if the definition of the reporting unit is understood by the respondent, if other terms and definitions are understood and answered correctly.

Reinterviews and field checking by supervisory personnel on a random basis will determine if the subsampling of the quarters is being done correctly, if the proper respondents are being used, if the questionnaires are being used correctly, etc. Checking data entry either through a check total procedure or by entering the data twice and computer editing for internal questionnaire consistency as well as to determine if all required data items are answered and within logical limits are all part of a quality control program. These items need to be thought about and built into the operating design prior to initiating data collection.

Recommendation 12: Develop a quality control program including a timetable of operations and tabulation plans before entering the frame construction and data collection program.

C. Field Operations

1. Vehicle support and training

Both the frame construction in sample villages as discussed in the Sample Design portion of this report and the data collection aspects of the anticipated survey will require substantial effort including vehicular support, well trained personnel and close supervision.

In most surveys of this type we find that obtaining a sufficient number of vehicles that can be operating during the entire period of field work is a problem. Also frame construction and sample selection in the field and data collection are generally quite complicated and will require close supervision. For these reasons it is recommended that the frame construction and data collection activity be combined into a single operation. It would seem that a logical field organization would be to have a supervisor and four interviewers assigned to a team. The team would be assigned a vehicle. The supervisor could drop two interviewers off at a sample site and help them get started on the frame construction process. He could then proceed to the next sample site and assist the other two interviewers in starting the frame construction process. The supervisor would then alternate between the two sample sites assisting and reviewing the work of the team members. In the situation where there is more than one sample in the same village, the team would work together until the individual quarters were selected and then separate. As soon as the final cluster is selected the team will make the required number of interviews. This procedure will allow the best opportunity for proper and effective supervision, the most effective use of the expected limited vehicular support and will result in an overall reduced survey cost through reduced traveling and other efficiencies. In addition it provides for active supervisory support.

Recommendation 13: Use teams of four interviewers and a supervisor to which will be assigned a vehicle for the duration of the survey.

Recommendation 14: Combine the frame construction and data collection activities by conducting interviews immediately following the construction and selection of the sample clusters.

To be successful in the proposed survey, the field operations need to be well planned and carried out. Special effort will be required to see that sufficient number of vehicles, spare parts, gas etc. are available. In addition a great deal of care should be taken in developing a field staff. Developing such a staff will include at least the following:

- o The selection of the best qualified field interviewers and supervisors. They should be intelligent, honest, have an ability to meet people, ask rather sensitive questions, have the ability to pay attention to detail and follow instructions without variance. Given that most of the respondents are

females and the nature of the questionnaire, considerable effort should be given to find good female interviewers.

- o It would be quite helpful to have at least one member of the team knowledgeable about cartography.
- o Develop an extensive training program that will:
 - Make the field staff knowledgeable in the use of the sampling and data gathering materials and procedures, especially the random sampling methods required to select samples.
 - Train the field staff in the proper procedures to use in conducting interviews with the respondent, establish and maintain rapport and motivate the respondent to provide sincere, meaningful and full answers.
 - Give the field staff as well as central office staff a full understanding of concepts, definitions and procedures.
- o Develop strong supervisory procedures which will require at least:
 - A sufficient or reasonable ratio between the number of supervisors and interviewers. Most surveys will require one supervisor to 5 - 8 interviewers. We are recommending a ratio of one supervisor for each 4 interviewers due to the complexities of combining the frame construction and data collection activities as well as efficient use of the vehicles that will be required.
 - The checking of all frame construction activities; the random procedures followed throughout all steps, the accuracy of all sketches and their usefulness in locating the clusters for return visits or subsequent surveys.
 - The checking of the completeness of sample coverage.
 - The review and checking of completed questionnaires and reinterviewing if necessary. This should be done for each interviewer on a daily basis.
 - The assembling of survey materials and sending them to the central office according to a pre-described timetable. This will require a carefully kept record system.

2. Frame construction and data collection

As discussed earlier the sampling frame will be constructed only in sample villages. An effort will be needed to locate and obtain the best mapping materials available for this purpose. My limited checking while developing this report failed to reveal reasonable mapping material. Detailed maps that could be used to locate quarters on the map and eventually assist in splitting a selected portion for the development of clusters for sampling were not located. I would suggest checking to determine the availability and cost of obtaining SPOT (satellite imagery from the French system). To the extent that reasonably scaled mapping materials are not available, personnel will need to be trained in cartographic skills. It would be helpful to obtain the services of individuals already trained in cartography and place a cartographer on each team.

Recommendation 15: Investigate the possibility of locating better quality mapping material to assist in frame construction. SPOT is a possibility.

Recommendation 16: Attempt to place a person knowledgeable in cartography on each field team.

a. The minimal steps to be used in area frame construction

A complete set of procedures should be developed for use in the field. Once the procedures are developed they should be well tested. The list of procedures would contain at least the following:

- o Gathering all available material that might be available for the sample village prior to the start of the survey.
- o Have a filing system developed for each sample village. All materials to be used in the frame construction work should be included in this file. This would include, but not be limited to, mapping materials showing location of the village, sample materials such as a table of random numbers to be used and then remain in the file for each village, an adequate supply of scaled paper to be used in sketching the village showing quartier boundaries, scaled paper to be used in sketching selected quarters, a form to assist with listing village quarters for subsequent subsampling and a set of instructions with perhaps a checkoff list with space for comments.

- o Contacting the village chief and sketching village boundaries including all satellite hamlets or groups of people that are administratively attached to the village. Ask the village chief to assist in sketching the village boundaries, sketching the quartier boundaries, obtaining names of quartier administrative heads, the estimated population etc.
- o Number the quartiers in a serpentine fashion and prepare a listing by number showing the population of each quartier and its population.
- o Determine a sampling interval by dividing the total population by the number of samples allocated to the village and systematically select the prescribed number of quartiers.
- o Divide the population of each selected quartier by three to obtain an estimated number of housing units within the quartier.
- o Divide the number of estimated housing units obtained by 10 to determine the number of sampling units or clusters in the selected quartier.
- o Proceed to the selected quartiers and contact the administrative head. Enlist his assistance in making an accurate sketch of the quartier, being careful to show all visible boundaries etc. Be sure to mark on the sketch the approximate location of the administrative head, record his name and general information that would assist locating the area on subsequent visits.
- o Determine if the number of sampling units is large enough to warrant splitting the quartier into parcels before dividing the quartier into equal parts. For example, if there are only 6 sampling units in the quartier, one would go directly to splitting the parcels into compact clusters and skip the next step.
- o Split the quartier into 4 to 5 parcels and select a section for additional sampling being sure to show random number selection and splits on sketch. Assign the number of estimated housing units to each of the

splits obtained by dividing the estimated quartier housing units by the number of splits used. Select one of the parcels with simple random sampling procedures and continue this procedure until a section of the quartier has approximately 5 to 8 clusters in each parcel. Select one of these parcels randomly with simple random sampling as the final parcel to be split into clusters.

- o Make another sketch of the final parcel of the quartier before proceeding with subdividing into compact sample clusters.
- o Subdivide the selected portion of the quartier into compact clusters for final enumeration and select one with simple random sampling techniques for data collection. The selected compact cluster should be outlined in red on the sketch.
- o Each sketch and other material should be clearly labeled showing the identification number of the village, quartier etc.

b. Conducting the interviews

- o Contact each house in the compact sample cluster.
- o Explain the purpose of the survey and solicit their participation. Record all identifying information on each schedule. Explain that the survey information is held strictly confidential.
- o Conduct the interview. The interviewer should review all information received before closing off the interview. Notes should be made by the interviewer to explain any and all unusual situations. This review should make certain that all required questions have been asked and that the questionnaire is internally consistent.

c. Supervisor review

- o The supervisor should review all materials prior to leaving the village. He should clarify any inconsistencies in the interviews making notes where they would be

helpful to reviewers. The materials and completed questionnaires should then be readied for shipment or delivery to the Central Survey Staff

d. Rough estimates of manpower required in the field

At this time it is very difficult to provide estimates of the manpower that will be required to complete the field work. The Pilot Survey recommended in the next section will provide much better estimates of the parameters involved. However, we thought it useful to provide some idea, regardless of the limited information available at this time.

Experience with a few questionnaires tested in the field while preparing this report indicates that the data collection will require approximately one and one-half hour to complete the work for each housing unit or an estimated total of 15 hours. Thus the interviewing would require a long day for 2 interviewers. The supervisor will be able to assist to some degree and thus an estimate of one day for interviewing should be fairly reliable.

The time required to complete frame construction is a difficult question at this time. Lets assume it will take two interviewers two days to complete this portion of the work with the assistance of the supervisor.

In summary it appears that a team consisting of a supervisor and 4 interviewers could complete two clusters in a three day period. This amount of effort would translate into a team averaging 3 clusters per week.

Let's assume that there will be six teams available to complete the field work. This then implies an estimated completion rate of 18 clusters per week ($6 \times 3 = 18$). Given that there are 124 clusters, the survey period should last approximately 7 weeks. Total manpower requirements are then 42 man weeks for supervision ($6 \times 7 = 42$) and 168 man weeks of interviewer time ($6 \text{ teams} \times 4 \text{ interviewers per team} \times 7 \text{ weeks} = 168 \text{ man weeks}$).

D. Pretest of Questionnaires, Instructions and Field Procedures.

Designing the questionnaire represents one of the most critical stages in the survey development process. It links the information need to the realized measurement. Unless the concepts are clearly defined and the questions unambiguously phrased the resulting data are apt to contain serious biases. In addition to well defined concepts and distinct phraseology, attention must be given to questionnaires length while trying to fulfill survey requirements. Unduly long questionnaires are burdensome to both the respondent and interviewer and are apt to induce respondent fatigue. This in turn induces response errors, refusals and misleading or incomplete questionnaires.

1. Developmental phase

a. First round (completed)

The developmental stage is used to discover how respondents think and talk about the subject matter of the survey. Usually, the statement of the study objectives and the information required for each objective and potential use to be made of the study results provide suggestions for a list of topics to be informally discussed with a small, highly diverse, purposely selected sample of people who could qualify as respondents. The sample respondents should be diverse with respect to social-economic status, educational, cultural and ethnic backgrounds, experience etc. A small sample of from 10 to 25 potential respondents should be selected who have the extreme characteristics of the population from which the final sample is to be chosen. Even as few as 5 interviews of this kind can be extremely informative and helpful in questionnaire development.

Based on the experience gained during these preliminary interviews, a review and re-evaluation of the study objectives, preliminary hypotheses and information required to meet each objective can be conducted. When this has been completed a preliminary draft of the study questionnaire to be used for testing during the second round of interviews can be prepared. This phase of testing has been completed while this report was being written.

b. Second round

During the second round the preliminary questionnaire and alternative groups of questions are tested with a highly diverse but a different group of respondents than on the first round. The objective is to determine whether or not each question is effective in communicating with respondents, obtaining data in sensitive areas where respondents are likely to become emotionally involved, and minimizing other possible sources of friction in the interview situation. A somewhat larger sample than that used for the first round is required.

From this experience the questionnaire is revised as may be necessary and a preliminary draft of interviewer instructions concerning the use of the questionnaire is prepared. These instructions include a definition of the purpose of each section, an explanation of the kind of information required to answer each question, an explanation of how the answers should be recorded on the questionnaire etc. If there are any parts of the questionnaire which still seem to give trouble, several additional interviews have to be made which key into these troublesome areas to ensure that final revision of the questionnaire will work satisfactorily.

During the second round field procedures and materials are tested for the frame construction process. The procedure and instructions should be developed prior to entering the field during the second round. At

least a small and large village as well as an urban area should be included in the test. As problems and specific situations arise, solutions and changes of procedure and instruction will be needed and further pretested.

Once the final revision of the questionnaire, frame construction procedures, instructions and associated survey training manuals are completed, we are ready to conduct the pilot survey.

c. Pilot survey

The pilot survey requires a field staff of supervisors and interviewers to pretest the frame construction procedures and the questionnaire. It is preferable to use a new set of supervisors and interviewers that had no association with the earlier testing. The purpose of the pilot survey is to make a final test of the questionnaire, frame construction procedures, interviewer instructions, sampling plan, the adequacy of the supervisor and interviewer training program, and the supervisory and administrative procedures used under actual field conditions. The use of a new set of supervisors and interviewers will provide a more accurate test of the training, instructions, questionnaire, etc. since there would be no conditioning caused by working on the second round.

Again a purposive or judgment sampling approach is used to select a relatively small sample of 2 or 3 diverse Cantons depending on how conditions vary in the area being studied. Within each Canton, 2 or 3 diverse villages should be selected having as varied field conditions as possible. The entire procedure should be tested. This includes frame construction involving all stages of subsampling and enumeration of the final cluster of approximately 10 housing units.

d. Finalizing the survey

On the basis of a careful analysis of the pretest or pilot survey experience the final preparations for the sample survey are made. The questionnaires, all instructions to the supervisors and interviewers, subject matter training materials, administrative and supervisory procedures are reviewed and revised as may be necessary. All materials are then reproduced and made ready to start conducting the sample survey.

e. Interviewer instructions

Interviewer instructions should contain an explanation of the purpose and use of each question, and the nature of the information each question is designed to obtain from the respondent. Mention should also be made of the kind of neutral PROBES to use in order to obtain more meaningful answers from respondents who seem to be giving superficial or merely socially acceptable answers. The procedures and sampling techniques to be used during frame construction need to be understandable and fully spelled out.

When interviewers are employed to conduct a survey, we must remember that they did not prepare the questions. Consequently, they should be made aware of the purpose of each of the questions and procedures and the information each is expected to obtain. We, however, must include sufficient information on the questionnaire and sampling materials. The manual is used only to provide additional information. For example, we should not ask the respondent who the head of the housing unit is and have a complex definition in the manual. Rather we should form questions for the important parts of the definition and have each of these questions on the questionnaire. If this is done, the head of the housing unit is objectively determined in a consistent manner from housing unit to housing unit and from interviewer to interviewer.

f. Importance of the developmental phase

We earlier discussed total error as being composed of sampling error and nonsampling error. The procedure outlined for conducting the proposed survey contains elements of both types of errors. Conducting a survey such as this involves a substantial effort, close attention to detail and good management.

Recommendation 17: A sound procedure, similar to that suggested in this report, should be developed and tested for the survey materials, survey procedures, training and recruiting interviewers. Once developed, it should be closely adhered to.

2. Management activities

With all the careful planning and effort invested in the survey it can still be a failure and useable results will be lost unless all the management activities are carried out properly. These activities include, but are not limited to:

- o planning the survey
- o obtaining vehicular and budget support
- o preparing and printing all survey materials
- o distributing survey materials to supervisors who are responsible for the immediate supervision over the field work
- o instructing supervisors in their duties and giving them the necessary background information which includes conducting training schools
- o supervising the recruiting, selection and training of field personnel

- o the systematic recording of survey materials as received from the field and the provision of convenient storage
- o the preparation of detailed instructions for reviewing, editing, coding, data entry, verification of data entry, machine tabulation, preparing and checking tables, computing percentage distributions of attributes, making estimates from sample data and other related data processing operations needed to meet the study objectives.
- o pretest data or, if the data are not usable, fictitious questionnaires should be developed to test both the computer edit system and the output table specifications
- o instructing and supervising office personnel in editing, coding and data processing operations.
- o developing plans for the preparation of written reports

3. Summary of recommendations

Recommendation 13: Use teams of four interviewers and a supervisor to which will be assigned a vehicle for the duration of the survey.

Recommendation 14: Combine the frame construction and data collection activities by conducting interviews immediately following the construction and selection of the sample clusters.

Recommendation 15: Investigate the possibility of locating better quality mapping material to assist in frame construction. SPOT is a possibility.

Recommendation 16: Attempt to place a person knowledgeable in cartography on each field team.

Recommendation 17: A sound procedure, similar to that suggested in this report, should be developed and tested for the survey materials, survey procedures, training and recruiting interviewers. Once developed, it should be closely adhered to.

III. DESIGN OF QUESTIONNAIRE

A. Purposes for Which Baseline Study Is Designed

The major objectives of the study are to establish a baseline from which project impact can be measured and to identify why people in the Moyen-Chari target area (Sub- Prefectures of Koumra, Sara Rural and Sara Urbain) do or do not use the available health facilities. Is it because of the facilities themselves, lack of money for medical care, or because of their attitudes towards and knowledge about health problems?

More specifically, the study is to concentrate on knowledge, attitudes and practices concerning childhood illnesses (especially diarrhea), pregnancy, delivery, aftercare and child spacing; and preventive health care.

B. Units of Analysis and Eligible Respondents

1. Definitions

- o Housing Unit: A house and its inhabitants who usually live there including anyone who slept there the preceding night. Contains one or more family units.
- o Family Unit: A group of people living together under the person who usually takes care of them on a day to day basis.
- o Eligible Respondents: Women of childbearing age (12-49) and mothers 50+ years of age with children under five. Also men who are the sole caretakers of children.

2. Housing unit

The housing unit has been selected as a unit of study, instead of household, for several reasons. In most studies the household is considered to be a single economic unit which can be identified with a dwelling unit (i.e. the people holding the house), or, in cases of polygamy, with a man and his wives, perhaps in several dwelling units, with whom he forms a single economic unit. In rural Moyen-Chari a one-to-one correspondence between economic and dwelling units does not exist. The inhabitants of one house may not all be members of a single economic unit, e.g. a husband may live with one wife to whom he provides no economic support and only visit other wives who are financially dependent on him. Young men may still be economically dependent on their parents but they most probably live in a separate house with other young men friends.

Determining housing unit income is more relevant to the survey objectives than the traditional "household" income because it is a more precise measure of the amount of money available to the women making decisions on health expenditures. If the person making the health decisions is a woman, her decisions will be influenced only by how much money she herself earns and how much her husband gives her, not by her husband's total income, much of which may not be accessible to her because it is used for her co-wives.

Using the household rather than the housing unit as a unit of study is also complicated by the problem of multiple marriages. In the Moyen-Chari, multiple wives who would, by the definition of household offered above, be in their husband's "household", normally live in different housing units, indeed often in different villages from their husband. Under the "household" definition, these women must be identified and removed from the sample in order to avoid duplication and erroneous results.

Using the household as a unit of analysis would also give rise to difficulties due to differences between the western concepts of the household and the concepts of Sara and other related ethnic groups which are in the majority in the Moyen-Chari. "Head of household", as usually used in such studies, is the person who has financial control and responsibility, makes the day to day decisions and is in charge of the household. But if one asks a Sara whether he or she is independent or is taken care of by someone else (ke de ki rang ngomi wa), i.e. by a head of household, the answer is most frequently "yes", because any male whose father is still living is still nominally under his father's charge, even though the son may have been living, farming and caring independently for his family for a number of years. Likewise any woman who is married is still nominally, and usually in such surveys she reports so, under the charge of her husband, even though she has ceased any sexual, economic or social relations with him. A woman is always considered married to the last man who paid bridewealth for her and she remains married to him until the bridewealth is reimbursed by a new husband (or very rarely, by her family). There is no way that the sociologist has yet found to ask a question about households that gets around this problem of cultural definitions. Instead, she has inverted the generations by asking adults what children they care for (ngom). The response to this question, when carefully checked to make sure the respondent cares for the children on a day to day basis, gives a reliable picture of the family unit.

For the preceding reasons the housing unit, rather than the household, has been selected as a unit of study.

The problem of finding housing units in urban areas is somewhat different from rural areas because land values and construction costs are higher in town. Therefore, people live in more compact areas and in more readily identifiable physical structures. Buildings are not necessarily abandoned on the death of one of the inhabitants. However, the pressure to consolidate housing for economic reasons means that what

would be separate buildings in rural areas are often conjoined together into several continuous units built with a common wall facing to the outside in order to maintain privacy. Thus one gets an urban "concession" or homestead, sometimes with several different families sharing a common courtyard. Within the "concession" or homestead, however, each woman will have her own dwelling room(s) for sleeping with her children and other dependants, and perhaps her husband. Along with the dwelling rooms there are kitchens, baths, etc. These dwelling rooms are the equivalent of separate buildings in rural areas and are called by the same name in Sara: "kuju bi" or sleeping house. Hence the housing unit will be used as a unit of analysis in both urban and rural areas.

3. Family unit

A Housing Unit may contain one or more family units on a habitual basis. A family unit may also contain people other than children whom the woman normally cares for, such as a sister, niece, etc.

There are probably cases where no woman is available to take care of the children living in a house. A man who is a widower without any other wives may take care of the children himself, with the aid of his "sisters" and "mothers" who prepare food and fetch water. In this case the man who is the sole support of the children is considered to be the head of the family unit and is an eligible respondent.

In other cases, orphans may be living by themselves if one of them is old enough to take care of the others. In this case the oldest child is considered the eligible respondent since he/she is making all the day to day decisions about health care, etc.

Other housing units may contain adults without any children under their care. In these cases the occupant of the house is considered to be the eligible respondent.

4. Eligible respondents

Women of childbearing age and mothers of children under five will be able to give the most accurate information on childhood illnesses, the illnesses their children have had, including diarrhea, and how they treat them. They are also, through their birth histories, able to give information on their pregnancies and deliveries, the problems they have encountered, and how they dealt with them and why. While men are aware of these matters and may make some decisions concerning them, it is the women who are most directly involved.

Sometimes children, who are one of the main concerns of this baseline study, are cared for only by a man. Perhaps their mother has died, been divorced, or is away on an extended trip. A man may then be in charge of these children, whom he cares for. If a child is not old enough to do the housework he gets help from "mothers", "sisters" and neighbors' wives. In these circumstances this study treats the man just like a

woman and asks him questions about the children under his care. The study does not ask him about his reproductive history since he may also be the father of other children whose mothers are in the study area and therefore likely to be sampled. Including his children would cause duplication. Only that portion of his income devoted to the sample housing unit is to be collected on this survey. These men can also give information about family well-being which reflects a male point of view.

C. Reasons for Selecting These Units of Analysis

Including men other than those who are caretakers of children as a unit of study would involve enormous difficulties, one of which has already been mentioned: polygamy. All a man's wives would have to be accounted for to ensure that the income he was reporting was not also counted as their income and that their children were not counted, as this would cause duplication. Finding men would also be difficult because in rural Moyon-Chari men frequently do not have houses of their own. Rather they sleep outside under a shelter, which is visually and in terms of daytime usage indistinguishable from ordinary storage facilities or shelters from the sun. Or they may sleep on an outdoor sleeping rack or in a wife's or fiancée's house. Mapping these outdoor structures in order to put them in a sample to select either "men" or "household heads" would require enormous time to identify with villagers all the uses to which these makeshift shelters are put.

There are disadvantages to using the housing unit as the sampling unit and women of childbearing age, mothers of children under five and men who are the sole support of children as the eligible respondents. First, the material is comparable to other studies only when comparing individuals, not households. Second, only a small number of men will be included in the study although men's views on family well-being are of interest to the project. However the difficulties and problems associated with including households and men as units of study are far greater than these inconveniences. Including men would greatly increase problems in sampling, interviewing and in calculating variances, as well as the time and cost of conducting the survey.

Recommendation 18: Women of childbearing age (12-49) and mothers of children under five and men who are the sole caretakers of children are the eligible respondents for this study.

Recommendation 19: The housing unit is the sampling unit and a unit of analysis. The family unit will also be a unit of analysis.

D. Rules of Eligibility

In order to maintain the quality of "uniqueness" which allows us to conduct an unbiased survey, we have set several rules to determine who is and is not eligible to be included in the survey. These rules are intended to keep us from counting the same person, or important attributes such as the person's income or children, more than once.

1. Interview only those who slept here last night

In order to keep from counting the same person twice each person will be interviewed only in the place where he/she slept the night before. Thus a woman who is the head of a family unit and has day-to-day charge of children, but who has gone to visit her sister, will be interviewed as the head of a family unit only at her sister's. Her children, who have been left at home, will be counted as hers on her questionnaire. Family units in which the children are alone or under the care of their father, etc. because the woman who usually cares for them slept elsewhere the night before will not be included in the sample. This family would not be eligible to be interviewed which avoids duplication.

Of those who slept here the preceding night, the following are eligible respondents:

- o Interview individual women of childbearing age and women with children under five. Also interview men who are the sole support of their children.
- o Interview only the men who are the sole support and take care, on a day to day basis, without a wife, of the children who slept with him last night.

The only men interviewed will be those who are the support of their children i.e., men who have no wives or resident "sisters" or "mothers" to care for the children. It would be highly improbable that a man who is caring for children without a wife's help would be married to another woman to whom he gives part of his income. If he had another wife she would be taking care of the children. Hence in counting the income of men who are the sole support of their children it is unlikely that part of his income would be counted again as part of the income of another wife who happened to fall into the survey. Instead, his income will reflect the income which is available for use of these children.

- o Interview the oldest child who provides the day to day care of the people who slept in the house with him.

Sometimes orphans are old enough to survive without the help of someone more mature. In these cases the oldest child is considered the head of the Family Unit.

- o Interview as head of the Family Unit those adults without children who take care of themselves on a day to day basis, and perhaps take care of other adults.

E. Design of The Questionnaire

1. Translation

The questionnaires have been written in French and in English. A translation in Sara and Arabic would ensure that the same question is asked of all respondents. Interviewers may ask questions in different ways and so elicit different answers if the translation from the French is left up to them. Moreover, because of their upbringing and education, many will have little familiarity with some Sara/Arab concepts and terms. However, several health workers, some of whom may serve as supervisors for the survey, said they were unable to read Sara and knew it only as a spoken language. After some testing of literate health workers' ability to read Sara, the sociologist dropped a Sara translation of the questionnaires. Since the questionnaire does not offer the exact question to be asked a respondent in Sara and in Arabic, the interviewers must be well trained in understanding what the question means in French, how to pose it in Sara and Arabic, and what the likely responses will be. This training should be included in the field school.

An earlier survey on family well-being conducted in NDjamena in 1988 by the MSP, the MASPF and Columbia University used a questionnaire written in French. The interviewers were intensively trained by journalists from Radio Tchad on how to translate and ask the questions in both Sara and Arabic. The supervisors from the CNNTA who were involved in the survey, along with two of the designers of the questionnaire, feel that this technique for translating worked well. Since they did not test whether the answers to set translations versus free translations by trained interviewers gave equally reliable results it is impossible to verify if this is true. Interviewers' inability to read phonetic Sara, however, makes this procedure necessary. It is recommended, however, that the questionnaire be translated into Arabic since literate Arabic speakers will be able to read it. The sociologist, in her explanation of the reasons for asking each question, has recounted in detail the possible answers in Sara and the cultural and ethnomedical categories involved so that the training group will be able to explain the questions to the interviewers and journalists from Radio Tchad.

Recommendation 20: Extensive training in administering the questionnaire in Sara should be part of the field school. The questionnaires should be translated into Arabic.

2. Length of questionnaire

The questionnaire has been designed with the goal of keeping it as short as possible and yet obtaining data to answer all the evaluation criteria. They also include a number of questions, all of which add to the length, and from the respondent's point of view, tedium of the interview. We must be concerned with the overall length as too long a questionnaire results in interviewer and respondent fatigue which

then results in faulty and erroneous results. These questions have been included because the project has some interest in the answers even though they are not crucial to determining the basic information needed for a baseline. These questions are noted as such in the comments offered on the questionnaires. The AID mission can decide whether these questions are necessary to meet baseline and evaluation criteria. If they are not, or if the information the questions are designed to provide is not of great importance to the Mission or others working in health, it is strongly recommended that they should be removed from the questionnaire.

Recommendation 21: Effort should be made to keep the questionnaires as short as possible and yet answer all the evaluation criteria. Those questions which are not needed to meet evaluation criteria or which provide basic guidelines for project staff need to be reviewed and those not meeting a real need should be removed.

3. Layout of the questionnaire

The questionnaire has been designed with a coding column at right so that, for most questions, the data processor can easily see the information to be keyed. The boxes in the coding column have been numbered so that the data processor knows which question the box refers to. It is a shame, however, to throw away good information just because no category for coding it has been provided. For this reason the questionnaire also contains an "other" box which can be marked, along with a space for the interviewer to fill in by hand the respondent's answer. Anyone who is interested can go back to the original interview sheets and look at the questionnaire for more detail. In fact, the analysis of the data should provide for an analysis of "other" answers. Such an analysis may provide exciting data that suggests new directions for the project which would be missed if the analysis relies solely on coded data.

Recommendation 22: Data code boxes should be on the right hand side of the questionnaire pages to assist staff in keying the data.

F. Populations for Which the Questionnaire Has Been Designed

The questionnaire has been developed mainly for the Sara and related ethnic groups which are predominant in the target area. There are, however, members of other ethnic groups, who live in Sara and other towns in the zone: Arabs, Gorane and others. Since these people are, for the most part, sedentary inhabitants of houses within the research area some will turn up in the survey sample. Hence the questionnaire has also been designed to be translated into Arabic, which is a lingua franca for many non-Sara. A modest attempt has been made to offer cultural categories which are applicable to these ethnic groups. The answers on pretests of the questionnaire will probably show that other response categories should be added to reflect their cultural and ethnomedical ideas.

The eventual project zone includes the Salamat as well as the Moyen-Chari. For the inhabitants of the Salamat a totally different questionnaire and survey framework will need to be developed since the residence, household and marriage patterns are different, as are the religion, concepts about the causality of illness and the kinds of treatments people seek. The questionnaire used in the Sub-Prefectures of Sara and Koumra can act as an initial pretest of some questions. The answers people give will point out the area in the questionnaire which need to be modified, and themes which need to be examined in more depth in an Arab oriented questionnaire.

G. Some Questions Frequently Asked in Questionnaires About Maternal and Child Health, Family Planning and ORT Have Been Left Out of the Questionnaire

Each question in the questionnaire has been asked in order to provide data which will help the project make decisions about the kinds of training health workers need, the amount of effort which should be put into improving the physical plant of health facilities or into health education instead, and to provide information on whether the reasons people's practices are the way they are depend on attitudes which health education can modify or on deep-seated cultural beliefs which it will be hard to change. Specialists particularly interested in one aspect of the project, whether it be ORT or family well-being, may wonder why certain questions of interest have not been asked. The questionnaire has attempted to hit the most important aspects of each part of the project; going into more detail would make the questionnaire too long for respondents and the quality and reliability of their answers would suffer. Thus, such classic questions as "How many children would you like to have?" or "How many living children, if any, did you have when you first did something or used a method to avoid getting pregnant?" or "At what age(s) do children most commonly suffer from diarrhea?" have not been included. The reason they were not included is that they are too specialized and of less importance to this project than other types of information. The questionnaire cannot accommodate all things for all people.

Likewise only a limited number of questions about Information, Education and Communication have been asked in the questionnaire. Material concerning IEC is discussed in a separate section of the report.

H. Information For Which the Questions Were Designed

Each question in the questionnaires was designed to provide information either on its own or in conjunction with other questions. Sometimes questions provide information of more than one sort. Sometimes the information from several questions can be linked together to arrive at an important point; the constituent questions may in themselves seem to provide uninteresting information but each piece is critical for an accurate overall answer.

Both questionnaires contain questions which are basic to gather information to achieve project goals. They also contain questions to answer evaluation criteria. In addition they contain questions which are less important but often asked in such questionnaires. The following discussion will point out which questions are important and why. The other questions should be reviewed for interest but the paramount importance of keeping the questionnaire short should not be forgotten.

The questionnaires have been designed to be coded by the interviewer in the field, in order to save time and lessen the data processing burden.

1. Housing unit questionnaire

Questions 1-11 screen the people who slept in the household to determine who is eligible. These people are so marked in this screening questionnaire and an eligible respondent questionnaire should be administered to each. This Housing Unit questionnaire plus its screening sheet act as a reminder of all the people who should be interviewed.

Question 12 determines housing unit composition. This question is suggested in the scope of work. Whether differences in composition of housing units will lead to differences in reactions to the project is questionable. Tying observed differences to housing unit composition would be difficult. It is suggested that this question be dropped.

Questions 13-14 are proxy indicators of economic status.

Questions 15-20 get information about household sanitation as well as economic status.

Questions 21-23 seek to discover the prevalence of different channels of communication for IEC

Question 24 determines the means of transport to medical facilities as well as acting as a proxy for income. Thus, people do get taken to the hospital in wheelbarrows. A family may, of course not own anything and have to borrow a cart or whatever to take the patient to a medical facility, but doing so takes even longer. Therefore the answer to this question helps establish the behavior of people in the optimum position to get to medical facilities,

2. Eligible respondent questionnaire

Questions 1-5 establish the respondent's age. Question 4 is necessary if the respondent does not know his/her age. Using outstanding events, one can bracket the year in which the respondent was most likely born. Within each region of the target S-Ps, the survey team should elaborate a list of local, well-known dates by which to place people's age.

Questions 6-8 establish migration trends and the social background of the respondent. It is recommended that these questions be dropped.

Questions 9 and 10 determine the level of education of the respondent.

Questions 11 through 13 are attitude questions, to determine the impact of religious ideas about family well-being and the reason for having children. Having children as old age insurance is more easily remedied by improved child health care and reduced mortality than is having children for social status. Animists usually describe themselves as "not practicing a religion."

Questions 14 through 25 establish the approximate economic level and income available to the eligible respondent and the people under his/her charge for health care and other needs.

Questions 26 through 29 about children are a lead-in to child health questions but also determine the minimal size of the Family Unit.

The child health questions are asked about specific children in order to get around people's tendency to tell the interviewer what they think he wants to hear. People are more likely to give true information when the questions are taken out of the realm of judgements and values. These questions also help to calculate morbidity.

Questions 33 through 38 provide information about people's decisions about health care. They also provide information about why they do or do not use health facilities. They may also give some indication of the importance of village level health care.

Question 39 begins to gather information about Oral Rehydration Therapy.

Question 40 can be used in conjunction with the BSPE inventory list of villages around health centers and the distance in kilometers between them to determine if distance is a factor in deciding about health care.

Questions 50 through 52 gather information about preventive health care and vaccination.

Questions 53 through 64 discover information about child feeding and breastfeeding.

Questions 57 through 64 inquire about weaning, since it appears that abrupt weaning of children who have not yet learned to eat other foods is a problem in this area.

Questions 65 through 68 inquire about people's knowledge of malnutrition.

Questions 69 through 81 deal with people's knowledge and attitudes about diarrhoea and ORT. Questions 70 and 71 concern knowledge and attitudes which are already widely known to health personnel and are therefore much less important and can be left out.

Question 72 gathers information about people's understanding of the effects of diarrhoea; the health personnel interviewed in the Moyen-Chari were anxious to learn about this.

Questions 82 through 89 seek information about adult morbidity and use of health facilities, as well as attitudes about health facilities.

Questions 90 through 97 inquire about a woman's knowledge and practice of contraception.

Questions 98 through 102 find out knowledge about AIDS and how the woman learned about AIDS.

Questions 103 through 106 attack the question of family planning again since co-wives may reduce pressure from the husband for sexual intercourse. One common method of birth control in this area is permanent separation once a woman is tired of having children. She leaves her husband and becomes economically independent or rejoins a "brother" or "sister" or "son". This is known, in Sara as "ta ko sei", she catches her breath or takes a rest.

Questions 107 and 108 provide information about age of marriage. Health personnel interviewed in the Moyen-Chari felt that the practice of female excision did not lead to complications in childbirth. If medical personnel in NDjamena are not of the same opinion, question 109 on excision should be excluded. A polite way to ask the question in Sara is to inquire if the girl has been initiated, then if she has been excised. (Ke aw ndo ti wa? Ke ijai wa?)

Questions 110 through the end develop a truncated five-year birth history. Questions 111 through 113 inquire about sterility and birth control.

Questions 115, 118, 123 through 133 inquire about prenatal care and childbirth attitudes and practices.

Questions 117, 119, and 120 through 127 inquire about child spacing.

This series of questions is repeated until the woman's birth history in the last five years has been covered.

The final 8 questions serve as a cross-check on the reproductive history the woman has given. Any inconsistencies discovered here should be ironed out before the interview is concluded.

The time the interview begins and ends will serve as a guide during pretesting to how long the actual survey may take. It will indicate

whether the questionnaire needs to be shortened. During the training school it will be one indicator of the quality of the interviewer.

The man's questionnaire covers his morbidity in the last two weeks and one year, men's attitudes, knowledge and practice of family planning, and AIDS.

I. Ethnomedical Information

Question 24 discusses traditional treatments for illnesses. There are many different kinds of traditional healers but they are all grouped together here, along with marabouts since much of their medical knowledge is "magical". War veterans who were nurses in the army often give people injections in the village if the person can obtain the medicine.

Question 36 also considers most kinds of traditional cures. Certain illness which are caused by sorcery, witchcraft, and fetishes (e.g., "besi" or "yo" in Sara, "girang" in Day), likewise the Arab concepts of "shitan" (devils) and the evil eye need to be treated in the village since they require the knowledge of ritual specialists or require that social relations with the sorcerer, witch or person with the evil eye be improved.

Certain "besi" are particularly tied to children's diarrhoea. Besi kada (do girang in Day) is particularly infamous for causing a child to suffer from it. The diarrhoea is cured by sacrificing to whichever "besi" has been determined to cause it (determined perhaps by visiting an oracle); this cure does not keep the mother from taking other, more specifically medical actions as well, such as watching the child's food intake. Hence diarrhoea due to an attack from a "besi" could still be treated with ORT.

All kinds of diarrhoea recognized by medical personnel are also recognized in Sara ethnomedicine. Their medical categorization does not include any additional types of diarrhoea. Therefore, question 71 should be dropped.

Questions 53-56 are tied to the general belief that colostrum is bad for the baby and that it must be expressed so that good milk will come in; until then the baby is not nursed.

Sterility, addressed in 113, can be caused, people believe, not only by illness but by ill will created over unpaid bridewealth or anger on the part of a mother or father towards a daughter. It can also be the outcome of basic physical incompatibility (ka si go nan ti ale) which can often be resolved by the couple divorcing and remarrying someone else. Frequent spontaneous abortions and stillbirths are also caused by ill feelings over unpaid bridewealth. Death of the fetus in utero and the death of a child in the first nine days after birth (but not from neonatal tetanus) are also known to be brought about by sorcerers and witches.

Even though the causes of certain illnesses are "magical" by western medical judgment, some of these sicknesses are probably more open to project-recommended changes in or additions to traditional medical treatment. If the traditional treatment already includes herbal or holy drinks (ie similar to ORT), washing in special herbal or holy liquids (which would be good for some skin diseases, wounds, etc.), eating special meals, or drinking gasoline (which people do because they can't afford or can't get vermifuges), then project-recommended treatments can constructively use these similarities.

Other illnesses and some problems with fertility and childbirth, which are judged to be caused or aggravated by strained personal relations, are probably much less likely to be treated in project-recommended ways. Thus malnutrition, illnesses with symptoms of swelling and edema, hemorrhages (though not necessarily hemorrhages in pregnancy, which are sometimes diagnosed as being purely physical in nature), frequent spontaneous abortions, stillbirths, early death of a newborn and problems during delivery are more likely to be treated at home or in the village, where the problems in social relations can be ironed out, before they are referred, as a last resort, to a medical facility.

Family planning methods may run up against two local concepts. If conception is not due to a single act of intercourse, methods which require precautions before every sexual act are probably less likely to be accepted. Long-term methods such as pills, injections and implants all fit into local ideas about effective medical treatments, but they will have to overcome the widespread idea that they bring about permanent sterility.

Recommendation 23: The project should emphasize treatments and Family Planning methods which are compatible with local medical concepts. Family Planning will have to convey the idea that fertility can also be controlled for short periods, not just stopped forever.

J. Summary of Recommendations

Recommendation 18: Women of childbearing age (12-49) and mothers of children under five and men who are the sole caretakers of children are the eligible respondents for this study.

Recommendation 19: The housing unit is the sampling unit and a unit of analysis. The family unit will also be a unit of analysis.

Recommendation 20: Extensive training in administering the questionnaire in Sara should be part of the field school. The questionnaires should be translated into Arabic.

Recommendation 21: Effort should be made to keep the questionnaires as short as possible and yet answer all the evaluation criteria. Those questions which are not needed to meet evaluation criteria or which

provide basic guidelines for project staff need to be reviewed and those not meeting a real need should be removed.

Recommendation 22: Data code boxes should be on the right hand side of the questionnaire pages to assist staff in keying the data.

Recommendation 23: The project should emphasize treatments and Family Planning methods which are compatible with local medical concepts. Family Planning will have to convey the idea that fertility can also be controlled for short periods, not just stopped forever.

IV. INFORMATION, EDUCATION, AND COMMUNICATION

A. The Use of the Questionnaire for Designing Information, Education, and Communication Materials (IEC)

1. Information available on IEC

On her journey in the Moyen-Chari the sociologist discussed with the health workers, regional and village officials and villagers she met their experiences with communicating health information. They were almost unanimous in some of their recommendations and comments, which also coincided with the sociologist's experience and observations of life in the bush. Because of this uniformity of opinion the sociologist prefers to state their conclusions in this report rather than putting additional questions into the questionnaire and devoting considerable interview time on the questionnaire to IEC. A primary consideration with any questionnaire is to keep it as short as possible so that the interviewee's attention does not wander. Since there is already considerable agreement among those people, such as health workers in the Moyen-Chari, already involved in IEC, it is better to use interview time for questions whose answers are more problematic.

Recommendation 24: Only a minimum number of questions on Information, Education and Communication should be included in the questionnaires.

2. Information to be obtained on the questionnaire about IEC

The questionnaire proposed for use among the target population of the Moyen-Chari does make certain inquiries into the best means to inform, educate and communicate with the urban and rural population. These questions deal with the main form of communication in the Moyen-Chari, the radio. Cinema and "cinema-video" (or video cassettes) are available only in the main town of Sara. Questions about media other than radio are, therefore, irrelevant for the majority of the population and should probably be left out and the interview time used for something else. It is unlikely that cinema or cinema-video will be used for spreading educational messages on health in Chad. It must first be determined if relevant audio-visual material exists. It is possible that there may be some Indian movies dealing with health themes; Indian movies have proven highly popular in other parts of Sahelian Africa.

B. Communication

The health workers and others consulted agreed on several aspects of communication.

- o Colorful posters interest people and elicit questions

- o People who listen to radio hear the songs but "tune out" from the talk
- o It is hard to get people to attend meetings
- o Audio-visual material attracts attention but is not available to most people, expensive and hard to use

1. Posters

a. Posters get people's attention

In infirmaries and dispensaries where people sit and wait before seeing a health professional, they have considerable time to study and wonder about the posters they may see. They often pose questions to the health professional asking for explanations. Posters showing problems--such as malformed pelvises or symptoms of illness--are particularly striking to patients. But they have some problem in identifying illnesses which are shown in photographs of non-negroid people. A poster in one clinic on the development of the fetus seems to increase their patients' understanding of prenatal care.

b. One picture is worth a thousand words

Even though much of a poster is often taken up by text explaining the pictures, most people who see them cannot read. All the health workers say they need is a brief text to prompt them in their explanations.

c. Pictures are highly sought after

In rural villages people are always eager for pictures, photos and magazines which they can use to decorate their walls. The sociologist often found it difficult in villages with deep wells to buy water, even for a hefty price, but when she had a Newsweek or Jeune Afrique people were glad to trade for water.

d. Posters using a series of pictures/designs to tell a story are more self-explanatory

A poster designed to tell a story through a series of actions/gestures/events is more self-explanatory than a single picture. Health workers felt that the Oral Rehydration Therapy (ORT) poster, created for the "Programme National de Lutte contre les Maladies diarrhétiques", under the MSP, AID and UNICEF, which simply showed women (one from the North, one from the South) giving a baby a drink, with the ingredients lined up in front and a text in Arabic and French explaining ORT, would have been more effective had it been designed like the other ORT material for the project which showed a child with diarrhoea, followed by a picture of the mother's hands mixing salt and sugar in a

liter container of water, then giving the child a drink in the daytime, then the nighttime.

e. Posters showing contrasts are more self-explanatory

A picture of parasites and of people with and without parasites is understood easily by the people visiting the health facility where it is displayed.

f. Diffusing posters should be a priority

Few health facilities had more than one or two posters, if any.

2. Radio

a. Radio is popular in the Moyen-Chari

During the 1989 cotton season the Rural Development Office (ONDR) offered a cheap radio (a little over 6,000CFA) widely to farmers in order to increase listenership to agricultural information broadcasts. All the radios were sold and far more people were willing to buy than they had stock to satisfy.

Having a radio with no batteries does not aid communication by radio. However in all the towns the sociologist visited in the Moyen-Chari in April 1990, even towns far from main roads such as Kaba 7, Kaba 8 and Warai, she was able to find radio batteries for sale. Their availability in the rainy season was not discovered.

b. Music is more popular than talk

People often seem, in the sociologist's experience, to turn on the radio for noise and company rather than to listen to the spoken message. During previous research she asked villagers whether they listened to the news programs and lists of announcements. Most said they did not really pay attention unless they heard a name which caught their attention. However they do listen to the music, even in foreign languages, turning up the volume when a song comes on. People learn catchy songs and walk about singing them, tap them out on drums during village dances, and women sing and clap them while pounding millet.

c. Only Radio Ndjamena reaches everywhere in the project area

Radio Sara reaches a very limited area, even within the S-P Rural of Sara. Banda/Sonasut near Sara receives it well but Koumogo and Maro, in the same S-P, do not. Radio Moundou reaches part of the project area, but just halfway across, to Koumra, Bekamba and Bediondo.

3. Newspapers and magazines have limited circulation

Both newspapers and magazines are rare in rural villages (one of the reasons pictures are so popular). The national daily newspaper is sent to only about 800 recipients so the impact of the printed press is limited (see Faradji Moulaye, "Le Role des Media dans le Developpement des Services du Bien-Etre Familial au Tchad," Conference sur le Bien-Etre Familial au Tchad, 15-21 Oct. 1988).

4. Films and television are available only in big cities

There is no television outside the capital city and a movie theatre in Sara as well as the capital. "Cinema-video" or movie cassettes shown to a paying audience are said to be popular in Sara.

5. Traditional theatre and other forms of entertainment are few

There is no traditional secular theatre open to men, women or children that the sociologist knows. Story-telling is almost a lost art. The most frequent entertainment is dances in the village or quartier, with both traditional and popular live music being played by the villagers themselves.

6. Public meetings are hard to get off the ground

While conducting earlier fieldwork the sociologist observed numerous agricultural extension workers, health personnel, veterinarians and religious representatives hold meetings in villages. Even when the meetings had been announced by the canton or village chief few people came. A person would peek a look at the meeting place, decide not enough people had come, and go home again. Often the meeting never reached a critical mass beyond which most people would decide it was time to come. To get people to attend a meeting one needs some sort of "hook" to pull them in, something with a beginning for which lots of people will want to be present.

7. Culturally appropriate messages

It is very difficult to determine from a questionnaire whether certain kinds of messages are or are not culturally appropriate, since there are so many kinds of possible messages. Pretesting a message to see whether it is comprehensible, attention-getting, etc. can determine at the same time if it is culturally appropriate or shocking and upsetting.

Certain basic concepts in Sara and related cultures in the Moyen-Chari may, however, determine whether health-related messages are accepted or not. These basic concepts are discussed here.

a. Malnutrition

Sometimes illnesses are attributed to sorcerers or witches. The questionnaire may reveal that certain illnesses are more typically considered due to evil. The sociologist has noted already that wasting illnesses and kwashiorkor are often believed to be the results of witchcraft (kuma). Unexpected hemorrhages are due to sorcery. If an illness is diagnosed as due to sorcery or witchcraft it is unlikely that the patient will be referred to a health facility since the cure for the illness is seen to be the rectification or soothing of upset relationships between people in the village. People are likely to stay in the village to try to straighten things out. It may, therefore, be unrealistic to expect cases of malnutrition to go to health facilities.

b. Childhood diarrhoea

Childhood diarrhoea is perceived as dangerous but is sometimes provoked by fetishes (besi or yo) which must be appeased; there is no logical or cultural reason why this belief should interfere with ORT, however.

c. Childbirth

Problems in giving birth are also frequently attributed to problems in social relationships. The way to deal with a complicated birth is, therefore, to try to straighten out these problems so that the birth can continue normally. Hence if bridewealth is still outstanding it should be paid. A woman who is having trouble is sometimes believed to have committed adultery and her friends and family put pressure on her to confess so that she will deliver. Fetishes may prevent an easy childbirth and so the owner of the fetish must be found and asked to perform his ceremony. All these beliefs sometimes prevent people from immediately referring a woman in difficult labor to a medical center. Only when these solutions do no work do people consider the hospital.

The risks that a primipara undergoes in childbirth are well known and the subject of a proverb: "Nga tog made yo kon" or "The firstborn causes his mother's death".

d. Sterility

Sterility is sometimes thought to be caused by uncontrollable factors: if a man's and woman's basic natures are incompatible they may be unable to conceive (ka si go nan ti ale). Likewise outstanding bridewealth may keep a woman from conceiving; however payment is supposed to relieve the problem.

e. Family planning

The Sara idea of how conception occurs is antipathetic to certain kinds of family planning. A woman does not become pregnant after one sexual act but only after having intercourse a number of times. It takes a number of times to build up the stopper of semen which will prevent the menstrual blood from running and allow it to develop into a child. The belief that intercourse must occur more than once for conception has been the basis for many court cases in which the parents of a pregnant girl sue the family of the boy she has named as responsible. The boy may argue that she must have slept with other boys as well, since he had relations with her only once or a few times.

Given this view of conception the necessity for practicing birth control may not always be evident. Methods which require an active effort to prevent pregnancy for every act of intercourse, such as diaphragms, etc. may be less well understood than longer term methods such as the pill or implants. Nor is the rhythm method likely to succeed. Another belief which conflicts with the rhythm method is that a woman is fertile throughout the time between her periods. Implants, however, may fit into a category of traditional medicine. For aches and pains and headaches people make little slits in the skin and rub in medicine. People seem to believe that injections make a woman sterile for life; indeed discussions of family planning using western methods seem to assume that all methods will terminate a woman's ability to procreate, not just interrupt it temporarily.

C. Information

An attitude widely held is that "dawa Nassar", or western medications, are far more effective health remedies than traditional medicines and home-prepared remedies. Homemade ORT solutions seem to suffer from this discrimination. Moreover, the good health and longevity considered typical of "Nassars" is attributed to the ease with which they can obtain western medicines, not to such hygienic habits as washing one's hands before eating or properly disposing of sewage. To illustrate this attitude: the sociologist stayed with a Village Health Worker (ASV) who had stopped working actively as an ASV in 1984, for lack of support. In 1990 people were still coming to him to seek advice on what "dawa Nassar", or western pharmaceuticals, to get, but not for advice on digging latrines, etc. When he explained to mothers of children with diarrhoea how to prepare a solution of sugar, salt and water at home to give to give the child, most mothers told him it would not work, that they wanted "dawa Nassar" instead. Only when he asked them to buy the sugar and salt and bring it to him and he prepared the solution himself did the mothers use it.

Likewise, for ASV, village Red Cross workers, and traditional midwives who have received some professional training, contact with western medicine is also important. Such contact is one aspect of the follow-up and support which all the health workers contacted felt was

the key to successful village-level health education. Such contact assures the workers that their job is important and worthwhile, helps them to resolve any problems, and gives them status as agents of the outside, therefore worth listening to; they are not just simple villagers.

D. Conclusions on Information, Education and Communication

- o Posters grab people's attention and lead them to ask questions
- o Pictures, posters and photos are popular in rural and urban areas alike
- o A series of pictures/contrasts is a more effective way to educate most people in the target area than a poster with lots of text
- o Radio gets more attention with music than with talk
- o Radio messages reach all the project area only on Radio NDjamena
- o Newspapers/magazines/television/films are not an effective way of reaching people in the Moyen-Chari; cinema-video may be an exception in urban areas
- o Traditional theater does not exist and so cannot be used to spread health messages but traditional dances may reinforce health messages if they appear in the format of popular songs
- o Public meetings, even with official support, are not well attended
- o People learn more about ORT by preparing it than by being told how to
- o Medication and messages with the imprimatur of western support are deemed more efficacious and important than remedies prepared in the village with household ingredients or village health agents

E. Recommendations on IEC

Recommendation 24: Only a minimum number of questions on Information, Education and Communication should be included in the questionnaires.

Recommendation 25: Posters, lots of posters, should be used to publicize health messages. Newspapers and magazines should not be used.

Recommendation 26: Posters should be distributed in rural areas as well as health facilities and in urban zones. A colorful poster given to mothers to put up in their house will probably receive more attention than the ORT reminder leaflet suggested in the project paper (p/55).

Recommendation 27: Posters should be colorful; tell a story in pictures, not words; contrasts between correct and incorrect behavior and the consequences.

Recommendation 28: Health messages for the project area should be broadcast on Radio NDjamena and Radio Moundou, not just Radio Sara in the Moyen-Chari. This is necessary to reach the target area but has the additional benefit of reaching additional people outside the target area.

Recommendation 29: Radio messages in the form of a popular song, followed by a brief spoken explanation, should be developed, pretested and used.

Recommendation 30: If public meetings are used for education or demonstrations, people should be attracted by some exciting start-off event. For example, it could be announced that 200 posters will be distributed among the audience just after the meeting begins at 16:00 (be sure and specify that the quantity is limited and exactly how many or some people will be offended that others received one while they were refused, which will generate ill will and criticism). Or a music group/theater group could start the meeting, etc.

Recommendation 31: Demonstrations should give the audience as much chance for "hands-on" experience as possible.

Recommendation 32: One or more health messages should include the idea that home prepared ORT can be just effective as medicine from a doctor in preventing dehydration. Another might try to explain that the longer average lifespan in developed countries is due in major part to good hygienic practices, not just easy access to western medications.

ANNEX 1

English Identification Sheet

KNOWLEDGE/ATTITUDES/PRACTICES
 MATERNAL AND CHILD HEALTH PROJECT
 MOYEN-CHARI

BSPE/USAID
 (677-0064)

Identification Sheet

Health District

Sarh-1
 Maro-2
 Koumra-3

Stratum urban-1 rural-2

X	X	X	
X	X		
X	X		
X			

Replication

Paper Stratum

Cluster

Housing Unit Number

--	--	--	--	--	--	--	--

canton | village

Results
 (see code)

--	--

Interviewer Visits

Date	day month year
Name Interviewer	
Results	
code: 1. completed 2. no one available to answer/revisit 3. no one home/revisit 4. put off till later 5. empty house or false address 6. no one slept here last night 7. interview refused 8. interview refused in course of interview 9. other _____	total no inhabitants # _____ total no eligible respondents # _____ total no eligible women # _____ total no children # _____

reviewed in field	reviewed bureau	keyed by	keyed by	
name				
date				

ANNEX 2

French Identification Sheet

Fiche d'Indentification

District Sanitaire(Sarh 1; Maro 2; Koumra 3):

Canton:

Village:

Stratum(urbain 1; rural 2):

Replication:

Stratum papier:

numero du cluster

Numero maison

Visites de l'Enqueteur

Date	jour mois an
Nom Enqueteur	
Resultat	
code: 1. menee a bien 2. personne en mesure de repondre 3. personne a la maison 4. repousee a plus tard 5. logement vacant ou fausse adresse 6. personne n'a dormi ici hier soir 7. interview refusee 8. interview refusee au cours de l'entretien 9. autre _____	total des habitants total hommes cibles total femmes cibles total enfants

	revu sur terrain	revu au bureau	frappe par	frappe par
nom				
date				

65

ANNEX 3

English Housing Unit Questionnaire
Maternal and Child Health

HOUSING UNIT QUESTIONNAIRE: MATERNAL AND CHILD HEALTH
 MPH/USAID (677-0064)

The Ministry of Health has sent us here because they are interested in improving the health of mothers and their children. The Ministry would like to know about the health problems that women and children have. We would like to ask the people who live in this house some questions about their health and their health needs. Everything you say to us will be kept strictly confidential.

Interviewed in French-1 Sara-2 Arab-3

1	2	3	4	5	6	7
#	Record names of who slept here last night	Does usually live here <input type="checkbox"/> yes-1 <input type="checkbox"/> no- 2	Sex	Age	Who cares for: Anyone <20 yrs. listed in Co. 5? <input type="checkbox"/> yes-line # in Col. 6 & cont. After last child go to 11 <input type="checkbox"/> no-go to 8	Eligible Respondent
01			100	110		
02			101	111		
03			102	112		
04			103	113		
05			104	114		
06			105	115		

Int.Instr. 1:if more than 6 persons, cont. on second form

67

8. Does any one take care of _____ on a day to day basis? yes-go to 9 no-go to 10

9. Did that person sleep in this house last night?
 yes-enter name in col. 2 no-place X in col. 5
 complete cols. 1 -7 cont. with next child

10. Does _____ care for other children?
 yes-mark as eligible resp. no-place X in col. 6 and
 in col. 7 cont. with next child

Int. Inst. 2: Check in col. 7 each person in this house who:
 * cares for children
 * is a woman 12-50 then go to 11

11. Does anyone else who slept here last night take care of children on a day to day basis?

yes-mark as eligible resp. in col. 7 no-continue

Int. Inst. 3:	
Indicate if supplementary sheets are used: <input type="checkbox"/> yes <input type="checkbox"/> no	
Total number people who slept in housing unit.....	
Total number of usual inhabitants of housing unit.....	
Total eligible respondents.....	
Total eligible male respondents.....	
Total eligible female respondents.....	
Total number children in housing unit.....	

68

11. (cont.) I would like to make sure we have not forgotten anyone.

a. Is there anyone else who slept here last night?

yes-add their in col. 2 and cont. no-go to 12

If yes, add their names and ask questions starting col. 1

Does anyone else usually live here? yes no

If yes, add their names and ask questions starting col. 1

12. Relationship of names listed in Col.2 to the Respondent.

<p>Code:</p> <p>1-husband/wife 13-co-wife's child</p> <p>2-child 14-child of divorced</p> <p>3-cowife wife</p> <p>4-own mother 15-child of deceased</p> <p>5-own father wife</p> <p>6-"father" 16-foster child</p> <p>7-"mother" 17-brother</p> <p>8-grandparent 18-sister</p> <p>9-grandchild 19-visitor</p> <p>10-maternal uncle 20-other</p> <p>11-maternal nephew/ 21-NA</p> <p> niece</p> <p>12-servant</p>	Int. Inst. 4	
	copy names from	
	col. 2	
	name	code
		140
		141
	142	
	143	
	144	
	145	

Int. Inst. 5: Observe housing unit and record below

13. House built of:

1=cement 2=mudbrick 3=straw

enter code

4= other _____

14. Is the roof made of:

1-straw/mud 2-tin/tiles

enter code

3= other _____

Transition: Now, I would like to ask you a few questions about your family's health situation.

15. Where do you get the water you drink?-----enter code(s) below

code every mention in code box to the right

1-water piped to house	6-public pump
2-public fountain	7-river or stream
3-well in house	8-bought from vendor
4-public cement well	9-other
5-public dirt well	10-NA

170	
171	
172	
173	

16. What kind of toilet do you have?

1-WC
2-latrine
3-empty lot nearby
4-bush
5-other _____
6.NA

enter code

175	
-----	--

17. Do you have any soap in the house right now?

- yes-enter 1 in code box then go to 18
- no -enter 2 in code box then go to 19

176	
-----	--

18. What do you use it for?

1-laundry	4-bathing children
2-bathing	5-washing dishes
3-washing hands	6-other _____

180	
181	
182	
183	
184	
185	

enter all codes mentioned →

10

24. Does anyone who slept here last night own a:

Code yes = 1 and no = 2 for each

Bicycle	200		Car	204	
Wheelbarrow	201		Truck	205	
Cart	202		Frigo	206	
Motorbike	203		_____	207	
			other		

Transition: Thank you very much for cooperating. I hope that the information you have given today will help improve your and your family's health. But I still have some specific questions which I would like to ask mothers with children and girls and women who might have children, since our project is especially interested in their good health. With your permission I would like to talk with them one by one.

If the respondent is herself an eligible woman begin the individual questionnaires with her.

Comments of interviewer: _____

Comments of Supervisor: _____

ANNEX 4

English Eligible Respondent Questionnaire
Maternal and Child Health

The Ministry of Health and the United States are trying to improve the health of women and children in your region. In order for the Ministry to help you they need to know exactly what health problems you and your children have and the problems you have in childbearing. We hope you will explain your problems to us and answer our questions. Everything you say to us today will remain confidential. You will notice as I write that I mark down lots of numbers. All the information which will be given to the Ministry will be in the form of these numbers. Therefore no one will know what you said today.

Interview begun at _____ h.

1. Your name:

220	
-----	--

2. Do you have an identity card/birth certificate/ UNIR party card? May I see it?

Interviewer: mark the year of birth in box 220 then ----> 5; if the respondent does not have a card --->3

3. When were you born?

year of birth.....

221	
-----	--

Interviewer: If respondent does not know birth date---> 4. Mark the mid-point date in box 222. If respondent knows date --->5.

4. Were you born before or after.....

- Code:
- 1.The Civil War 1979-82
 - 2.Francois Tombalaye became Ngarta 1973
 - 3.Independence from France 1960
 - 4.The Second World War 1940-1945
 - 5.People were forced to work on the Congo-Ocean Railway 1924-1936
 - 6.Farmers were forced to grow cotton 1929

74'

222	
-----	--

5. How old are you now?.....

Interviewer: Are 221 and 222 in approximate agreement? If not, try again

6. Were you born here?

yes- mark 1 in box 230

no- mark 2 in box 230

230	
-----	--

7. Before living here did you live in the bush -1 or
in town -2

231	
-----	--

8. Before living here did you
live in the same

1. Canton
2. S-Prefecture
3. Prefecture
4. region
5. country

232	
-----	--

9. Have you been to school?

yes-mark 1

no -mark 2

235	
-----	--

10. What grade did you reach?

Mark in box 234	
Code:	
1-Primary School-CP 1	7-CEG
2-Primary School-CP 2	8-Lyce
3-Primary School-CM1	9-University
4-Primary School-CM2	10-superior
5-Coranic School	11-other
6-Madrassa	

236	
-----	--

11. Do you conscientiously practice
a religion -1
or have you stopped practicing-2
or are you not religious -3 ?

Interviewer-mark in box 240. If 1 or 2 --> 12. If 3 --> 13.
--

240	
-----	--

12. What religion do you practice?

Code:	4-Bahai
1-Catholic	5-other
2-Protestant	6-NA
3-Muslim	

241	
-----	--

13. I would like you to complete the following phrase.

"Having lots of children is....."

242	
-----	--

Interviewer: Mark 1 for positive, 2 for negative in the first box of 242. Then mark the answer most resembling the statement offered by the respondent.

Code: positive evaluation	negative evaluation
1.old age insurance	6.very difficult
2.gain status in others' eyes	7.hard to take care of them
3.get lots of happiness out of life	8.sometimes bad for the health of the mother or child
4.guarantee progenity	9.other
5.other	

14. How do you earn your living?.....

250	
-----	--

Code: Interviewer: prompt respondent if necessary

1-farmer	8--craftsman
2-farmer/housewife	9--petty vendor in market
3-housewife	10-student
4-merchant	11-volonteer
5-salaried employee	12-unemployed
6-military	13-War Pensionner
7-worker	14-other

15. Do you own-1 or rent-2 your house?

251	
-----	--

Interviewer: If 1--> 17

22. From what sources?

23. How much do you get from each source?

Interviewer: Mark each source mentioned in 259	259	Interviewer: mark the sum from each source and then enter the total in box 260.	
1.farming			
2.petty commerce			CFA
3.craft			CFA
4.worker			CFA
5.War Pension			CFA
6.husband/wife			CFA
7.child			CFA
8.relative			CFA
9.other_____			CFA
Total supplement			CFA 260

24. Are you able to save any money each month?

yes-mark 1 in 261 --> 25

no -mark 2 in 261 --> 26

261	
-----	--

25. How much per month?.....

262	CFA
-----	-----

Interviewer: Calculate the total 257+260+262
Mark the total in 263.

263	CFA
-----	-----

78-

26. Do you have any children?

Interviewer: Mark in box 270

- yes-1
- no-2-->27

270	
-----	--

27. How many?.....

271	
-----	--

28. How many children do you take care of?.....

272	
-----	--

If I understand correctly you take care of ____ children and you have ____ children of your own?

29. What are these children's names?

- 01 _____ 04 _____ 07 _____
- 02 _____ 05 _____ 08 _____
- 03 _____ 06 _____ 09 _____

I would like to ask you some questions about the health of these children.

Interviewer: Mark the line number of each child in 29 then ask 30 each

30. Has _____ (line #, question 29) been ill during the last two weeks?

- yes-mark 1 in box 273 and-->32
- no-mark 2 in box 273 and ---> 31

273	
-----	--

31. Has _____ (line #, question 29) not had a cold, or diarrhoea, an eye infection or some sort of sicknes in the last two weeks?

- yes-->mark 1 in box 273 and-->32

no --> Take supplementary sheets and mark the line numbers of all children named in question 29. Begin at question 30 for each child until all the children named in 29 have been finished.

79

36. What treatment did you use?

Interviewer:Note every citation	278	
1-did first aid		
2-mended fracture/sprain		
3-gave herbal tea to drink		
4-gave packets of ORT or water-sugar-salt		
5-exorcised evil spirits/evil eye		
6-washed child with herbal infusions		
7-cupped		
8-slit with razor and rub in medicine		
9-drink water with Coranic ink		
10-make amulets		
11-drink gasoline		
12-give pharmaceutical products		
13-give an injection		
14-prepare a special meal		
15-other _____		

37. Or was it a case of sorcery/witchcraft? yes-1
 no -2

279	
-----	--

38. Why didn't you go to a medical facility?.....

280	
-----	--

Code:	
1.too far	4.child over illness quickly
2.too expensive	5.illness needs to be treated in village
3.illness not grave	6.other _____

81

Interviewer: If the child has been sick with diarrhoea and received ORT
--->39; if not -->41

39. Where did you learn to make ORT solution
or Sugar-water-salt?..... 281 -->42
1.Dispensary
2.Social Centre
3.Hospital
4.on the radio
5.from a friend/neighbour/relative
6.Village Health Worker/Red Cross Worker
7.other _____

40. What medical facility did you take the child to?..... 282

Code:	
1.dispensary	5.hospital
2.infirmery	6.pharmacy
3.Social Centre	7.private doctor
4.Medical Centre	8.other

41.Where did you take him? Name of town _____

Interviewer: Add kilometrage when do field review..... 283

42. Did you consult oracles? (If respondent
is a Muslim add)..... or a "marabout?" yes-1 284
 no -2

43. Was this a serious illness? yes-1 285
 no -2

44. Did you change the treatment you were
giving: yes--> 45 286
 no --> 46

- 82'

45. What change did you make?

- 1. took child to a medical facility..... 287
- 2. tried another treatment in villlge/at home

46. How much did you pay for these treatments?..... 288 CFA
Interviewer: If necessary do calculations

47. Is the child now
- 1. cured 289
 - 2. still sick
 - 3. deceased

48. Has this child been sick during the last year? yes-1 290 no -2

49. How much did you pay for his treatments last year? 291 CFA

Interviewer: Go back to question 30 for all the children for whom you have supplementary sheets.

50. Have your children been vaccinated? yes-1 -->52 292 no-2

51. Why not?..... 293 -->Interviewer Instructions

- | | |
|-------------------------------------|------------------|
| 1 PEV/Grandes Endemies did not come | 4 not necessary |
| 2 too expensive | 5 didn't want to |
| 3 too far | 6 other _____ |

52. Were they vaccinated by 1 PEV/Grandes Endemies 294 2 at a medical facility

Interviewer: If the respondent is a man-->l6l. If the respondent is a woman, continue here.

We are also interested in finding out about the health of newborn and young children. Would you be so kind as to give me some information about your children when they were little?

83'

53. What was the first thing which you gave _____ (put in name of one of respondent's own children) during the first two days after his birth?

- 1 plain water.....
- 2 boiled water
- 3 water boiled with leaves
- 4 milk in tin

300	
-----	--

54. Did you give him the breast during the first 2 days? yes-1-->56 301
 no -2

55. Why not?..... 302
 1-good milk was not yet running
 2-my milk was bad
 3-I didn't yet have any milk
 4-other _____

56. When did you first begin to nurse _____?..... 303
 1-after 2 days
 2-never

57 .At what age did you first give another food to _____ besides milk?..... 304

- 0-4 months-1 13-15 months-5
- 5-6 months-2 16-18 months-6
- 7-9 months-3 19-22 months-7
- 10-12 months-4 23-24 months-8
- after _____ was two
- years old--9

58. What was the first food you gave to _____?..... 305

- 1--plain gruel
- 2--gruel with water boiled with leaves
- 3--gruel with milk
- 4--gruel with oil
- 5--gruel with peanut butter
- 6--gruel with fish
- 7--gruel with vegetables
- 8--gruel with eggs
- 9--other _____
- 10-not yet old enough

84

59. After this first food what did you give _____ to eat?..... 306

- 1--boule without salt
- 2--plain boule
- 3--boule and sauce
- 4--vegetables
- 5--fruits
- 6--fish
- 7--meat
- 8--other _____
- 9--NA

60. At what age did you give _____ this food?..... 307

- 1. before 1 year
- 2. 12-15 months
- 3. 16-18 months
- 4. 19-22 months
- 5. 23-24 months
- 6. after 2 years
- 7. NA

61. At what age did you wean _____?..... 308

- 1. 0-4 months
- 2. 5-6 months
- 3. 7-9 months
- 4. 10-12 months
- 5. 13-15 months
- 6. 16-18 months
- 7. 19-22 months
- 8. 23-24 months
- 9. only after the age of 2 years
- 10. other _____
- 11-NA

62. Is this the usual age? -1 309
or younger -2
or older -3

63. Why did you decide to wean _____? 310

1. milk became bitter
2. pregnant again
3. child was ill
4. mother was ill
5. child was old enough
6. other _____

64. How did you wean _____? 311

1. I hid my breasts with clothing
2. I put a product on my nipples
3. I sent the child somewhere else
4. other _____

Interviewer: Let's talk about your children's health.

65. Do you know about the yes-1
 illness of wasted children? no-2 312

66. Do you know about the illness yes-1
 which makes children's feet no-2 313
 swell?

67. Do you know the illness which yes-1
 makes a child's skin peel? no-2 314

do'

68. What causes these illnesses?

Interviewer: mark every mention

1-mother pregnant before child old enough to walk	315	
2--malnutrition	316	
3--sorcery/witchcraft	317	
4- child of a devil	318	
5--evil spirits	319	
6--new pregnancy	320	
7--measles	321	
8--diarrhoea	322	
9--vomiting	323	
10-swollen uvula	324	
11-other_____	325	

69. Is it normal for a child to have diarrhoea?..... 326

1. yes, always
2. sometimes yes, sometimes no
3. no, it's bad

87

70. What can give a child diarrhea?

Interviewer: note every spontaneous mention in boxes 327-334 with 1.
Then ask if the others not spontaneously mentioned, can cause diarrhoea. Mark 1 for yes, 2 for no in boxes 335- 342

1--various foods	327		335	
2--dentition	328		336	
3--parasites	329		337	
4--fetishes	330		338	
5--malnutrition	331		339	
6--dirty water	332		340	
7--stomach aches	333		341	
8--other _____	334		342	

71. What kinds of diarrhoea can you name?

Interviewer: mark all spontaneous mentions

1-mucous	343		5-yellow	347	
2-liquid	344		6-foamy	348	
3-bloody	345		7-other	349	
4-green	346				

88.

72. What effect does diarrhoea have on _____?

Interviewer: Mark every spontaneous mention-1; mark those not mentioned- 2

1. dehydration	347	
2. sunken eyes	348	
3. child becomes weak	349	
4. child vomits	350	
5. child becomes thin	351	
6. other _____	352	

73. Do you continue to nurse _____ while he has diarrhoea?

yes-1 353

non-2

74. Do you give _____ something to drink when he has diarrhoea?

yes-1--->75 354

no-2 -->77

75. What do you give? 355

- | |
|---|
| 1--plain water
2--water boiled with leaves
(note names of leaves even in local language

3--water with roots
4--water/sugar/salt
5--ORT packets
6--boiled rice water
7--boiled carrots and water
8--other _____ |
|---|

Handwritten mark

76. Do you force the child to drink even ?

1. if he refuses	356	
2. if he vomits	357	
3. if he cries	358	
4. if he continues to have diarrhoea	359	

77. Do you know about ORT therapy or about sugar/salt/water

and how to prepare it?.....

360	
-----	--

- 1. she knows how to prepare it (ingredients/quantities)
- 2. knows ingredients but not quantities
- 3. doesn't know

79. Where did you learn to make ORT sugar/salt/water solution?.....

361	
-----	--

- 1. radio
- 6. friends
- 2. Social Centre
- 7. Village Health Worker
- 3. medical facility
- 8. Ministry of Health personnel
- 4. maternity
- 9. neighbours
- 5. relatives
- 10. other
- 11. NA

80. Do you give _____ anything to eat when he has diarrhea?

yes-1

362	
-----	--

no-2---> 80

81. What?.....

363	
-----	--

- 1-same food as usual
- 2-special foods
- 3--NA

Interviewer: Now I would like to ask you some questions about yourself, in order to learn about your life and your problems.

82. Have you yourself been ill in the last 2 weeks?

yes-1

364	
-----	--

no-2---> 89

90

83. With what?..... 365

Code:		
1-measles	8-otitis/sore throat	16-muscle pains or headaches
2-meningitis	9-conjunctivitis	17-kwashiorkor
3-tetanus	10-hematuria	18-post-partum complication
4-diarrhea	11-urinary infection	19-other
5-dysentery	12-skin infection	
6-cough 15+ days	13-trauma	
7-cough less than 15 days	14-food poisoning	
	15-fever	

84. How much did you pay for your treatment? 366 CFA

85 Did you go to a medical facility? yes-1-->87 367

no-2--->88

86. Why not?..... 368

Code:	
1.too far	4.illness quickly over
2.too expensive	5.illness needed treating in village
3.illness not grave	6.other _____

87. Were you satisfied with your treatment? yes-1-->89 369

no-2

88. Why not?..... 370

Code:	
1.not cured	4.poor quality of care
2.illness came back	5.no medicine available
3.too expensive	6.other _____

.91

89. Have you been to a medical facility in the last year? yes-1 no-2 371

Interviewer: The Ministry of Health wants to improve the health of mothers and children. Sometimes a woman does not want to have a child. The Ministry is concerned about this as well.

90. To your mind what are the reasons for avoiding a birth?

Interviewer: Note all mentions

1-no reason sufficient	381	7-health of the mother	387
2-unmarried/divorced/widowed mother	382	8-woman too young	388
3-births too close together/ previous child too young	383	9-woman too old	389
4-already too many children	384	10-other	390
5-does not want to have child	385	11-NA	391
6-having children is too much suffering	386		

92'

92. Do you know any ways to avoid an unwanted birth? What are they?

Interviewer: Mark all spontaneous mentions in boxes 400-439

1-abstinence	400	413
2-woman moves elsewhere	401	414
3-nursing baby	402	415
4-deliberate abortion	403	416
5-withdrawal by man	404	417
6-condom	405	418
7-pill	406	419
8-injection	407	420
9-IUD	408	421
10-abstinence in fertile time	409	422
11-tubes tied/ vasectomy	410	423
12-traditional _____	411	424
13-other	412	425

Interviewer: Ask question 93 about every spontaneous mention 400-412.
Mark 1=yes 2=no in boxes 413-425.

93. Have you used this method?

94. Where did you learn about this method?

Interviewer: Mark every mention-1, non-mention -2

radio/TV	426
Health personnel	427
spouse	428
neighbour	429

relatives	430
magazines	431
other	432
NA	433

-93-

95. Are you at present trying to avoid getting pregnant? yes-1 434 no -2

96. How?..... 435
 Interviewer: Mark the number of the code given above in boxes 400-412

Ask about every method not spontaneously mentioned in 400-412. Mark in boxes 436-446 1-known 2-unknown.
 If, during this discussion the woman remarks that a particular method does not work mark 1 in the associated box (447-457) Mark 2 for every method not mentioned in 447-457.

97. There are still other ways to avoid an unwanted pregnancy. Have you heard about _____?

1-abstinence	436		447				
2-woman moves somewhere else	437		448				
3-nursing baby	438		449				
4-deliberate abortion	439		450				
5-withdrawal of man	440		451				
6-condom	441		452				
7- pill	442		453				
9-injection/IUD	443		454				
10-abstinence during woman's fertile period. When is this period? _____	444		455				
11-tubes tied/vasectomy	445		456				
13.other _____	446		457				

94-

98. Do you know what AIDS is? yes-1 no -2--->103

458	
-----	--

99. How did you learn about this illness?.....

459	
-----	--

1-radio/TV 2-Health personnel 3-spouse
 4-neighbour 5-relative 6-friend 7-magazine 8-other 9-NA

100. Is AIDS just a sickness-1
 a serious illness-2 an illness which kills-3
 or something else-4?

460	
-----	--

101. Can AIDS be cured? yes-1 no-2 --->103

461	
-----	--

102. How?

462	
-----	--

1.medical treatment
 2.medicines
 3.prayer
 4.other _____

103. Are you married at present? yes-1---> 106 no-2

463	
-----	--

104. Have you been married before? yes-1 no -2

464	
-----	--

105. How did your marriage end?.....

465	
-----	--

By 1-divorce
 2-death of your husband
 3-you retired from marriage/separated from your husband

106. Did you have any cowives? yes-1 no -2

466	
-----	--

107. At what age did you first marry?.....

467	
-----	--

95

108. Did you marry before you had your first period? yes-1 468 no -2

109. Were you excised? yes-1 469 no -2

110. Have you been pregnant during the last 5 years? yes-1--->114..... 470 no -2

111. Why haven't you become pregnant?..... 471

- | | |
|---|--------------|
| 1-have not had intercourse | 4-sterility |
| 2-no menstrual period | 5-don't know |
| 3-doing something in order to avoid pregnancy | 6-other_____ |

Interviewer: If answers 3, ask question 112.
 If answers 4, ask question 113.
 For all other answers, go to question 114.

112. Would you please tell me what you have been doing in order to avoid a pregnancy?..... 472

- | |
|---|
| 1-nursing baby |
| 2-withdrawal of man |
| 3-fetishes (which ones?_____) |
| 4-absinace during fertile period (exactly when is it?_____) |
| 5-condom |
| 6-pill |
| 7-IUD |
| 8-injection |
| 9-implantation |
| 10-tubes tied/vasectomy |
| 11-other_____ |

96'

113. In your opinion, what is the cause of your sterility?

473

- 1-illness
- 2-husband and I are not compatible
- 3-non-payment of bridewealth
- 4-fetishes
- 5-someone cursed me
- 6-other _____

114. Are you pregnant right now?

yes-1

474

no-2--->117

115. Are you going to prenatal consultations?

yes-1-->117

475

no -2

116. Why not?.....

476

- 1-don't need to
- 2-too far
- 3-too expensive
- 5-see trained village midwife
- 6-see traditional midwife
- 7-other

117. How much time has passed since your last pregnancy?

477

Interviewer: If more than 5 years--->152

118. Did you go for prenatal consultations?

yes-1

478

no--2

97

119. With your last pregnancy did you give birth to a child who was

479	
-----	--

- 1- live?
- 2- dead at term
- 3- stillborn
- 4- aborted

Interviewer: If she answers 1 go to question 123. If 3 or 4, go to 120. If 2 go to 121.

120. In what month of pregnancy did you lose your child?

480	
-----	--

121. If the child died just after birth how long after the birth did he die?

months years

481		
-----	--	--

122. What was the cause of death?

482	
-----	--

Code:

- | | | |
|---------------------------|----------------------|-------------------------------|
| 1-measles | 8-otitis/sore throat | |
| 2-meningitis | 9-conjunctivitis | 16-muscle pains and headaches |
| | 10-hematuria | 17-kwashiorkor |
| 3-tetanus | 11-urinary infection | 18-other |
| 4-diarrhea | 12-skin infection | 19-sorcery/witchcraft |
| 5-dysentery | 13-trauma | 20-fetishes |
| 6-cough 15+ days | 14-food poisoning | 21-don't know |
| 7-cough less than 15 days | 15-fever | 22-God |

Interviewer: go to question 126

123. Is the child still alive?

yes-1

no -2 -->126

483	
-----	--

124. What is his name _____?

125. How old is he _____?

484	
-----	--

Interviewer: If this age is not in agreement with the date of the last pregnancy, reconcile.

126 Where did you give birth?..... 485

- 1-at home
- 2-just outside the village
- 3-on the road
- 4-at a medical facility
- 5-hospital

Interviewer: If she answers 4 or 5, go to 129.

127. Who helped you to give birth?
 Interviewer: note all mentions.

1-mother	486	
2-traditional midwife	487	
3-trained village midwife	488	
4-relatives	489	
5-no one	490	
6-other _____	491	

128. Just after birth did anyone put anything in the baby's eyes?
 What _____? yes-1 492 no -2

129. Did you have an uneventful birth? yes-1---> 132 no -2 493

130. What problems did you have?

1-water broke 24+ hours before birth	494	
2-presentation of cord or limb	495	
3-hemorrhage before birth	496	
4-in labor for more than 24 h.	497	
5-hemorrhage after birth	498	

.99'

131. When you had this problem what did you do?

1-went to medical center	499	
2-named person with whom adultery	500	
3-paid outstanding bridewealth	501	
4-prayed to God or fetishes	502	
5-other _____	503	

132. How long after this birth did you have your period again?

months years

504		
-----	--	--

133. Before this birth we have just talked about had you been pregnant?

yes-1

no -2---> 152

505	
-----	--

134. How much time was there between this last birth (the birth of _____124) and the previous pregnancy?

months years

506		
-----	--	--

135. With the preceeding pregnancy did you give birth to a
 1- live infant?
 2- died at birth
 3- stilbirth
 4- abortion

507	
-----	--

Interviewer: If she answers 1 to to question 139.

136. In what month of pregnancy did you lose your child?

508	
-----	--

137. How long after the birth did the..... child die?

month year

509		
-----	--	--

100

138. What was the cause of death? 510

Code:

- 1-measles
- 2-meningitis
- 3-tetanus
- 4-diarrhea
- 5-dysentery
- 6-cough 15+ days
- 7-cough less than 15 days
- 8-otitis/sore throat
- 9-conjunctivitis
- 10-hematuria
- 11-urinary infection
- 12-skin infection
- 13-trauma
- 14-food poisoning
- 15-fever
- 16-muscle pains and headaches
- 17-kwashiorkor
- 18-other
- 19-sorcery/witchcraft
- 20-fetishes
- 21-don't know
- 22-God

139. Is the child still alive? yes-1 no -2 -->124 511

140. What is his name _____

141. How old is he _____? 512

Interviewer: If this age is not in agreement with the date of the preceding pregnancy, reconcile.

142. Did you go to prenatal consultations? yes-1 no -2 513

143 Where did you give birth?..... 514

- 1-at home
- 2-just outside village
- 3-on the road
- 4-in a medical facility
- 5-hospital

Interviewer: If she answers 4 or 5 go to 146.

101

144. Who helped you to give birth?

Interviewer: note all mentions

1-mother	515	
2-traditional midwife	516	
3-trained village midwife	517	
4-relatives	518	
5-no one	519	
6-other _____	520	

145. Just after the birth was anything put in the baby's eyes?
 What _____? yes-1 no -2 521

146. Did this birth occur without any problems? yes-1---> 150
 no -2 522

147. What problems did you encounter?

1-water broke 24+ before birth	523	
2-presentation of cord or limb	524	
3-hemorrhage before birth	525	
4-in labour 24+ hours	526	
5-hemorrhage after birth	527	

102

148. What did you do when you had these problems?

1-went to medical facility	529	
2-confessed name of adulterer	530	
3-paid outstanding bridewealth	531	
4-pray to God or fetishes	532	
5-other _____	533	

150. How long after this birth did you get your period?

months years

534		
-----	--	--

151. Before this birth and pregnancy (birth of _____ 139) were you pregnant?

yes-1

535	
-----	--

no -2-->153

152. How much time occurred between these two pregnancies (birth of _____ and previous pregnancy?)

536	
-----	--

Interviewer: If the time between this previous pregnancy and today is less than 5 years, take another Eligible Individual Questionnaire and continue to ask questions on these other pregnancies of the last 5 years. If not go to --->153

153. At what age did you become pregnant for the first time?

537	
-----	--

154. Did you give birth with your first pregnancy to a

- 1-live infant
- 2-died at birth
- 3-stillbirth
- 4-abortion

yes-1

538	
-----	--

no -2-->158

103

155. Is the child still alive?

yes-1

no -2-->158

539	
-----	--

156. What is his name _____ ?

157. How old is he _____?

Interviewer: If 157+153 + approximately the age of the woman (see question 5)-->158; if not, try do review her birth history.

158. How many times have you given birth to live children?

540	
-----	--

159. How many of your children have died afterwards?

541	
-----	--

160. How many of your children are alive today?

542	
-----	--

Interviewer: If 160 + 159- 158, continue.
If not, try to reconcile her birth history.....

Interviewer: I would like to thank you very much for your help today. I assure you that I will not talk about what we have said with anyone. But I hope that the numbers which you have given us today with your answers wil help improve your health situation.

Interviewer: Note the time the interview finished _____

Individual interviewed in
1-French
2-Sara
3-Arab

543	
-----	--

Interviewer: Did you note on the identification sheet that this interview has been completed?

Commentary of the interviwer and supervisor:

104

MAN'S INTERVIEW:

Interviewer: Now I would like to ask you a few questions about yourself, in order to learn about your life and your problems.

161. Have you ben sick during the last 2 weeks? yes-1 no -2 550

162. With what?..... 551

- Code:
- | | | |
|---------------------------|----------------------|-------------------------------|
| 1-measles | 8-otitis/sore throat | |
| 2-meningitis | 9-conjunctivitis | 16-muscle aches and headaches |
| | 10-hematuria | 17-kwashiorkor |
| 3-tetanus | 11-urinary infection | 18-other_____ |
| 4-diarrhea | 12-skin infection | |
| 5-dysentery | 13-trauma | |
| 6-cough 15+ days | 14-food poisoning | |
| 7-cough less than 15 days | 15-fever | |

163. How much have you paid for your treatment? 552 CFA

Interviewer: If necessary do the calculations to find total

164. Did you go to a medical facility? yes-1 no -2 553 -->166

105

165. Why not?..... 554 -->168

Code:	
1.too far	4.quickly cured
2.too expensive	5.needed to be treated in village
3.illness not grave	6.other _____

166. Were you satisfied with your treatment? yes-1 no -2

555	<input type="checkbox"/>
-----	--------------------------

167. Why not?..... 556

Code:	
1.not cured	4.poor quality of treatment
2.illness came back	5.medicine not available
3.too expensive	6.other _____

168. Have you been to a medical facility in the last year? yes-1 no -2

557	<input type="checkbox"/>
-----	--------------------------

169. Where?..... 558

Interviewer: Note all mentions

Code:	
1.dispensary	5.hospital
2.infirmery	6.pharmacy
3.Social Center	7.private doctor
4.medical center	8.other _____

558	<input type="checkbox"/>
559	<input type="checkbox"/>
560	<input type="checkbox"/>
561	<input type="checkbox"/>
562	<input type="checkbox"/>
563	<input type="checkbox"/>

106

170. You said that you have _____ (number mentioned in question 26) children. But sometimes a couple does not want to have a child. In your opinion what are some of the reasons for avoiding a birth?

Interviewer: Note all mentions

1-no good reason	564	7-health of the mother	570
2-unwed mother/divorced/widowed woman	565	8-woman too young	571
3-births too close together/ last child too young	566	9-woman too old	572
4-already too many children	567	10-other _____	573
5-don't want this child	568	11-NA	574
6-having children is so difficult	569		

171. What can you or your wife do to avoid a birth?

Interviewer: Mark all spontaneous mentions in boxes 575-600

1-abstinence	575		588	
2-woman moves elsewhere	576		589	
3-nursing baby	577		590	
4-deliberate abortion	578		591	
5-withdrawal of man	579		592	
6-condom	580		593	
7-pill	581		594	
8-injection	582		595	
9-IUD	583		596	
10-abstinence fertile period	584		597	
11-tubes tied/ vasectomy	585		598	
12-traditional_____	586		599	
13-other_____	587		600	

Interviewer: For each spontaneous mention marked in 575-587, ask question 172; mark 1 for yes, 2 for no in boxes 588-600.

172. Have you ever used this method?

173. Where did you learn this method?

Interviewer: Mark all mentions -1, non-mentions -2

radio/TV	601	
health personnel	602	
spouse	603	
neighbour	604	

relative	605	
magazine	606	
other	607	
NA	608	

174. Are you at present trying to avoid a pregnancy?

yes-1

609	
-----	--

no -2

175. How?.....
Interviewer: mark the number of the code from question 171 above.

610	
-----	--

176. Do you know what AIDS is?

yes-1

611	
-----	--

no -2--->end

177. How did you learn about this illness?.....

612	
-----	--

1-radio/TV 2-health personnel 3-spouse
4-neighbour 5-relative 6-friend 7-magazine 8-other 9-NA

178. Is AIDS a simple illness--1.....
a serious illness-2, an illness which kills-3,
or other-4?

613	
-----	--

179. Can AIDS be cured?

yes-1

614	
-----	--

no -2-->end

180. How?.....

615	
-----	--

1.by medical treatment
2.pharmaceuticals
3.prayer
4.other_____

Interviewer: Thank you very much for your help. I assure you that I will not talk with anyone about what you have said today. I hope that the numbers which we will get from your answers will aid us in improving your health situation.

Time at which the interview finished _____

Interview in 1-French

616	
-----	--

2-Sara
3-Arab

Commentary of interviewer and supervisor:

110

ANNEX 5

French Eligible Respondent Questionnaire

111

Le Ministere de Sante et les Etats-Unis d'Amerique essaient ensemble d'ameliorer la sante des femmes et leurs enfants dans votre region. Pour vous aider il nous est important de savoir les problemes que vous avez pour mettre au monde un enfant. Si vous voulez nous les expliquer nous essayerons d'ameliorer votre situation. Nous voulons aussi savoir les maladies qui attaquent vos enfants. Tout ce que vous disez aujourd'hui ne va jamais etre communique a quelqu'un d'autre sauf sous la forme des chiffres ou numeros. Vous allez voir quand je vous pose des questions que je marque beaucoup de numeros. C'est ces numeros seulement que le Ministere de Sante va utiliser. Personne ne va savoir que c'est vous qui a donne les reponses que vous dites aujourd'hui. Si vous etes d'accorde, allons-nous quelque part ou nous pouvons discuter tranquillement.

Interview commence a _____

1. Votre nom:

220	
-----	--

2. Est-ce que vous avez une...carte d'identite/ acte de naissance/ carte d'adhesion? Est-ce que je peux le voir?

Enqueteur: marquez l'annee de naissance en boite 220 et --> 5; sans carte, posez 3.

3. Quand etes vous ne?

annee de naissance.....

221	
-----	--

Enqueteur:s'il ne sait pas la date, a demander 4. Marquez la date moyenne dans la boit 221

4. Etes-vous ne avant ou apres.....

- Code:
- 1.Les Evenements 1979-82
 - 2.Francois Tombalaye est devenu Ngarta 1973
 - 3.Independence de la France 1960
 - 4.la Deuxieme Guerre Mondiale 1940-45
 - 5.Ils ont pris les gens pour travailler sur le chemin de fer 1924-36
 - 6.Ils ont force les gens de cultiver le coton 1929

112

5. Quel age avez vous maintenant?

222	
-----	--

Enqueteur:Est-ce que 221 et 222 sont en accorde? Si non, essayez encore

6. Etes-vous ne ici?

oui-marquez 1 en boite 230

non-marquez 2 en boite 230

230	
-----	--

7. Avant d'habiter ici ou avez-vous vecu dans la brousse-1
en ville-2

231	
-----	--

8. Avant d'habiter ici avez-vous
vecu dans le meme

- 1. Canton
- 2. S-Prefecture
- 3. Prefecture
- 4. region
- 5. pays

232	
-----	--

9. Est-ce que vous avez fait l'ecole?

oui-marquez 1

non-marquez 2

235	
-----	--

10.A quel niveau?

Marquez en boite 234	
Code:	
1-Ecole Primaire-CP 1	7-CEG
2-Ecole Primaire-CP 2	8-Lyce
3-Ecole Primaire-CM1	9-Universite
4-Ecole Primaire-CM2	10-superieur
5-Ecole Coranique	11-autre
6-madrassa	

236	
-----	--

11. Est-ce que vous pratiquez la
religion toujours-1
ou avez-vous la laisse tomber-2
ou n'etes-vous pas croyant-3?

Enqueteur-marquez en boite 240.Si 1 ou 2 --> 12. Si 3 --> 13.
--

240	
-----	--

113

12. Quel religion pratiquez-vous?

Code:	4-Bahai
1-Catholique	5-autre _____
2-Protestant	6-NR
3-Musselman	

241	
-----	--

13. Je vous propose une phrase. Veuillez-vous la completer pour moi?

"Avoir beaucoup d'enfants, c'est....."

242	
-----	--

Enqueteur: Marquez 1 pour positive; 2 pour negative dans la premiere boite de 242. Puis marquez la reponse la plus semblable a celle donnee par l'enqueteur.

Code: evaluation positive	evaluation negative
1.une assurance dans la vieillesse	6.avoir beaucoup de souffrances
2.devenir important aux yeux des autres	7.difficile de les garder
3.avoir beaucoup de joie dans la vie	8.mauvais pour la sante de la mere/enfants
4.garantir la progénite	9.autre _____
5.autre _____	

14. Qu'est-ce que vous faites pour gagner de l'argent?.....

250	
-----	--

Code: Enqueteur: promptez s'il ne sait pas repondre

1-agriculteur	8--artisan
2-agriculteur/menagere	9--petit vendeur au marche
3-menagere simple	10-etudiant
4-commercant	11-benevol
5-salarie	12-chaumeur
6-militaire	13-ancien combattant
7-ouvrier	14-autre

15. Dans votre maison est-ce que vous etes proprietaire-1 (--->17) ou locataire-2?

251	
-----	--

Enqueteur: marquez 1 ou 2 dans la boite 251.

114

16. Combien depensez-vous par mois pour le loyer?.....

252	CFA
-----	-----

17. Combien d'argent depensez-vous au marche par semaine?

Enqueteur: Faites vos calculs et marquez dans la boite 253.

.....

253	CFA
-----	-----

18. Est-ce que vous avez depense d'autres sommes pendant le mois dernier?

oui-marquez 1 dans.....

254	
-----	--

 la boite 254
 non-marquez 2

19. Combien?.....

255	CFA
-----	-----

Enqueteur: Ajoutez 252+253+255 pour calculer Depenses Totals. Marquez dans la boite 256

calculs	
256	CFA

20. Combien d'argent gagnez-vous par mois?.....

257	CFA
-----	-----

Enqueteur: Si agriculteur demandez revenu par an, divise par 12; S'il ne sait pas, demandez son revenu par semaine et multipliez par 4). Marquez la somme en boite 257.

Total revenu par mois

21. Est-ce que vous avez d'autres sources d'argent?

oui.....

258	
-----	--

 non--> 24

22. De quoi?

23. Combien de chaque source?

Enqueteur: marquez toute mention en boîte 259	259	Enqueteur marquez la somme de chaque source et puis marquez la total en boîte 260.	
1. agriculture			CFA
2. petit commerce			CFA
3. artisanat			CFA
4. ouvrier			CFA
5. ancien combattant			CFA
6. epoux/epouse			CFA
7. enfant			CFA
8. parent			CFA
9. autre _____			CFA
Total supplement			CFA 260

24. Est-ce que vous arrivez a faire des epargnes par mois?

oui-marquez 1 en 261, --> 25

non-marquez 2 en 261, --> 26

261	
-----	--

25. Combien par mois?.....

262	CFA
-----	-----

Enqueteur: Calculez total revenu: 257+260+262
Marquez la total en 263.

.....

263	CFA
-----	-----

26. Est-ce que vous avez vous-meme des enfants?

Enqueteur: marquez dans la boîte 270

- oui-1
- non-2-->27

270	
-----	--

27. Combien?.....

271	
-----	--

28. Combien d'enfants avez-vous a votre charge?.....

272	
-----	--

Si j'ai bien compris vous avez _____ enfants a votre charge, dont _____ sont vos propres enfants.

29. Quels sont les noms de ces enfants?

- 01 _____ 04 _____ 07 _____
- 02 _____ 05 _____ 08 _____
- 03 _____ 06 _____ 09 _____

Je voudrais vous poser des questions sur la sante de tous ces enfants.

Enqueteur: Marquez le numero de l'enfant de question 29 et demandez 30

30. Est-ce que _____ (# d'enfant, question 29) a ete malade pendant les 2 dernieres semaines?

- oui-marquez 1 en boîte 273 et-->32
- non---> 31

273	
-----	--

31. Est-ce que _____ (# d'enfant, question 29) n'a pas eu une rhume ou la diarrhee, mal aux yeux ou quelques choses?

oui-->marquez 1 en boîte 273 et-->32

non--> Prenez des fiches supplementaires et marquez tous les numeros d'enfants question 29. Commencez a 30 pour chaque enfant jusqu'a ce que tous les enfants en 29 sont finis.

117'

32. Qu'est-ce qu'il a eu comme maladie?

Enqueteur: Mentionner le nom en langue locale _____		
Marquez le code en boite 274		
1-rougeole	8-otite/angine	
2-meningite	9-conjonctivite	16-douleurs musculaires & cepheales
	10-hematurie	
3-tetanos	11-infection urinaire	17-kwashiorkor
4-diarrhee	12-infection de la peau	18-autre
5-dysenterie	13-traumatisme	19-NR
6-toux de 15 jours	14-intoxication	
7-toux moins de 15 jours	15-fievre	

33. Qu'est-ce que vous avez fait comme traitement au commencement de cette maladie?
 Soigne au village/chez soi.....1 Marquez 1
 Ammene chez le medecin.....2 ou 2 en 275
 Si 2--> 40

34. Qui est-ce qui l'a soigne au village/chez soi?.....

Code:Marquez en boite 276	
1.vous meme	3.Agent Sanitaire Villageois
2.un guerisseur traditionnel/ marabout	4.Secouriste de la Croix Rouge
3.ancien combattant	5.Accoucheuse Villageoise Formee
	6.autre
	7.NR

35. Qui est-ce qui a decide a faire ce traitement?.....
 1-mere
 2-pere
 3-autre de la famille
 4-autre _____

118

36. Qu'est-ce que vous avez fait comme traitement?

Enqueteur:A noter toute citation)	278	
1-faite des soins primaires		
2-retroucir la fracture		
3-donner des tisanes herbales a boire		
4-donner des sachets TRO ou eau-sucre-sale		
5-enlever les mauvais sorts/esprits		
6-laver son corps avec les infusions herbales		
7-ventouse		

8-couper avec une lame et frotter avec medicaments		
9-boire de l'encre		
10-faire des gris gris		
11-boire de l'essence		
12-donner des produits pharmaceutiques		
13-faire une piqure		
14-donner de la nourriture speciale		
15-autre _____		

37. Ou est-ce que c'est de la sorcellerie? oui-1

non-2

279	
-----	--

38. Pourquoi n'etes-vous pas alle voir un medecin?.....

280	
-----	--

Code:	
1.trop loin	4.enfant vit gueri
2.trop cher	5.il faut le traiter au village/chez soi
3.maladie pas grave	6.autre _____

-119-

Enqueteur: si l'enfant a ete malade avec la diarrhee et il a recu du TRO
--->39; si non -->41

39. Ou est-ce que vous avez appris a faire
du TRO/eau-sucree-sale?..... 281 --> 42
1.au dispensaire
2.au Centre Social
3.a l'hopital
4.a la radio
5.chez une amie/voisin/parent
6.ASV/secouriste Croix Rouge
7.autre _____

40. Ou l'avez-vous ammene voir un medecin?..... 282

Code:	
1.dispensaire	5.hopital
2.infirmerie	6.pharmacie
3.centre social	7.chez un medecin prive
4.centre medical	8.autre

41.Ou avez-vous l'ammene? Nom de la ville _____

Enqueteur:A mettre le kilometrage quand revu sur terrain..... 283

42. Avez-vous consulte des oracles (a ajouter
pour un Musselman)... ou un marabout? oui-1 284
 non-2

43. Est-ce que cette maladie est grave? oui-1 285
 non-2

44. Est-ce que vous avez change de traitement? oui--> 45
 non--> 46 286

120

45. Qu'est-ce que vous avez fait?

- 1. ammene chez un medecin 287
- 2. fait autres choses dans le village/chez soi

46. Combien avez-vous paye pour tous ces traitements?..... 288 CFA
Enqueteur: faites les calculs du total

47. Est-ce que l'enfant est... 1.guerri..... 289
2.toujours malade
3.decede

48. Est-ce que cet enfant a ete malade pendant l'annee derniere? oui-1 290
 non-2

49. Combien avez-vous paye pour ces traitements? 291 CFA

Enqueteur: Revenez a la question 30 pour tous les enfants dont vous avez des fiches supplementaires.

50. Est-ce que vos enfants ont ete vaccines? oui-1 292
 non-2

51. Pourquoi pas?..... 293

- | | |
|------------------------|------------------|
| 1 PEV/Grandes Endemies | 4 pas necessaire |
| n'a pas passe | 5 ne veut pas |
| 2 trop | 6 autre _____ |
| 3 trop loin | |

52. Est-ce qu'ils ont ete vaccine par 1 PEV/Grandes Endemies 294
2 dans un clinique

Enqueteur: Si l'enquete est un homme ---> 161. Si l'enquete est une femme, continuez ici.

Nous sommes interesses aussi a la sante des nouveaux-nes et des petits enfants. Veuillez vous maintenant me raconter des choses sur vos enfants quand ils etaient petits?

121

53. Quelle est la premiere chose que vous avez donne a boire a _____ (a citer le nom d'un de ses propres enfants) pendant les deux premiers jours apres sa naissance?

- 1 eau simple 300
- 2 eau bouillie
- 3 eau bouillie avec feuilles
- 4 lait en boite

54. Est-ce vous avez donne le sein oui-1--->56..... 301
 pendant les 2 premiers jours? non-2

55. Pourquoi pas?..... 302
 1-le bon lait ne coule pas
 2-lait mauvais
 3-je n'ai pas de lait
 4-autre _____

56. Est-ce que vous avez commence a donner le sein?..... 303
 1-apres 2 jours
 2-jamais

57 .A quel age avez-vous donne autre aliment
 a _____ que le lait? 304

- | | |
|--------------|--|
| 0-4 mois---1 | 13-15 mois-5 |
| 5-6 mois---2 | 16-18 mois-6 |
| 7-9 mois---3 | 19-22 mois-7 |
| 10-12 mois-4 | 23-24 mois-8 |
| | seulement apres
l'age de deux ans-9 |

58. Qu'est-ce que vous avez donne
 comme premier aliment a _____? 305

- 1--bouillie simple
- 2--bouillie avec l'eau des feuilles
- 3--bouillie avec lait
- 4--bouillie avec l'huile
- 5--bouillie avec la pate d'arachide
- 6--bouillie avec poisson
- 7--bouillie avec legumes
- 8--bouillie avec des oeufs
- 9--autre _____
- 10-pas encore assez age

c 122-

59. Apres le premier aliment qu'est-ce que vous avez donne a _____ pour manger? 306

- 1--boule sans sel
- 2--boule normale simple
- 3--boule et sauce
- 4--legumes
- 5--fruits
- 6--poisson
- 7--viande
- 8--autre _____
- 9--NR

60. A quel age est-ce que vous l'avez donne?..... 307

- 1. avant 1 an
- 2. 12-15 mois
- 3. 16-18 mois
- 4. 19-22 mois
- 5. 23-24 mois
- 6. apres 2 ans
- 7. NR

61. A quel age avez-vous refuse le sein a _____ ?..... 308

- 1. 0-4 mois
- 2. 5-6 mois
- 3. 7-9 mois
- 4. 10-12 mois
- 5. 13-15 mois
- 6. 16-18 mois
- 7. 19-22 mois
- 8. 23-24 mois
- 9. seulement apres l'age de 2 ans
- 10. autre _____
- 11-NR

62 Est-ce que c'est l'age normal-1 309
ou plus jeune-2
ou plus age-3?

173

63. Pourquoi avez vous refuse le sein?..... 310

1. lait amer
2. nouvelle grossesse
3. maladie de l'enfant
4. maladie de la mere
5. age requis par la mere
6. autre _____

64. Comment avez vous refuse le sein?..... 311

1. je cache le sein avec des vetements
2. je mets des produits sur le sein
3. j'envois l'enfant ailleurs
4. autre _____

Enqueteur: Est-ce que nous pouvons discuter la sante des enfants?

65. Connaissez-vous la maladie oui-1
des enfants maigres? non-2 312

66. Connaissez-vous la maladie des oui-1
enfants dont les pieds gonflent? non-2 313

67. Connaissez-vous la maladie des oui-1
enfants dont le peau pele? non-2 314

124-

68. Ces maladies sont due a quoi?

Enqueteur: marquez toute mention

1--maman enceinte quand enfant ne peut pas marcher	315	
2--malnutrition	316	
3--sorcier	317	
4- enfant du diable	318	
5--fetiches	319	
6--nouvelle grossesse	320	
7--rougeole	321	
8--diarhee	322	
9--vomissement	323	
10-maladie de la lulette	324	
11-autre _____	325	

69. La diarrhee est-elle normale chez l'enfant?.....

326	
-----	--

1. oui, toujours
2. des fois oui, des fois non
3. non, c'est mauvais

125

70. Qu'est-ce qui donne la diarrhee a l'enfant?

Enqueteur: citez toute mention spontanee dans les boites 327-334; puis demandez si les autres, non-mentionnees, provoque la diarrhee. Marquez 1-oui 2-non dans les boites 335-3452 .

1--alimentation	327		335	
2--dentition	328		336	
3--parasites	329		337	
4--fetiches	330		338	
5--malnutrition	331		339	
6--eau sale	332		340	
7--maux d'estomach	333		341	
8--autre _____	334		342	

71. Quels types de diarrhees connaissez-vous?

Enqueteur: marquez toute mention spontanee

1-glaireux	343		5-jaune	347	
2-liquide	344		6-mousseux	348	
3-sanglant	345		7-autre	349	
4-vert	346				

126.

72. Quel est l'effect de la diarrhee sur l'enfant?

Enqueteur: marquez toute mention spontanee-1; marquez ceux qui ne sont pas mentionnees -2

1. deshydratation	347	
2. les yeux sont enfonces	348	
3. l'enfant est faible	349	
4. l'enfant vomit	350	
5. l'enfant maigrit	351	
6. autre _____	352	

73. Est-ce que vous continuez a allaiter un bebe qui a la diarrhee? oui-1 353
 non-2

74. Est-ce que vous donnez a boire a un enfant qui a la diarrhee? oui-1-->75 354
 non-2-->77

75. Que donnez-vous? 355

- | |
|--|
| 1--eau simple
2--eau bouillie avec de feuilles
(a preciser quels feuilles,
meme en langue locale

3--eau avec des racines
4--eau/sucre/sel
5--sachet TRO
6--eau de riz bouilli
7--de carottes bouillis
8--autre _____ |
|--|

- 127

76. Obligez-vous l'enfant a boire meme.... ?

1. s'il refuse	356	
2. s'il vomit	357	
3. s'il pleure	358	
4. s'il a toujours la diarrhee	359	

77. Connaissez-vous le TRO-eau-sucre-sel? oui-1

non-2

78. Comment preparer-le?..... 360

1. elle sait correctement(ingrédients/quantités)
2. sait ingrédients mais pas quantité
3. ne sait pas

79. Ou est-ce que vous avez appris a faire le TRO/eau-sucre-sel?..... 361

- | | |
|---------------------|------------------------------|
| 1. radio | 6. ami(e)s |
| 2. au centre social | 7. ASV/secourist Croix Rouge |
| 3. centre medical | 8. personnel de sante |
| 4. maternite | 9. voisins |
| 5. parents | 10. autre |
| | 11. NR |

80. Donnez-vous a manger a l'enfant pendant la diarrhee? oui-1 362

non-2--->80

81. Quoi?..... 363

- 1-la meme chose que d'habitude
- 2-aliments speciaux
- 3--NR

Enqueteur: Maintenant je voudrais poser quelques questions a vous meme, pour connaitre votre vie et vos problemes.

82. Avez-vous meme ete malade pendant les 2 dernieres semaines? oui-1 364

non-2--->89

128

83. Avec quoi?..... 365

Code:		
1-rougeole	8-otite/angine	16-douleurs musculaires & cephalés
2-meningite	9-conjonctivite	17-kwashiorkor
	10-hematurie	18-complication post-partum
3-tetanos	11-infection urinaire	19-autre
4-diarrhee	12-infection de la peau	
5-dysenterie	13-traumatisme	
6-toux de 15 jours	14-intoxication	
7-toux moins de 15 jours	15-fievre	

84. Combien avez-vous paye pour votre traitement?..... 366 CFA

85 Avez-vous ete chez un medecin? oui-1-->87 367

non-2-->88

86. Pourquoi pas?..... 368

Code:	
1.trop loin	4.vit gueri
2.trop cher	5.il faut le traiter au village/chez soi
3.maladie pas grave	6.autre _____

87. Etes-vous satisfait avec votre traitement? oui-1-->89 369

non-2

88. Pourquoi pas:..... 370

Code:	
1.pas gueri	4.mauvaise qualite de traitement
2.maladie recommence	5.pas de medicaments
3.trop cher	6.autre _____

129

89. Depuis un an avez-vous ete chez un medecin? oui
 non 371

Enqueteur: Le Ministere de Sante veut ameliorer la sante des meres et des enfants. Mais parfois une femme ne veut pas mettre au monde un enfant. Alors le Minsistere pense a ce probleme aussi.

90. A votre avis quels sont des raisons pour eviter une naissance?

Enqueteur:A citer toute mention

1-aucune raison	381	7-sante de la mere	387
2-fille-mere/femme divorce/veuve	382	8-femme trop jeune	388
3-naissances trop rapprochees/ bebe trop petit	383	9-femme trop agee	389
4-deja trop d'enfants	384	10-autre	390
5-ne veut pas d'enfant	385	11-NR	391
6-avoir des enfants est trop souffrir	386		

92. Est-ce que vous connaissez des moyens pour éviter un accouchement non-désiré? Quels sont-ils?

Enquêteur: Marquez toute mention spontanée en boîtes 400-439

1-abstinence	400	413	
2-envoyer la femme ailleurs	401	414	
3-allaitement du bébé	402	415	
4-avortement provoqué	403	416	
5-retrait de l'homme	404	417	
6-condom	405	418	
7-pillule	406	419	
8-injection	407	420	
9-sterilet	408	421	
10-abstinence période fertile	409	422	
11-ligature des trompes/ vasectomie	410	423	
12-traditionnel _____	411	424	
13-autre	412	425	

Enquêteur: Demandez pour chaque mention spontanée marquée en 400-412, la question 93; marquez 1-oui 2-non en boîtes 413-425.

93. Est-ce que vous avez utilisé _____ méthode?

94. Ou est-ce que vous avez appris ces méthodes?

Enquêteur: Marquez toute mention-1, pas mentionnée -2

radio/tele	426	
personnel de santé	427	
époux	428	
voisin/ami	429	

parents	430	
journaux	431	
autre	432	
NR	433	

131-

95. Est-ce que vous essayez maintenant d'éviter oui-1 434
 une grossesse? non-2

96. Comment? 4
 Enqueteur: marquez le numero du code ci-dessus

Enqueteur Transition: Citez toute methode non-mentionnee spontaneement et marquez en 400-412. Marquez en boites 436-446 1-connu 2-inconnu
 Si, pendant la discussion la femme remarque qu'une methode ne marche pas, marquez-1 dans les boites associees (entre 447-457). Mettez-2 pour toute non-mention.

97. Il y a d'autres methodes aussi pour eviter des grossesses. Est-ce que vous avez entendu parler de _____?

1-abstinence	436		447				
2-envoyer la femme ailleurs	437		448				
3-allaitement du bebe	438		449				
4-avortement provoque	439		450				
5-retrait (azl)	440		451				
6-condom	441		452				
7- pillule							
8-injection	442		453				
9-sterilet	443		454				
10-abstinence pendant la periode fertile de la femme (a preciser quand est-ce la periode fertile	444		455				
11-ligature des trompes/vasectomie	445		456				
13. autre _____	446		457				

132

98. Connaissez-vous ce que c'est le SIDA? oui-1 non -2--->103 458
99. Comment avez-vous entendu de cette maladie?..... 459
 1-radio/tele 2-personnel de sante 3-epoux
 4-voisin 5-parents 6-amis 7-journaux 8-autre 9-NR
100. Est-que le SIDA est une maladie simple-1,..... 460
 maladie grave-2, ou une maladie qui tue-3,
 ou autre-4?
- 101 Est-ce que le SIDA peut-etre guerri? oui-1 non -2-->103 461
- 102 Comment? 462
 1.par traitement medical
 2.medicaments
 3.priere
 4.autre _____
103. Etes-vous actuellement mariee? oui-1---> 106 non-2 463
104. Est-ce que vous etiez mariee avant? oui-1 non-2 464
105. Comment est-ce que votre mariage est termine?..... 465
 Par 1-divorce
 2-deces du mari
 3-vous vous etes retire du mariage
106. Est-ce que vous av(i)ez des co-epouses? oui-1 non-2 466
107. A quel age etes-vous mariee?..... 467

108. Etes-vous marie avant vous avez vu vos premiers regles? oui-1 468 non-2

109. Est-ce que vous avez ete excise? oui-1 469 non-2

110. Est-ce que pendant les 5 dernieres annees vous avez ete enceinte? oui-1--->114 470 non-2

111. Pourquoi n'etes-vous pas tombe enceinte?..... 471

- | | |
|--|---------------|
| 1-pas couche avec un homme | 4-sterilite |
| 2-pas de regles | 5-ne sais pas |
| 3-fait quelque chose pour eviter une grossesse | 6-autre _____ |

Enqueteur: Si elle reponde 3, demandez question 112.
 Si elle reponde 4, demandez question 113.
 Pour toute autre reponse, passez a la question 114.

112. Veuillez-vous m'expliquer ce que vous avez fait pour eviter une grossesse? 472

- | |
|--|
| 1-allaitement du bebe |
| 2-retrait de l'homme |
| 3-fetiches (a preciser _____) |
| 4-contenance pendant ma periode fertile(a preciser quand est-ce _____) |
| 5-condom |
| 6-pillule |
| 7-sterilet |
| 8-injection |
| 9-implantation |
| 10-ligature des trompes/vasectomie |
| 11-autre _____ |

134

113. A votre avis, qu'est-ce qui cause votre sterilité?

473

- 1 -maladie
- 2-mon mari et moi ne sont pas compatibles
- 3-question de la dot
- 4-fetiches
- 5-quelqu'un m'a maudit
- 6-autre _____

114. Est-ce que vous êtes enceinte maintenant? oui-1

non-2-->117

474

115. Allez-vous aux consultations prénatales? oui-1-->117

non-2

475

116. Pourquoi pas?

476

- 1-pas besoin
- 2-trop loin
- 3-trop cher
- 5-voit accoucheuse villageoise formée
- 6-voit matrone traditionnelle
- 7-autre

117. Il y a combien d'ans depuis votre dernière grossesse?

477

Enqueteur: si plus de 5 ans --->152

118. Est-ce que vous avez fait des consultations prénatales? oui-1

non-2

478

119. Avec votre dernière grossesse avez-vous.....

accouche un bébé

1- vivant?
 2- mort-ne
 3-fausse couche
 4-avortement

Enqueteur: Si elle reponde 1 sautez a la question 123

120. En quel mois de grossesse avez-vous perdu votre enfant?

mois annee

121. Combien de temps apres l'accouchement
 est-ce que le bebe est mort?

122. Qu'est-ce qui a cause sa mort?

Code:

- | | | |
|--------------------------|-------------------------|-------------------------|
| 1-rougeole | 8-otite/angine | 16-douleurs musculaires |
| 2-meningite | 9-conjonctivite | & cephalées |
| | 10-hematurie | 17-kwashiorkor |
| 3-tetanos | 11-infection urinaire | 18-autre |
| 4-diarrhee | 12-infection de la peau | 19-sorcellerie |
| 5-dysenterie | 13-traumatisme | 20-fetiches |
| 6-toux de 15 jours +5 | 14-intoxication | 21-ne sait pas |
| 7-toux moins de 15 jours | 15-fievre | 22-Dieu |
| | | 23-autre |

Enqueteur: sautez a la question 126

123. Est-ce qu'il est toujours vivant? oui-1

non-2 -->126

124. Quel est son nom _____

125. Quel age a _____?

Enqueteur: Si cet age n'est pas en accorde avec la date de la dernière grossesse, a reconcilier.

126 Ou avez-vous accouche? 485

- 1-a la maison
- 2-a cote du village
- 3-sur la route
- 4-dans un centre medical
- 5-hopital

Enqueteur: Si elle reponde 4 ou 5, sautez a 129.

127. Qui est-ce qui vous a aide a accoucher?
 Enqueteur: citez toute mention

1-mere	486	
2-matronne(s) traditionnelle(s)	487	
3-accoucheuse villageoise formee	488	
4-parents	489	
5-personne	490	
6-autre	491	

128. Juste apres l'accouchement le bebe
 a-t-il recu un produit dans ces yeux?
 Quoi _____ ?

oui-1 492

non-2

129. Est-ce que votre accouchement
 est deroule normalement?

oui-1---> 132 493

non-2

130. Quels problemes avez-vous eu?

1-rupture de la poche des eaux plus de 24 h.	494	
2-presentation du cordon ou d'un membre	495	
3-hemoragie avant l'accouchement	496	
4-travail de plus d'un jour	497	
5-hemorragie apres l'accouchement	498	

131. Quand vous avez eu ces problemes
qu'est-ce que vous avez fait?

1-parti au centre medical	499	
2-dit le nom de l'adultere	500	
3-paye la dot	501	
4-prie Dieu ou des fetiches	502	
5-autre _____	503	

132. Combien de temps a passe apres cet
accouchement avant que vous avez vu vos regles? mois ans

504		
-----	--	--

133. Avant cet dernier accouchement avez-vous ete enceinte?

oui-1 505

non-2---> 152

134. Combien de temps a deroule entre ce
dernier accouchement (et la naissance de
___124 et votre grossesse anterieure? mois ans

506		
-----	--	--

135. Avec cette grossesse anterieur..... 507

avez-vous accouche un bebe

1- vivant?

2-mort-ne

3-fausse couche

4-avortement

Enqueteur: Si elle reponde 1 sautez a la question 139

136. En quel mois de grossesse avez-vous perdu votre enfant? 508

137. Combien de temps apres l'accouchement mois annee
est-ce que le bebe est mort? 509

138. Qu'est-ce qui a cause sa mort?

510	
-----	--

Code:

- | | | |
|--------------------------|-------------------------|-------------------------------------|
| 1-rougeole | 8-otite/angine | |
| 2-meningite | 9-conjonctivite | 16-douleurs musculaires & cephalées |
| 5-dysenterie | 10-hématurie | 17-kwashiorkor |
| 3-tétanos | 11-infection urinaire | 18-autre |
| 4-diarrhée | 12-infection de la peau | 19-sorcellerie |
| 5-dysenterie | 13-traumatisme | 20-fétiches |
| 6-toux de 15 jours +5 | 14-intoxication | 21-ne sait pas |
| 7-toux moins de 15 jours | 15-fièvre | 22-Dieu |
| | | 23-autre |

139. Est-ce qu'il est toujours vivant? oui-1

511	
-----	--

 non-2 -->124

140. Quel est son nom _____

141. Quel âge a _____?

512	
-----	--

Enquêteur: Si cet âge n'est pas en accord avec la date de la dernière grossesse, à réconcilier.

142. Est-ce que vous avez fait des consultations prénatales? oui-1

513	
-----	--

 non-2

143 Ou avez-vous accouché?

514	
-----	--

1-a la maison
2-a cote du village
3-sur la route
4-dans un centre medical
5-hopital

Enquêteur: Si elle reponde 4 ou 5 sautez a 146.

144. Qui est-ce qui vous a aide a accoucher?

Enqueteur-citez toute mention

1-mere	515	
2-matronne(s) traditionnelle(s)	516	
3-accoucheuse villageoise formee	517	
4-parents	518	
5-personne	519	
6-autre	520	

145. Juste apres l'accouchement le bebe a-t-il recu un produit dans ces yeux? oui-1 521 non-2
 Quoi _____?

146. Est-ce que votre accouchement est deroule normalement? oui-1---> 150 522 non-2

147. Quels problemes avez-vous eu?

1-rupture de la poche des eaux plus de 24 h.	523	
2-presentation du cordon ou d'un membre	524	
3-hemoragie avant l'accouchement	525	
4-travail de plus d'un jour	526	
5-hemorragie apres l'accouchement	527	

- 140

148. Quand vous avez eu ces problemes
qu'est-ce que vous avez fait?

1-parti au centre medical	529	
2-dit le nom de l'adultere	530	
3-paye la dot	531	
4-prie Dieu ou des fetiches	532	
5-autre _____	533	

150. Combien de temps a passe apres cet
accouchement avant que vous avez vu vos regles? mois ans

534		
-----	--	--

151. Avant cet accouchement et grossesse
(et la naissance de ___ (nom de 139)),
avez-vous ete enceinte? oui-1

535	
-----	--

 non-2-->153

152. Combien de temps a deroule entre ces
deux grossesses (et la naissance de
_____ (nom de 139))?

536	
-----	--

Enqueteur: Si le temps ecroule entre cette grossesse anterieur et
aujourd'hui est moins de 5 ans, prenez une autre Enquete Individue et
continuer a poser des questions sur ces autres grossesses des derniers 5 ans.
Sinon, --->153

153. A quel age avez vous ete enceinte
pour la premiere fois?

537	
-----	--

154. Est-ce que vous avez donne naissance a un enfant

1-vivant oui-1

538	
-----	--

2-mort-ne non-2-->158
3-fausse couche
4-avortement

155. Est-ce qu'il est toujours vivant? oui-1 non-2-->158

539	
-----	--

156. Quel est son nom _____ ?

157. Quel age a _____ ?

Enqueteur: Si 157+153 = approxitivement l'age de la femme (question 5) ---> 158; sinon essayez de revoir son histoire genesique.

158. Combien de fois avez-vous couche des enfants vivants?

540	
-----	--

159. Combien de vos enfants-nes vivants sont decedes apres?

541	
-----	--

160. Combien de vos enfants sont vivants aujourd'hui?

542	
-----	--

Enqueteur: Si 160+ 159=158, continuez. Sinon, essayez de reconcilier son histoire genesique.

Enqueteur: Je vous remercie beaucoup pour votre aide aujourd'hui. Je vous assure que je ne vais parler de ca avec personne. Mais j'espere quen les chiffres et numeros que nous avons recueillis de vos reponses vont aider a ameliorer votre sante.

Enqueteur: Notez l'heure: Interview termine a _____

Individu enquete en
1-Francais
2-Sara
3-Arabe

543	
-----	--

Enqueteur: Avez-vous note sur la fiche identification que cet interview a ete complete?

Commentaires de l'enqueteur et superviseur:

INTERVIEW HOMME:

Enqueteur: Maintenant je voudrais poser quelques questions a vous meme, pour
connaître votre vie et vos problemes.

161. Avez-vous meme ete malade pendant les 2 dernieres semaines? oui-1 non-2

550	
-----	--

162. Avec quoi?.....

551	
-----	--

Code:

- | | | |
|--------------------------|-------------------------|------------------------------------|
| 1-rougeole | 8-otite/angine | |
| 2-meningite | 9-conjonctivite | 16-douleurs musculaires & cepheles |
| 5-dysenterie | 10-hematurie | 17-kwashiorkor |
| 3-tetanos | 11-infection urinaire | 18-autre |
| 4-diarrhee | 12-infection de la peau | |
| 5-dysenterie | 13-traumatisme | |
| 6-toux de 15 jours +5 | 14-intoxication | |
| 7-toux moins de 15 jours | 15-fievre | |

163. Combien avez-vous paye pour votre traitement?

552	CFA
-----	-----

Enqueteur: Si necessaire, faites les calculs pour trouver le total

164. Avez-vous ete chez un medecin? oui-1 non-2

553	
-----	--

 -->166

143

165. Pourquoi pas?..... 554 -->168

Code:	
1.trop loin	4.vit gueri
2.trop cher	5.il faut le traiter au village/chez soi
3.maladie pas grave	6.autre _____

166. Etes-vous satisfait avec votre traitement? oui-1 non-2 555

167. Pourquoi pas?..... 556

Code:	
1.pas gueri	4.mauvaise qualite de traitement
2.maladie recommence	5.pas de medicaments
3.trop cher	6.autre _____

168. Depuis un an avez-vous ete chez un medecin? oui-1 non-2 557

169. Ou?..... 558
 Enqueteur:A citer toute mention

Code:	
1.dispensaire	5.hopital
2.infirmierie	6.pharmacie
3.centre social	7.chez un medecin prive
4.centre medical	8.autre

558	<input type="checkbox"/>
559	<input type="checkbox"/>
560	<input type="checkbox"/>
561	<input type="checkbox"/>
562	<input type="checkbox"/>
563	<input type="checkbox"/>

144'

170. Vous avez dit que vous avez _____ (a rapporter le nombre de la question 26) d'enfants. Mais, des fois un couple ne veut pas faire un enfant. A votre avis quels sont des raisons pour eviter une naissance?

Enqueteur:A citer toute mention

1-aucune raison	564	7-sante de la mere	570
2-fille-mere/femme divorce/veuve	565	8-femme trop jeune	571
3-naissances trop rapprochees/ bebe trop petit	566	9-femme trop agee	572
4-deja trop d'enfants	567	10-autre	573
5-ne veut pas d'enfant	568	11-NR	574
6-avoir des enfants est trop souffrir	569		

171. Qu'est-ce que vous ou votre femme peut faire pour qu'elle ne met pas au monde?

Enqueteur: Marquez toute mention spontanee en boites 575-600

1-abstinence	575	588
2-envoyer la femme ailleurs	576	589
3-allaitement du bebe	577	590
4-avortement provoque	578	591
5-retrait de l'homme	579	592
6-condom	580	593
7-pillule	581	594
8-injection	582	595
9-sterilet	583	596
10-abstinence periode fertile	584	597
11-ligature des trompes/ vasectomy	585	598
12-traditionnel_____	586	599
13-autre	587	600

Enqueteur: Demandez pour chaque mention spontanee marquee en 575-587, la question 172; marquez 1-oui 2-non en boites 588-600.

172. Est-ce que vous avez utilise _____ methode?

173. Ou est-ce que vous avez appris ces methodes?

Enqueteur: Marquez toute mention-1, pas mentionnee -2

radio/tele	601	
personnel de sante	602	
epouse	603	
voisin/ami	604	

parents	605	
journaux	606	
autre	607	
NR	608	

174. Est-ce que vous essayez maintenant d'eviter oui-1 609
une grossesse? non-2

175. Comment? 610
Enqueteur: marquez le numero du code de la question
171 ci-dessus.

176. Connaissez-vous ce que c'est le SIDA? oui-1 611
 non -2--->fin

177. Comment avez-vous entendu de cette maladie?..... 612
1-radio/tele 2-personnel de sante 3-epoux
4-voisin 5-parents 6-amis 7-journaux 8-autre 9-NR

178. Est-que le SIDA est une maladie simple-1,..... 613
maladie grave-2, ou une maladie qui tue-3,
ou autre-4?

179. Est-ce que le SIDA peut-etre guerri? oui-1 614
 non -2-->fin

180. Comment? 615
1.par traitement medical
2.medicaments
3.priere
4.autre _____

147

Enqueteur:Je vous remercie beaucoup. Je vous assure que je ne vais pas parler de ce que vous m'avez dit aujourd'hui. Mais j'espere que les chiffres(numeros) que nous allons tirer de vos reponses vont aider a ameliorer votre sante.

L'heure a laquelle l'interview se termine _____

Interview en 1-Francais.....

616	
-----	--

2-Sara
3-Arabe

Commentaires de l'enqueteur et superviseur:

148

ANNEX 6

French Housing Unit Questionnaire
Maternal and Child Health

ENQUETE MAISON: SANTE MATERNELLE ET INFANTILE
MSP/USAID (677-0064)

Nous sommes ici aujourd'hui pour le Ministere de sante qui essaie d'ameliorer la sante des meres et leurs enfants. Le Ministere a besoin des renseignements sur les problemes de sante des femmes et des enfants. Nous voudrions poser des questions aux gens de cette maison sur leurs problemes de sante. Tout ce qu'ils nous disent aujourd'hui ne serait jamais communique aux autres.

Interview en Francais-1 Sara-2 Arabe-3

1	2	3	4	5	6	7
#	noms de ceux qui ont dormi ici hier soir	Habite-il ici normalement? <input type="checkbox"/> oui-1 <input type="checkbox"/> non-2	Sexe	Age	Qui garde: quelqu'un <20 ans nomme en col. 5? <input type="checkbox"/> oui-# en col. 6 Continuez pour chaque enfant. Puis --> 11 <input type="checkbox"/> non---> 8	Eligible Respon- dent
01			100	110		
02			101	111		
03			102	112		
04			103	113		
05			104	114		
06			105	115		

Enqueteur: Si plus de 6 personnes, continuez avec 2eme fiche

150

8. Est-ce que quelqu'un garde _____ regulierement tous les jours? oui--->9 non---> 10

9. Est-ce que cette personne a dormi ici hier soir?

oui-marquez nom en col.2 non-marquez X en col. 5
completez col. 1 -7 continuez avec prochain

10. Est-ce que _____ garde d'autres enfants?

oui-marquez eligible resp. non-marquez X en col 6 et
en col. 7 continuez avec prochain

Enqueteur: Indiquez en col 7, chaque personne dans la maison qui:

* garde des enfants
* est une femme 12-50 ans ---> 11

11. Est-ce que quelqu'un d'autre qui a dormi ici hier soir garde des enfants journalierement?

oui-marquez eligible resp. en col. 7 non-continuez

Enqueteur:	
Indiquez si fiches supplementaires utilises <input type="checkbox"/> oui <input type="checkbox"/> non	
Nombre total des gens qui ont dormi ici hier soir.....	
Nombre total des habitants habituels de la maison.....	
Nombre total des gens a enquerer.....	
Nombre total des enquetes hommes.....	
Nombre total des enquetes femmes	
Nombre total des enfants dans la maison.....	

151

11. (cont.) Je veux verifier que nous n'avons oublie personne.

a. Est-ce que quelqu'un d'autre a dormi ici hier soir?

oui-ajouter nom col 2 et continuez non---> 12

Si oui, demandez questions a partir de col. 1

Est-ce quelqu'un d'autre habite ici d'habitude? oui non

Si oui, ajouter noms et demandez questions a partir de col. 1

12. Relation entre gens en col. 2 et l'enquete

Code:		Enqueteur:	
1-epoux/epouse	13-enfant co-epouse	marquez noms du col. 2	
2-enfant	14-enfant femme	nom	code
3-co-epouse	divorcee		140
4-propre mere	15-enfant epouse		141
5-propre pere	decedee		142
6-"pere"	16-enfant garde		143
7-"mere"	17-frere		144
8-grandparent	18-soeur		145
9-petit enfant	19-etranger		
10-oncle maternel	20-autre		
11-neveu/niece	21-NR		
maternel			
12-domestique			
Enqueteur: Commentaires sur la maison ici			

13. Maison construite en:

1-ciment 2-potopoto 3-paille marquez code

4- autre _____

14. Toiture fabrique de:

1-paille/terre 2- tole/tuilles marquez code

3- autre _____

Enqueteur: Maintenant je voudrais vous demander quelques questions sur la sante de votre famille.

15. D'ou vient l'eau que vous buvez?-----marquez code(s) ci-dessous

code toute mention en boite a droite

1-tuyeau a la maison	6-pompe public
2-fontain public	7-fleuve/marigot
3-puit a la maison	8-achete d'un vendeur
4-puit ciment public	9-autre
5-puit en terre public	10-NR

170	
171	
172	
173	

16. Qu'est-ce que vous utilisez pour vos besoins?

1-WC
2-latrine
3-terrain vide a cote
4-la brousse
5-autre _____
6.NR

marquez code

175	
-----	--

17. Avez-vous du savon a la maison maintenant?

oui-marquez 1 en boite et---> 18

non-marquez 2 en boite et ---> 19

176	
-----	--

18. Que faites-vous avec le savon?

1-lessive	4-bains des enfants
2-bains	5-vaisselle
3-laver les mains	6-autre _____

marquez toutes mentions



180	
181	
182	
183	
184	
185	

24. Est-ce que quelqu'un qui a dormi ici hier soir possède un:

Code oui = 1 et non = 2 pour chaque

Bicyclette	200		Voiture	204	
Brouette	201		Camion	205	
Charette	202		Frigo	206	
Moto	203		_____	207	
			autre		

Enqueteur: Je vous remercie beaucoup pour votre aide. L'information que vous nous avez donne aujourd'hui va ameliorer les soins sanitaires pour votre famille. Mais j'ai encore des questions a poser aux meres des enfants et des filles et femmes qui peuvent donner naissance. Notre projet s'interesse particulierement a leur sante. Avec votre permission je voudrais discuter avec eux, un par un.

Si l'enquete est elle meme quelqu'un a enquerer, commencez les questionnaire individuelles avec elle.

Commentaires de l'enqueteur_____

Commentaires du Superviseur_____

SS