

FINAL REPORT

SINE-SALOUM FAMILY HEALTH SURVEY

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PROJET DE SANTE RURALE
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Division of Reproductive Health
Centers for Disease Control
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This report was prepared by Dr. Howard I. Goldberg and Jay S. Friedman, Centers for Disease Control, Atlanta, Georgia; Fara M'Bodji, Direction de la Statistique, Dakar; and Dr. Abdurahmane Sow, Ecole de Medecine, Dakar.

We would like to acknowledge the valuable contributions made to various phases of the survey by the following people:

National Census Office of Senegal (Bureau National de Resensement):

Mr. Ibrahima Lamine Diop, Director

Mr. Mattar Gueye

The four team supervisors:

El Hadj Ibrahima N'Dao

Moktar Dieng

Selle Ba

Alioune N'Donnabe Gueye

The Interviewers

Ministry of Health Senegal (Ministere de la Sante):

Regional Medical Director, Sine-Saloum

Mme. Aida Lo Faye--Coordinator, Rural Health Project

Dr. Jean-Michel N'Diaye, USAID Project Coordinator Mr. M'Baye Serigne

Diene--Nutritionist

USAID/Senegal:

Dr. Michael White--Health, Population and Nutrition Officer

Ms. Dawn Liberi--Assistant Health, Population and Nutrition Officer

Ms. Mary Diop--Former Project Manager, Rural Health Project

Ms. Patricia Daly--Project Manager

Ms. Josephine Sadjii--Secretary

U.S. Centers for Disease Control:

Dr. Nancy Binkin, Medical Epidemiologist
Ms. Paula Bryan, Research Assistant
Shirley M. Davis, Clerk/Typist
Dr. Timothy Dondero, Medical Epidemiologist
Kaye E. Dunagan, Clerk/Typist
Ms. Sarah Gill, Statistical Assistant
Dr. David Heymann, Medical Epidemiologist
Ruth R. Kurtz, Secretary
Dr. James Marks, Pediatric Epidemiologist
Dr. Leo Morris, Statistician/Demographer
Dr. Richard Peck, Anthropologist
Dr. Mary Serdula, Medical Epidemiologist
Mr. Norman Staehling, Statistician

SUMMARY

In late 1982 the Sine-Saloum Family Health Survey was conducted in rural areas of the Sine-Saloum Region of Senegal. This survey, carried out by the U.S. Centers for Disease Control and the National Census Office of Senegal, was performed in order to assess the health status and needs of women and children and to provide baseline information for the future evaluation of the Sine-Saloum Family Health Project, a primary health care project whose second phase was to begin shortly after the survey.

In the survey information was collected from 1,894 ever-married women between the ages of 15 and 44. These women provided information on the 2,733 children reportedly born to them since the beginning of 1977. A small amount of data were also collected regarding the compounds* and villages in which respondents lived. The survey was designed to cover a wide range of topics, rather than to collect highly detailed information on a small number of subjects. The specific areas examined in the survey were: socioeconomic and demographic characteristics of respondents, the health status of young children, mortality and causes of death among recently born children, knowledge and use of Project services, the use of maternal and child health services, fertility, breast-feeding and the post-partum period, and knowledge, use, and potential demand for family planning services.

Child Morbidity and Treatment: The incidence of diarrhea was found to be very high, 39 percent in the previous 2 weeks for children under 6 years-old. Over half of diarrhea cases were treated with antibiotics or other pharmaceutical products, while use of oral rehydration therapy was rare.

*Extended family households

Almost 90 percent of children reportedly had fever during the previous rainy season, but we do not know how many of those fevers were malarial. About three-fourths of children received anti-malarial drugs, with the vast majority of them taken therapeutically rather than prophylactically.

Levels of adequate DPT/polio and BCG coverage were extremely low. Measles vaccination coverage was substantially better, but could still be improved substantially, since only 19 percent of 1-year-olds had received a measles vaccination. (However 32 percent of children 1 to 5 years of age are vaccinated against measles).

Nutritional Status: Anthropometric data, including weight, height, and arm circumference, were collected on all children who were present. Only 4 percent of children were categorized as acutely malnourished and only 0.5 percent severely so. Chronic undernutrition is far more prevalent, affecting about one-quarter of young children, with 11 percent of children severely undernourished.

Use of Maternal-Child Health Services: Levels of use of maternal-child health services associated with pregnancy and childbirth (prenatal exams, post-partum exams, well-baby checkups, and use of tetanus toxoid during pregnancy) were low. About 80 percent of births occurred outside of health facilities, with 55 percent taking place with no trained person in attendance.

Access to and Use of Health Facilities: Survey results show that respondents living in departments where the health project is operating were more likely than others to live near a health facility and to have used specific health services. It was also found that the distance to the nearest health facility correlated strongly with the likelihood of use of services. About 30 percent of respondents had used traditional healers in the previous 2 years.

Infant and Early Childhood Mortality: For every child born since 1977 the survey ascertained whether he or she was still alive and, if not, the child's age at death and symptoms present before death, in order to determine causes of death. Mortality was high, estimated to be about 110 per 1,000 live births in infancy and 246 per 1,000 live births before the fifth birthday. Unspecified diarrheal and respiratory diseases were the two leading causes of death, together responsible for almost one-half of early deaths. Next in importance were malaria, measles, and tetanus in that order.

Infant and Child Feeding: Breast-feeding was found to be virtually universal and quite long. Mean durations of breast-feeding were almost 2 years, excluding children dying prior to the survey. Even in the second and third years of life, a substantial proportion of children were still not receiving solid foods regularly.

Fertility and Family Planning: Not surprisingly, fertility levels were very high; women average about six or seven births apiece. Although fertility is high, birth intervals were not particularly short for an African population. Only about one-seventh of birth intervals were less than 2 years long. Virtually the only women with a desire to have no more children are those with at least four live births. Likewise, except for those women with seven or more children, almost no respondents claimed that their last child was unwanted. Twenty-two percent of women were defined as being in need of family planning services. Use of modern contraceptive methods is all but nonexistent. However, it appears that knowledge of most methods has increased sharply in recent years, although knowledge is still relatively low.

PREFACE

From November 1982 until January 1983, a Family Health Survey was carried out in the rural areas of the Sine-Saloum Region of Central Senegal. This multi-purpose survey, which consisted primarily of interviews with women of childbearing age, was designed to describe various aspects of the health status and needs of women, and especially their young children, and to measure the use and effect on health of a primary health care project which has been operating since 1977 in the Sine-Saloum Region. This project is to enter its second phase during 1984.

A preliminary report discussing the survey activities and objectives was released in 1983. This report does not include a detailed analysis of all the various subjects covered by the survey, but rather sets out the most important and useful results. This descriptive analysis is designed to disseminate the survey results to health officials and policymakers so that the data can be used for evaluation and planning purposes.

The report consists of nine chapters, including six (chapters III-VIII) which discuss results of the survey:

- I. Introduction and History
- II. Survey Methodology
- III. Socioeconomic and Demographic Characteristics
- IV. Child Morbidity and Use of Maternal/Child Health Services
- V. Access to and Use of Health Facilities

- VI. Infant and Early Childhood Mortality
- VII. Post Partum period and Breast-feeding
- VIII. Fertility, Birthspacing, and Family Planning
- IX. Conclusions and Recommendations

A. INSTITUTIONAL FRAMEWORK

The survey was carried out under the auspices of the Senegalese Ministry of Health, who lent support to the endeavor in numerous ways. It was initiated by USAID/Senegal, which was responsible for coordinating the operational aspects of the survey, and, which has been involved in the Sine-Saloum Health Project, the primary health care project discussed below. The survey was designed by the Division of Reproductive Health of the U.S. Centers for Disease Control (CDC) and the Division of Surveys and Demography of the Senegalese National Census Office (in the Directorate of Statistics). The survey field work was directed by a statistician/demographer from the National Census Office and a Senegalese epidemiologist.

B. THE SINE-SALOUM RURAL HEALTH PROJECT

1. Background

The Sine-Saloum Rural Health Project is now considered a model for Primary Health Care projects in Africa. It is the rural laboratory where the Senegalese Government tests approaches to primary health care (PHC) delivery.

A study of the evolution of this project provides important insights as to the importance of (a) early, objective evaluation, (b) willingness to revise policies when necessary, (c) establishing realistic objectives and allowing adequate time to achieve them, and (d) competent project management.

The project, as originally designed, was to finance the training of Community Health Workers (CHW's) in 600 villages in each of the Sine-Saloum Region's six departments. The community health team was to be composed of a first aid worker (secourist), an auxiliary midwife (matrone), and a sanitationist (hygienist). The workers were chosen by the villagers themselves, trained for 3 weeks, supervised by State nurses from the nearest dispensary (health post), and compensated from the receipts from the sale of 10 basic medicines that constituted the village pharmacy. The supervision of the CHW and the financial management of the village pharmacy was to be the responsibility of the village health committee. A very modest two-room structure, the "case de sante" (health hut) was built using local materials and village labor to serve as the base of operation of the CHW. The project team trained health post and health center personnel--doctors, nurses, and midwives--in the techniques of village motivation, teaching, and supervision of the CHW. The project financed the construction of 15 new health posts and the renovation and equipment of 23 others.

2. The First Evaluation

As part of a series of impact evaluations, a team of experts evaluated the project in 1980, 2 years after field activities began (Agency for International Development, 1980). Their findings were not positive. Among the more important findings were: (1) Little effective supervision of the CHW was being done because all personnel efforts were being concentrated on the training of new CHW teams to try to obtain as much coverage as possible; (2) the pharmacies were not financially viable--two-thirds were already bankrupt or soon would be; (3) villagers preferred to walk to the health post where care was free than to go to the "case de sante" in their own village where

they had to pay a fee; (4) neither USAID/Senegal nor the Ministry of Health (MOH) in Dakar was adequately involved in the management of the project; and (5) no baseline data had been collected so that evaluation of the project's impact on health status was impossible.

3. Remedial Action

The Ministry of Health (MOH) and USAID studied the results of the evaluation and decided to revitalize the project through a combination of policy change, redesign, and better management. The initial scope of the project was too great. The implementation team was trying to do too much too fast. The scope of the redesigned project was, therefore, limited to the 400 "cases de sante" in the four departments where the project was operational. This decision came as a bitter disappointment to the 40 percent of Sine-Saloum's population who live in the other two departments, but allowed the project team to demonstrate what can be accomplished if human resources are concentrated. Motivating and training villagers to invest the necessary money and time in the creation and adequate supervision of their CHW is a very slow, difficult process.

People were paying a fixed fee for consultation at the health hut--approximately \$0.20 per visit. Sixty percent of the proceeds were to be divided among the three health workers and the rest used to replenish the stock of medicines. This system proved unsatisfactory for replenishment of the pharmacy. In the redesigned project, villagers paid not a fixed fee but an amount based on the replacement costs of the medicines provided. This decision required flexibility on the part of the MOH because elsewhere in the health system people were asked to pay only a fixed fee. Remuneration of the CHW would be the responsibility of the village using a traditional system, but was not to come from the pharmacy receipts.

The MOH realized that the Government of Senegal could no longer provide free health care to people at the level of its fixed centers and, at the same time, ask villagers to pay for their care at the level of the case de sante. At this point, the MOH instituted two separate but related policy reforms, which served as the basis for the now successfully evolving primary health care (PHC) system. The MOH decided that all people at all levels of the health care system would have to contribute to the financing of those health services. Senegal was the first country in West Africa to require the generalized payment of user-fees by a population who regarded the provision of free health services as a normal responsibility of the State. The MOH went one step further and decreed that all the proceeds from the payment of these fees would be managed by an independent, locally-elected health committee. Agents of the MOH could advise the committee on how to allocate its funds but could not dictate their use.

One of the original design concepts was that project management should be completely decentralized to encourage local decision-making and local assumption of responsibility. One of the reasons the Region of Sine-Saloum was chosen was that it was one of Senegal's first regions to undergo "Administrative Reform" and hence had the greatest experience with local autonomy. The result was that both USAID/Dakar and the MOH in Dakar maintained an almost completely "hands off" position vis-a-vis the project.

This proved to be a mistake. Almost everyone agrees that the move toward giving more autonomy to local authorities is desirable. Delegation of major responsibilities, especially for projects designed to test new approaches which will be applicable nationwide, will be a long, slow process. The central Government must remain an active participant in the development of these

projects because it is the central Government which will institute the policy reforms that the projects demonstrate to be desirable. As a result of the evaluation, both the MOH and USAID reinforced their management staffs and began to play an active role in the development of the project.

4. The Second Evaluation

Two teams, one representing AID/Washington and the other representing the Senegalese Government, reevaluated the project in the spring of 1982—2 years after the first evaluation. Although the emphasis varied somewhat in the two reports, both teams found the project to be well managed, meeting almost all of the objectives established as a result of the project redesign, and greatly appreciated by the rural population and the Senegalese Government administration at the rural level. At the time of the evaluation, approximately 400,000 people living in 378 villages with health huts or in approximately 1,000 surrounding "polarized" villages are benefiting from project activities. As of 1983, the project had cost approximately \$3,500,000.

Both evaluation teams strongly recommended that USAID fund a second phase of the project. A phase II project may be viewed as necessary for three reasons:

- a. Many technical interventions are absent or working less than optimally in the program. At the level of the health hut, there is no immunization, no effective oral rehydration, no growth monitoring, inadequately controlled chemoprophylaxis for malaria, and no family planning counseling. This is the result of a conscious decision on the part of the Government of Senegal and USAID not to use project resources to begin activities at the village level until the State had proper supporting structures in place at more central levels. The

introduction of these technical interventions at the level of the health center has required more time than anticipated. This Sine-Saloum Family Health Survey was designed to help evaluate the impact on health status of the phase II project.

- b. Certain recurrent costs--particularly those related to transport for CHW supervision by the health post nurse--have been paid by the project during phase I. The economic analysis done for the phase II project demonstrates that there is an adequate amount of money available in rural areas to pay these recurrent costs. The phase II project will allow the Government of Senegal to prove they can make payment of these costs administratively possible and will allow the population to demonstrate that they will decide to spend this discretionary money on a PHC system and not on something else.

- c. The original phase I project was designed to cover the entire region to demonstrate the type of support and supervisory systems that will be needed at the regional level. Because the phase I program was reduced in scope, we still do not know whether the regional team, as now constituted, can successfully develop the program in all six regions. Perhaps more or different types of personnel will be required. The phase II project will allow the Government of Senegal to study the strengths and weaknesses of the current structure and make the necessary modifications.

C. SURVEY OBJECTIVES

The Sine-Saloum Family Health Survey had three main objectives:

1. To furnish information concerning the health status and needs of children, the level of infant and child mortality, the nutritional status of children, birthspacing and fertility, and knowledge and use of available health services and facilities. The survey results also examine differentials in health status, needs, and practices according to other variables, such as socioeconomic and demographic characteristics. This information should help to determine which project interventions should be strengthened and what interventions might be added to those already in place. Interventions which might be added include the availability of family planning services, immunization activities, availability of oral rehydration salts, information and education activities, and the construction of additional health facilities (health huts).
2. To indicate the degree to which project services were used by mothers and their children and whether these services have improved the health status and reduced the child mortality in the region. Comparisons between the data from the project areas and the data from the rest of the region may give some idea of the impact of the Rural Health Project.
3. The collected data will be used as baseline information for future evaluations of the Rural Health Project in the Sine-Saloum Region. It is intended that a followup survey will be done several years hence to help determine the magnitude of the Project's effect on health in the Region.

D. DESCRIPTION OF THE REGION

The Sine-Saloum Region covers an area of 23,945 Km², 12.2 percent of Senegal. It is bounded on the north by the Diourbel Region, on the south by the Gambia, on the east by Senegal Oriental, and on the west by the Atlantic Ocean and the Thies Region. The Region consists of three main areas. The southern part of the Departement of Fatick and the northern part of the Departement of Foundiougne, formed by the estuary of the Sine and the Saloum Rivers differ noticeably from the rest of the region. The area located in the northern part of the Departement of Fatick and Kaolack, known as the Sine, is characterized by dense population, low rainfall, and the highest proportion of cultivated land. Lastly, the South of Saloum and the Department of Kaffrine (the eastern half of the region) have low population density, adequate rainfall, and better conditions for the spread of modern agriculture.

The Sine-Saloum is the most populous region of the country according to the results of the census of April 1976. With an average annual rate of population growth of 2.8 percent, the population which was 1,006,000 in 1976 was estimated to be 1,220,500 in 1983. The overall density is 51 inhabitants per Km², varying widely across the region. Kaffrine, by far the largest department in terms of area has only about 20 inhabitants per square kilometer, compared with nearly six times as great density in the Department of Kaolack.

The region is essentially agricultural, with the main crops being peanuts and corn. Sixty-five percent of the nation's peanut crop (one of the world's largest) is produced in the Sine-Saloum. Other major economic activities are fishing, livestock, and processing industries.

E. SURVEY HISTORY

There are four major sources of demographic information available on the Sine-Saloum Region, some of which also include information on the health of the population. The 1976 Census of Senegal includes quite detailed information on demographic and socioeconomic characteristics for each region and for smaller areas within regions. In 1970 and 1971 a National Demographic Survey (Enquete Demographique Nationale) was carried out (Senegal Direction de la Statistique, 1971). As with the national census, this survey did not deal directly with health issues.

In 1978, the Senegal Fertility Survey (SFS) was performed as a part of the World Fertility Survey, a project which sponsored detailed surveys in a large number of developing countries in all parts of the world. In addition to fertility data, the SFS included considerable information on topics related to health, including child mortality, breast-feeding, and family planning (Senegal Direction de la Statistique, 1981). Unfortunately, no information specific to the Sine-Saloum has been published.

The work of Pierre Cantrelle and his colleagues at the Office de la Recherche Scientifique et Technique d'Outre-Mar (ORSTOM) has provided the most useful and detailed health information available for the Sine-Saloum. ORSTOM has been operating a project in small areas within the Sine-Saloum since the early 1960's which has continued to the present. This project has included listing of all births occurring within project areas and following the children through the early years of life in order to measure mortality. Besides mortality, data on other areas of health have also been gathered. More recently, ORSTOM has begun to look into such areas as diarrhea prevalence.

CHAPTER II: THE SURVEY

A. COVERAGE AND CONTENTS

1. Geographic Coverage

The Family Health Survey covered the entire region of Sine-Saloum with the exception of six urban areas and three towns in which health centers were located--a health center being a type of health facility which provides a level of health care and a variety of services well above that provided by health posts and huts. The nine localities excluded from the sampling frame included Kaolack (the regional capital and capital of the Department of Kaolack), the five other departmental capitals, and three other towns--Sokone, Guinguineo, and Kounghoul. In all, this eliminated areas with a combined population of roughly 200,000, leaving a survey area with a population of about 1 million. Thus, the survey results are not intended to be representative of the entire region but only of its rural areas, which contain most of its area and population.

2. Eligible Survey Population

The population eligible to be interviewed consisted of all women between the ages of 15 and 44 who had ever been married or had ever had a live birth. The reason that younger and older women were excluded from the sample was that most of the questionnaire dealt with the health of very young children and the use of maternal and child health services. Since only a very small proportion of childbearing occurs outside the ages 15 to 44, it was felt that the extra effort and cost expended in interviewing women outside this age range would have yielded little information in return.

3. Questionnaire

The survey instrument consisted of three components: a village dossier, a compound or concession form, and the individual respondent questionnaire. Each of these was to provide quite different types of information, as indicated below.

First, a one-page village dossier was completed by the village chief (or other official if the chief was not available) in each of the villages falling into the sample. The purpose of this dossier was to provide information on the proximity of various facilities (especially health facilities) to the village in question.

Second, the chief of every selected concession was asked to provide information on all females between the ages of 15 and 44 living in his concession. The data collected consisted of women's ages, marital status, and whether or not each woman had borne any children. This information served two purposes. First, it yielded a list of women who were eligible to respond to the individual questionnaire, the most important of the survey instruments. Also, it allowed us to make total population estimates for analysis of fertility rates and sociodemographic variables as well as age and marital status distributions. Without the data from the concessions we would have been limited to descriptions of the ever-married population only.

Finally, there was the individual questionnaire, the most important and lengthy of the three survey instruments. Each woman of childbearing age who had ever been in a consummated union or had ever had a live birth was asked to respond to a 20-to-30-minute questionnaire covering several topics on the health of her young children, the use of health services, and related subjects.

4. Content

The Sine-Saloum Family Health Survey was designed to cover a wide range of topics rather than to concentrate on a small number of specific subjects. It was intended to provide a moderate amount of information on health status, use of health services, and other subjects directly related to the health of children and their mothers. The specific areas examined were: socioeconomic and demographic characteristics of respondents; the health status of young children; mortality and causes of death among recently born children; the use of maternal and child health services; the use of health care facilities and services, with particular attention paid to use of Sine-Saloum Health Project services; fertility; breast-feeding and the post-partum period; and knowledge, use, and potential demand for family planning services.

Because this was a multi-purpose survey, it was necessary that limitations be imposed on the depth of information collected on each of the topics included. The length of interviews had to be kept to less than one-half hour, on average, in order to achieve a predetermined sample size within the constraints of the survey budget. Therefore, it was not possible to gather the detail of information which could have allowed for more in-depth analyses of some subjects. Although those with particular interest in specific subject areas may have found the survey more satisfying if it had provided more detailed findings in those areas, it was decided that the survey would provide maximum benefit to health planners and officials in the form it eventually took.

B. SURVEY DESIGN

1. Sampling Plan

The survey utilized a multistage cluster sample and was intended to be as nearly self-weighting as possible. Since this was a multi-purpose survey designed to yield information on a variety of topics, the desired sample size was based on the number of live births about which information would be needed in order to obtain acceptable sampling errors for the least common event about which information was sought, that being mortality from specific causes. Since tetanus was thought to have the lowest rate of the major causes of death, with about 1 percent of all children succumbing to it, information was needed on about 3,000 children.

The survey pretest had indicated that women would have had an average of about 1.5 births apiece over the period to be covered (since the beginning of 1977). So, interviews with about 2,000 women were needed.

To include 2,000 women, 80 sampling clusters were chosen with an expected 25 interviews per cluster. Eighty census districts (out of about 800 in the region) were selected with probability proportional to their size in the 1976 census of population (the most recent sampling frame existing). Within each district, one village was chosen with probability proportionate to the village's size relative to others in the district as a point in which interviewing would start.

Upon entering a selected village the interview team supervisor had the village chief (or other authority) make a list of all compounds* in the village in whatever order he desired. Interviewing began at a randomly selected concession. Interviewing took place at that initial concession and at the next 14 compounds* on the list (an expected 1.7 interviews per concession on

*"Concession" in French--one or several households of an extended family within an easily distinguished, delineated area.

the average). If the end of the list was reached before 15 concessions, the interview team went on to the next listed village in the district.

Within selected compounds all ever-married women from 15 to 44 years of age were eligible for interview. In some parts of the Sine-Saloum, especially in Serer areas, compounds tend to be very large, containing far more than the two or three women found, on average, in the rest of the region. Thus, in these areas only 10 compounds were selected in each cluster. This kept the number of interviews in these clusters from being disproportionately large. In spite of this, some weighting factors had to be used to take into account the varying percentages of women successfully interviewed in different areas. This results from the fact that there was some variation in the population of districts, as well as the number of women interviewed.

2. Final Interview Status

Table 2.1 presents the results of the compound and individual interviews. The top panel, results of compound interviews, most importantly shows that there were no refusals to provide information at any compound where someone was at home (and in only 1 percent of cases was no one at home). Nine percent of compounds reportedly had no women eligible for the individual portion of the survey.

The bottom panel shows that refusal was not a problem in the individual interviews either; only one woman would not agree to be interviewed. However, 21 percent of eligible women were absent from the concession and therefore could not be interviewed. A comparison was made between the women interviewed and those not at home to see if they differed according to those variables for which we have information on all women. We found that there were very small differences between respondents and nonrespondents according to age, current marital status, and whether or not they ever had any live births.

TABLE 2.1

Percent Distributions of Final Interview Status for
Compound and Individual Interviews
Sine-Saloum Family Health Survey 1982

<u>Results of Compound Interviews</u>	<u>Percentage Distribution</u>
List of Eligible Women Obtained	89.5
No Eligible Women	8.9
No One at Home	1.3
Vacant Compound	0.3
Refusal	0.0
 TOTAL	 100.0
 Number of Compounds	 (1,085)
 <u>Results of Individual Interviews</u>	
Completed Interview	78.3
Woman Absent	21.0
Refusal	0.0
Other	0.7
 TOTAL	 100.0
 Number of Eligible Women	 (2,414)

Most women who were absent apparently were helping with the harvest and, in most respects, were likely to have been similar to women who were interviewed, since most women assist with the harvest. Another 1 percent of women were not interviewed for assorted other reasons, most often because of some physical or mental impairment. It appears that the survey sample is quite representative of ever-married women of childbearing age in rural Sine-Saloum as a whole.

3. Training and Fieldwork

The fieldwork contingent for the survey consisted of the survey director and the survey coordinator, both from the Bureau National de Recensement

(BNR-National Census Office) in Dakar, and four interview teams. Each team included a supervisor, three interviewers, and a chauffeur. The BNR recruited a total of 15 women as possible interviewers. After a 2-week training period, 12 of them were asked to work on the survey, and the remaining 3 served as backups should any of the original 12 leave the survey at any time. All interviewers were fluent in both Wolof and French and had at least a high school education. The supervisors were permanent employees of the BNR and who had worked on previous surveys, including the 1976 census and the Senegal World Fertility Survey of 1978.

Included among the supervisors' tasks were: contacting the village chief upon arrival and informing him of the survey activities and goals, collecting information for the village dossier, obtaining a list of concessions in each village, reviewing completed questionnaires before leaving the village, and answering interviewers' questions. The interviewers were charged with obtaining as accurate information as possible from concession heads and respondents. Besides driving the teams to sampling points, the chauffeurs were trained to obtain the heights, weights, and arm circumferences of the children of respondents.

The fieldwork portion of the survey was scheduled to last for no more than 8 weeks. The four teams were combined into two groups of two teams, each of which covered about one complete sample cluster per working day. The survey was performed at a time of year when nutritional status was anticipated to be at a relatively low level, that is shortly before the year's harvest came in. If the survey extended beyond about 8 weeks, i.e., much beyond the beginning of the year, health and nutrition status would have likely started their yearly improvement. Fieldwork began in mid-November and was completed within the time allotted, with the vast majority of interviews finished by the end of December.

C. LIMITATIONS OF THE SURVEY

There are two important limitations associated with the Sine-Saloum Family Health Survey. The first, as mentioned previously, is that although it contains information on many subject areas, the depth of information in many of those areas is quite limited due to practical constraints on the length of the survey instrument. In many instances this limits the detail of the analysis which can be performed. For example, in regard to diarrhea, respondents were asked only if each of their young children had had diarrhea during the past 2 weeks and how the child had been treated. Although more extensive information on the severity and duration of the illness and details of the treatment would have been useful, the collection of such information would have necessitated reducing other parts of the questionnaire.

The second limitation of the survey typically arises when dealing with retrospective information, particularly in developing countries. The questionnaire called for considerable information requiring women to recall past events. For example, women were to list the month and year of the births of children born after 1976, whether each child had diarrhea in the past 2 weeks, the symptoms exhibited prior to death by children no longer alive, and the number of months she breast-fed her last child. Such information is bound to be misreported by some respondents. Not only might dates be reported inaccurately, but some events, such as the births of children dying very young, may be omitted either because of faulty memory or socio-cultural taboos. One can only hope that the degree of these types of errors is not severe enough or any biases great enough so as to affect the survey's conclusions. Fortunately, in many instances, there are means of examining the

data for probable biases and errors so as to correct possible faults. For example, comparisons can be made with other sources of data or irregularities in the patterns of responses, i.e., the questionnaire's internal consistency, can be examined.

A number of other factors had to be taken into consideration when the data were analyzed. The most important of these factors may be language. The questionnaires were written in French, but most interviews were conducted in Wolof, the language of most residents of the Sine-Saloum. The interviewers, who were fluent in both French and Wolof, were trained to translate all terms on the questionnaire as precisely as possible to convey the meanings of questions. However, there may have been instances of imprecise translation from one language to the other, especially the answers to the limited number of open-ended questions, which were given by respondents in Wolof but had to be written in French by the interviewers. There may have been instances in which concepts did not easily translate into one language or the other, since the two languages are manifestations of very different cultures. In other instances literal translations may not have captured the exact meaning of certain responses.

As in much of the developing world, and especially in Sub-Saharan Africa, people often do not have a good sense of how long ago various events in their lives occurred. Therefore, extra effort had to be made to obtain accurate information on the ages of respondents, their dates of marriage, and the dates of birth of their children. In spite of the care taken in collecting such information, we realize that it may be imperfect and must be viewed with this in mind.

With these precautions in mind and the knowledge that some inaccuracies are inevitable in virtually any survey, one can proceed to examine the results obtained from the survey. We feel the reliability of the survey data are good in most areas, considering all the opportunities which exist for the inclusion of faulty information. We have done our best to point out areas where it was felt that conclusions may have been influenced by possible shortcomings in the data.

III. SOCIOECONOMIC AND DEMOGRAPHIC CHARACTERISTICS

A. Introduction

The Sine-Saloum Family Health Survey (SSFHS) questionnaire included a section which dealt with social, economic, and demographic characteristics of respondents and their husbands. Information was collected on the material from which the respondent's house was constructed, literacy and education of her and her husband, and the occupation of her husband (or last husband, if not currently married). The ethnic group and religion of each respondent were ascertained. Also, nuptiality information was obtained, including marital status, age at marriage, and number of wives of each respondent's current or most recent husband.

These data were intended to serve primarily as control variables when the health-related parts of the survey were analyzed. It enables one to determine if health status, needs, and service usage vary within the population and to find out where particular problems are most acute. Such knowledge might help health planners and administrators in directing their programs and projects so as to be most effective.

B. Housing

The type of housing in which mothers and children live tends to be a reliable indicator of socioeconomic status, and may itself significantly influence health status. In the SSFHS we cross-classified the material of which the walls and roof of each respondent's house was made, in order to create a typology of house type, which serves as a useful measure of

socioeconomic status. This typology, developed by the Senegalese Census Office and used with success in other analyses, consisted of the following categories:

- traditional housing: the walls and roof are made of local materials;
- improved traditional housing: only the roof is made of modern materials;
- semi-modern housing: only the walls are made of modern materials;
- modern housing: both the walls and roof are made of modern materials.

Among the 1,896 women interviewed, only 16 percent live in dwellings made of completely local materials (straw, thatch, etc.). Though modern housing is not widespread yet (11 percent), it should be noted that a considerable number of houses are at least partially modern. In fact, 73 percent of respondents live in houses which have been improved through the use of other than local materials in the construction of the walls or roof, but not both.

C. Ethnic Group and Religion

Fifty percent of the women are from the Wolof tribe. These are followed by the Serers and the Peulhs with 31 percent and 15 percent, respectively. The Serers are in the majority in the Departments of Fatick and Foundiougne. However, they are far less numerous than the Wolofs in the other five Departments. As shown in Table 3.1, housing is best among the Serers and is least modern among the Peulhs, only 3 percent of whom live in modern dwellings. These differences are likely, but not necessarily, reflections of differences in socioeconomic levels among the ethnic groups.

TABLE 3.1

Percent Distribution of Selected Characteristics
by Ethnic Group Background
Sine-Saloum Family Health Survey

<u>Characteristics</u>	<u>Total</u>	<u>Ethnic Group</u>			
		<u>Wolof</u>	<u>Serer</u>	<u>Peulh</u>	<u>Other</u>
<u>House Type</u>					
Modern	10.7	9.7	16.4	3.2	5.9
Semi-modern	18.5	18.4	21.0	12.9	22.4
Improved Trad.	55.0	56.3	48.9	59.9	67.1
Traditional	15.8	15.6	13.7	24.0	4.6
<u>Economic Activity of Husband</u>					
Primary Sector	81.8	83.1	76.6	84.5	76.5
Non-primary Sector	17.8	16.7	22.7	14.9	23.5
No Activity	0.4	0.2	0.7	0.6	0.0
<u>Husband's Literacy in French</u>					
Literate	14.4	10.4	25.4	4.6	16.1
Illiterate	85.6	89.6	74.6	95.4	83.9
Total	100.0	100.0	100.0	100.0	100.0
Number of Cases	(1,894)	(980)	(537)	(293)	(84)

The vast majority of women report themselves to be Moslems (96 percent). The remaining 4 percent are Christians, all of whom belong to the Serer ethnic group. Because almost all respondents are Moslems, religion does not serve as a useful control variable.

Only women who had ever been in consummated marriages were interviewed in the SSFHS. (Single women who had had any children were eligible for interview, but none were identified). Information was obtained on current marital status, age at marriage, the number of times each women had been married, and the number of wives each respondent's husband had.

TABLE 3.2

Percent Distribution of Current Marital Status by Age
Sine-Saloum Family Health Survey

<u>Age</u>	<u>Total</u>	<u>Marital Status</u>			
		<u>Married</u>	<u>Divorced</u>	<u>Widowed</u>	<u>Single</u>
15-19	100.0	63.3	1.2	0.3	35.2
20-24	100.0	89.9	3.0	0.4	6.8
25-29	100.0	95.9	2.6	0.8	0.8
30-34	100.0	96.6	1.6	1.3	0.5
35-39	100.0	97.6	1.5	0.6	0.3
40-44	100.0	95.9	1.8	2.3	0.0
15-44	100.0	87.7	2.0	0.8	9.5

Singulate Mean Age at Marriage (SMAM)=17.2 years.
(Mean number of years single for women married
before age 50).

Table 3.2 presents the distribution of current marital status by age for all 15-44 year-old women reported to be living in selected compounds. As can be seen, marriage occurs quite early and is virtually universal. Even among 15-19 year-olds, only 35 percent of women have never married. By ages 25-29, fewer than 1 percent of women remain single. The mean age at marriage, based on these percentages, is about 17 years. Almost one-half of respondents claim to have been married at age 15. It is probable that many women who married in their midteens merely rounded their marriage age to 15 years. Because of the likely biases implied by these responses, we have used current marital status to look at age at marriage. For all practical purposes, marriage often occurs somewhat later than implied by these data, since there is very often a period of up to 1 or 2 years between the actual marriage and its consummation and cohabitation.

The figures in Table 3.3 confirm, to no one's surprise, that polygyny is a widespread practice in Sine-Saloum: 50 percent of women reported being in a polygamous marriage, 33 percent where the husband had 2 wives and 17 percent in marriages where the husband had at least 3 wives. Polygyny is most widespread among Wolofs; the proportion of women living in polygamous unions is 58, 43, and 36 percent for Wolofs, Serers, and Peulhs, respectively. Besides being affected by culture, the number of wives a husband has is correlated strongly with economic status, when it is gauged by house type or economic activity. However, social indicators, such as educational level or literacy, show a slightly inverse relationship with polygamy, the higher the status, the less likely a man is to be in a polygamous union. Table 3.3 also shows that there is a strong direct association between a woman's age and the probability of being in a polygamous marriage.

D. Education Level

Fewer than 6 percent of women have ever attended a French language school, while only 3 percent know how to read and write French. These percentages are about 14 and 13 percent, respectively, for the respondent's husbands. For either sex, the educational level and the literacy level are highest among the Serers. The percentage of husbands who know how to read French is 25 percent among the Serers, 10 percent among the Wolofs and only 5 percent among the Peulhs. Because of the very low levels of literacy and education throughout the population, these variables are rarely used in the analysis as other socioeconomic variables proved to be more useful control variables.

TABLE 3.3

Percent Distribution of Number of Wives of Respondents'
Husbands According to Selected Characteristics
Sine-Saloum Family Health Survey

<u>Characteristics</u>	<u>Total</u>	<u>Number of Wives</u>			<u>Number of Cases</u>
		<u>1</u>	<u>2</u>	<u>3+</u>	
<u>Total</u>	100.0	50.5	32.9	16.7	(1,865)
<u>House Type</u>					
Modern	100.0	29.8	43.9	26.4	(189)
Semi-modern	100.0	34.5	37.0	28.6	(341)
Improved traditional	100.0	55.6	31.6	12.8	(1,049)
Traditional	100.0	65.1	25.0	10.0	(286)
<u>Husband's Economic Activity</u>					
Primary sector	100.0	50.9	33.3	15.8	(1,531)
Outside primary sector	100.0	49.0	30.6	20.4	(316)
<u>Husband's Literacy</u>					
Can read	100.0	56.3	29.2	14.5	(1,605)
Cannot read	100.0	49.7	33.3	17.0	(235)
<u>Respondent's Age</u>					
15-19	100.0	71.5	19.0	9.6	(289)
20-24	100.0	56.7	32.1	11.2	(437)
25-29	100.0	48.1	37.6	14.3	(414)
30-34	100.0	40.1	38.2	21.7	(298)
35-39	100.0	40.7	33.4	25.9	(262)
40-44	100.0	39.0	35.9	25.1	(165)
<u>Ethnic Group</u>					
Wolof	100.0	41.8	34.8	23.3	(965)
Serer	100.0	56.7	31.7	11.6	(524)
Peulh	100.0	63.4	30.4	6.2	(292)

E. Economic Activity

The questions regarding economic activities pertained to men. Each respondent was asked to report both the main and the secondary economic activities of her husband, defined on the basis of income. Even if the respondent is economically active, women's economic activities can only be considered as secondary as far as income is concerned, since in the vast majority of cases, women do not work outside the home or fields.

Not surprisingly, 82 percent of the men are employed in the primary sector (farming, livestock or fishing), while 17 percent are employed outside the primary sector. The Serers are the least likely to be involved in primary activities followed by the Wolofs and Peulhs, with 23, 17, and 15 percent, respectively, working outside the primary sector. It is among those working in the non-primary sector, whose housing is the most modern, a sign that economic activity is a useful indicator of socioeconomic status.

CHAPTER IV: CHILD MORBIDITY AND USE OF MCH SERVICES

In the Sine-Saloum Family Health Survey a substantial amount of information was collected regarding the health status of young children as well as the utilization of maternal/child health services by women during and following their most recent pregnancy. These data should serve to help evaluate the degree to which certain adverse health conditions exist among children in the population and the adequacy of general practices for dealing with these conditions. Such knowledge can help in the formulation of health intervention policies by demonstrating the health conditions which warrant the most attention and the segments of the population with the greatest needs in particular health areas. In this analysis we look at three areas related to maternal and child health status and needs: (1) the incidence of common childhood illnesses and the use of measures to combat them, (2) the nutritional status of young children, and (3) the use of maternal and child health services before, during, and following deliveries.

A. Child Morbidity and Related Services

Information was collected on three topics directly related to the health status of young children. These include: (1) recent diarrhea and its treatment, (2) fever and use of antimalarials during the past rainy season, and (3) DTP, BCG, and measles vaccination coverage.

1. Diarrhea Incidence

Each woman interviewed was asked whether each of her children born since 1977 had had diarrhea* during the past 2 weeks. As seen at the top of Table 4.1, 40 percent of young children were reported to have had diarrhea during that period. At first glance, such a percentage appears extremely high. However, recent studies by the Senegalese Ministry of Health in the Region of Casamance (1983) and by Garenne (1983) and his co-workers at ORSTOM, in small areas within the Sine-Saloum reveal rates of diarrhea approximately as high as those found in the Sine-Saloum Family Health Survey. One should keep in mind though, that there are two possible ways in which prevalence may be exaggerated. First, women may be thinking in terms of "recent" diarrhea, rather than during exactly the last 2 weeks, so, on average, the time frame included may be slightly longer than 2 weeks. Second, there is the possibility of a definitional problem, whereby children who had some diarrhea, but did not meet the strict survey definition, were included as having had diarrhea.

The important point, however, regardless of whether the reported prevalence is somewhat inflated, is that diarrhea is extremely common among young children in rural Sine-Saloum. The fact that over a very short period of time, so many children have diarrhea (and this survey was carried out at a time of year not generally considered to be the peak season for diarrhea) indicates that it is an extremely serious health problem in the Region. This point will be made again in Chapter VI, where it is shown that diarrheal disease is the leading cause of childhood mortality.

*The World Health Organization definition of diarrhea was used: three loose or watery stools for two consecutive days.

TABLE 4.1

Percent of Children Under 6 Years Old With Diarrhea
During the Past 2 Weeks, by Selected Characteristics
Sine-Saloum Family Health Survey

<u>Characteristics</u>	<u>Percent</u>	<u>Number of Cases</u>
<u>Total</u>	40.3	(2,262)
<u>Department</u>		
With Health Huts	38.8	(1,215)
Fatick	31.3	(624)
Kaffrine	50.1	(423)
<u>Age</u>		
<6 Months	45.3	(292)
6-11 Months	61.9	(166)
1 Year	57.9	(409)
2 Years	44.1	(374)
3 Years	35.7	(393)
4+ Years	20.7	(618)
<u>House Type</u>		
Modern	33.6	(244)
Semi-Modern	41.4	(402)
Improved Traditional	42.5	(1,279)
Traditional	36.3	(337)
<u>Father's Occupation</u>		
Primary	40.7	(1,837)
Non-Primary	37.0	(388)
<u>Ethnic Group</u>		
Wolof	45.4	(1,167)
Serer	34.0	(696)
Peulh	39.4	(298)
Other	34.8	(101)
<u>Sex</u>		
Male	42.3	(1,183)
Female	38.1	(1,079)

Table 4.1 shows that there are noteworthy differences between population subgroups in recent incidence of diarrhea. One-half of Kaffrine's children recently had diarrhea, compared with 39 percent in the four Project departments and 31 percent in Fatick. The figure for Kaffrine provides strong support for expanding the health project throughout the Region, since the area with the most diarrhea (and, as will be shown, the most fever) is the largest department and is not yet included in the project.

Diarrhea incidence is highest from 6 months of age until the second birthday, at a level of about 60 percent. After age 1, incidence declines rapidly, down to 21 percent for 4 and 5 year-olds. It is lower in the first 6 months than in the following months probably because of the presence of maternal antibodies and relatively low exposure to foods other than breast milk. (In fact, incidence is only 24 percent in the first 2 months).

There is no strong overall relationship between the presence of diarrhea and the socioeconomic indicators. In both Fatick and Kaffrine incidence is lowest among children in traditional houses, by a substantial margin. This again may be related to breast-feeding and supplementation, even though within age groups neither appears related to diarrhea overall. Among ethnic groups, Wolof children are the most likely to have diarrhea and Serers are the least likely. Boys have a slightly higher incidence than girls--42 percent compared to 38 percent.

2. Diarrhea Treatment

For each child who reportedly had diarrhea in the previous 2 weeks, mothers were asked what they did about the illness. The objective was to see to what extent effective treatment was being used and likewise the extent of inappropriate treatment.

Oral rehydration solution (ORS) is an effective, low-cost, easy to prepare and administer means of preventing and treating dehydration due to diarrhea (WHO, 1981; Pierce, et al., 1977). ORS can either be prepared at home using readily available, inexpensive ingredients or by using ORS packets which are ready to add to water. It was expected that the survey results would show that use of ORS, both home-prepared and packets provided by health facilities, would be low, since there had been virtually no program in rural Sine-Saloum to establish and promote ORS usage.

Table 4.2 shows that, indeed, use of ORS is minimal, having been used in about 2 percent of recent cases of childhood diarrhea. (Another question in the survey, asking about how mothers would treat diarrhea, also showed that 2 percent would use ORS). In light of the fact that diarrhea is such a major health problem among young children in the Region, this demonstrates that the addition of an ORS program as part of the health project is vital. Intravenous (IV) therapy, which is only available at high level health facilities, was used by virtually no one in the sample.

Over half of all cases of diarrhea were treated by various "Western" pharmaceutical products, most of which were either antibiotics or "Ganidan". Unfortunately, the vast majority of diarrheal diseases are sure to be viral, which means that these treatments are ineffective. One likely and unfortunate side effect of the use of such drugs is that because mothers believe them to be effective, they are less likely to administer agents which may be helpful, particularly foods and home remedies which might prevent dehydration.

About one-fifth of mothers administered some sort of "home remedy", the most common being pain de singe ("monkey bread"), the fruit of the baobab tree. Three percent gave their children solid or semi-solid foods such as porridge and cereals. About 6 percent used what we have called "non-nutritive liquids," consisting mostly of teas and herbal preparations. Most of these home remedies may be effective at least for preventing dehydration in children. Almost one-fifth of mothers did not do anything for their children which they described as treatment.

TABLE 4.2

Percent Distribution of Treatment for Recent
Diarrhea in Children, by Department
Sine-Saloum Family Health Survey

<u>Treatment</u>	<u>Department</u>			
	<u>All Departments</u>	<u>With Health Huts</u>	<u>Fatick</u>	<u>Kaffrine</u>
Oral Rehydration	1.9	2.1	4.1	0.6
Intravenous	0.2	0.4	0.0	0.0
Other Pharmaceuticals*	54.5	56.5	38.9	58.9
Pain de Singe**	9.9	7.8	24.1	6.1
Solids/Porridge	2.8	2.7	2.4	3.1
Nutritive Liquids	1.4	2.1	0.7	0.8
Non-Nutritive Liquids	6.1	5.3	2.3	9.0
No Treatment	<u>23.3</u>	<u>23.1</u>	<u>27.5</u>	<u>21.4</u>
Total	100.0	100.0	100.0	100.0
Number of Cases	(898)	(468)	(128)	(302)

*Primarily antibiotics and Ganidan

**The fruit of the baobab tree

Differences in treatment between departments (Table 4.2) are relatively minor except between Fatick and the other five. In Fatick mothers use pain de singe much more often (possibly because there are more baobab trees) and pharmaceuticals less often than in the other five departments, very likely to the benefit of their children. Twice as large a proportion of diarrhea cases are treated with ORS in Fatick as elsewhere, although even in Fatick this proportion is only 4 percent.

There are some interesting differences in treatment according to house type (Table 4.3). The more modern the house, the higher is the likelihood of using Western medicine and the lower is the likelihood of no treatment. "Nutritive liquids" (e.g., rice water) are used almost exclusively in

traditional houses, while "non-nutritive liquids" are used least often in those same houses. Of the major ethnic groups, Wolofs are the most likely to use Western medicines and Serers are most likely to use pain de singe (probably because the Serers are concentrated in Fatick). Children under 1 year of age (and especially under 6 months) are the least likely to receive pharmaceuticals and the most likely not to be treated. It will be useful and interesting to look into the reasons for this relationship.

TABLE 4.3

Percent Distribution of Treatment for Recent Diarrhea in Children, by House Type
Sine-Saloum Family Health Survey

<u>Treatment</u>	<u>House Type</u>				
	<u>All Types</u>	<u>Modern</u>	<u>Semi-Modern</u>	<u>Improved Traditional</u>	<u>Traditional</u>
ORS	1.9	0.0	1.5	2.3	2.3
IV	0.2	1.1	0.0	0.2	0.0
Other Pharmaceuticals*	54.5	64.6	56.8	54.2	45.7
Pain de Singe**	9.9	9.5	11.6	9.9	7.6
Solids/Porridge	2.8	3.2	1.1	2.9	4.5
Nutritive Liquids	1.4	0.8	0.6	0.4	7.5
Non-Nutritive Liquids	6.1	7.3	4.9	7.2	1.8
No Treatment	23.3	13.5	23.6	23.0	30.7
Total	100.0	100.0	100.0	100.0	100.0
Number of Cases	(898)	(91)	(170)	(564)	(131)

*Primarily antibiotics and Ganidan

**The fruit of the baobab tree

3. Fever and Its Treatment

Mothers were asked if each living child born before the last rainy season ("hivernage") had had fever or had been given antimalarial drugs during the

rainy season. Malaria is a major health problem in the Region and antimalarials have been available through the Sine-Saloum Health Project for several years as well as from non-project sources. The purpose of getting information on fever is to get some idea of the incidence of malaria. Admittedly, this is a far from perfect indicator, since many fevers do not arise from malaria, and the fact that what women refer to as fever may not, in some cases, involve fever at all.

The first column of Table 4.4 displays the percentage of children who reportedly had fever. Only 11 percent of children did not have fever during the period in question, confirming that Sine-Saloum is a highly malarious area (even if many fevers are not malaria). The proportion with fever is extremely high throughout the region, being slightly higher in Kaffrine than elsewhere. Proportions increase up to 2-3 years of age (as the presence of maternal antibodies declines) and then fall from 88 to 72 percent at 4-5 years. There is a slightly inverse relationship between fever and socioeconomic status. There is little difference according to ethnic group and virtually none according to the child's sex.

The second column of Table 4.4 displays the proportion of children with fever who were allegedly treated with antimalarials. This proportion is 79 percent overall, an impressively high level. (However, no details were obtained on how the medicine was administered, so the percent of children effectively treated is certain to be somewhat lower). The percent of fevers untreated is over twice as high in Kaffrine as elsewhere. Somewhat fewer children under 1 year were treated compared to older children. Women in modern houses were much more likely than others to have administered antimalarials (90 percent vs. 77 percent). Serers used antimalarial drugs much more than any other ethnic group. Once again there was no perceptible difference between boys and girls.

TABLE 4.4

Percent of Children Who Reportedly Had Fever During
the Post Rainy Season and Percent Treated With Antimalarials
by Selected Characteristics
Children Less Than 6 Years of Age*
Sine Saloum Family Health Survey

<u>Characteristics</u>	<u>Percent With Fever</u>	<u>Percent With Fever Who Were Treated</u>	<u>Number of Children</u>
<u>Total</u>	88.6	78.6	(1,931)
<u>Department</u>			
With Health Huts	86.8	84.4	(1,044)
Fatick	88.3	87.2	(355)
Kaffrine	92.1	61.2	(532)
<u>Age</u>			
6-11 Months	83.5	73.2	(150)
1 Year	86.1	79.6	(404)
Years	90.1	78.2	(371)
3 Years	88.0	80.6	(384)
4-5 Years	71.7	79.1	(603)
<u>House Type</u>			
Modern	80.3	89.5	(219)
Semi-Modern	85.1	78.7	(349)
Improved Traditional	90.6	77.4	(1,074)
Traditional	91.2	76.0	(289)
<u>Father's Occupation</u>			
Primary Sector	89.5	77.1	(1,580)
Not Primary Sector	85.3	86.4	(328)
<u>Ethnic Group</u>			
Wolof	90.9	74.1	(1,002)
Serer	86.5	88.7	(589)
Peulh	88.1	72.3	(255)
Other	79.7	72.5	(85)
<u>Sex</u>			
Male	88.9	79.2	(1,020)
Female	88.2	77.9	(911)

*Excludes children born since the beginning of the last rainy season.

Table 4.5, column 1, shows that, overall, three-fourths of children received antimalarial drugs, with the differences between groups paralleling those seen in the second column of Table 4.4.

TABLE 4.5

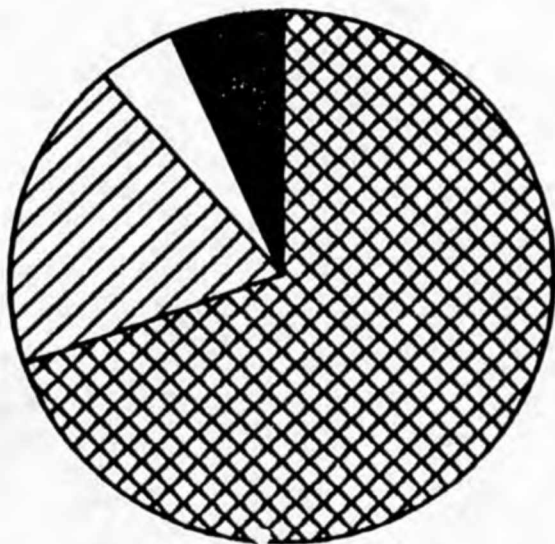
Percent of Children Receiving Antimalarials
During the Past Rainy Season and
Percent of Those Receiving Antimalarials
Who Received Them Prophylactically,
Children Less Than 6 Years of Age*
Sine-Saloum Family Health Survey

<u>Characteristics</u>	<u>Percent of Children Receiving Antimalarials</u>	<u>Percent of Recipients Taking Prophylactically</u>	<u>Number of Children</u>
<u>Total</u>	74.6	6.7	(1,931)
<u>Department</u>			
With Health Huts	79.9	7.9	(1,044)
Fatick	82.9	7.1	(355)
Kaffrine	58.2	3.1	(532)
<u>Age</u>			
6-11 Months	68.4	10.5	(150)
1 Year	75.2	8.8	(404)
2 Years	74.9	5.9	(371)
3 Years	76.7	7.6	(384)
4-5 Years	75.1	4.6	(603)
<u>House Type</u>			
Modern	83.6	14.1	(219)
Semi-Modern	77.3	13.2	(349)
Improved Traditional	72.8	3.7	(1,074)
Traditional	71.0	2.4	(289)
<u>Father's Occupation</u>			
Primary Sector	72.5	4.8	(1,580)
Not Primary Sector	84.9	13.1	(328)
<u>Ethnic Group</u>			
Wolof	71.9	6.4	(1,002)
Serer	83.9	8.6	(589)
Peulh	64.4	1.1	(255)
Other	63.6	9.1	(85)
<u>Sex</u>			
Male	75.1	6.2	(1,020)
Female	74.1	7.2	(911)

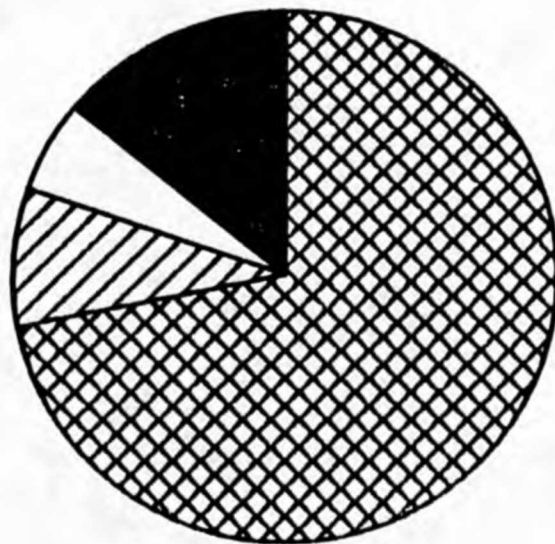
*Excludes children born since the beginning of the last rainy season.

Figure 4.1
 Percent Distribution of Fever—Antimalarial Status
 During the Last Rainy Season for Children
 Under 6 Years of Age by House Type

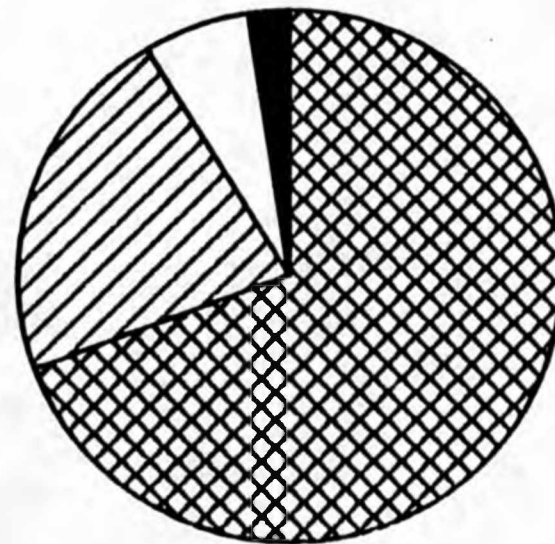
- 41 -



Total
 (N=1931)



Modern
 (N=219)



Traditional
 (N=289)

 Untreated Fever
  Fever, with Treatment
  Treated Prophylactically
  No Fever or Treatment

Figure 4.1 compares fever-treatment status for the extreme housing type groups. The main differences are in treatment, both prophylactic and therapeutic, and not in the probability of having had fever. There is virtually no difference in the percent of children with fever among those children not treated prophylactically.

The Senegalese Ministry of Health advocates the use of antimalarial drugs prophylactically, instead of waiting until they are needed therapeutically. The second column of Table 4.5 displays the proportion of children receiving antimalarials who were given them prophylactically. There seems to be a strong correlation between the percent of all children given these drugs and the proportion who were given them prophylactically. Thus, the women most likely to treat their children also tend to be the ones most likely to use antimalarials prophylactically. The major exception to this rule is by age of the child; the older the child, the less likely it is that he or she has received prophylactic antimalarials. Women in the two most modern housing categories and those whose husbands work outside the primary sector were three to four times more likely than others to administer drugs prophylactically. Almost no Peulh children were given prophylactic antimalarials.

4. Immunizations

Mothers were asked whether each of their living children born since 1977 had received DPT/Polio (in Senegal combined injections are generally given), BCG, and measles vaccinations. The information given could be verified by a health card only for approximately 10 percent of children. WHO recommendations for these vaccinations are as follows:

- (a) DPT/Polio - 3 doses 1 month apart, starting at 1 month (to be followed up with boosters later on);
- (b) BCG - one dose as early as possible;
- (c) Measles - 1 dose at 9 months.

Therefore, all children at least 1 year of age should have received 3 doses of the combined DPT/polio vaccine and a dose of measles vaccine. All except the very youngest children should have received BCG.

Table 4.6 shows the percents of children who had been vaccinated, according to their age. DPT/polio coverage is extremely poor. Only one-tenth of all children at least 1 year-old have received any doses of these vaccines and a mere 3 percent have received the recommended 3 doses. BCG coverage is somewhat better, about 12 percent, but still must be considered quite poor. Measles coverage, however, is far better; about one-third of children at least 1 year-old have received immunizations. Since none of the various immunizations are available at low level health facilities and there have only been occasional (every 2 years) mass campaigns run by the Service des Grandes Endemies, the higher level of measles coverage likely stems from greater awareness of the vaccine and its benefits and fear of measles' effects, causing some mothers to make a considerable effort to have children vaccinated.

Table 4.7 presents proportions of all living children born since 1977 who have received the recommended dosage of each vaccine for population subgroups. For all three Kaffrine lags behind the other departments. Except for measles, Fatick has much better coverage than the Project departments, but all are quite low. House type and husband's occupation are very strongly associated with vaccination coverage, the range from most to least modern houses being 7 to 2 percent, 22 to 6 percent, and 38 to 16 percent, for DPT/polio, BCG, and measles immunizations, respectively. Serers have the highest levels of coverage for DPT and BCG, while Peulhs have the lowest for all three vaccines. Interestingly, Wolofs have the best measles coverage, but virtually no DPT/polio coverage. As with most other diseases and treatments, there is no difference between the coverage rates for boys and girls.

TABLE 4.6

Percent of Children Who Received
DPT/Polio, BCG, and Measles Vaccines by Age
Sine-Saloum Family Health Survey

<u>Age</u>	<u>Immunization</u>						<u>Number of Children</u>
	<u>DPT/Polio Doses</u>				<u>BCG</u>	<u>Measles</u>	
	<u>0</u>	<u>1+</u>	<u>2+</u>	<u>3+</u>			
<6 Months	99.1	0.9	0.3	0.3	2.9	2.4	(293)
6-11 Months	94.1	5.9	2.1	2.1	9.4	10.8	(165)
1 Year	90.0	10.0	3.4	2.1	11.7	19.0	(411)
2 Years	91.9	8.1	4.0	2.8	10.7	32.6	(383)
3+ Years	90.1	9.9	4.5	3.2	11.6	28.9	(1,041)
1+ Years	90.4	9.6	4.2	2.9	11.5	32.4	(1,835)

TABLE 4.7

Percent of Children Who Received
DPT/Polio, BCG, and Measles Vaccines by
Selected Characteristics
Sine-Saloum Family Health Survey

<u>Characteristics</u>	<u>Immunization</u>			<u>Number of Children</u>
	<u>DPT/Polio*</u>	<u>BCG</u>	<u>Measles</u>	
<u>Total</u>	2.5	10.2	27.1	(2,305)
<u>Department</u>				
With Health Huts	2.4	9.0	28.5	(2,305)
Fatick	4.4	17.1	28.2	(432)
Kaffrine	1.0	7.2	23.4	(632)
<u>House Type</u>				
Modern	7.4	22.4	38.3	(249)
Semi-Modern	2.7	12.0	31.3	(414)
Improved Traditional	1.6	8.2	26.4	(1,300)
Traditional	1.8	6.1	16.2	(342)
<u>Father's Occupation</u>				
Primary	0.9	6.9	25.5	(1,877)
Non-Primary	9.7	23.6	35.6	(392)
<u>Ethnic Group</u>				
Wolof	0.7	7.2	30.0	(1,192)
Serer	5.6	16.0	26.8	(706)
Peulh	0.6	4.4	17.0	(301)
Other	3.0	15.7	25.2	(106)
<u>Sex</u>				
Male	2.4	9.9	26.9	(1,198)
Female	2.6	10.5	27.2	(1,107)

*Three or more doses

5. Conclusions

It is apparent from these results (which will become even clearer in Chapter VI) that diarrhea and malaria are major health problems in Sine-Saloum. It is also evident that no programs yet exist which have succeeded in controlling the effects of these diseases to an adequate degree. Likewise, there is little protection against the major vaccine preventable diseases, at least two of which--measles and pertussis--are still very prevalent.

Since, for several reasons, eradication of these illnesses in Senegal will not occur in the foreseeable future, the only feasible way to significantly and rapidly reduce morbidity and mortality from diarrhea, malaria, measles, and pertussis is through effective programs of prevention and treatment. Although in the long run, disease may be reduced more effectively through improved economic conditions, education, nutrition, and sanitation, as well as other changes, more immediate changes must be made in order to achieve rapid health improvements. Increased knowledge, availability, and use of oral rehydration therapy (both packets and homemade versions) would be one of the most important measures for making a noticeable impact on childhood morbidity and mortality in a relatively short time. Also of considerable significance would be implementation of a region-wide immunization program (especially against measles) and strengthening of the program to combat malaria. More will be said in Chapter IX about recommendations for improving the health of children in the Sine-Saloum.

B. NUTRITIONAL STATUS

1. Introduction

The Sine-Saloum Family Health Survey included anthropometric measurements of young children. All children born to respondents since the beginning of

1977 and present at the time of interview had their height, weight, and arm circumference measured. Measurements were taken on 1,796 children less than 5 years of age. These measures should yield a picture of the extent of both acute and chronic undernutrition among children in the population. Because month and year of birth were not reported for some children anthropometric indices based on age could be calculated only for 1,684 children. We have been forced to assume that a failure to report a complete date of birth for a child is not correlated with that child's nutritional status.

2. Anthropometric Indices

Three anthropometric indices were tabulated for each child for whom full information was available: weight for height, height for age, and weight for age. Each looks at a somewhat different aspect of nutritional status. We have compared these indices for each child to "reference" or "standard" populations in order to gauge levels of under-nutrition. The standard, developed by the United States National Center for Health Statistics (NCHS, 1977; NCHS, CDC, no date) is based on a well-nourished United States population, since, to our knowledge, no specific standard for the survey population or other African populations exists. Unlike adults, young children from differing ethnic backgrounds have similar anthropometric indices, if well nourished (Habicht et al., 1974; Graitcer and Gentry, 1981). Therefore, it is thought to be acceptable to use a non-African standard, even though one is assessing an African population.

In this analysis we talk about proportions of children whose various anthropometric indices fall below a particular "percent of median of the reference population." The median for a given population refers to the middle

observation in a distribution. Therefore, the median weight for height for a sample of 999 children would be the weight for height of the 500th child in the distribution. For example, a child at 80 percent of median would fall below 20 percent of children and above 80 percent of children in the reference population in regard to weight relative to height.

Weight-for-height--"The weight is the sum total of all body tissues, whereas height measures only the body skeleton. During an acute or sudden period of nutritional deficiency, there is a reduction of muscle and fat. This results in weight reduction, but height is not affected. The relationship between weight and height alters so that the weight-for-height ratio is reduced" (Agency for International Development, 1978). Such "acute undernutrition" (sometimes called, "wasting") is usually of temporary duration with its highest prevalence occurring during famines and food shortages. In keeping with previous nutrition surveys carried out through the Nutrition Division of the U.S. Centers for Disease Control, acute undernutrition has been defined as a weight-for-height falling below 80 percent of the reference median, with severe undernutrition being under 70 percent.

Height-for-Age--"As a result of frequent episodes or a prolonged period of malnutrition, the height or length of a child will fail to increase in the normal way. Short stature can be the end result, which may be considered an indication of chronic undernutrition (also termed stunting). The highest prevalence occurs with a long-term deficit of food (calories and/or protein) often combined with persistent or recurrent ill health" (Agency for International Development, 1978). We define chronic undernutrition as height-for-age less than 90 percent of the reference median, with severe cases being those under 85 percent.

Weight-for-Age--This index does not distinguish between acute and chronic undernutrition since both long and short-term undernutrition leads to low weight-for-age in describing nutritional problems. Therefore, it is not as useful generally as the other two indices discussed. However, it does have the advantage of being based on a more reliable standard at very early ages than the other indices. Values below 60 percent of the reference median are considered indicative of severe undernutrition with 60-74 percent viewed moderate in this analysis. These cutoff points for weight-for-age are somewhat arbitrary, other analyses having used slightly different thresholds for moderate and severe undernutrition.

3. Results

Percentage distributions of the weight-for-height indices of all measured children at least 3 months of age are presented in Table 4.8. (Children under 3 months are excluded because the reference only goes down to 49 centimeters, a height below that of many young infants). Overall, only 4 percent of children are acutely undernourished, i.e., below 80 percent of the reference median. Moreover, only about one-ninth of the acutely undernourished (about 1 of every 200 children) are severely undernourished. The proportion who are acutely undernourished decreases regularly with increasing age, from 8 to 2 percent. One might expect this pattern to be the reverse, since most of the youngest children are breast-fed. The reason(s) for this pattern have not been determined, although it has also been observed in other populations. Acute undernutrition is quite rare (1.9 percent) among children from 3 to 4 years old, and in severe form is almost nonexistent. Over 70 percent of all children were found to be at least 90 percent of median.

TABLE 4.8

Percent Distribution of Weight-for-Height (in Percents of Standard Median), by Age of Child, Children 3-59 Months of Age
Sine-Saloum Family Health Survey

Weight/Height (Percent of Median)	Age (in years)				
	0-4	<1	1	2	3-4
Under 80 (acutely undernourished)	4.4	7.6	6.6	4.2	1.9
Under 70 (severe)	0.5	0.3	0.9	0.7	0.2
70-79 (moderate)	3.9	7.3	5.7	3.5	1.7
80-89	23.5	20.5	33.6	31.3	14.6
90-99	40.9	32.2	39.8	41.9	45.3
100 plus	31.2	39.7	20.1	12.7	38.3
TOTAL	100.0	100.0	100.0	100.0	100.0
No. of Children	(1,653)	(265)	(370)	(297)	(609)

*Includes 112 children for whom a month and/or year of birth was not reported.

These results indicate that acute undernutrition did exist to a small degree but was not an extreme problem at the time of the survey and even that which did exist was not of a severe nature. Weight-for-height is a measure of undernutrition in the past few weeks or months, so the problem might be more severe at other times of the year and certainly in other years. However, this survey was completed before most of the year's harvest came in, so nutritional status was likely to have been lower than during most of the year.

As seen in Table 4.9, slightly over one-fourth of children measured were found to be below 90 percent of the height-for-age reference median, indicative of chronic undernutrition. Eleven percent were in the severe category while 17 percent were in the moderate category. Chronic undernutrition is very minor in the first year of life, possibly for two reasons. First, virtually all infants are breast-fed. Second, the problem generally takes 6 months or so to develop to a substantial degree. Prevalence

is greatest among 2-year-olds, 39 percent of whom are chronically undernourished, 18 percent severely so. The fact that most children are weaned at about their second birthday (as shown in Chapter 7), might help to explain this finding.

TABLE 4.9

Percent Distribution of Height-for-Age (in Percents of Standard Median), by Age of Child, Children Less Than 5 Years Old Sine-Saloum Family Health Survey

Height/Age (Percent of Median)	Age (in years)				
	Total*	<1	1	2	3-4
Under 90 (chronically undernourished)	26.1	3.9	28.6	39.3	31.9
Under 85 (severe)	10.7	0.8	10.7	18.2	13.6
85-89 (moderate)	15.4	3.2	17.9	21.1	18.3
90-99	55.3	57.0	61.3	47.1	53.4
100 plus	18.6	39.1	10.1	13.6	14.7
TOTAL	100.0	100.0	100.0	100.0	100.0
No. of Children	(1,796)	(405)	(371)	(298)	(610)

*Includes 112 children for whom a month and/or year of birth was not reported.

Such levels of chronic undernutrition certainly warrant the attention of those involved in health and nutrition in the Sine-Saloum. However, despite the apparent seriousness of the problem it does not seem significantly worse than in other parts of Africa where nutritional surveys have been performed. For instance, rural Cameroon had a prevalence of chronic undernourishment of 22 percent in 1977-78, (Agency for International Development, 1978) and a survey in one area of Upper Egypt showed rates of 33 and 27 percent in 1978 and 1980, respectively (Egyptian Nutrition Institute, 1981).

High levels of chronic undernutrition concurrent with modest levels of acute undernutrition may seem somewhat contradictory. However, this situation

seems to exist in much of the developing world, as demonstrated by the results of a large number of surveys collecting anthropometric data. Typically, if surveys have not been done during periods of extreme food shortage, levels of chronic undernutrition are several times higher than acute levels.

Table 4.10 presents distributions of weight-for-age for survey children. Using 75 percent of median as the limit for undernutrition, one finds 23 percent of children to be undernourished, about 90 percent of them only moderately so. Weight-for-age indices reach their worst at ages 1 and 2 where one-third of children are defined as undernourished.

TABLE 4.10

Percent Distribution of Weight-for-Age (in Percents of Median)
by Age of Child, Children Less Than 5 Years Old
Sine-Saloum Family Health Survey

Weight/Age (Percent of Median)	Age (in years)				
	0-4	<1	1	2	3-4
Under 75	22.7	10.9	32.5	33.2	18.1
Under 60 (severely undernourished)	2.5	1.2	3.2	4.4	1.3
60-74 (moderately undernourished)	20.2	9.7	29.3	28.8	16.8
75-89	40.2	27.4	45.6	38.5	45.1
90 plus	37.1	61.7	21.9	28.3	36.8
TOTAL	100.0	100.0	100.0	100.0	100.0
No. of Children	(1,796)*	(403)	(371)	(298)	(612)

*Includes 112 children for whom month and/or year of birth were not reported.

Although levels of acute undernutrition are nowhere outstandingly high, they are somewhat higher in certain population sub-groups than others, as seen in Table 4.11. The most outstanding difference is between children who had and did not have diarrhea during the previous 2 weeks (7 vs. 2 percent). This result is reasonable since diarrhea is a significant contributor to weight loss and, thus, to wasting. Children in Kaffrine experience somewhat more acute undernutrition than those in the other five departments. Prevalence is slightly higher among males than females, which is consistent with other survey results showing diarrhea incidence and mortality also higher among males. House type appears to matter little, although if the survey had occurred during a time of severe food shortage, one would expect socioeconomic status to have been an important determinant of undernutrition. Levels are also somewhat higher among Peulhs than others.

Table 4.12 looks at differentials in chronic undernutrition. Most of these differentials, not surprisingly, are in the same direction as those in weight-for-height. There is still a difference between children according to whether they recently had diarrhea but, as one would expect, when considering chronic undernutrition the difference is no longer striking (29 vs. 24 percent). The situation is substantially worse in Kaffrine than in the rest of rural Sine-Saloum. Most of the difference comes from the moderate category, however. Again, males are slightly worse off than females, but the difference exists at each age, meaning there may be meaningful differences between the sexes. House type is a much more important determinant than it was for weight-for-height. This makes sense, since the effects of living at a lower economic standard should be likely to show up more over the long run than the short run except during times of severe hardship. Prevalence is

about 30 percent higher among children in traditional houses than among others. Wolof children experience far more stunting than either Serers or Peulhs. The difference between Wolofs and Serers may stem primarily from socioeconomic differences. However, the difference between Wolofs and Peulhs, who are no better economically than the Wolofs, probably can be attributed to the fact that the Peulhs are traditionally cattle herdsman and, thus, have readily available supplies of milk and meat at most times, resulting in different infant and child feeding practices.

TABLE 4.11

Percent of Children 3-59 Months of Age Exhibiting Acute Undernutrition* by Severity and Selected Characteristics
Sine-Saloum Family Health Survey

<u>Characteristics</u>	<u>Total</u> (<u><80%</u>)	<u>Severe</u> (<u><70.0%</u>)	<u>Moderate</u> (<u>70.0%-79.9%</u>)	<u>No. of</u> <u>Children</u>
All Children	4.4	0.5	3.9	(1653)
<u>Diarrhea in Past 2 weeks</u>				
Yes	6.9	0.7	6.3	(742)
No	2.3	0.3	2.0	(908)
<u>Department</u>				
4 Project Departments	4.4	0.2	4.2	(858)
Fatick	3.2	0.3	2.9	(331)
Kaffrine	5.3	1.1	4.2	(464)
<u>Sex</u>				
Male	5.1	0.5	4.6	(859)
Female	3.6	0.5	3.2	(749)
<u>House Type</u>				
Modern/semimodern	4.1	0.6	3.4	(487)
Tradit/Improved Tradit.	4.5	0.4	4.1	(1166)
<u>Ethnic Group</u>				
Wolof	4.3	0.6	3.7	(838)
Serer	4.1	0.3	3.8	(527)
Peulh	6.0	0.4	6.0	(219)

*Less than 80 percent of reference median weight-for-height.

TABLE 4.12

Percent of Children Less Than 5 Years of Age Exhibiting Chronic
Undernutrition*, by Severity and Selected Characteristics
Sine-Saloum Family Health Survey

<u>Characteristics</u>	<u>Total (<90.0%)</u>	<u>Severe (<85.0%)</u>	<u>Moderate (85.0%-89.9%)</u>	<u>No. of Children</u>
All children	26.1	10.7	15.4	(1796)
<u>Diarrhea in Past 2 Weeks</u>				
Yes	28.8	11.3	17.5	(797)
No	24.0	10.3	13.7	(995)
<u>Department</u>				
4 Project Departments	23.7	10.3	13.4	(947)
Fatick	22.5	8.6	14.0	(352)
Kaffrine	33.5	13.2	20.3	(497)
<u>Sex</u>				
Male	27.3	10.7	16.7	(926)
Female	24.8	10.8	14.0	(870)
<u>House Type</u>				
Modern/Semimodern	22.4	9.2	13.2	(520)
Tradit./Improved Tradit.	27.7	11.4	16.3	(1276)
<u>Ethnic Group</u>				
Wolof	31.1	12.8	18.4	(915)
Serer	20.0	8.2	11.8	(567)
Peulh	23.6	8.5	15.2	(232)

*Less than 90 percent of reference median height-for-age.

In conclusion, undernutrition, both acute and chronic, exists in rural Sine-Saloum. Neither can be said to be particularly severe compared to what is known about other parts of Africa, but prevalence is high enough to warrant action to improve the nutritional status of children. Acute undernutrition, related to short-term problems and acute illness and of fairly low prevalence, should be less of a concern than chronic undernutrition. The fact that over one-fourth of all children born in the previous 5 years show signs of chronic undernutrition should be of great concern to those involved in the health and nutrition of the population.

Further analysis of the survey data will attempt to determine what the most important factors are in bringing about high levels of undernutrition. Other research is attempting to determine the extent to which a Government-sponsored feeding program is being utilized and how it has affected levels of wasting and stunting.

C. USE OF MCH SERVICES

A section of the questionnaire was designed to evaluate the extent to which women utilize health services related to pregnancy, delivery, and the postpartum period. This period is a time when the health risks to mothers and children are very high.

1. Prenatal Services

(a) Consultations

Women who had at least one pregnancy were asked if they had a prenatal examination (not to be confused with a medical checkup) during their most

recent pregnancy. Thirty-eight percent of the 1,745 women replied that they had received such an examination. The percentage of positive answers is far higher in the 15-19 age group (44 percent) than in the 40-44 age group (27 percent). Between these two groups the proportions differ slightly except for the 30-34 age group where the responses are practically the same as for the less than 20 age group. This may indicate a trend toward the receipt of prenatal examinations. This is supported by the fact that 39 percent of women with their last delivery in 1981 received exams, compared to 36 percent in 1978-80 and 30 percent whose last delivery was before 1978.

Serers are more likely to receive prenatal exams than the other groups: 45 percent compared with 34 percent among Wolofs and Peulhs. Receipt of prenatal visits varies directly and sharply with the modernity of respondents' houses, from 63 percent of those in the most modern houses to 21 percent for those in the most traditional. Also, the proportion making prenatal visits is highest in the Health Project area, where almost half of the women had at least one prenatal visit, compared with 39 percent in the Department of Fatick and 16 percent in Kaffrine.

Table 4.13 shows that women tend to have their first exam relatively late during pregnancy. Slightly over one-third had their first exam before the fourth month of pregnancy, while the largest proportion (43 percent) had their first exam between the fourth and the sixth months.

With 46 percent of their consultations occurring before the fourth month, Serers tend to be examined earlier than Wolofs (30 percent) or Peulhs (27 percent). Table 4.14 shows that women in modern houses go for exams earlier than others, with those in the two lowest housing categories tending to have the latest exams.

TABLE 4.13

Percent Distribution of Time of First Prenatal Exam During
Pregnancy According to Ethnic Group
Sine-Saloum Health Family Survey

<u>Month First Examined</u>	<u>Total</u>	<u>Ethnic Group</u>		
		<u>Wolof</u>	<u>Serer</u>	<u>Peulh</u>
Less than 4 Months	34.8	29.8	45.6	26.5
4-6 Months	40.0	44.9	35.9	46.7
7-8 Months	19.3	21.3	16.9	23.3
Month Unknown	2.9	4.0	1.6	3.3
TOTAL	100.0	100.0	100.0	100.0
Number of Cases	(664)*	(320)	(222)	(83)

(Includes 39 women in other ethnic groups.)

TABLE 4.14

Percent Distribution of Time of First Prenatal Exam During
Pregnancy According to the Type of Housing
Sine-Saloum Health Family Survey

<u>Month First Examined</u>	<u>Total</u>	<u>House Type</u>			
		<u>Modern</u>	<u>Semi- Modern</u>	<u>Improved Trad.</u>	<u>Trad.</u>
Less Than 4 Months	34.8	35.5	48.1	28.5	40.4
4-6 Months	43.0	45.7	38.6	44.8	34.8
7-8 Months	19.2	16.7	9.6	23.5	23.1
Month Unknown	2.9	2.1	3.7	3.2	1.8
TOTAL	100.0	100.0	100.0	100.0	100.0
Number of Cases	(664)	(160)	(113)	(339)	(52)

(b) Prevention of Tetanus and Malaria During Pregnancy

(1) Degree of Use

In order to measure the degree to which women take important prenatal measures for protection of the baby during pregnancy, women were asked two questions:

"Did you receive a tetanus vaccination during your most recent pregnancy?" and;

"Did you regularly take anti-malarial drugs during your most recent pregnancy?"

It should be noted that the answers to the first question may sometimes be unreliable since some women cannot differentiate between an injection against tetanus and any other. Tetanus toxoid given during pregnancy prevents the possibility of the newborn contracting neonatal tetanus. Malaria should be avoided during pregnancy first simply to avoid severe infection during pregnancy and secondly, because it can cause nutritional insufficiency in the fetus.

Use of tetanus toxoid during pregnancy is very low: only 13 percent reported having been vaccinated. However, 38 percent of respondents reported that they took anti-malarials during their last pregnancy.

As will be seen in the Chapter VI, tetanus is the most important cause of death among newborns. Although reduction of neonatal tetanus will be sought through implementation of the Expanded Program of Immunization, one would hope that the distance to the nearest health facility is directly correlated with whether a woman was immunized against tetanus during her most recent pregnancy. As can be seen in Table 4.15, 16 percent of women living in villages having a health hut and 19 percent of women living in villages having a health post had been immunized, compared with 7 percent of those living 5 or more kilometers from a health facility. Sixteen percent of women in the four departments with health huts had been immunized as compared to only 9 and 8 percent in the other two departments. As discussed in Chapter V, the presence

of health huts, in effect, means a greater number of women live within easy access of a health facility. This proximity might also somehow increase knowledge of what health services should be used to protect children's health and use of those services.

As was also the case for antitetanus vaccinations, the data show that distance to the nearest health facility is directly correlated with whether a woman had taken nivaquine during her last pregnancy. Table 4.15 shows that 43 percent of women living in villages that had a health hut and 56 percent of women living in villages that had a health post reportedly had taken antimalarials, compared with only 30 percent of those who lived more than 5 kilometers away. In addition, 45 percent of women in the four departments with health huts had taken nivaquine, while only 29 and 32 percent of women in the two departments without health huts had done so.

TABLE 4.15

Percent of Women Vaccinated Against Tetanus and Percent of Women Who Took Antimalarials During Most Recent Pregnancy According to Distance to Nearest Health Facility and Department, Women 15-44 Years of Age
Sine-Saloum Family Health Survey

<u>Distance to Nearest Health Facility in Kilometers & Department</u>	<u>% Vaccinated Against Tetanus</u>	<u>% Taken Nivaquine</u>	<u>No. of Cases</u>
TOTAL	12.7	38.1	(1,745)
<u>Distance</u>			
Health hut in village	16.1	42.6	(515)
Health post in village	18.6	55.9	(151)
1-2	13.3	39.4	(307)
3-4	11.3	33.1	(306)
5+	7.2	29.9	(466)
<u>Department</u>			
4 Depts. with health huts	16.4	45.4	(955)
Fatick	9.4	31.6	(290)
Kaffrine	7.6	28.6	(500)

House type, as well as other socioeconomic indicators, also appears to be associated with whether a woman receives a tetanus vaccination or takes antimalarials during pregnancy. Table 4.16 shows that whereas 21 percent of women in modern houses are vaccinated, this is true of only 7 percent of women in traditional houses. Similarly, while 55 percent of women in modern houses took antimalarials during their last pregnancy, only 25 percent of women in traditional houses had done so. However, socioeconomic status is apparently not responsible for the relationship between use of services and presence of health huts in the department. That relationship persists even when socioeconomic variables are controlled.

TABLE 4.16

Percent of Women Vaccinated Against Tetanus and Percent Who Took Antimalarials During Most Recent Pregnancy, by Selected Characteristics Sine-Saloum Family Health Survey

<u>Characteristics</u>	<u>% Vaccinated Against Tetanus</u>	<u>% Taken Nivaquine</u>
TOTAL	12.7	38.1
<u>House Type</u>		
Modern	20.6	54.9
Semi-modern	14.1	44.3
Improved traditional	12.1	36.3
Traditional	7.2	24.8
<u>Ethnic Group</u>		
Wolof	13.6	40.1
Serer	13.6	37.3
Peulh	14.0	32.8
Other	13.9	37.3
<u>Age</u>		
15-24	17.0	40.5
25-34	13.6	39.4
35-44	10.6	33.8

Ethnic group makes no difference in the likelihood of women receiving tetanus vaccinations during pregnancy. Peulh women are somewhat less likely than others to have taken antimalarials. Finally, young mothers appear more likely to have used these prenatal measures than older mothers. This is either an indication of a trend toward increasing utilization or of women being more likely to take health precautions for low order pregnancies, when they have few or no other living children.

3. Delivery

(a) Place of Most Recent Delivery

All women pregnant at the time of the survey or who had been pregnant in the past were asked where their last delivery took place. Table 4.17, which includes only deliveries since 1977, shows that the proportion of women giving birth in a health facility (hospital, dispensary, maternity hospital, etc.) still remains very low, approximately 21 percent. Deliveries outside of health facilities, which account for 79 percent of deliveries, are performed with various degrees of assistance. The majority, 54 percent of all deliveries, are performed without the assistance of any trained person, while the remaining 25 percent are performed by a midwife or an auxiliary midwife. The Department of Kaffrine records the highest percentage of home births, 92 percent compared with 68 and 75 percent, respectively, for Fatick and the four project departments.

Deliveries in health facilities are most common among women in the youngest age groups, but even among 15 to 19 year-olds fewer than 30 percent of deliveries take place outside of homes. The youngest cohort is also the only one in which more than half of deliveries are attended by trained personnel. It is possible this is a indication of a trend toward increasing reliance on health facilities and medical personnel at birth.

TABLE 4.17

Percent Distribution of Place of Last Delivery, by Age of Mother,
Ethnic Group, House Type, and Department
Sine-Saloum Family Health Survey

<u>Characteristics</u>	<u>Total</u>	<u>Place of Delivery</u>			<u>Number of Cases</u>
		<u>Health Facility</u>	<u>Home With Assistance*</u>	<u>Home, No Assistance</u>	
<u>Total</u>	100.0	21.2	24.6	54.1	(1,250)
<u>Department</u>					
Project Departments	100.0	24.5	29.6	45.9	(679)
Fatick	100.0	32.2	11.8	56.0	(215)
Kaffrine	100.0	7.8	24.1	68.1	(356)
<u>Age</u>					
15-19	100.0	29.1	27.7	43.2	(148)
20-24	100.0	22.6	19.7	57.7	(312)
25-29	100.0	17.6	27.4	55.1	(310)
30-34	100.0	19.8	24.0	56.3	(212)
35-39	100.0	20.5	28.0	51.5	(181)
40-49	100.0	22.3	22.1	55.7	(87)
<u>House Type</u>					
Modern	100.0	36.3	26.8	36.9	(121)
Semi-Modern	100.0	28.0	30.0	42.0	(222)
Improved Trad	100.0	18.5	24.7	56.8	(713)
Traditional	100.0	13.9	17.2	68.9	(194)
<u>Ethnic Group</u>					
Wolof	100.0	16.8	29.0	54.2	(664)
Serer	100.0	29.8	16.0	54.3	(359)
Peulh	100.0	19.1	27.4	53.5	(180)
Other	100.0	17.2	28.4	54.5	(47)

*Assisted by a medically trained person, include deliveries at the home of midwives.

Although the percentage of home deliveries without any medical assistance is approximately the same for the three main ethnic groups, Serers have the greatest tendency to give birth in health facilities while Wolofs and Peulhs are more likely to give birth at home with medical assistance. This phenomenon could be related to difficulties of access to health facilities, which is a function of the location of health facilities.

Table 4.17 also indicates that the more modern the residence, the greater the proportion of women who use health facilities for delivery and the lower the proportion of deliveries without medical assistance. This relationship exists in Fatick and the four project departments but not in Kaffrine, where the proportion of home deliveries is extremely high and unrelated to house type.

4. Postnatal Services

(a) Post-partum Examinations

Very few mothers had a post-partum examination associated with their most recent delivery--less than 17 percent. They represent 5, 14, and 23 percent of women, respectively, in Kaffrine, Fatick, and the four Project departments. Most post-partum visits took place in the first month following delivery (73 percent), beyond which the percentage drops to 14 percent for the second month, 9 percent for the third month, and 4 percent for the fourth month. The same trend is also seen within each ethnic group, although overall a higher percentage of Serer mothers than of Wolofs and Peulhs have had a post-partum exam. The likelihood of receiving a post-partum exam also seems to be correlated with socioeconomic level, as shown in Table 4.18.

TABLE 4.18

Percent Distribution of Whether Women Received a Post-partum Exam After Their Most Recent Delivery by House Type
Sine-Saloum Family Health Survey

	<u>Total</u>	<u>House Type</u>			
		<u>Modern</u>	<u>Semi-Modern</u>	<u>Improved Traditional</u>	<u>Traditional</u>
Post-partum Exam	16.8	29.5	13.3	14.0	12.6
No Post-partum Exam	85.2	70.5	18.2	86.0	87.4
TOTAL	100.0	100.0	100.0	100.0	100.0

(b) Post-natal Visits

The medical follow-up of the newborn in the first months of life is very important for the child's health and welfare. We attempted to find out the proportion of mothers whose children had a medical examination before the child's first birthday. These examinations can be done as a simple well baby checkup or they can be related to an illness.

These results show the low level of health service use after delivery. Twenty-seven percent of mothers had their child examined within the 12 months following their birth. Among these children, 17 percent had an actual well baby exam, while 10 percent had medical care of one sort or another. The number of post-natal visits was also related to the place of residence. As shown in Table 4.21, the four departments covered by the project show, once again, a higher level of health facility use for this type of service.

TABLE 4.19

Percent Distribution of Whether Child Received a Post-natal Examination by Department of Residence
Sine-Saloum Family Health Survey

	<u>Total</u>	<u>Department</u>		
		<u>Project Departments</u>	<u>Fatick</u>	<u>Kaffrine</u>
Post-natal Visit	16.7	23.1	10.1	3.7
Medical Visit	10.4	11.2	9.0	9.7
No Visits	73.0	65.7	72.8	86.6
TOTAL	100.0	100.0	100.0	100.0

Table 4.22 shows that the likelihood of a mother taking her most recent child for either a well baby checkup or an exam for a medical condition decreases as age increases. Serers are more likely than others to take their child for a medical followup, 22 percent compared to 14 among Wolofs and 13 percent among Peulhs. The probability of checkups also increases sharply with the modernity of the mother's residence.

TABLE 4.20

Percent Distribution of Whether Child Received
a Post-natal Examination by Age of Mother
Sine-Saloum Family Health Survey

	<u>Total</u>	<u>Age</u>					
		<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30-34</u>	<u>35-39</u>	<u>40-44</u>
Post-natal Visits	16.7	20.5	18.5	14.7	17.0	14.7	15.6
Medical Visits	10.4	12.9	10.7	11.7	10.9	9.5	4.7
No Visits	73.0	66.6	71.0	73.6	72.1	75.9	79.8
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 4.21

Percent Distribution of Whether Child Received a
Post-natal Examination by House Type
Sine Saloum Family Health Survey

	<u>Total</u>	<u>House Type</u>			
		<u>Modern</u>	<u>Semi- Modern</u>	<u>Improved Traditional</u>	<u>Traditional</u>
Post-natal Visit	16.7	30.0	19.7	14.2	12.2
Medical Visit	10.4	13.8	11.7	10.1	7.1
No Visits	73.0	56.2	68.6	75.7	80.7
TOTAL	100.0	100.0	100.0	100.0	100.0

A. INTRODUCTION

The objectives of the survey included measuring the impact and public awareness of the Family Health Project's 376 health huts, as distinct from other types of health facilities. However, this was not easily accomplished because of problems of identification and terminology. The rural population in Sine-Saloum is accustomed to using the terms "the doctor" or "dispensary" when referring to virtually any health facility other than hospitals. The distinctions between "health hut," "health post," and "health center" are, for the most part, apparent only to health workers and officials. However, the data showed that awareness and use of health facilities, in general, is greater in the four departments with health huts than the two without.*

A less important problem in assessing knowledge and use of health facilities was that well over 90 percent of respondents could not answer a question as to the time or distance they perceived as necessary to travel to the "health hut," "health post," or "dispensary," even though they knew the location of the nearest health facility. However, data on the actual (rather than perceived) distance to the nearest health facility was gathered with relative accuracy in the "village dossier". When the nearest health

*Of the six departments in Sine-Saloum, Kaolack, Foundiougne, Nioro du Rip and Gossas have health huts that are part of the Sine-Saloum Health Project. Fatick and Kaffrine do not.

facility was within the respondent's village it was identified as a health hut or a health post from lists supplied by the project office. These data on distance and presence of a health hut or post are used in the following analysis and may in fact, be more useful, since they provide an objective measure of access to health facilities.

B. AVAILABILITY AND USE OF HEALTH FACILITIES IN GENERAL

The data in Table 5.1 indicate that the health huts and posts are readily accessible to much of the population in the surveyed area. Approximately half of the respondents living in the four departments where health huts in the project have been in operation, as well as in Fatick where a health project sponsored by the Dutch Government had been in operation until December 1981, have a health facility within their village. Only 8 percent and 11 percent of respondents in these departments, respectively, live 5 or more kilometers from a health facility. On the other hand, in the Department of Kaffrine, where no health huts are in operation, only 15 percent of respondents have a health facility within their village, and almost one-half live more than 5 kilometers from a health facility.

There seems to be slightly greater use of health services where there are health posts than where there are health huts. Whereas 6 percent of respondents claim to have made no use of any service in villages with health huts, this was true of only 1 percent of respondents in villages with health posts. Conversely, whereas 25 percent of respondents had made use of five or more services in villages with health huts, 33 percent of respondents in villages with health posts used that many services.

TABLE 5.1

Percent Distribution of Distance from
Respondent's Village to Nearest Health Facility
Sine-Saloum Family Health Survey

<u>Distance From Health Facility</u>	<u>Department</u>			
	<u>All Departments</u>	<u>Departments With Health Huts</u>	<u>Fatick</u>	<u>Kaffrine</u>
In Village	39.3	50.1	46.7	14.8
1-2 Kilometers	16.6	16.8	25.4	10.6
3-4 Kilometers	22.5	21.6	19.7	25.7
5+ Kilometers	<u>21.7</u>	<u>11.4</u>	<u>8.2</u>	<u>48.9</u>
Total	100.0	100.0	100.0	100.0
Number of Cases	(1862)	(1010)	(309)	(543)

Distance alone appears to influence greatly the use of health facilities. In general, less use is made of health services the further a respondent's residence is from a health facility. The presence of health huts has brought substantial numbers of people closer to health facilities and provided access to more health services for the population in those departments with health huts.

Of the 11 percent of respondents who have never used health facilities, the most frequently given reasons for not doing so were: "not concerned with or had never gone to the health facility" (18 percent); "no illness requiring health facility services" (18 percent); "the nearest health facility was too far" (16 percent); and "unaware of the location of health facilities" (14 percent). Certainly those who are unaware of the location of health facilities can be reached with information, education, and communication (IEC) activities. As more health huts are built, many of those who consider them "too far" at present will have easier access to health facilities.

It is noteworthy that among women living in modern houses (a high socioeconomic group), fully 40 percent gave "not concerned or had never gone to" as their reason for never using health facilities, compared to 12-16 percent of women in lower socioeconomic groups. Presumably many of these women can afford to obtain care from other sources, including the regional capital, Kaolack.

The knowledge and use of specific health services and drugs is shown in Table 5.2. Of the services provided at health facilities respondents know of and have made the most use of nivaquine to treat (and, in some cases, prevent) malaria. The least known and used of available services is iron tablets. This is in keeping with findings presented elsewhere in this report showing that respondents are highly conscious of malaria and its treatment.

TABLE 5.2

Percent Distribution of Knowledge and Use
of Specific Services and Drugs in Health Facilities
Sine-Saloum Family Health Survey

<u>Service</u>	<u>Total</u>	<u>Never Used</u>			<u>Used</u>
		<u>No Knowledge</u>	<u>Prompted Knowledge</u>	<u>Spontaneous Knowledge</u>	
Nivaquine	100.0	8.0	6.3	6.6	79.0
Aspirin	100.0	15.8	11.0	8.3	64.8
Eyedrops	100.0	30.6	29.1	3.0	37.3
Wound Treatment	100.0	33.2	29.0	3.8	34.0
Piperazine	100.0	64.8	22.2	2.4	10.6
Iron	100.0	80.0	16.1	0.5	3.4
Other	100.0	75.7	0.0	3.8	20.5

Unweighted number of cases = 1,802.

In addition to the services presented in Table 5.2, 35 percent of respondents reported receiving oral rehydration salts (ORS) from a health facility to treat diarrhea. However, two other open-ended questions show that

only 2 percent of actual or hypothetical diarrhea cases were or would be treated with ORS. What may have happened was that respondents were indicating they had received treatment or medication of one kind or another for diarrhea from the health facility. This is in line with other questions which showed that 55 percent of diarrhea cases were treated with some type of pharmaceutical.

Except for nivaquine and possibly aspirin, it appears that the availability of all services provided by health huts needs to be better publicized. In addition, even if public awareness of services and medications were higher, efforts would still be necessary to increase the use of these services through increased knowledge of their purpose and effectiveness. The fact that nivaquine, antibiotics, and certain other medicines are well-known and heavily used indicates that most of the population is positively inclined toward Western medicine. Therefore, an obstacle to improved health care in some populations--resistance to the use of modern medicine--does not appear to be important in rural Sine-Saloum.

The presence of a health hut or health post in the village of residence also appears to be related to the use of the four most widely used services offered by health huts. Table 5.3 indicates that in the departments with health huts the greatest difference is between those respondents who have either a health hut or a health post within their village of residence and all other respondents. This is true regardless of the total level of use of the service. There is no consistent difference in the use of these services between respondents who live in villages with health huts and those who live in villages with health posts.

TABLE 5.3

Proportion of Women Using Selected Specific Health Services
by Distance to Nearest Health Facility,
Departments With Health Huts Only
Sine-Saloum Family Health Survey

<u>Service</u>	<u>Total</u>	<u>Health Hut In Village</u>	<u>Health Post In Village</u>	<u>Distance to Nearest Facility (in Kilometers)</u>		
				<u>1-2</u>	<u>3-4</u>	<u>5+</u>
Nivaquine	83.6	88.0	94.3	78.0	77.9	74.5
Aspirin	72.7	77.1	81.0	67.9	70.6	60.7
Eyedrops	43.8	55.9	45.5	42.5	34.2	28.4
Wound Treatment	41.3	48.6	43.0	38.6	36.8	30.6
No. of Cases	(994)	(347)	(157)	(174)	(189)	(127)

The use of these specific services also seems to be related to the presence of health huts in the department of residence. As seen in Table 5.4, the presence of health huts in a department, which in most cases, lessens the distance to the nearest health facility, is related to greater use of specific health services offered. Regardless of the total level of use of each specific service, the presence of huts in a department is correlated with higher utilization of services. Moreover, the use of these specific health services does not seem to be related to socioeconomic status.

It is possible that many of the respondents have obtained such products as nivaquine and aspirin from sources other than health facilities, since they are readily available in other places. However, the important point is that use of specific services decreases with distance from health facilities and is highest in the project departments, which implies that the health project has, in fact, increased service utilization.

TABLE 5.4

Proportion of Women Using Selected Specific Health Services
by Presence of Health Hut in the Department
Sine-Saloum Family Health Survey

<u>Service</u>	<u>Total</u>	<u>Department</u>		
		<u>Departments With Health Huts</u>	<u>Fatick</u>	<u>Kaffrine</u>
Nivaquine	77.2	83.7	82.5	62.0
Aspirin	63.4	72.7	51.4	54.0
Eyedrops	36.5	43.4	27.6	29.5
Wound Treatment	33.3	41.0	27.2	23.2
Number of Cases	(1,868)	(1,010)	(309)	(543)

C. USE OF HEALTH FACILITIES FOR CHILDREN

Providing children with nivaquine, an antimalarial drug, as a curative or preventive measure seems to be the best indicator of the use of health facilities for children. Seventy-seven percent of all respondents' children born since 1977 were given nivaquine to prevent or treat malaria during the last rainy season (see Chapter IV, Section A-2). However, as can be seen in Table 5.5, the likelihood that they were given nivaquine was related to the distance from their residence to the nearest health facility. Seventy-eight percent of children living in villages with health huts and 87 percent in villages with health posts had received nivaquine as opposed to only 69 percent of children living 5 or more kilometers from a health facility. In addition, a total of 77 percent and 79 percent of children living in departments with USAID-supported health huts and in Fatick, respectively, had been given nivaquine compared to only 58 percent in Kaffrine (Table 5.6).

TABLE 5.5

Proportion of Children Less Than 6 Years of Age
Receiving Anti-Malarials as a Preventive or Curative Measure
During Last Rainy Season by Distance to Nearest Health Facility
Departments With Health Huts Only
Sine-Saloum Family Health Survey

<u>Distance from Facility in Kilometers</u>	<u>% Received Nivaquine</u>	<u>No. of Children</u>
Health hut in village	77.5	(384)
Health post in village	87.1	(179)
1-2	80.8	(200)
3-4	67.8	(213)
5+	69.0	(151)
TOTAL	76.7	(1,127)

TABLE 5.6

Proportion of Children Less Than 6 Years of Age
Receiving Anti-Malarials As a Preventive or Curative Measure
During Last Rainy Season by Department
Sine-Saloum Family Health Survey

<u>Department</u>	<u>% Received Nivaquine</u>	<u>No. of Children</u>
Departments with health huts	76.7	(1131)
Fatick	78.9	(385)
Kaffrine	58.1	(580)
TOTAL	71.5	(2,096)

House type also appears to be related to whether a child is given nivaquine as either a preventive or curative measure. Usage decreases steadily with housing type; whereas 82 percent of children living in modern houses were given antimalarials during the last rainy season, this was done for only 66 percent of children in traditional houses (Table 5.7).

TABLE 5.7

Proportion of Children Less Than 6 Years of Age
Receiving Anti-Malarials As Preventive
or Curative Measure During Last Rainy Season by House Type
Sine-Saloum Family Health Survey

<u>House Type</u>	<u>% Given Nivaquine</u>	<u>No. of Children</u>
Modern	81.6	(231)
Semi-modern	74.6	(375)
Improved traditional	69.8	(1175)
Traditional	66.4	(315)
TOTAL	71.5	(2,096)

The survey also gathered data which related the treatment of diarrhea and BCG, measles, and DPT/polio vaccinations to the distance to the nearest health facility and to the presence of health huts in the department. In general, the use of health facilities for diarrhea treatment and vaccinations was substantially lower than for obtaining nivaquine. The relationship between health facility distance and use of services for diarrhea treatment and vaccinations was also much less striking, except that children living 5 or more kilometers away seemed much less likely to make use of these services than all other children.

All the foregoing data not only show the importance of proximity to a health facility but, as far as the Sine-Saloum rural health project is concerned, the importance of the presence of health huts in the department. This demonstrates the positive impact on use of services provided by community health workers as well as the need for additional community health workers, particularly in the two departments not already served by the project.

Furthermore, the data on socioeconomic level shows that future information, education, and communications (IEC) activities encouraging the use of health services should be directed to the lower socioeconomic groups. Specifically,

IEC activities should encourage greater use of nivaquine as a preventive measure in keeping with present national health policy. This policy is to reduce malaria morbidity rather than merely to treat existing cases. This activity should be facilitated by the fact that, as the survey data showed, nivaquine is already widely known, accepted, and used as a curative measure. IEC activities should also focus on vaccinations as a means to reduce disease morbidity, since--with the exception of antimeasles vaccines--vaccination coverage is extremely low.

D. USE OF TRADITIONAL HEALERS

Respondents were asked whether they or their children had used the services of a traditional healer (guerisseur) to treat an illness within the past 2 years. Thirty percent of respondents responded positively. There appears to be almost no relationship between the distance to the nearest health facility and the use of traditional healers (Table 5.8).

TABLE 5.8

Use of Traditional Healers by Respondent on Her Children
 Within the Past 2 Years by Distance to Nearest Health Facility
 Four Departments With Health Huts Only
 Sine-Saloum Family Health Survey

<u>Distance in Kilometers</u>	<u>% Used Healers</u>	<u>No. of Cases</u>
Health hut within village	28.3	(347)
Health post within village	31.4	(157)
1-2	23.7	(174)
3-4	32.9	(189)
5+	33.5	(127)
TOTAL	29.7	(994)

However, there is greater use of healers among respondents in lower socioeconomic groups as measured by house type. While only 23 percent of women living in modern houses report having used the services of a healer for themselves or a child within the past 2 years, this proportion increases to 39 percent of women in traditional houses (Table 5.9).

TABLE 5.9

Use of Traditional Healers by Respondent or Child
Within Past 2 Years by House Type
Sine-Saloum Family Health Survey

<u>House Type</u>	<u>% Used Healers</u>	<u>No. of Cases</u>
Modern	23.5	(190)
Semi-modern	32.5	(333)
Improved traditional	28.7	(1,021)
Traditional	<u>38.9</u>	<u>(283)</u>
TOTAL	30.5	(1,827)

Respondents who had used guerisseurs were asked why they had not gone to a health facility instead. Forty-five percent of those who used traditional healers replied that they either felt the health facility staff was incompetent, its medicine ineffective, or they had more confidence in the traditional healer. Additionally, however, more than one-fourth reported that they also used the services of a health facility. It is noteworthy that only 6 percent stated that access to the health facility was the problem, i.e., it was either too expensive or too far away (Table 5.10).

TABLE 5.10

Reasons for Use of Traditional Healer by Respondent
or Her Children Within the Past 2 Years
Sine-Saloum Family Health Survey

<u>Reason</u>	<u>Percent</u>
Health workers inadequate/incompetent	25.2
More confidence in guerisseur	15.7
Western medicine ineffective	4.4
Also use health facility	26.4
Health facility too expensive or too far	5.6
Opposition of husband or parents	0.9
Other	21.9
TOTAL	100.0
No. of Cases	(538)

A. INTRODUCTION

With little doubt, Sub-Saharan Africa is the major area of the world with the most severe and widespread health problems. The incidence of severe infectious disease there is unsurpassed as are levels of infant and childhood mortality. For all countries combined, mean life expectancy at birth has yet to reach 50 years, well below that for any other major region of the world. Ironically, despite the low health status of the population, Sub-Saharan Africa is also the part of the world with the least information available regarding virtually all aspects of human health. In addition, the information which does exist tends to be of questionable reliability more often than in other parts of the world.

The Sine-Saloum Family Health Survey attempted to look primarily into two aspects of infant and childhood mortality--levels and causes of mortality. In this chapter attempts are made to estimate age-specific mortality rates among young children overall and within various socioeconomic and ethnic subgroups of the population. Using a somewhat innovative methodology, causes of death have been diagnosed and determined by looking at symptoms prior to death, allowing estimation of cause-specific mortality rates for young children. Additionally, attempts are made to assess the reliability of our results and make adjustments accordingly, where possible.

B. METHODOLOGY

Respondents were asked to list the name of each of their children born alive since the beginning of 1977, along with the child's date of birth, sex, and whether he or she was still alive. For any child who was no longer alive at the time of interview, the respondent was asked to provide information on the child's age at death, place of death, the duration of his or her terminal illness, what the mother believed to be the cause of death, and who informed her of the cause of death. The respondent was also to indicate whether or not the child exhibited each of 16 specific symptoms during the illness leading to his or her death. In all, data were obtained on 2,733 children born to respondents since 1977. Of these children, 383 reportedly had died prior to the date of interview.

Rather than relying solely on the cause of death as alleged by the mother (which was often unreliable as evidenced by the fact that 11 children reportedly died from evil spirits), or on causes of death as recorded on a certificate or health card (which do not exist for most children who die), a determination of the most likely cause of death was made using all of the information collected surrounding the child's death. An infectious disease specialist from the University of Dakar and a medical epidemiologist from the Centers for Disease Control examined all questionnaires which listed any dead children. By synthesizing the data on symptoms, the cause of death given by the mother and any other relevant information on the questionnaire, a determination was made (where possible) as to the most likely cause of death. Not only did this procedure allow the assignment of causes of death with much greater reliability than otherwise, it also considerably reduced the proportion of deaths of indeterminate cause from 42 percent to 20 percent of all deaths.

All mortality rates presented in this analysis are lifetable rates. That is, rather than computing proportions of children actually surviving to given ages, the survival data were put into lifetable form. This procedure makes fuller use of the data than directly calculated mortality rates and avoids some potential biases introduced by other procedures. For example, direct calculations would exclude from infant mortality rates the experience of children born within 1 year of their mother's interview, since they had not had a full year's exposure to the risk of mortality. Lifetable rates make use of the experience of all children no matter how recently they were born. Thus, for example, ${}_1q_0$, the lifetable equivalent of infant mortality, is the probability that a child survives until his or her first birthday rather than a standard mortality rate.

C. MORTALITY LEVELS, TRENDS, AND DIFFERENTIALS

Table 6.1 displays probabilities of death during infancy and early childhood according to the Sine-Saloum Family Health Survey as well as the Senegal Fertility Survey of 1978. The SSFHS infant mortality rate of 72 deaths per 1,000 live births is undoubtedly an underestimate. For a number of reasons it is highly unlikely that infant mortality has fallen to so low a level (relatively speaking). Infant mortality in rural West Africa is generally held to be over 100 per 1,000 births and in most populations is far above that level. Prospective studies by ORSTOM since the early 1960's to the early 1980's for smaller areas within the Sine-Saloum Region (Cantrelle and Leridon, 1971; Cantrelle, 1980; and Garenne, 1982), have found infant mortality to be considerably higher than the survey rate. In addition, the ratio of mortality from ages 1 to 4 (${}_4q_1$) to infant mortality (${}_1q_0$), which is about 2:1, is extreme even for West Africa where such ratios tend to be the highest in the world. In most of the world ${}_4q_1$ is usually much lower than ${}_1q_0$.

TABLE 6.1

Probabilities of Dying During Infancy and Early Childhood,
According to the 1978 Senegal Fertility Survey and the
Sine-Saloum Family Health Survey

	Probability of Dying		
	Before 1 Year (190)	Between 1 and 5 Years (491)	Before 5 Years (590)
Sine-Saloum Family Health Survey, 1977-82*			
Direct estimate	.072	.146	.207
Brass estimate**	.156	.120	.257
Adjusted***	.110	.153	.246
Senegal Fertility Survey,**** 1973-77*	.118	.191	.286

*Dates refer to the years for which mortality rates were computed

**Using Trussell multipliers

***Assumes that: (1) ${}_{4q_1}$ is underestimated by 5 percent;

(2) ${}_{4q_1}/{}_{1q_0}=1.4$

****Results for the entire Sine-Saloum Region, not just rural areas.

It is generally taken for granted that retrospective surveys in developing countries, such as this survey, fail to obtain complete reports of infant and child deaths. Owing to forgetfulness, superstition, unwillingness to talk about dead children, not considering children who died very young to have been live births, and other factors, women sometimes do not provide interviewers with complete lists of children who are no longer alive. The fact that the survey estimates appear too low indicates that the Sine-Saloum Survey is no exception to the rule of underestimates of early mortality in surveys. Thus, it was decided that adjustment of the mortality data was mandatory in order to obtain more reliable results.

The most common procedure for adjusting infant and child mortality rates, devised by Brass (Brass and Coale, 1968) and modified by Trussell (1975), apparently is not well suited to these data. This procedure involves

transforming reported proportions of children still alive, according to the mother's age, into infant and child mortality rates based on standard or model age patterns of early mortality. Recent work by Garenne (1982) indicates that the assumptions upon which the Brass procedure are based (particularly the assumed underlying age pattern of early mortality) are violated to such a degree that their use in the Sine-Saloum in particular and Africa in general can be quite misleading. The results of applying the Brass procedure to the survey data are shown in Table 6.1. The deficiencies of this procedure can be seen in the estimate of childhood mortality, ${}_4q_1$, which is lower than the direct survey result by 18 percent and from ages 2 to 5 is lower by over 40 percent. However, one can be certain that there is no overreporting of childhood mortality in the survey. Therefore, a different means of adjustment had to be used to avoid adjusting childhood mortality downward.

The adjustment procedure used is based on two assumptions. There is no indication that deaths between the first and fifth birthdays are seriously underreported, since the survey mortality of about 15 percent is no lower than one would expect to find in this part of the world. Therefore, we have first assumed, quite arbitrarily, that 5 percent of childhood deaths have been omitted, giving an adjusted mortality rate of just over 15 percent. It is virtually certain that more deaths during the first year of life than later in childhood are omitted because that is virtually always the case and because of the extreme ratio of reported child to infant deaths. Secondly, based on ORSTOM's work in Sine-Saloum, we assumed that the ratio of early childhood to infant mortality (${}_4q_1/{}_1q_0$) is 1.4. These assumptions yield an adjusted infant mortality rate of 110 deaths per 1,000 live births and a probability of death within 5 years of birth of .246.

This exercise admittedly is imprecise. However, its purpose is not to produce exact mortality rates but to adjust reported mortality to yield more realistic levels. These mortality rates, although high by non-African standards are, in fact, fairly low relative to the rates reported for most West African populations. If the adjustment assumptions are valid, then about one-third of infant deaths would have been omitted by respondents. If omission is less severe (as is quite possible) then the actual infant mortality rate is even lower.

Mortality rates according to children's year of birth were calculated to see if a trend could be detected. However, because of sample sizes too small to determine changes as slight as would occur from year to year, and the likelihood that time since birth correlates with the probability of omitting a child's death, nothing conclusive came of this. However, there is evidence that early mortality in rural Sine-Saloum has been declining. The best evidence comes from comparisons between the results of the Senegal Fertility Survey (SFS) and the unadjusted Sine-Saloum Family Health Survey, shown in the top two lines of Table 6.1. The SFS was a retrospective survey conducted in 1978 and was quite similar in design to this survey. There is a difference of about 5 years in the time to which the estimates in the two surveys apply. If one assumes that the degree and types of errors in the two surveys were fairly similar (or even that the SFS reporting was somewhat better), one gets the impression of a marked decrease in both infant and early childhood mortality in the late 70's and early 80's. This impression is strengthened by the fact that the SFS estimates include urban areas where mortality tends to be appreciably lower than in rural areas.

That a decrease in early mortality has occurred is supported by the findings of Cantrelle and Garenne, whose prospective studies have found sharp reductions in mortality over a period of just a few years for small areas within the Sine-Saloum Region. Whereas ${}_5q_0$ had been between .4 and .5 until the early 1970's, it has fallen to a level between .2 and .3.

There are noteworthy differentials in early mortality between some population subgroups, as seen in Table 6.2. The unadjusted $4q_1$ in Kaffrine is almost 70 percent higher than in the other five departments, .195 as opposed to .117. However, reported infant mortality is no higher in Kaffrine than elsewhere, possibly due to more extreme omission of infant deaths in Kaffrine. Reported mortality among Peulh children looks to be lower than among both Wolofs and Serers. This finding may at first appear surprising in light of the generally lower socioeconomic levels of the Peulhs. However, it could stem from better nutritional status among the Peulhs, arising from the availability of milk and meat among these traditional cattle herdsman and longer breast-feeding.

TABLE 6.2

Unadjusted Probabilities of Death in Infancy
and Early Childhood According to Department and
Selected Characteristics
Sine-Saloum Family Health Survey

<u>Department</u>	<u>Probability of Dying</u>		
	<u>Before 1 Year (190)</u>	<u>Between 1 and 5 Years (590)</u>	<u>Before 5 Years (491)</u>
<u>Depts. with health huts</u>	.083	.117	.190
Fatick	.061	.116	.170
Kaffrine	.073	.195	.254
<u>Ethnic Group</u>			
Wolof	.074	.174	.235
Serer	.073	.136	.199
Peulh	.061	.127	.180
<u>Type of House</u>			
Modern	.075	.126	.192
Traditional	.070	.154	.213
<u>Husband's Occupation</u>			
Primary sector	.073	.153	.215
Not primary sector	.066	.101	.160

Early childhood mortality is somewhat higher among those in traditional houses and the children of workers outside the primary sector than among their counterparts in higher socioeconomic groups. This is not true of infant mortality, though, where the reported differences are too small to be meaningful. We do not know if the lack of differences is real or stems from women of lower socioeconomic status being more likely to have omitted infant deaths.

D. CAUSES OF DEATH

Table 6.3 displays cause-specific mortality rates in infancy and early childhood with no adjustment for underreporting of deaths. As with overall mortality, these rates should be adjusted to take into account the omission of some deaths. The adjustment procedure used is the same as that used for overall mortality. Since omission is assumed to occur most frequently for children dying very young, rates for those diseases which tend to kill very early, most notably tetanus, are affected most by the adjustment. Unfortunately, the procedure does not allow for the possibility that a child's cause of death is related to the probability of that death being reported by his or her mother, all else being equal, including the age at death.

The adjustment does not take into account at what point during an age interval death occurs. For instance, most infant tetanus deaths occur in the first days after death; therefore, tetanus mortality in infancy is probably underreported more than most other causes of death, which do not usually occur so early. About 10 percent of deaths were of totally unidentifiable cause, and about an equal proportion were attributed to "unspecified infectious

disease". Therefore, about one in every five deaths, distributed over all ages, had no specific cause attributed in the analysis. Thus, the cause-specific rates in the tables should be viewed as minimum rates, since some unknowns probably belong in each category. We decided not to prorate the unknowns, however, because there is no reason to believe that the distribution of causes of death among the unknowns are the same as among those with attributed causes of death.

TABLE 6.3

Unadjusted Cause-Specific Mortality By Age and
Selected Causes of Death
Sine-Saloum Family Health Survey

<u>Cause of Death</u>	<u>Age Interval</u>		
	<u>Before 1 Years</u>	<u>Between 1 and 5 Years</u>	<u>Before 5 Years</u>
Diarrheal disease	.0182	.0428	.0602
Respiratory disease	.0188	.0307	.0489
Malaria	.0029	.0264	.0292
Measles	.0013	.0170	.0183
Tetanus	.0074	.0018	.0092
Meningitis	.0037	.0026	.0063
All Causes	.0717	.1459	.2071

Both unadjusted and adjusted rates (Tables 6.3 and 6.4, respectively) indicate that diarrheal and respiratory diseases (excluding measles), in that order, are by far the two major causes of death among all young children. It is estimated that these types of diseases kill about 7 percent and 6 percent, respectively, of all children by age 5. Before age 1 they are of about equal importance causing about 30 deaths per 1,000 children. Some people might consider these levels surprisingly high, to some degree, since almost all children are intensively breast-fed, which is likely to be providing them with

considerable protection against intestinal and respiratory infections. However, to assess these rates better one must have a population against which to compare them, to see what the rates would be without such high levels of breast-feeding.

TABLE 6.4

Adjusted* Cause-Specific Mortality By Age, For
Selected Causes of Death
Sine-Saloum Family Health Survey

Cause of Death	Age Interval		
	Before 1 Year	Between 1 and 5 Years	Before 5 Years
Diarrheal disease	.028	.045	.072
Respiratory disease	.029	.032	.060
Malaria	.004	.028	.032
Measles	.002	.018	.020
Tetanus	.011	.002	.013
Meningitis	.006	.003	.009
All Causes	.110	.153	.246

*Assumes that: Deaths at 1 to 5 years are underreported by 5 percent and deaths before the first birthday are underreported by 34.5 percent

Malaria and measles are next in importance, killing an estimated 3 percent and 2 percent of children, respectively. As one might expect, given the usual presence of maternal antibodies against these diseases in the first year of life, mortality from both of these causes is quite low during infancy. Over half of measles mortality occurs between the first and second birthdays, the period when measles mortality typically is highest. Also, it is possible that some of the diarrhea and respiratory problems which caused deaths were really complications of measles which had occurred in prior months. Surprise has been expressed by some that malaria and measles mortality rates are not

higher. However, other parts of the survey show extensive use of antimalarials (about three-fourths children given antimalarials either prophylactically or therapeutically during the past rainy season), and almost 40 percent of children between ages 1 and 5 reportedly had been vaccinated against measles, despite low levels of vaccination against other vaccine-preventable diseases. Also, because of low population densities in rural areas, the exposure to measles epidemics may be reduced. Measles and malaria are the only major causes of childhood death against which the population appears to have taken any significant action.

Tetanus ranks fifth in overall mortality, killing an estimated 1.3 percent of children. This closely matches estimates made by Sow (1982) for rural Senegal. However, almost 90 percent of tetanus deaths occur in infancy, with the vast majority happening during the first month after birth. Meningitis was the only other specific disease to which an appreciable number of deaths was attributed. About 1 percent of children reportedly died of meningitis, with most deaths occurring during infancy. Senegal lies in the Sahelian region of Africa, which is noted for its high incidence of meningitis.

Table 6.5 presents percentage distributions of causes of death within age at death categories. Both diarrheal and respiratory diseases remain very important across all ages, the former becoming slightly more important relative to other causes with increasing age. Malaria increases very markedly with age relative to other causes, and after the second birthday is virtually as important as any other cause of death except diarrheal diseases. Measles is a significant killer only after infancy, as one might expect, since the presence of maternal antibodies usually prevents it until at least late in the first year of life. Tetanus is responsible for an estimated one-ninth of infant

deaths and one-fourth of neonatal deaths. Conspicuous by their near-absence are deaths due to prematurity and congenital abnormalities. This goes along with the theory that those deaths occurring very shortly after birth are the most likely ones to be omitted by women. Thus, tetanus mortality in infancy may even be considerably higher than estimated in the survey. Babies dying of prematurity and congenital abnormalities also may not have exhibited the specified symptoms and thus were likely to be classified as having unknown causes of death.

TABLE 6.5

Unadjusted Percentage Distributions of Causes of Death for
Children Born After 1976, By Reported Age at Death
Sine-Saloum Family Health Survey

Cause of Death	Age at Death				
	Before 1 Year	1-2 Years	Between 2 and 5 Years	Unknown	Before 5 Years
Diarrheal disease	21.3	26.6	28.1	14.8	23.8
Respiratory disease	25.5	19.1	22.4	21.0	23.0
Malaria	3.1	10.5	18.6	2.5	9.0
Measles	1.7	15.8	9.1	5.0	6.9
Tetanus	11.0	2.0	1.1	0.0	5.4
Meningitis	6.0	3.9	0.7	0.0	3.5
Other Neurologic diseases	4.4	3.0	2.6	9.2	4.0
Polio	2.3	0.0	0.8	0.0	1.2
Malnutrition	0.5	1.2	1.9	0.0	1.0
Prematurity	1.5	0.0	0.0	0.0	0.6
Other or unspecified infectious disease	12.1	7.7	9.7	7.2	10.1
Indeterminate	10.4	10.3	5.0	40.3	11.4
TOTAL	100.0	100.0	100.0	100.0	100.0
No. of Deaths	(162)	(79)	(111)	(31)	(383)

Possibly a more objective way of examining child deaths than ascribed cause of death alone, and one which can help tell more about useful directions for health policy is simply to describe the symptoms present among children before they died rather than trying to make a best guess as to underlying causes of death. Table 6.6 shows the proportions of children dying who were reported to have exhibited several of the symptoms related to the most common causes of death, both alone and in combination.

More than four-fifths of children were reported to have had a fever during their terminal illness. The vast majority of children who had either diarrhea, cough, or a rash had it in conjunction with fever. Fifty-one percent of children had diarrhea, 39 percent had a cough, and 14 percent exhibited a rash. Every individual and combination of symptoms examined was reportedly less common among infants who died than among older children. This may be due partially to the presence of maternal antibodies transmitted prenatally or through breast milk, and partially to the relatively large proportion of infant deaths from causes less likely to be accompanied by these symptoms (tetanus, prematurity, etc.).

One learns from these results such things as the fact that although one-fourth of deaths were attributed to diarrheal disease, twice that many children had diarrhea prior to death. Mortality could be attacked through treatment of symptoms as well as root causes. For instance, measles could be reduced through increased vaccination, but its mortality can also be reduced through treatment of the diarrhea which often occurs as a complication.

TABLE 6.6

Percentages of Children No Longer Alive Born Since 1977
Who Reportedly Exhibited Selected Symptoms
According to Age at Death
Sine-Saloum Family Health Survey

<u>Symptoms</u>	<u>Age at Death</u>			
	<u>All Ages</u>	<u><1</u>	<u>1</u>	<u>2-5</u>
Fever	81.4	73.8	86.2	89.2
Diarrhea	50.7	42.2	58.7	60.9
Cough	39.0	35.1	47.8	38.9
Rash	14.3	11.1	19.3	16.1
Fever and diarrhea	45.1	35.0	52.1	57.1
Fever and cough	34.3	27.7	42.1	38.9
Fever and rash	13.7	10.4	19.3	16.1
Diarrhea and cough	24.7	18.1	33.4	31.0
Diarrhea and rash	10.8	9.1	12.5	13.0
Rash and cough	9.3	5.5	15.8	11.0
Fever, diarrhea and cough	22.8	15.6	29.7	31.0
No. of Children	(370)*	(161)	(78)	(109)

*Individual ages do not sum to total because age at death was unknown for 22 children. The number of children for whom the presence of a symptom was unknown varied slightly from symptom to symptom; 370 was the maximum number known for any individual symptom (diarrhea).

A. INTRODUCTION

The Sine-Saloum Family Health Survey included a section on health and fertility-related practices of respondents in regard to their most recent live birth. The questions in this section related to breast-feeding, the initiation of nonmaternal milk and solid foods, the practice of abstinence, and whether the respondent's menstrual period had returned since her last birth. There were two reasons for obtaining information on these topics in the survey. First, child-feeding practices, especially breast-feeding practices, are known to influence strongly the health of infants and young children. It is generally accepted that breast-feeding itself benefits infants through the provision of maternal antibodies against a number of diseases and the assurance of adequate nutrition (see, for example, McCann et al., 1981). Conversely, in many developing countries the ingestion of liquids, other than breast milk, increases the potential for disease through exposure to contaminants from the available water supply or from animal milk and through over-dilution of breast milk substitutes. In addition, delaying the start of foods other than milk beyond a certain age can be detrimental to infant health. Second, breast-feeding and other post-partum practices greatly affect fertility levels by influencing the length of the post-partum anovulatory period and exposure to risk of pregnancy, and thus the intervals between births. Also, there is mounting evidence that the length of birth intervals is positively associated with the health of infants and mothers, even when other variables are held constant (Winikoff, 1983; Hobcraft et al., 1983).

B. INFANT AND CHILD FEEDING

1. Breast-feeding

Breast-feeding is virtually universal among infants in rural Sine-Saloum. Over 98 percent of the most recently born children of interviewed women were breast-fed, with very little deviation from the high incidence among any major subgroups of the population. Of the small proportion of children reportedly never breast-fed, more than three-fourths were never nursed because he or she died shortly after birth and never had the opportunity to be breast-fed. Only six children who survived substantially beyond birth (about 0.4 percent of all births) were not breast-fed--three because the mother had no milk, two because the mother was reportedly too ill to breast-feed, and one because she wanted to get pregnant right away.

When asked why they stopped breast-feeding their last child (Table 7.1), 83 percent of mothers responded simply that the child had reached the correct age for weaning, in almost all cases somewhere over 1 year of age. Another 14 percent stated that the child had died, leaving only about 3 percent who terminated for any other reasons, mostly because the mother had become pregnant. It is a widely held belief in much of Africa that women should not breast-feed while they are pregnant, out of fear that the health of the unborn child or the breast-fed child will be harmed. Differentials between population subgroups, according to socioeconomic or demographic variables, tend to be small; the proportions stopping for reasons other than reaching weaning age or death do not exceed 6 percent for any group examined.

TABLE 7.1

Percentage Distribution of Reason Women
Stopped Breast-feeding Their Last Child
Sine-Saloum Family Health Survey

<u>Reason Woman Stopped Breast-feeding</u>	<u>Percent</u>
Total	100.0
Child reached age of weaning	82.9
Child died	14.1
Became pregnant/wanted to become pregnant	1.7
Other	1.3
No. of Cases (unweighted)	(748)

Since there was apparent heaping on particular durations when women were asked how long they had breast-fed their last child (nearly half of women reported durations of 24 months, with smaller heaps on 18, 36, and 12 months), current breast-feeding status information was used to provide more reliable indications of the true length of breast-feeding. Thus, the results presented here are based on reports of whether children were still being breast-fed and the ages of the children at the time of interview. It was assumed that a woman's most recently born child was the only one who might be breast-fed at the time of interview, certainly a valid assumption in the vast majority of instances.

As seen in Table 7.2 and Figure 7.1, which show proportions of children still being breast-fed at given ages, breast-feeding durations tend to be quite long. One year after birth about 95 percent of children continue to be breast-fed. Even at 3 years of age about 10 percent are still being nursed. Both the median and mean durations for all living children are between 23 and 24 months. (If data for children no longer alive are included, the mean drops to 22 months.)

Figure 7.1. Percent of Living Children Currently Being Breastfed, by Age

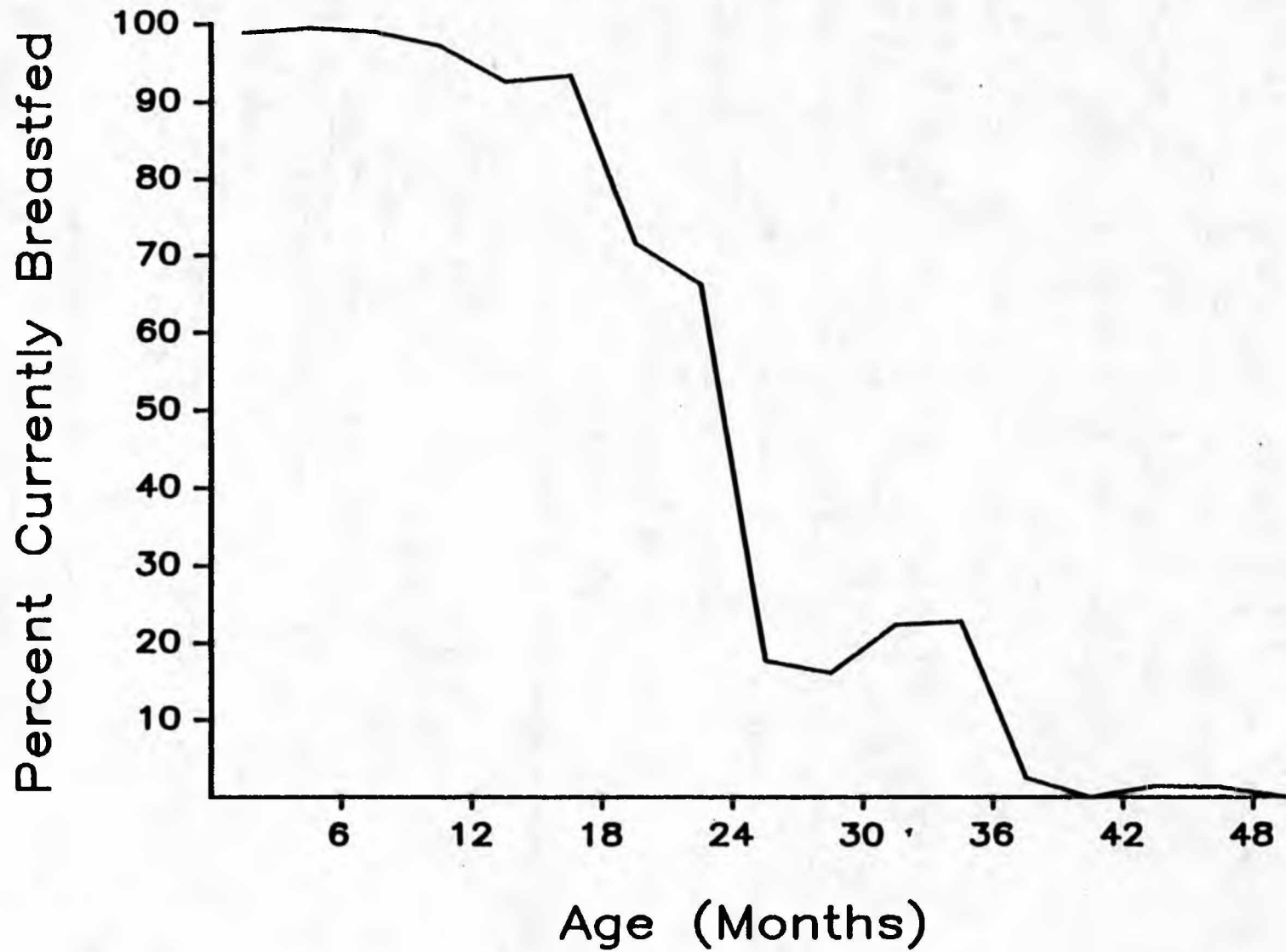


TABLE 7.2

Percentages of Living Children Still Being Breast-Fed by
Age at Interview and Type of House of Mother, and
Median and Mean Durations of Breast-Feeding
Family Health Survey, Sine-Saloum

<u>% Still Breast-Feeding at:</u>	<u>Total</u>	<u>Type of House</u>	
		<u>Modern or Semi-modern</u>	<u>Traditional or Improved Traditional</u>
0-5 Months	99.1	100.0	98.9
6-11 Months	98.1	95.8	99.2
12-17 Months	92.9	94.7	92.2
18-23 Months	68.4	48.9	78.3
24-29 Months	17.1	3.2	22.6
30-35 Months	22.6	16.5	25.0
36-41 Months	1.3	2.9	0.6
Median Duration	23.2	21.1	24.0
Mean Duration*			
Living children only	23.6	22.0	24.3
All children	21.9	20.4	22.4
No. of living children	(1650)	(470)	(1187)

*Mean durations calculated using the prevalence/incidence procedure:

$$\text{Mean duration} = \frac{\text{Children currently breast-fed}}{\text{Living children } < 24 \text{ months old}} \times 24$$

The distribution of durations is quite interesting. Unlike most other populations where proportions still breast-fed decrease gradually as age in months increases, there is a strong propensity for women to discontinue breast-feeding when the child reaches his or her second birthday (or, given inexact knowledge of ages, what the mother perceives as the second birthday). Discontinuation from 1 to 2 years is gradual. But the difference between the proportions being breast-fed at 21 to 23 months and at 24 to 26 months is about 50 percentage points, i.e., about half of children are breast-fed for about 2 years. The proportions then level off until 3 years is reached, where they rapidly near zero.

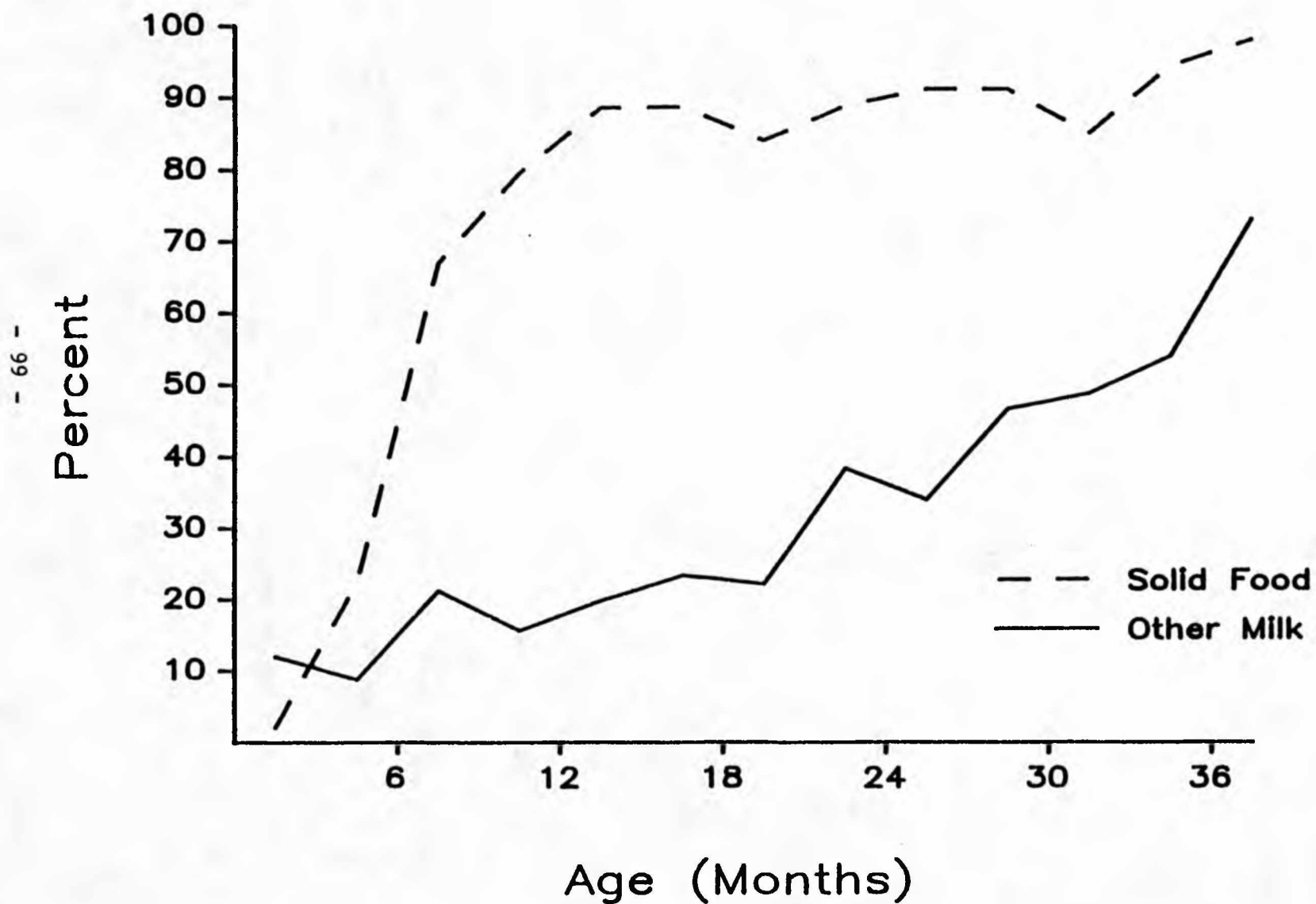
Among various subgroups of the population these same duration patterns persist, but there are some noteworthy differences in breast-feeding durations. Differentials according to house type (Table 7.2) are similar to those according to other socioeconomic variables (not shown). Substantial differences do not develop until after about 18 months, from which time the proportion being breast-fed is substantially higher among children in traditional houses and other lower socioeconomic groups. Serers tend to breast-feed about 2 to 3 months shorter than Wolofs and members of other ethnic groups, 22 months as opposed to 24 to 25 months. There is virtually no difference between boys and girls in duration of breast-feeding.

2. Supplemental Feeding

Respondents were asked whether their youngest child had begun regularly receiving milk other than maternal milk. Column 1 of Table 7.3 and Figure 7.2 reveal that about 10 percent of children receive supplemental milk from the first months of life. The percentage receiving nonmaternal milk rises gradually from birth until just under 2 years of age, by which time about one-third of children have received it with regularity. The proportion does not exceed 50 percent until almost 3 years of age and only rises to about two-thirds for the oldest children in the analysis.

There appears to be no correlation between whether supplemental milk is given to children and either house type or husband's occupation, the survey's best socioeconomic indicators. However, Wolofs are less likely to have given their children supplemental milk than members of other ethnic groups at nearly every age. Overall, only 22 percent of Wolof children under 3 years have regularly received supplements compared to 28 percent of Serers and 40 percent

Figure 7.2. Percent of Living Last Born Children Currently Regularly Receiving Non-Maternal Milk and Percent Receiving Solid Food, by Age



of Peulhs. The differences between ethnic groups is especially marked in the first 1-1/2 years of life, where Peulhs are far more likely than others to have received nonmaternal milk (Figure 7.3). It is probable that this is because the Peulhs, noted for being cattle herders, have abundant supplies of cow's milk.

TABLE 7.3

Percentage of Children Regularly Receiving Nonmaternal Milk
and Percent Not Regularly Receiving Solid Food, by Age
Sine-Saloum Family Health Survey

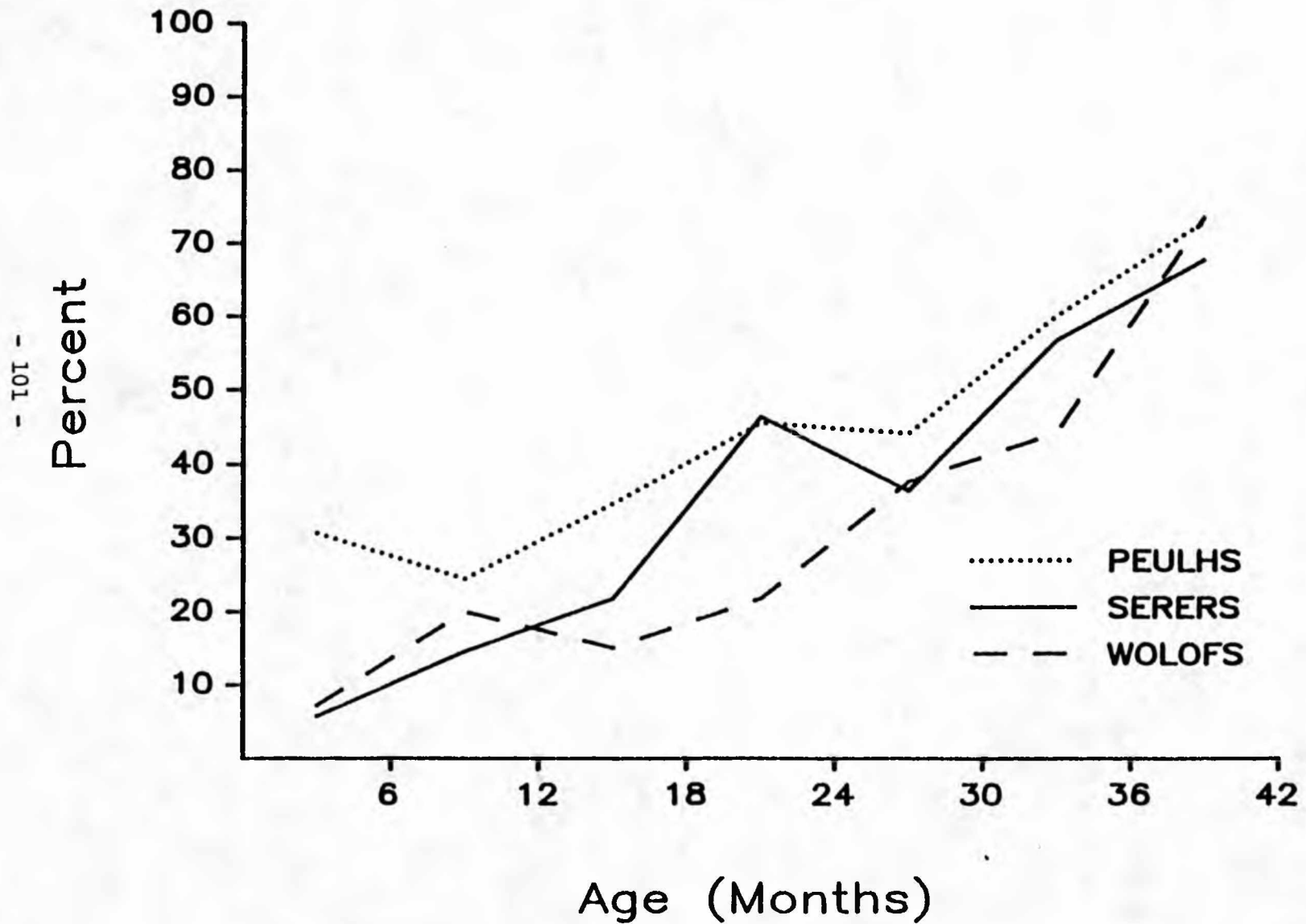
<u>Child's Age (in Months)</u>	<u>% Receiving Nonmaternal Milk</u>	<u>% Not Receiving Solid Food</u>	<u>No. of Children</u>
<3		96.6	(157)
3-5	10.5*	77.6	(137)
6-8		34.1	(81)
9-11	18.4**	19.9	(83)
12-17	21.1	11.7	(280)
18-23	31.9	12.5	(131)
24-29	39.0	9.4	(204)
30-35	51.8	9.8	(166)
36-41	72.0	3.2	(240)
42-47	72.7	7.4	(140)
Mean		6.7 months	

* <6 months

** 6-11 months

The reason for the interest in alternatives to maternal milk is that their use at early ages potentially increases children's exposure to serious infections and eliminates the assurance that children are adequately nourished. To examine this further we also looked at type of milk received and at children's breast-feeding-supplementation status. Table 7.4 shows that almost half of children receiving alternative types of milk generally receive undiluted animal

Figure 7.3. Percent of Children Regularly Receiving Non-Maternal Milk, by Age



milk, and another 28 percent receive diluted animal milk. Only 8 percent reportedly are given commercial infant formulas, not surprising in view of the cost of such products relative to the very limited means available to most of the population. None of these percentages vary appreciably with child's age or ethnic group. There is a strong correlation with socioeconomic indicators, though. The use of formula is sharply higher among families of husbands working outside the primary sector (23 percent) than among their counterparts within the primary sector (6 percent). Formula use also increases with improving house type, ranging from 1 percent in the most traditional houses to 23 percent of children in the most modern houses.

TABLE 7.4

Percentage Distribution of Type of Milk Usually Received
for Children Under 4 Years Old Receiving Nonmaternal
Milk, by Type of House

<u>Type of Milk</u>	<u>Total</u>	<u>House Type</u>	
		<u>Modern/ Semi-Modern</u>	<u>Improved Traditional/ Traditional</u>
Nondiluted animal milk	46.2	32.5	51.1
Diluted animal milk	27.7	27.4	27.8
Infant formula	7.9	17.5	4.5
Condensed milk	7.2	9.8	6.3
Powdered milk	3.9	3.0	4.3
Other, Unknown	7.0	9.7	6.1
Total	100.0	100.0	100.0
No. of Children	(331)	(88)	(243)

Table 7.5 shows a distribution of children under age 4 according to whether, at the time of interview, they were reported to be receiving breast milk only, breast milk and nonmaternal milk, or no breast milk at all. Until age 1-1/2 years a large majority of children are completely breast-fed, the

percentage decreasing only from about 90 percent in the first 6 months to 75 percent at 12-17 months. Even beyond that age, though, most children who are breast-fed receive no other type of milk as supplementation. This even applies at quite advanced ages; for instance, after 30 months three times as many children are fully breast-fed as are breast-fed and supplemented. These results, however, do not take into account that most babies are routinely given small amounts of water, generally not boiled, in addition to milk. Ingestion of unboiled water is a potential source of disease in young children in a setting where the water is likely to be contaminated.

The only appreciable differentials detected in breast-feeding-supplementation status were according to ethnic group. Wolof children appear considerably more likely to be receiving solely breast milk at given ages than Serer or Peulh children. At 18 months, where the differences are near their largest, just over 70 percent of Wolofs, about 54 percent of Serers, and only 40 percent of Peulhs are breast-fed without receiving nonmaternal milk. This finding is a result of Serers having the shortest duration of breast-feeding and the Peulhs having ready supplies of cow's milk.

TABLE 7.5

Breast-feeding-Supplementation Status
of Children Less Than 4 Years Old, By Age
Sine-Saloum Family Health Survey

Child's Age (in Months)	Total	Breast-feeding-Supplementation			No. of Children
		Breast- feeding Only	Breast-feeding + Other Milk	Not Breast- feeding	
<3	100.0	88.1	11.3	0.6	(160)
3-5	100.0	90.7	8.8	0.6	(136)
6-8	100.0	77.7	21.3	1.1	(81)
9-11	100.0	85.1	14.9	0.0	(80)
12-17	100.0	75.5	17.4	7.1	(280)
18-23	100.0	46.7	21.4	31.9	(131)
24-29	100.0	13.7	3.4	82.9	(204)
30-35	100.0	17.0	5.6	77.4	(169)
36-47	100.0	1.0	0.3	98.3	(380)
All Ages	100.0	43.9	9.3	46.8	(1652)

3. Solid Food

Respondents were asked if their youngest child was yet receiving foods other than water, milk, or juices. Current thinking in developed countries is that solid food should be initiated between 4 and 6 months of age, when it is felt that breast-feeding may become insufficient for optimum development of the child. Column 2 of Table 7.3, and Figure 7.2 show that one-third of infants have not yet begun receiving solid food by 6 to 8 months after birth. This proportion drops to about 10 percent shortly after the first birthday but does not approach zero until about 3 years of age. Whether some children are really not receiving solid food until such an advanced age, or women were misinterpreting the survey questions has not been determined. About half of children are apparently receiving solid food as early as is recommended. This means that half of all children may be getting solid food later than they ideally should. Most importantly, there are substantial numbers of children not receiving solid foods until such a late age as to hinder their growth and development.

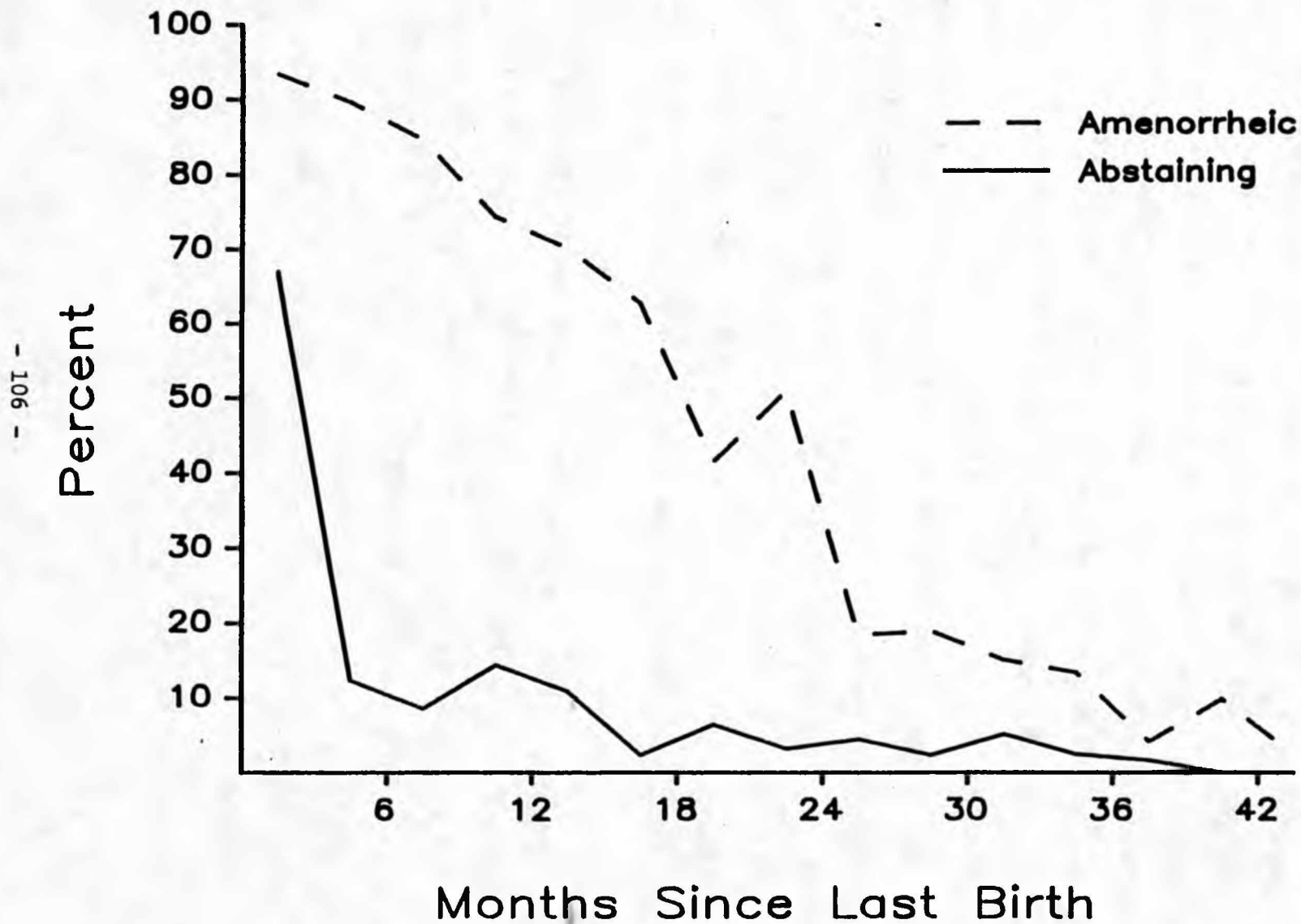
There is a slight correlation between when children first receive solid food and both house type and husband's occupation. Those with modern houses and nonprimary occupations tend to start their children on solid foods about 1 month earlier, on average, than their counterparts. The proportion of children at least 2 years-old who have not yet received solid food is considerably higher in farm families as opposed to those in which the father works outside the primary sector--6 percent and 3 percent, respectively. Serers are slightly more likely to have given solid food to their children than Wolofs or others as of given ages. There are no noteworthy differences according to the mother's age at the time of interview.

C. POST-PARTUM AMENORRHEA AND ABSTINENCE

As will be seen in Chapter VIII, in spite of high fertility the mean interval between births in rural Sine-Saloum tends to be quite long. Where there are long birth intervals and breast-feeding durations one would certainly expect to find, in general, quite long periods of post-partum amenorrhea. Indeed, as seen in Figure 7.4, the duration of post-partum amenorrhea is typically very long. Based on reports of whether a woman's menstrual period had yet returned according to the time since the last birth, we find that the average period of amenorrhea was about 19 months. (This assumes about 5 percent of women are terminally amenorrheic.) This ranks with some of the longest durations found among large populations. The expected duration of amenorrhea, given mean breast-feeding of 22 months, would be about 15 months, according to a formula developed by Bongaarts (1978). That the actual mean greatly exceeds that is probably due to very long durations of complete breast-feeding and high intensity of breast-feeding. In light of the data shown in Figure 7.4, it is not surprising that birth intervals tend to be quite long (as will be demonstrated in Chapter 8) in spite of low levels of contraceptive use.

In some African societies post-partum sexual abstinence is customarily practiced (Schoenmaekers et al., 1981; Caldwell and Caldwell, 1981). Often sexual relations are not resumed until breast-feeding of the youngest child is terminated or until some landmark event, such as the child beginning to walk. In addition, the Koran prescribes a period of abstinence of 40 days for a women following the birth of a child. Besides such forms of temporary abstinence, permanent forms--such as grandmaternal abstinence--are practiced

Figure 7.4. Percent of Women Still Amenorrheic and Percent Abstaining from Sexual Relations by Months Since Most Recent Birth



in some societies. The existence of forms of sexual abstinence are not only sociologically interesting but, if sufficiently widespread, can have a significant effect on fertility and the length of birth intervals within a population.

In the Sine-Saloum Survey, women who had given birth within the previous 4 years were asked if they had resumed sexual relations since the birth of their last child. As indicated by Figure 7.4, extended post-partum abstinence is not typical in the Sine-Saloum. Mean abstinence is about 5 months, but this is somewhat misleading because of a small percentage of women who reportedly refrain from sexual relations for very long periods of time following a birth.

Median duration, a more useful indicator, is only about 2 months. Beyond the months immediately following delivery, abstinence declines rapidly. We do see, though, that the Islamic proscription against sexual relations after a child's birth seems to be followed by the vast majority of women. All respondents who had a birth less than 1 month ago reported they had not resumed sexual relations. The same was true of 84 percent of women in their second month post-partum.

Abstinence appears to vary with neither respondent's age nor with socioeconomic indicators. Wolof women tend to resume sexual relations slightly sooner following a birth than women of other ethnic groups. The largest differential was according to whether the woman's last child was still alive. Overall, 12 percent of women whose last child was still alive were abstaining compared to only 2 percent of those whose last child had died. Within the first 3 months following birth, these percentages were 69 and 29, respectively. Six months following birth virtually everyone in the latter group had resumed sexual relations. This probably stems from the fact that couples want to have another birth as soon as possible in order to replace the dead child (an indication that unwanted fertility may be low).

In conclusion, it seems unlikely that post-partum abstinence, although widely practiced, has an important fertility-inhibiting effect in the Sine-Saloum. Among the vast majority of women its practice is limited to the months immediately following a birth, a time during which most women cannot become pregnant anyway because of the long period of intense breast-feeding. For only a handful of women does abstinence last long enough to lengthen interbirth intervals significantly. We do not yet know if those women who have not resumed sexual relations have not done so as a form of traditional abstinence, as a form of contraception, because they have been separated from their spouse temporarily, or if some other factor has caused it.

D. CONCLUSIONS

The most outstanding features of post-partum practices in the Sine-Saloum are the long duration and lack of variation in breast-feeding and the correspondingly lengthy post-partum amenorrhea. One can assume, based on the findings of extensive research on breast-feeding around the world, that the universality and length of breast-feeding practiced by Sine-Saloum women makes a major contribution to the health and well-being of infants in the region. The provision of maternal antibodies, the assurance of adequate nutrition, the avoidance of the ingestion of disease-causing contaminants, and the lengthening of birth intervals to which breast-feeding contributes likely lead to reduced levels of disease, malnutrition, and mortality in infants. Fortunately, there is no indication of movement toward more "modern" patterns of breast-feeding as seen among other populations where durations become shorter, substantial proportions of children are never breast-fed, and

maternal milk substitutes are introduced very early in life. Any significant changes in infant health arising from such trends would almost certainly be adverse. Any movement toward less prolonged or less intense breast-feeding would also shorten birth intervals and raise fertility, an issue which is discussed further in Chapter VIII.

Use of breast milk substitutes, at least during the first 1-1/2 years is not widespread among most segments of the population. Thus, most children would not likely be widely exposed to ingestion of disease-causing organisms if they were not given unboiled water to drink. One way to reduce the incidence of diarrhea among infants, since diarrhea is prevalent even among fully breast-fed infants, would be to make women more aware of the dangers of giving unboiled water to their babies.

Solid food is regularly given to only about half of all children by the time they are 6 months of age. At 1 year, about one-tenth of children still have not received solid food. Delay of commencement of solid foods until such an advanced age may be detrimental to the development and health of infants. It would be helpful to know whether the late introduction of food in most cases is the result of poverty and a shortage of food, or if it is something that could be significantly changed through educational and informational activities.

A. INTRODUCTION

The Sine-Saloum Family Health Survey included a number of questions on women's overall and recent fertility as well as on the use and potential demand for family planning services. Knowledge of fertility levels and differentials is important in itself for what it says about population growth and family size. The survey yields information about the length of recent birth intervals, which has itself been tied to the health of infants and mothers. Although use of contraception was expected to be low, the survey could indicate whether knowledge or use of family planning methods had increased in recent years. More importantly, the survey allows determination of the extent to which unplanned births are occurring and if births are being spaced as well as mothers would like. Thus, the need for family planning services can be gauged, and recommendations can be made as to whether increased availability of such services, for instance through the Sine-Saloum Health Project, is warranted.

B. FECUNDITY

Respondents were considered subfecund if they stated they had a medical or surgical problem preventing conception or if they had unsuccessfully tried to conceive during the 3 years preceding interview. Eleven percent of the respondents were subfecund according to this definition, including 1 percent who were menopausal. While virtually all women are fecund in the 15-24 age group and over 90 percent are fecund in the 25-34 age group, only about three-fourths of 35-44-year-olds are thought to be able to become pregnant (Table 8.1). Menopausal women amount to 5 percent of those in the 35-44 age group.

TABLE 8.1

Fecundity Status, By Age 15-44
Sine-Saloum, Senegal

<u>Age</u>	<u>Total</u>	<u>Fecundity Status</u>			<u>No. of Cases (Unweighted)</u>
		<u>Fecund</u>	<u>Subfecund</u>	<u>Menopausal</u>	
15-24	100.0	96.5	3.5	-	(721)
25-34	100.0	91.3	8.7	-	(717)
35-44	100.0	74.1	20.7	5.2	(430)
Total	100.0	89.3	9.5	1.2	(1,868)

A second way of looking at the extent of infertility is to calculate the proportion of ever-married women who have never had a live birth. This is a more objective indicator, since it does not rely on a woman's judgment of her ability to bear children. Only 20 percent of subfecund women in Sine-Saloum are of zero parity and therefore suffering from primary infertility. Only 4 percent of women in the oldest age group, 35-44, and likewise 4 percent of women first married at least 10 years earlier, are of zero parity and therefore presumably infecund (since no respondents reported wanting to be childless) whether or not they claimed to be fecund. This is well below the levels of childlessness in the so-called "infertility belt" of Africa and is comparable to the generally accepted world average of about 5 percent of women with primary infertility (Ferry, 1981; Lesthaege et al., 1981; Retal-Laurentin, 1974). These results are consistent with those from the 1978 Senegal Fertility Survey for Senegal as a whole, and indicate that women in the Sine-Saloum have no more of a problem with infertility than women in most of the rest of the world. There were no noteworthy differences in childlessness between socioeconomic groups. However, there is an indication that infertility is more prevalent among Peulhs than among the rest of the population. About 9 percent of Peulh women between 35 and 44 are childless compared with fewer than 4 percent of women in other ethnic groups. Within each 5-year age group, childlessness is substantially higher among Peulhs than others.

C. FERTILITY LEVELS, TRENDS, AND DIFFERENTIALS

Table 8.2 shows three standard fertility measures tabulated from the Sine Saloum Family Health Survey. The crude birth rate (CBR) calculated for the 12 months prior to interview is almost 55 births per 1,000 population; the total fertility rate (TFR) is 7.2 births per woman. A CBR of 55 would be higher than that published for any current national population in the world, if it is to be believed. However, if one calculates fertility based on reported births over a 24-month period rather than a 12-month period, the CBR is 49 and the TFR is 6.4, a reduction in each of about 10 percent. Thus, the survey rate for 2 years before interview is about 20 percent lower than for 1 year before interview. Such a change in fertility within 1 year is highly improbable, and the suspicion is confirmed by looking at results of the Senegal Fertility Survey (SFS) of 1978. In the SFS also, fertility 2 years before the survey was 20 percent below that for 1 year before. The inescapable conclusion is that women tend to report about 10 percent too many births as having occurred in the past year at the expense of births reported for the previous year. Thus, we assume that fertility rates for 24 months are more reliable than for 12 months, even though, naturally, the 24-month rates themselves are subject to both omission of births and errors from shifting of birth dates. A TFR of 6.4 (or slightly higher due to omission) is very comparable to those reported for most populations of West Africa, levels which are very high by world standards.

The survey results provide no evidence of any noteworthy change in fertility in rural Sine-Saloum in recent years. First, as seen in Table 8.1, total fertility for the most recent year--as measured by the SSFHS and the Senegal Fertility Survey of 1978 (for Central Senegal)--are the same. (Both levels are probably overestimated, but both are subject to the same errors).

TABLE 8.2

Fertility Measures According to the
Sine-Saloum Family Health Survey, 1982, and
the Senegal Fertility Survey 1978

	<u>Sine-Saloum Survey*</u>		<u>Senegal Fertility Survey (12-Month)</u>		
	<u>12-Month</u>	<u>24-Month</u>	<u>All Senegal</u>	<u>Rural</u>	<u>Central</u>
Crude Birth Rate	54.5	49.4	56	NA**	NA
General Fertility Rate	24.7	22.4	NA	NA	NA
Total Fertility Rate	7.2	6.4	7.1	7.5	7.2

*Rates do not include information on women under 15 or over 44 years of age, unlike the Senegal Fertility Survey. Were the small numbers of births occurring at these ages included, rates would be slightly higher relative to those for the Senegal Fertility Survey.

**NA = Not available

In Table 8.3 mean numbers of live births per woman are displayed by years since first marriage and age according to the SSFHS and the 1978 SFS. The means from the SSFHS are slightly but consistently higher than the SFS results from either central Senegal or rural Senegal. It is likely that rates for rural Central Senegal or just rural Sine-Saloum if they were available, would be higher than those presented. This result is encouraging, since it shows that completeness of birth reporting is quite good and unlikely to have been worse than in other surveys.

Table 8.4 shows that some interesting differentials in fertility exist. Differences in parity by house type are inconclusive when examined by age. However, the other socioeconomic variable used, husband's occupation, shows that parity is consistently lower among wives of men working outside the primary sector than among others. Peulhs appear to have appreciably fewer children than Wolofs and Serers, even from the youngest ages of childbearing. (Fertility rates and birth interval analyses lead to the same conclusion--that Peulhs have fewer children than other ethnic groups in the Sine-Saloum Region.) Serer women appear to have more children than any other major ethnic group in Sine-Saloum, although the difference from Wolof women is not great.

TABLE 8.3

Mean Number of Live Births by Respondent's Age and
Years Since First Marriage for Ever Married Women
1982 Sine-Saloum Family Health Survey and
1978 World Fertility Survey

	Sine-Saloum Survey	World Fertility Survey	
		Central Senegal	Rural Senegal
All Women (Duration Adjusted)*	3.9 (1877)	3.6	3.6
<u>Years Since Marriage</u>			
0-4	1.0 (412)	0.8 (350)	0.8 (557)
5-9	2.6 (431)	2.4 (217)	2.3 (402)
10-14	4.2 (394)	3.8 (213)	4.0 (369)
15-19	5.6 (281)	5.5 (203)	5.4 (354)
20+	6.9 (359)	6.6 (430)	6.5 (725)
<u>Age</u>			
15-24	1.6 (730)	1.2 (484)	**
25-34	4.4 (717)	4.1 (441)	
35-44	6.8 (430)	6.3 (381)	

NOTE: Numbers in parentheses are unweighted numbers of cases.

*Adjusted to duration distribution in Sine-Saloum Survey

**Figures not available

TABLE 8.4

Mean Number of Live Births by Selected Background
Variables by Respondent's Age
Sine-Saloum Family Health Survey

Characteristics	Age			
	All Ages	15-24	25-34	35-44
All Women	3.9	1.6	4.4	6.8
<u>Type of House</u>				
Modern	4.4	1.7	4.7	6.9
Semi-modern	4.1	1.6	4.6	6.5
Improved traditional	3.7	1.7	4.3	6.9
Traditional	3.8	1.6	4.1	6.5
<u>Ethnicity</u>				
Wolof	3.8	1.6	4.5	6.6
Serer	4.2	1.8	4.4	7.0
Peulh	3.4	1.3	3.8	6.1
<u>Husband's Occupation</u>				
Primary Sector	4.0	1.7	4.4	6.9
Nonprimary	3.4	1.5	4.0	6.1
<u>No. of Husband's Wives</u>				
1	3.5	1.5	4.2	7.2
2	4.1	2.0	4.4	6.6
3+	4.6	1.8	4.7	6.4

It has been debated whether polygyny decreases fertility among women by lessening exposure to risk of pregnancy or increases it because of "competition" between wives to bear children. The survey results are not conclusive in this regard. Overall, the more wives a woman's husband has, the more children she is likely to have borne. However, the number of spouses of a woman's husband also increases with her age. When age is controlled, we see that for 35-44-year-olds parity is highest among women in monogamous unions, supporting the "exposure" hypothesis; but for younger women the reverse is true, supporting the "competition" hypothesis. It is conceivable that the competition takes place mostly in the earlier years of marriage, after which exposure becomes the more important factor.

There seems to be very little difference throughout the population in median age at first birth, which falls between the 17th and 18th birthday for almost all population subgroups, including age cohorts (Table 8.5). About 15 percent of women reported that their first birth occurred before age 15. This is important to know because the risk to a mother's (and infant's) health is greater for births occurring to women at very young ages. A reduction in this percentage could lead to better maternal and child health.

A final way of examining fertility is to look at the length of birth intervals. Of course, shorter intervals indicate higher fertility, but there is also evidence that short intervals have detrimental effects on the health of infants as well as mothers (see Hobcraft, 1984 and Winikoff, 1983). Table 8.6 shows that 14.5 percent of birth intervals beginning between 1977 and 1980 were reported to be less than 2 years long (2 years being an arbitrary cut-off below which intervals can be considered to be short). This is a very low proportion compared to those found in developing countries in the rest of the world. Moreover, almost 70 percent of women who had a child in 1980 (i.e., 2-3 years earlier) who was still alive at interview had not yet had another live birth. One-third of those with live births in 1979 had still not had another birth.

TABLE 8.5

Median Age At First Birth and Percent of Ever-Married Women Reporting
Their First Birth Before Age 15, 20-44 Year-Old
Women, According to Selected Characteristics
Sine-Saloum Family Health Survey

<u>Characteristics</u>	<u>Median Age At First Birth</u>	<u>% With a Live Birth by Age 15</u>	<u>Number of Cases</u>
All Women	17.5	14.8	(1,570)
<u>Age</u>			
20-24	17.5	13.2	(432)
25-29	17.6	17.6	(412)
30-34	17.5	14.3	(299)
35-39	17.4	17.1	(264)
40-44	17.7	9.1	(163)
<u>House Type</u>			
Modern	17.7	13.9	(165)
Semi-modern	17.6	18.7	(283)
Improved traditional	17.5	14.0	(879)
Traditional	17.6	13.7	(243)
<u>Ethnicity</u>			
Wolof	17.3	14.2	(804)
Serer	18.0	13.2	(459)
Peulh	17.3	16.4	(240)
<u>Husband's Occupation</u>			
Primary sector	17.4	15.6	(1,296)
Nonprimary	18.4	11.3	(261)

There are a few important differentials in birth intervals. As expected, older women have the longest intervals—only 9 percent of 35-44-year-old women had last intervals of less than 2 years. Peulhs have considerably longer intervals than Wolofs and Serers in Sine-Saloum. Only 11 percent of Peulhs' intervals are shorter than 2 years, and fully 89 percent of women with live births in 1980 had not had another live birth yet. Although Wolofs and Serers do not differ in percent of short intervals, Serers tend to have their next child more quickly than Wolofs, contributing to their higher fertility. Overall, in spite of the fact that fertility in the Sine-Saloum region is very high, there does not appear to be a large number of birth intervals short

enough to cause serious health problems among infants and mothers. It should be kept in mind, however, that the only factor of consequence in keeping birth intervals from being very short is prolonged breast-feeding. Any shortening of breast-feeding is likely to be reflected in an increase in the number of birth intervals of short duration.

TABLE 8.6

Percent of Birth Intervals Beginning Between 1977 and 1980
in Which the Initial Child is Still Alive, Which Were Less
Than 24 Months Long, and Percent Not Closed Yet,
by Selected Characteristics
Sine-Saloum Family Health Survey

<u>Characteristics</u>	<u>Percent of Intervals <24 Months</u>	<u>Percent of Intervals Still Open Year Interval Started</u>		
		<u>1977-78</u>	<u>1979</u>	<u>1980</u>
All Women	14.5	13.7	34.7	69.3
<u>Age</u>				
15-24	15.0	8.1	28.6	69.4
25-34	16.2	9.6	26.9	62.4
35-44	9.0	21.8	59.8	83.7
<u>House Type</u>				
Modern	13.8	13.5	43.1	67.3
Semi-modern	14.4	14.2	40.1	65.0
Improved traditional	13.8	12.7	31.1	70.1
Traditional	18.0	16.1	34.0	71.6
<u>Ethnicity</u>				
Wolof	15.1	12.6	38.3	70.9
Serer	15.6	11.3	24.9	60.6
Peulh	10.8	24.8	44.9	89.0
<u>Husband's Occupation</u>				
Primary sector	14.3	14.3	36.1	70.5
Nonprimary	15.7	10.2	26.6	63.8

D. FERTILITY PLANS

Among reportedly fecund women only 26 percent want to become pregnant now or sometime in the unspecified future, 42 percent of women want more children but definitely don't want to get pregnant now, and 8 percent want no more children (Figure 8.1 and Table 8.7). This indicates there may be a significant need for family planning services in rural Sine-Saloum, particularly for birth spacing purposes. As expected, as the number of living children increases the likelihood of wanting to become pregnant now decreases considerably, from 36 percent of women with 0-1 living children to 16 percent of women with 6 or more living children (Table 8.7).

TABLE 8.7

Fertility Desires by Number of Living Children
Sine-Saloum Family Health Survey

<u>Fertility Desires</u>	<u>Total</u>	<u>Living Children</u>			
		<u>0-1</u>	<u>2-3</u>	<u>4-5</u>	<u>6+</u>
Want to get pregnant now	23.9	35.9	21.3	16.2	15.5
Want to get pregnant, time uncertain	2.1	2.5	1.6	2.2	2.1
Want to get pregnant later	41.9	32.9	50.6	46.4	27.6
Currently pregnant, want more children	17.8	23.9	19.8	12.4	5.7
Want no more children	8.0	1.6	1.8	12.4	37.6
Don't know, etc.	6.4	3.2	5.0	10.4	11.5
TOTAL	100.0	100.0	100.0	100.0	100.0
No. of Cases (Unweighted)	(1,694)	(516)	(603)	(404)	(171)

The relationship between living children and desire to become pregnant is not due to older women being less likely to want to get pregnant. To the contrary, Table 8.8 shows that when the number of living children is controlled, women are more likely to want to get pregnant as age increases. This probably reflects the fact that as the childbearing years come to an end, women who want to become pregnant again must do so as soon as possible, as well as a possible shift in attitude among younger women.

TABLE 8.8

Percent of Nonpregnant Women Desiring to Become Pregnant
Now or at an Uncertain Time, by Age and Number of Living Children
Sine-Saloum Family Health Survey

Age	Total	Living Children			
		0-1	2-3	4-5	6+
15-24	34.9 (550)	47.2	18.2	18.7	*
25-34	27.0 (542)	60.1	32.7	15.4	14.2
35-44	33.7 (302)	*	51.7	31.3	20.7
TOTAL	31.6 (1394)	50.6	28.5	21.0	18.6

NOTE: Numbers in parentheses are numbers of cases.

*Fewer than 25 cases.

As age, parity, and socioeconomic level increase, the likelihood that the last pregnancy was wanted (i.e., occurring no sooner than intended) decreases. Table 8.9 shows that up to the age of 30 the proportion of respondents whose last pregnancy was neither mistimed nor unwanted is fairly constant at about 90 percent. This proportion then declines with increasing age. Of those pregnancies which were not planned, almost all before age 30 were wanted later whereas from age 30 onward, unwanted pregnancies (defined as those in excess of the desired number of children) increase markedly with age. For women aged 40 to 44 there were over four times as many unwanted pregnancies as pregnancies which were wanted later.

As parity increases, the proportion of pregnancies which are wanted decreases. However, the proportion of pregnancies classified as unwanted remains extremely low until parity seven where 10 percent are unwanted. There is no clear relationship between the number of live births and the proportion of pregnancies wanted later. Interestingly the proportion of pregnancies which mothers could not classify increases markedly with parity.

TABLE 8.9

Percent Distribution of Planning Status
of Last or Current Pregnancy by Respondent's Age,
Live Births, and House Type
Sine-Saloum Family Health Survey

<u>Characteristics</u>	<u>Total</u>	<u>Planning Status of Last Pregnancy</u>				<u>No. of Cases</u>
		<u>Wanted at Time of Pregnancy</u>	<u>Wanted Later</u>	<u>Unwanted</u>	<u>Don't Know, etc.</u>	
<u>Total</u>	100.0	84.3	4.3	2.8	8.6	(1742)
<u>Age</u>						
15-19	100.0	90.0	5.8	0.0	4.3	(212)
20-24	100.0	87.7	6.0	0.2	6.1	(422)
25-29	100.0	90.1	3.5	0.2	6.2	(405)
30-34	100.0	82.3	3.4	3.3	11.0	(287)
35-39	100.0	77.6	3.8	6.3	12.3	(259)
40-44	100.0	67.7	2.9	13.1	16.3	(157)
<u>Live Births</u>						
1	100.0	90.1	7.7	0.0	2.2	(259)
2-3	100.0	88.3	4.9	0.5	6.3	(501)
4-6	100.0	85.4	4.3	1.9	8.4	(550)
7+	100.0	71.6	2.0	9.7	16.7	(356)
<u>House Type</u>						
Modern	100.0	72.0	7.8	5.0	15.2	(184)
Semi-modern	100.0	82.8	4.2	2.7	10.4	(319)
Improved traditional	100.0	87.0	3.8	2.0	7.3	(976)
Traditional	100.0	85.4	4.2	4.1	6.4	(263)

Seventy-two percent of the last pregnancies occurring to women in "modern" houses were wanted at the time of pregnancy as opposed to 83 to 87 percent for those living in what were categorized as less-than-modern houses. There does not appear to be any relationship between type of house and the likelihood of unwanted pregnancies.

When respondents classified as fecund were asked the number of additional children they desired, 62 percent of them indicated they wanted unlimited fertility (all the children they could have, all that God would provide, etc.) while another 5 percent had not thought about it or did not know (Table 8.10). However, there is a strong relationship between the number of

additional children desired and the number of children currently alive. The proportion of women expressing a desire for "unlimited" fertility remains fairly constant at slightly less than two-thirds until parity six. For women with six or more children, the proportion is only 41 percent. This result indicates that when many women who profess to want as many children as possible confront the realities of age and/or the costs (both economic and non-economic) of a large number of children, they modify their desires. The proportion of women wanting four or more additional children is 23 percent of women with zero or one living child and drops to only 3 percent of women with six plus living children.

TABLE 8.10

Percents of Fecund Women Wanting Large Numbers
of Additional Children by Number
of Living Children and House Type
Sine-Saloum Family Health Survey

	<u>Percent Wanting Four or More Additional Children</u>	<u>Percent Wanting as Many Children as Possible</u>	<u>Number of Women</u>
All women	16.3	62.1	(1,587)
<u>Living Children</u>			
0-1	23.0	65.9	(501)
2-3	20.1	63.7	(571)
4-5	7.1	63.3	(363)
6+	2.6	41.5	(152)
<u>House Type</u>			
Modern	15.5	58.8	(156)
Semi-modern	15.9	62.8	(283)
Improved traditional	17.2	62.3	(908)
Traditional	13.9	62.6	(240)

The proportion of all respondents wanting no additional children is only 8.5 percent. However, this varies greatly by the number of living children. Less than 2 percent of women with three children or fewer want no additional children, while 14 percent of women with four to five living children and 43 percent of women with six or more living children want no more.

E. THE NEED FOR FAMILY PLANNING SERVICES

To some extent the need for family planning services in the Sine-Saloum Region is indicated by the data on fecundity, desire to become pregnant, and planning status of the last pregnancy, which have been already discussed. However, a more comprehensive measure of the need for family planning services can be more useful. We define "women in need of family planning services" as fecund women who are not pregnant, do not want to get pregnant now and are not amenorrheic or post partum*, but are not using effective (i.e., nontraditional) means of contraception. This definition does not take into account reasons for not using contraception among women deemed to be "in need". Data shown here are restricted to married women, since unmarried women are a very small proportion (3.5 percent) of all 15 to 44-year-old women, and in the rural area surveyed are not likely to be sexually active. (In urban areas it is presumed that unmarried women would be more likely to be included among actual and potential family planning clients.)

We have divided the need for family planning services into (1) the need to limit births and (2) the need to space births. The first group is defined as those women who want no more children and the second as those who want to have more children but not at the present time. This is an important distinction in Senegal where family planning services are promoted for the purpose of spacing births.

*Defined as women whose menses have returned or whose last live birth was at least 18 months before interview (18 months is 1 month shorter than the mean length of post-partum amenorrhea in the population). Defining all breast-feeding women as unable to get pregnant would understate the number of women at risk of unplanned pregnancy.

Overall, 23 percent of interviewed women were found to be in need of family planning services: 19 percent for the purpose of spacing births and 3 percent for the purpose of limiting births (Figures 8.2 and Table 8.11). The number of living children seems to be an important determinant of whether a particular woman is in need of family planning services, particularly for limiting purposes. The overall proportion of women in need of services increases with the number of living children to the point where one-third of those with six or more children are in need. While almost no women with fewer than four living children are in need of services for limiting purposes, 14 percent of those with fewer than two children and 23 percent of those with two or three children are in need of services for spacing births. The greatest number of women in need of family planning services for birth spacing therefore appears to be among women with small- and medium-sized families. As the number of living children increases to four to five and then six or more, the proportion of women in need of services for spacing decreases slightly, but the proportion in need of services for limiting increases markedly. The survey data indicate that as family planning service availability expands in Sine-Saloum there will likely be a modest demand for them. Contraceptive use is thought to be increasing in urban areas of Senegal and, if provided in rural areas, would probably grow also as it becomes more accepted.

Figure 8.2
 Proportion of Women in Need of
 Family Planning Services
 by Number of Living Children

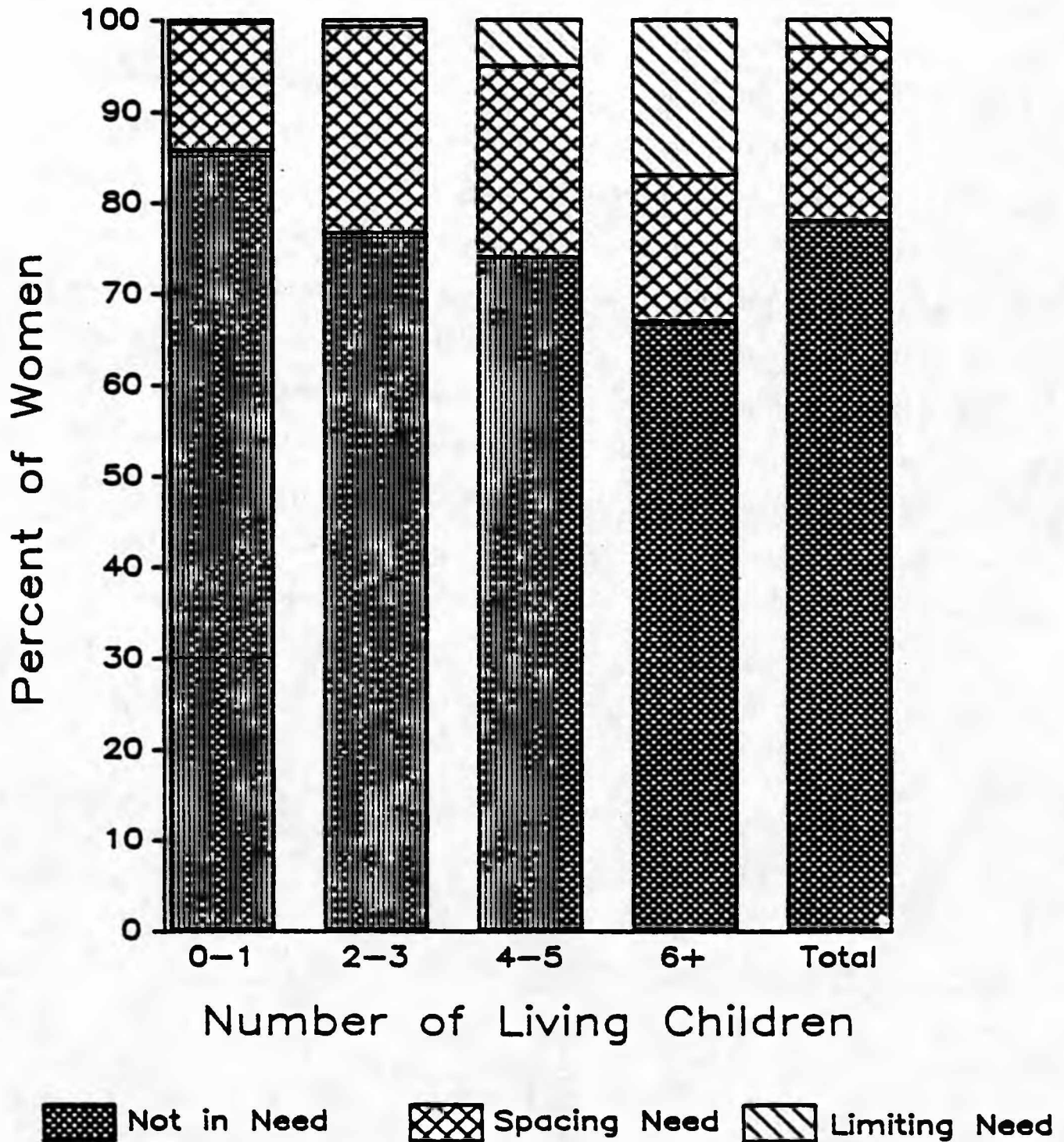


TABLE 8.11

Percent Distribution of Need for Family Planning Services*
 By Number of Living Children and Age
 Siné-Saloum Family Health Survey

<u>Characteristics</u>	<u>Total</u>	<u>Need for Family Planning Services In Need of Services</u>			<u>Not in Need of Services</u>	<u>No. of Cases</u>
		<u>Total</u>	<u>For Limiting</u>	<u>For Spacing</u>		
<u>Living Children</u>						
0-1	100.0	14.2	0.3	13.9	85.8	(574)
2-3	100.0	23.3	0.7	22.6	76.7	(637)
4-5	100.0	25.6	4.6	21.1	74.3	(429)
6+	100.0	32.8	16.9	15.9	67.2	(188)
<u>Age</u>						
15-24	100.0	21.2	0.3	20.9	78.8	(709)
25-34	100.0	23.6	2.3	21.3	76.4	(702)
35-44	100.0	20.9	9.7	11.3	79.1	(417)
TOTAL	100.0	22.5	3.3	18.8	77.9	(1828)

*Defined as women who are currently married, not pregnant or wanting to get pregnant now, fecund, had their last birth at least 18 months earlier or has resumed menstruating, and is not using effective contraception.

F. KNOWLEDGE AND USE OF FAMILY PLANNING METHODS AND SERVICES

Only 5 percent of women had any knowledge of where contraceptives could be obtained. This is in keeping with the fact that there are few family planning outlets at the present time in Sine-Saloum, apart from the larger cities and towns which were not covered in the survey. On the other hand, a much larger proportion of women are aware of the existence of contraceptive methods, and this proportion appears to be increasing as family planning services become more widely available of Senegal, although the demand for services has not necessarily increased in rural areas.

Table 8.12 compares the data on knowledge of contraceptive methods gathered in the present survey with the 1978 Senegal Fertility Survey. Knowledge of most methods was still not extensive in the 1982 survey, with no method known by more than 46 percent of respondents and 41 percent familiar with no modern methods. However, the data show about a five-fold increase in knowledge of most methods over a 4 to 5-year period. The percentage of women aware of it at least one supplied method increased from 14 to 59 percent. Unless there are serious differences in the quality of the responses between the two surveys, this difference shows a fantastic increase in knowledge of contraception over a very short period of time. Possibly, the difference in knowledge of contraceptives can be attributed in large measure to family planning information and services having become much more widely available in Senegal between 1978 and 1982. Although these services are mostly available in urban areas, especially Kaolack, as the capital of the Sine-Saloum Region, awareness of these services has certainly increased.

TABLE 8.12

Percent of Women 15-44 With Knowledge of Specific Contraceptive Methods
1982 Sine-Saloum Family Health Survey and
1978 Senegal Fertility Survey

<u>Method</u>	<u>Sine Saloum Survey 1982</u>	<u>Senegal Fertility Survey 1978</u>
Pill	43.7	8.9
IUD	18.6	3.5
Sterilization	45.8	*
Injection	32.5	5.5
Condom	17.5	3.2
Diaphragm	5.5	0.2
<u>At Least One Supplied Method**</u>	59.3	13.8
Rhythm	9.0	4.1
Withdrawal	6.7	*

*Not asked in survey

**Pill, IUD, Sterilization, Injection, Condom, Diaphragm

In the 1982 survey, pills and sterilization are each known by about 45 percent of rural Sine-Saloum women. A substantial proportion of women in Sine-Saloum also claim knowledge of three other supplied methods: injectables, the IUD, and condoms at levels of 32 percent, 19 percent, and 17 percent, respectively. No other modern method is known by more than 10 percent of women. Fifty-nine percent know of at least one supplied method. Traditional methods tend to be the best known of all methods among the women interviewed. However, except for abstinence, these methods have not been demonstrated to be effective.

With the exception of the traditional methods (abstinence, herbs, and gris-gris), a smaller proportion of women 35-44 years of age than of younger women are aware of each method. This is noteworthy, since the women more likely to be in need of family planning services are women with a higher number of living

children, who are usually older women. The greater knowledge by younger women may indicate that such women are becoming more "modern" in their knowledge and perhaps will eventually be inclined to use effective contraception. The same pattern was found in the Senegal Fertility Survey; knowledge of contraceptive methods peaked at ages 20-24 and then declined sharply with age.

Socioeconomic indicators are also related to women's knowledge of contraceptive methods. Table 8.13 shows that women who live in houses classified as modern have greater knowledge of contraceptive methods than other women. Greater knowledge also exists among women whose husbands work outside the primary sector. Also, Peulh women are less familiar with contraceptive methods than are Wolof or Serer women.

TABLE 8.13

Percent of Women With Knowledge of Any Supplied, Nontraditional
Contraceptive Methods by Selected Characteristics
Sine-Saloum Family Health Survey

<u>Characteristics</u>	<u>Percent With Knowledge</u>	<u>No. of Women</u>
All Women	59.3	(1894)
<u>Age</u>		
15-24	59.8	(746)
25-34	62.2	(718)
35-44	53.9	(430)
<u>House Type</u>		
Modern	75.4	(182)
Semi-modern	57.6	(335)
Improved traditional	57.6	(1028)
Traditional	56.5	(283)
<u>Husband's Occupation</u>		
Primary sector	56.2	(1507)
Nonprimary	72.6	(302)
<u>Ethnic Group</u>		
Wolof	60.7	(980)
Serer	59.7	(537)
Peulh	53.6	(293)

Only 3 percent of women are currently using contraception. Half of these practice abstinence, and most of the rest use traditional methods such as herbs and gris-gris (charms). In fact, only five women (out of some 1,800 interviewed) were using any nontraditional methods--one was using condoms and four were practicing rhythm. Six percent of women report using contraception in the past, of which one-half used traditional methods only.

G. REASONS FOR NONUSE OF CONTRACEPTION

As can be seen in Table 8.14, among fecund, nonpregnant women who have never used contraception, the largest single reason for nonuse, given by 47 percent of women, is that they have "no need" for contraception. Unfortunately, in most cases where women said they had "no need," they did not specify whether this meant they wanted to get pregnant or something else (e.g., they could not get pregnant at the current time). However, one can fairly safely say that these women are not immediate candidates for use of contraception. Another 8 percent of women said their births were already sufficiently spaced, which obviates the need for contraceptives. An additional 14 percent of women were opposed to contraception because of personal dislike, their husband's opposition or that it is not in keeping with religious or customary tradition.

Therefore, close to 70 percent of fecund, nonpregnant nonusers would probably not be willing to make use of family planning services in the absence of a strongly persuasive IEC program or social or economic changes which would influence their behavior.

TABLE 8.14

Percent Distribution of Reasons for Not Using Contraception
Fecund, Nonpregnant Never-Users of Contraception
Sine-Saloum Family Health Survey

<u>Reason for Not Using</u>	<u>Percent</u>
No need/want to get pregnant	46.9
Births adequately spaced	7.8
Doesn't like	5.7
Against religion or customs	6.2
Husband opposes	2.4
Not familiar with contraception/ Never thought about it	24.8
Lack of Access or Means	3.5
Other	<u>2.7</u>
TOTAL	100.0
No. of Cases	(1220)

On the other hand, 25 percent of women stated that their reason for nonuse was that they had never thought about or were unfamiliar with contraception, and 4 percent said their reason for nonuse was a lack of access or lack of means to obtain family planning services. One would expect that these are the women who would be quite likely to make use of family planning services if they were accessible and other barriers to their use were removed.

When broken down by number of living children (Table 8.15), it can be seen that as the number of living children increases, a smaller proportion of women state they have no need for contraception or want to get pregnant. While 61 percent of women with fewer than two living children say they have no need for contraception, only one-third of women with six or more children gave this response. Women with many living children are more likely to give such reasons for not contracepting as their births being adequately spaced naturally. Women

with six or more living children are much more likely than others to give reasons which one might call traditional reasons--that contraception runs contrary to religion or custom or that her husband opposes its use. Lack of access to or familiarity with contraception increases slightly as the number of living children rises.

TABLE 8.15

Percent Distribution of Reasons for Not Using Contraception
by Number of Living Children Fecund, Non-Pregnant
Never-Users of Contraception
Sine-Saloum Family Health Survey

<u>Reason for Not Using</u>	<u>Living Children</u>				
	<u>Total</u>	<u>0-1</u>	<u>2-3</u>	<u>4-5</u>	<u>6+</u>
No need/want to get pregnant	46.9	61.5	52.4	43.0	33.9
Births adequately spaced	7.8	0.4	7.2	11.4	11.0
Doesn't like	5.7	6.3	5.1	5.3	6.1
Against customs/husband opposes	8.6	3.6	7.1	7.1	15.2
Not familiar with contraception/ lack of access or means	28.3	26.3	26.2	28.8	31.5
Other	2.7	2.0	1.9	4.5	2.2
Total	100.0	100.0	100.0	100.0	100.0

CHAPTER IX: CONCLUSIONS AND RECOMMENDATIONS

The Sine-Saloum Family Health Survey indicates, in general, that the project interventions are having a positive impact on the availability and use of certain health services in the region. The construction of health huts has provided greater access to health facilities, and the services provided seem to have had some impact on certain aspects of health status.

However, despite apparent reductions, child mortality in Sine-Saloum remains high, and further efforts must be made to decrease it. Since the leading cause of child mortality almost certainly is diarrheal disease, the program should focus, as a first priority, on the greater availability and use of oral rehydration therapy (ORT). It should be made widely available in all levels of health facilities and widely known through information, education, and communication (IEC) activities. Training in ORT use should also be included in regular refresher training courses for health personnel. Mothers should be trained to administer ORT to children effectively.

Program efforts in this direction are particularly needed for the reduction of morbidity as well as mortality, since the survey has found that 40 percent of children had diarrhea very recently, while only 2 percent of those were treated with ORT. On the other hand, about half of those children with diarrhea were treated with some sort of pharmaceutical product, most of which were antibiotics. This should be discouraged since the cause of most childhood diarrhea in a setting such as rural Sine-Saloum is thought to be viral. In fact, certain home remedies such as pap for infants and "pain de singe" (the fruit of the baobab tree) may be more effective than antibiotics. Since people feel that pharmaceuticals will help the child, mothers may often not give the child foods and liquids which would be helpful.

The next largest cause of childhood mortality is respiratory disease, of which an unknown but possibly large percentage was whooping cough and even some measles for which no rash was reported. These are vaccine-preventable diseases. The survey found vaccination coverage, except for measles, to be very low. Virtually no children are protected against whooping cough and even though measles coverage is far better, it could be much improved. It is rehydration could (Goldberg and M'bodji, 1984). Measles vaccine is rarely locally available, but even so 32 percent of children 1 to 5 years old have reportedly been vaccinated. Thus, improvement should be relatively easy if vaccine were available. In conjunction with the Expanded Program of Immunizations program, the health project should make efforts to increase vaccination coverage substantially. In addition, further research should be done to determine the morbidity and mortality from whooping cough.

Coverage of tetanus toxoid vaccination for pregnant women is low and is related to the distance to the nearest health facility. Efforts should be made to provide this service in as many health facilities as possible, as part of the EPI program and to make women aware of these vaccinations and their benefits. Tetanus vaccination coverage among children is also very low. However, there does not appear to be much tetanus mortality after the neonatal period.

There is a high level of awareness and use of nivaquine among respondents, both for their children and for themselves, during pregnancy. However, as mentioned in chapter V, most nivaquine use for children is for curative

purposes. Since awareness and use of nivaquine is wide-spread, program efforts to encourage its use for preventive purposes should be fruitful. This will reduce the morbidity and mortality from malaria, which accounts for slightly less than 10 percent of all infant and child deaths.

The use of family planning methods in rural Sine-Saloum is practically nonexistent due, at least in part, to the fact that services are only available for the moment in the regional capital. Nevertheless, the survey found that a need for family planning services, mainly to insure adequate birth spacing, exists; overall about 20 percent of women can be considered at risk of an unplanned pregnancy, although the proportion is much higher among women with many living children. There was also some desire to limit births among women with many living children. It can be assumed that many of these women would make use of family planning services in rural Sine-Saloum if these services were made available, since the survey found that almost 30 percent of women reported no particular objection to making use of family planning services.

Of course, there are often other obstacles to the adoption of the use of contraception, which would not necessarily show up in the survey. Once any such barriers were overcome and contraceptives were available, one could expect increased use. It is recommended that a knowledge, attitude, practice survey (KAP) be done to determine exactly what these obstacles are. Such a survey should include men in its sample.

Making family planning services available is important since prolonged and intensive breast-feeding is virtually the sole factor keeping births well-spaced at present. Since this could change, as it has elsewhere in the world, information and educational activities should encourage breast-feeding. It

should be kept in mind that any decrease in breast-feeding duration or intensity will increase the need for family planning services in order to maintain desired family size and birth intervals. The project should therefore make family planning services available in health huts, and efforts should be made to ensure their availability in health centers, health posts, and other facilities as well. Also, breast-feeding has been shown to benefit the health and development of children, and for this reason alone, should be encouraged.

The survey shows the importance of the health huts in making health care more accessible to the population by, in effect, reducing the distance to the nearest health facility. The survey demonstrates the positive impact on the use of services provided by the community health worker as well as the need for additional community health workers, particularly in the two departments not already served by the project. In addition, the data on socioeconomic level show that future IEC activities should be directed toward the lower socioeconomic groups.

Only a little more than one-third of women had made use of prenatal services for their last pregnancy; only 28 percent had brought their child for a postnatal examination, only 20 percent delivered in a health facility, and only 17 percent had a post-partum examination following their last birth. There seems to be a greater tendency to make use of these services among women most recently pregnant and among younger women, so it appears that if this trend persists, women will make greater use of these services in the future. Nevertheless, IEC activities should focus on the value of these services.

Prenatal services also include tetanus toxoid vaccinations and the administration of nivaquine. The use of these two services, particularly vaccination, is not high, but it is strongly related to the distance to the nearest health facility and socioeconomic status. Efforts should be made to attract women who live relatively far from health facilities as well as increase the number of community health workers.

The survey clearly showed the necessity of extending the project to the two departments of Sine-Saloum wherer it has not yet been implemented, particularly the department of Kaffrine. Many of the survey's measures of health status and health facility use showed Kaffrine to be at lower levels than the other departments of Sine-Saloum, differences partially and possibly largely attributable to an absence of the project's services.

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Nombre identifiant :

1	2	3	4

Nombre de questionnaires individuels :

5	6

N. d'ordre du questionnaire individuel :

7	8

**ENQUETE SUR LA SANTE FAMILIALE DANS LA REGION DU
SINE - SALOUM**

QUESTIONNAIRE INDIVIDUEL

Prénoms et NOM de l'enquêtée

Prénoms et NOM du conjoint

Prénoms et NOM de l'enquêtrice

Prénoms et NOM du contrôleur

Visa après contrôle :

A-CARACTERISTIQUES SOCIO-DEMOGRAPHIQUES

1. Type des murs du local d'habitation de la femme :

- 1. Briques en ciment
- 2. Briques en banco
- 3. Pisé en banco
- 4. Paille ou tige
- 5. Tôle
- 6. Autre (A PRECISER)

9

2. Type du toit du local d'habitation de la femme :

- 1. Briques en ciment ou béton
- 2. Tôle, tuile ou ardoise
- 3. Chaume (paille)
- 4. Autre (A PRECISER)

10

3. Quel est votre âge (en années) ?

11
12

4. Quel est votre groupe ethnique ?

- | | |
|--|---|
| 1. Wolof <input type="checkbox"/> | 4. Mandingue <input type="checkbox"/> |
| 2. Serer <input type="checkbox"/> | 5. Diola <input type="checkbox"/> |
| 3. Pèl, Pular <input type="checkbox"/> | 6. Autre sénégalais <input type="checkbox"/> |
| | (A PRECISER) |
| | 7. Autre nationalité <input type="checkbox"/> |
| | (A PRECISER) |

13

5. Quelle est votre religion ?

1. Musulmane 2. Chrétienne 3. Autre

14

5. Quel est votre état matrimonial actuel ?

- | | | | |
|--|---|---|--------------|
| 1. Mariée <input type="checkbox"/> | 2. Union libre <input type="checkbox"/> | } | (PASSER A 8) |
| 3. Séparée ou divorcée <input type="checkbox"/> | 4. Veuve <input type="checkbox"/> | | |
| 5. Célibataire <input type="checkbox"/> (PASSER A 7) | | | |

15

7. Avez-vous jamais été mariée (y compris union libre) ?

1. OUI (CORRIGER REPONSE A 0 6 ET PASSER A 8)
2. NON (PASSER A 13)

16

8. Combien de fois avez-vous été mariée (y compris union libre)?

17
18 21

9. A quelle date vous êtes-vous mariée pour la première fois ?

Mois : Année : (PASSER A 11)

Ne sait pas (PASSER A 10)

22 23

10. A quel âge vous êtes-vous mariée pour la première fois ?

(SI JAMAIS MARIEE, DETERMINER L'AGE AUQUEL, L'ENQUETEE A VECU EN UNION LIBRE POUR LA PREMIERE FOIS)

11. Combien de temps s'est écoulé entre la célébration et la consommation de votre premier mariage (y compris union libre) ?

24 25

Mois :

(SI MOINS D'UN MOIS, INSCRIRE «0»)

Mariage non encore consommé

12. Quel est ou était le nombre d'épouses de votre actuel ou précédent mari (ou concubin) ?

26

13. Avez-vous fréquenté l'école française ? 1. OUI 2. NON

27

14. Savez-vous lire un journal ou une revue écrits en français ?

28

1. OUI 2. NON

15. Savez-vous lire en wolofal ? 1. OUI 2. NON

29

16. Quel est ou était le niveau d'instruction le plus élevé atteint par votre actuel ou précédent mari (ou concubin) à l'école française ?

30

- 1. n'a jamais fréquenté
 - 2. cycle primaire inachevé
 - 3. cycle primaire achevé
 - 4. 1er cycle secondaire
 - 5. 2è cycle secondaire
 - 6. Université
 - 7. Autre
 - 8. Ne sait pas
 - 9. Femme célibataire
- (PASSER A 17) } (PASSER A 19) } (PASSER A 17) } (PASSER A 100)

17. Sait-il ou savait-il lire un journal ou une revue écrits en français ?

31

1. OUI 2. NON

18. Sait-il ou savait-il lire en wolofal ? 1. OUI 2. NON
3. Ne sait pas

32

19. Quelle est ou était l'activité qui lui rapporte ou lui rapportait le plus haut revenu ? (PASSER A 20)

33

- Pas d'activité économique (PASSER A 100)
- 3. Ne sait pas (PASSER A 20)

20. Quelle est ou était la seconde activité qui lui rapporte ou lui rapportait le plus haut revenu après celle citée précédemment ?

34

.....
 Pas d'activité secondaire

Ne sait pas

(PASSER A 100)

B-FECONDITE

100. Etes-vous actuellement en grossesse ?

- 1. OUI (PASSER A 101)
 - 2. NON
 - 3. Ne sait pas
- } (PASSER A 102)

35

101. Depuis combien de mois êtes-vous en grossesse ?

- 1. moins de 3 mois
 - 2. 3 à 5 mois
 - 3. 6 mois et plus
 - 4. Ne sait pas
- } (PASSER A 103)

36

102. Avez-vous jamais été en grossesse ?

- 1. OUI (PASSER A 103)
 - 2. NON
 - 3. Ne sait pas
 - 4. NON : célibataire, mariée dont mariage non consommé (FIN DE L'INTERVIEW)
- } (PASSER A 414 page 15)

37

103. Combien de naissances vivantes avez-vous déjà eues ?

(I N'oubliez pas les naissances suivies de décès et les enfants encore vivants ne résidant pas dans la concession)

..... (SI AUCUNE NAISSANCE VIVANTE, INSCRIRE «0» ET PASSER A 110)

38 39

104. Combien de ces enfants (VOIR Q. 103) sont encore vivants ?

..... (SI AUCUN, PASSER A 107)

40 41

105. Combien y en a-t-il de garçons ?

42 43

106. Combien y en a-t-il de filles ?

44 45

107. Combien de ces enfants (VOIR Q. 103) sont décédés

.....(SI AUCUN, PASSER A 110)

46 47

108. Combien y en a-t-il de garçons ?

48

109. Combien y en a-t-il de filles ?

49

110. Combien de morts-nés avez-vous déjà eus ?

50

111: Combien de fausses couches ou avortements avez-vous déjà eus ?

(SI L'ENQUETEE N'A AUCUNE NAISSANCE VIVANTE, PASSER A 400 PAGE 13)

(SI L'ENQUETEE N'A QU'UNE SEULE NAISSANCE VIVANTE, INSCRIRE LA MEME REPONSE POUR LES QUESTIONS 112 ET 114)

51

112. Quelle est la date de naissance de votre premier enfant né vivant ?

Mois Année (PASSER A 114)

Ne sait pas (PASSER A 113)

52

55

113. Quel est ou devrait être l'âge de votre premier enfant né vivant ?

56

57

114. Quelle est la date de naissance de votre dernier enfant né vivant ?

Mois Année

Ne sait pas (ALors estimer son âge

58

61

(SI LE DERNIER ENFANT EST NE EN 1979 OU APRES, DONC AGE DE 3 ANS OU MOINS DE 3 ANS.

PASSER A 200)

(PAR CONTRE S'IL EST NE AVANT 1979 (DONC AGE DE PLUS DE 3 ANS) PASSER A 202)

C - PERIODE POST-PARTUM ET ALLAITEMENT

200. Avez-vous eu vos règles depuis votre dernière naissance vivante ?

1. OUI }
2. NON } (PASSER A 201)

3. NON, mais a eu une ou plusieurs grossesses (PASSER A 202)
depuis la dernière naissance vivante

201. Avez-vous repris les rapports sexuels depuis votre dernière naissance vivante ?

1. OUI
2. NON
3. Sans réponse

202. avez-vous allaité votre dernier enfant né-vivant ?

1. OUI { SI NE EN 1979 OU APRES (DONC AGE DE 3 ANS OU MOINS DE 3 ANS) PASSER A 204)
SI NE AVANT 1979 (DONC AGE DE PLUS DE 3 ANS) PASSER A 205)
2. NON (PASSER A 203)

203. Pour quelle raison ?

1. Enfant décédé trop tôt (PASSER A 300)
2. Enfant malade, incapable de téter
3. Pas de lait ou très peu
4. Mère trop malade pour allaiter
5. Mère désire être enceinte aussi tôt possible
6. Le lait du biberon est meilleur pour l'enfant (PASSER A 209)
7. Mère a trouvé le biberon plus pratique
9. Ne se souvient pas
0. Autre - - - - -
(A PRECISER)

204. Allaitiez-vous toujours votre dernier enfant né-vivant ?

1. OUI (PASSER A 207)
2. NON (PASSER A 205)

205. Pourquoi avez-vous arrêté son allaitement ?

1. Enfant a atteint l'âge du sevrage
2. Enfant décède
3. Enfant malade, incapable de téter
4. Enfant a refusé de téter

62

63

64

65

66

67

- 5. Mère malade
- 6. Pas de lait ou très peu
- 7. Mère enceinte ou le désirait
- 8. Mère a préféré ne plus allaiter
- 9. Ne se souvient pas
- 0. Autre
(A PRECISER)

206. A quel âge (en mois), l'enfant a-t-il tété pour la dernière fois ?

..... (mois)

68	69

207. Cet enfant boit-il ou buvait-il de façon régulière du lait autre que le lait maternel ?

- 1. OUI (PASSER A 208)
- 2. NON (PASSER A 210)

70

208. A quel âge (en mois) a-t-il ou avait-il commencé à boire de façon régulière du lait autre que le lait maternel ?

71	72

209. Quel autre type de lait a-t-il ou avait-il l'habitude de boire ?

- 1. lait non dilué d'animaux
- 2. lait dilué d'animaux
- 3. lait en poudre conçu spécialement pour les enfants
- 4. lait en poudre ordinaire
- 5. lait évaporé ou condensé (liquide)
- 6. combinaison de 1 à 5
- 7. Autre (A PRECISER)

73

210. Consomme-t-il ou consommait-il de façon régulière des aliments autres que le lait, l'eau et les jus ?

- 1. OUI (PASSER A 211)
- 2. NON (PASSER A 300)

74

211. A quel âge (en mois) a-t-il ou avait-il commencé à consommer de tels aliments solides ? (mois)

75	76

N ^o d'Ordre	DTCOO P.JLIO TRETRACOO (nombre de prises)	(307) VACCINATIONS				P.P.N.S.			(309) Pendant combien de temps en mois (si inscrit)	MENSURATIONS		
		H.C.G.		Rougeole Rouvax		(308) Inscription dans un Centre de P.P.N.S.				(310) Hauteur (en cm)	(311) Poids (en Kg)	(312) Tour de bras (en cm)
		OUI	NON	OUI	NON	est inscrit	était inscrit	jamais inscrit				
1												
2												
3												
4												
5												

0 - o prise
9 - NE SAIT PAS

• DE LA PAGE 9

(S'IL Y A PLUS DE 2 ENFANTS DECEDES UTILISER UNE FEUILLE SUPPLEMENTAIRE)

PRENOMS ET NOMS (DANS L'ORDRE DES ENFANTS DECEDES DU TABLEAU PAGE 9)

1er Enfant

2e Enfant

313. No d'ordre de l'enfant (PAGE 9)

314. Sexe

M. F.

M. F.

315. Age au décès

Ans Mois

Ans Mois

316. Nombre de jours de maladie avant le décès

par accident

PASSER A L'ENFANT SUIVANT OU A 400

Nombre de jours

par accident

PASSER A L'ENFANT SUIVANT OU A 400

Nombre de jours

317. Lieu du décès

Domicile

Hôpital

Centre de santé

Autre

A PRECISER

Domicile

Hôpital

Centre de santé

Autre

A PRECISER

318. L'enfant tétait-il normalement après la naissance ?

OUI

NON

Ne se souvient pas

OUI

NON

Ne se souvient pas

319. Au cours de la maladie ayant conduit au décès, l'enfant a-t-il présenté un ou plusieurs des symptômes suivants ?

a/ incapacité d'ouvrir la bouche pour téter

OUI

NON

OUI

NON

b/ incapacité d'ouvrir la bouche pour pleurer

c/ forte fièvre

d/ éruption

e/ toux

f/ yeux rouges et larmoyants

212 213

214 215

216 219

220 223

224 229

230 231

232 233

234 235

236 237

238 239

240 241

242 243

244 245

	OUI	NON	OUI	NON		
g/ toux prolongée suivie de vomissements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h/ quintes de toux	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i/ 3 ou plus de selles déliées (ou liquides) par jour	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j/ cheveux roux	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k/ pieds enflés	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					246	247
					248	249
					250	251
					252	253
					254	255

320. Juste avant la mort, l'enfant a-t-il eu un ou plusieurs des symptômes suivants ?

	OUI	NON	OUI	NON		
a/ spasmes musculaires ou convulsions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b/ 3 ou plus de selles déliées (ou liquides) par jour	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c/ selles présentant des mucosités ou du sang	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d/ corps raide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e/ paralysie d'une ou des deux jambes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					256	257
					258	259
					260	261
					262	263
					264	265

321. Reconnaissez-vous un de ces mots comme étant la cause de la mort de l'enfant ?

	OUI	NON	OUI	NON
1/ Tétanos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2/ Coqueluche	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3/ Diarrhée	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4/ Rougeole	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5/ Malaria, paludisme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SI AUCUN DES MOTS CITES CI-DESSUS N'A OBTENU UNE REPONSE POSITIVE - OUI - PASSER A 322 ;

SINON PASSER A 323

322. Quelle est la cause du décès ?

NE sait pas (PASSER A L'ENFANT SUIVANT OU A 400)

323. Qui vous a appris la cause du décès ?

Médecin

A S C

Infirmier ou autre agent sanitaire

Personne

Autre

(A PRECISER)

Médecin

A S C

Infirmier ou autre agent sanitaire

Personne

Autre

(A PRECISER)

(PASSER A L'ENFANT SUIVANT OU A 400)

<input type="checkbox"/>	<input type="checkbox"/>
268	271

<input type="checkbox"/>	<input type="checkbox"/>
272	273

E - SANTE MATERNELLE ET INFANTILE

(SI L'ENQUETEE DISPOSE D'UN CARNET DE SANTE, UTILISER-LE POUR OBTENIR LES RENSEIGNEMENTS SUIVANTS)

400. Avez-vous subi une ou des visites prénatales au cours de votre dernière

- grossesse (y compris grossesse actuelle)
1. OUI (PASSER A 401)
2. NON } (PASSER A 403)
9. Ne se souvient pas }

274

401. A quel mois de votre grossesse avez-vous subi votre première visite prénatale ?

275

.....

8 = 8è mois ou plus tard

9 = ne sait pas

402. Où avez-vous subi la première visite prénatale ?

276

1. hôpital
2. P.M.I., centre de santé, circonscription médicale
3. Poste de santé, dispensaire
4. case de santé
5. autre (à préciser)

403. Avez-vous été piquée contre le tétanos pendant cette grossesse ?

277

1. OUI

2. NON

9. Ne sait pas

404. Avez-vous pris un comprimé anti-paludique pendant votre dernière grossesse de façon régulière ?

278

1. OUI

2. NON

9. Ne sait pas

405. Où a eu lieu votre dernier accouchement ?

- | | | | |
|---|--------------------------|---|----------------|
| 1. Hôpital | <input type="checkbox"/> | } | PASSEZ A 408 |
| 2. P.M.I., centre de santé,
circonscription médicale | <input type="checkbox"/> | | |
| 3. Poste de santé,
dispensaire | <input type="checkbox"/> | | |
| 4. Chez la Sage-femme | <input type="checkbox"/> | | |
| 5. Case de Santé | <input type="checkbox"/> | } | (PASSEZ A 407) |
| 6. Chez la matrone ou
l'Auxiliaire accoucheuse | <input type="checkbox"/> | | |
| 7. Chez l'accoucheuse traditionnelle | <input type="checkbox"/> | | |
| 8. Domicile, chez des voisins, parents
amis | <input type="checkbox"/> | } | (PASSEZ A 406) |
| 9. Autre | <input type="checkbox"/> | | |
| (A PRECISER) | | | |
| 0. Pas d'accouchement | <input type="checkbox"/> | | (PASSEZ A 414) |

279

406. Qui vous a assisté durant votre accouchement ?

- | | | |
|----------------------------------|--------------------------|--------------|
| 1. sage femme, infirmière | <input type="checkbox"/> | |
| 2. auxiliaire
accoucheuse | <input type="checkbox"/> | |
| 3. matrone | <input type="checkbox"/> | |
| 4. accoucheuse
traditionnelle | <input type="checkbox"/> | |
| 5. autre personne | <input type="checkbox"/> | |
| 6. sans assistance | <input type="checkbox"/> | (A PRECISER) |

280

407. Avec quel instrument le cordon ombilical a-t-il été coupé ?

.....

281

408. Avez-vous subi une ou des visites post-partum après votre dernier

- | | | | |
|----------------|-----------------------|--------------------------|----------------|
| accouchement ? | 1. OUI | <input type="checkbox"/> | (PASSEZ A 409) |
| | 2. NON | <input type="checkbox"/> | } |
| | 9. Ne se souvient pas | <input type="checkbox"/> | |

282

409. Combien de temps (en mois) après l'accouchement avez-vous subi la
première visite ?

283 284

410. Votre dernier enfant a-t-il subi une ou des visites post-natales avant qu'il ait un an ?

1. OUI (PASSER A 411)
2. NON
9. Ne se souvient pas } (PASSER A 414)

285

411. Quel âge (en mois) avait votre enfant au moment de sa première visite post-natale ?

286 287

412. Est-ce parce qu'il était malade qu'il a subi cette visite ?

1. OUI
2. NON
9. Ne se souvient pas

288

413. Où a eu lieu cette première visite de l'enfant ?

1. Hôpital
2. P.M.I, centre de santé, circonscription médicale
3. poste de santé, dispensaire
4. case de santé
5. autre (A PRECISER)

289

414. Où iriez-vous en premier lieu pour faire soigner votre enfant en cas de maladie ou de blessure graves ?

290

415. Comment traiteriez-vous un cas de diarrhée très grave chez un enfant ?

.....

291

416. Avez-vous entendu parler des cases de santé (ou postes de santé) ?

1. OUI (PASSER A 417)
2. NON (PASSER A 422)

292

417. a/ Il faut combien de temps pour y aller par votre moyen de transport habituel ? Nombre de mn
autre mesure du temps

293 295

997. Connaît le lieu mais pas le temps de parcours
 998. Ne connaît pas le lieu
 999. N'y est jamais allée } (PASSER A 418)

(PASSER A 417 b)

417. b/ Par quel moyen vous y rendez-vous habituellement ?

[]

296

418. Je voudrais maintenant vous poser des questions sur les services et médicaments qui sont offerts ou vendus à la case ou au poste de sante

Selon vous, quels sont ces services et médicaments ?

	connaissance spontanée	connaissance dirigée (services cités par l'enquêtrice	utilisation par la femme ou l'enfant
a - nivaquine (contre le paludisme)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b - fer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c - piperazine (contre les vers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d - ORS (pour traiter la diarrhée)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e - aspirine (contre les maux de tête)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f - gouttes pour les yeux	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g - pansements, alcool, etc ... (pour traiter les blessures)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h - autre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(A PRECISER)			

[]

297

[]

298

[]

299

[]

300

[]

301

[]

302

[]

303

[]

304

(SI UN SERVICE OU UN MEDICAMENT EST UTILISE, PASSER A 420)
(SI AUCUN N'EST UTILISE, PASSER A 419)

419. Pourquoi n'avez-vous jamais demandé à bénéficier des services de la case ou du poste de sante ?

[] []

305 306

420. Etes-vous jamais allée chez un guérisseur pour traiter une maladie que vous ou votre enfant avez eue pendant les deux dernières années ?

[]

307

- 1. OUI (PASSER A 421)
- 2. NON (PASSER A 422)

421. Si OUI, pour quelle raison principale n'êtes-vous pas allée dans une formation sanitaire ?

[] []

308 309

(SI L'ENQUETEE N'A PAS EU DE NAISSANCE VIVANTE, PASSER A 500)

422. Avez-vous entendu parler du PPNS (Programme de Protection Nutritionnelle et Sanitaire) ?

[]

310

(DONNER UNE PRESENTATION DU PPNS SI L'ENQUETEE NE CONNAIT PAS LE SIGLE)

- 1. OUI (PASSER A 423)
- 2. NON (PASSER A 425)

423. Avez-vous ou aviez-vous un enfant inscrit dans un centre du PPNS ?

1. OUI (PASSER A 500)

2. NON (PASSER A 424)

424. Pour quelle raison ?

1. un seul enfant décédé trop tôt

2. centre du PPNS trop loin,
difficultés de transport

3. n'en a pas besoin

4. cotisation trop chère

5. autre (A PRECISER)

425. Un de vos enfants bénéficie-t-il ou a-t-il bénéficié de vivres gratuitement offerts par un ou plusieurs programmes alimentaires autres que le PPNS durant ces deux dernières années ?

1. OUI (PASSER A 426)

2. NON (PASSER A 500)

426. Lesquels ?

311

312

313

314

E - ESPACEMENT DES NAISSANCES ET PLANIFICATION FAMILIALE

500. Pensez-vous être capable de concevoir (d'être enceinte) à l'heure actuelle ?

1. OUI (PASSER A 502)
2. actuellement enceinte (PASSER A 504)
3. NON (PASSER A 501)

315

501. Pour quel(les) raison(s) ?

1. Ménopause
2. Problèmes médicaux chirurgicaux temporaires ou définitifs
3. Essayé sans succès durant les 3 dernières années (PASSER A 507)
4. stérilisée en guise de contraception
5. inactivité sexuelle
6. post-partum, allaitement (PASSER A 502)
7. pratique la contraception
8. autre
- (A PRECISER)

316

502. Voulez-vous avoir (des enfants) ou d'autres enfants ?

1. OUI (PASSER A 503)
2. NON (PASSER A 507)
3. indécise, n'y a pas pensé
ne sait pas, Dieu décidera, etc ... (PASSER A 506)

317

503. Combien en voulez-vous dans l'avenir ?

- 98 autant qu'elle pourra, autant que lui en donnera Dieu, etc ...
- 99 ne sait pas, n'y a pas pensé, etc ...

(PASSER A 506)

318

319

504. Après cette grossesse, désirez-vous avoir d'autres enfants ?

1. OUI (PASSER A 505)
2. NON
3. indécise, etc ... (PASSER A 507)

320

505. Combien d'enfants voulez-vous avoir en plus après cette grossesse ?

- 98 autant qu'elle pourra, autant que lui en donnera Dieu, etc ...
- 99 ne sait pas, n'y a pensé, etc ...

(PASSER A 507)

506. Aimeriez-vous être enceinte actuellement ?

- 1. OUI
- 2. NON
- 3. indécise, n'y a pensé, Dieu décidera, etc ...

(SI LA FEMME N'A JAMAIS ETE ENCEINTE -NON A LA QUESTION 102- PASSER A 509)

507. Désiriez-vous être enceinte la dernière fois que vous avez été en grossesse

(y compris l'actuelle grossesse) >

- 1. OUI (PASSER A 509)
- 2. NON (PASSER A 508)
- 3. n'y a (ou avait) pas pensé etc. (PASSER A 509)

508. Est-ce parce que vous :

- 1. Ne vouliez plus d'enfants ?
- 2. Vouliez attendre plus longtemps ?

509. Je vais vous poser des questions sur des méthodes préventives que les couples utilisent pour éviter une grossesse

	AVEZ-VOUS JAMAIS ENTENDU PARLER DE :	SI OUI, AVEZ-VOUS JAMAIS UTILISE :	SI OUI, UTILISEZ-VOUS ACTUELLEMENT :	
1. Pilule	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	326
2. Stérilet, DIU, appareil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	327
3. Ligature des trompes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	328
4. Piqûre, injection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	329
5. Condom, capote	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	330
6. Mousse, diaphragme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	331
7. Rythme (ogino)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	332
8. Retrait	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	333

- 9. Abstinence
- 10. Racine,poudre
- 11. Gris-gris
- 12. Autre

Méthode actuelle (oo - non utilisatrice)

SI L'ENQUETEE :

- UTILISE ACTUELLEMENT UNE METHODE CONTRACEPTIVE (METHODE 1 à 6)
(PASSER A 510)
- UTILISE ACTUELLEMENT UNE METHODE CONTRACEPTIVE (METHODES 7 A 12)
(PASSER A 515)
- N'UTILISE PAS ACTUELLEMENT UNE METHODE MAIS EN A DEJA UTILISE DANS
LE PASSE, (PASSER A 517)
- N'A JAMAIS UTILISE UNE METHODE CONTRACEPTIVE, (PASSER A 520)

510. A quel lieu (ou de qui) obtenez-vous vos contraceptifs (y compris la stérilisation) ?

.....

511. Il faut combien de temps (en minutes) pour y aller par votre moyen de transport habituel ?

Nombre de mn

Autre mesure du temps

997. connaît le lieu mais pas le temps de parcours

998. ne connaît pas le lieu }
 999. n'y est jamais allée } (PASSER A 513)

512. Par quel moyen vous y rendez-vous habituellement ?

.....

513. En quelle année avez-vous commencé à pratiquer la contraception ?

Année

514. Combien d'enfants aviez-vous lorsque vous avez commencé à pratiquer

la contraception ?

FIN DE L'INTERVIEW

515. En quelle année avez-vous commencé à pratiquer la contraception ?

Année

334
335
336
337
338 339

340

341 343

(PASSER A 512)

344

345 346

347 348

349 350

516. Combien d'enfants aviez-vous lorsque vous avez commencé à pratiquer la contraception ? (PASSER A 521)

351 352

517. En quelle année avez-vous commencé à pratiquer la contraception ?

Année

353 354

518. Combien d'enfants aviez-vous lorsque vous avez commencé à pratiquer la contraception ?

355 356

519. Pourquoi avez-vous cessé de pratiquer la contraception ?

.....
(PASSER A 522)

357 358

520. Pourquoi ne pratiquez-vous pas la contraception ?

.....
(PASSER A 522)

359 360

521. Savez-vous où vous pouvez obtenir des contraceptifs autres que ceux utilisés actuellement ?

- 1. OUI (PASSER A 523)
- 2. NON (FIN DE L'INTERVIEW)

361

522. Savez-vous où vous pouvez obtenir des contraceptifs ?

- 1 OUI (PASSER A 523)
- 2 NON (FIN DE L'INTERVIEW)

362

523. A quel lieu ?

363 364

524. Il faut combien de tems (en minutes) pour y aller par votre moyen de transport habituel ?

Nombre de minutes

Autre mesure du temps

997. connaît le lieu mais pas le temps de parcours

998. ne connaît pas le lieu } (FIN DE L'INTERVIEW)

999. n'y est jamais allée }

525. Par quel moyen vous y rendez-vous habituellement ?

365 367

368

(PASSER A 525)

RESULTAT DE L'INTERVIEW INDIVIDUELLE

Visite	Jour	Mois	Résultat (a)
1	<input type="checkbox"/>
2	<input type="checkbox"/>
3	<input type="checkbox"/>

--

369

(a) RESULTAT : 1. Interview complète
 2. femme absente
 3. refuse de répondre

5. autre

Nombre de visites :

Dernière visite : Jour Mois

--	--	--	--	--

371 370 374

Département:

--

375

Arrondissement

--

376

Communauté Rurale

--

377

District de recensement

--	--

378 379

Village

Concession No

--	--

380 381

Nom du chef de concession

ENQUETE SUR LA SANTE FAMILIALE
REGION DU SINE SALOUM
DOSSIER VILLAGE

Population au 16 Avril 1976

Nom

Département

Arrondissement

Communauté Rurale

District de recensement

RENSEIGNEMENTS / VILLAGE

1. Existence d'un forage

OUI

NON

2. Existence de puits

3. Existence d'une case de santé ou d'un poste de santé

Si NON, distance de l'unité sanitaire la plus proche
en (Km)

4. Existence d'une école

OUI

NON

Si NON, distance de l'école la plus proche

5. Existence d'une coopérative

OUI

NON

Si non, distance du Chef lieu de C.R. d'appartenance

6. Est ce chef lieu de CR

OUI

NON

Si NON, distance du chef lieu de CR le plus proche

7. Existence d'un marché

OUI

NON

8. Existence d'un Centre PPNS

OUI

NON

Si non, distance du Centre PPNS le plus proche

Vertical column of checkboxes for data entry, corresponding to the questions on the left.

Nombre identifiant

1	2	3	4

Nombre de questionnaires individuels

5	6

ENQUETE SUR LA SANTE FAMILIALE DANS LA REGION DU SINE SALOUM

QUESTIONNAIRE COLLECTIF

IDENTIFICATION

Département:

7

Arrondissement
.....

8

Communauté Rurale

9

District de recensement

10	11

Village

Concession No

12	13

Nom du chef de concession

RENSEIGNEMENT SUR LA CONCESSION

Nombre de résidents

14	15

Nombre d'hommes

16	17

Nombre de femmes

18	19

Nombre de femmes de 15 à 44 ans

20	21

Nombre d'enfants de moins de 6 ans

22	23

Source d'approvisionnement en eau

24

1 . Forage

2 . Puits interieur

3 . Puits exterieur

4 . Source

5 . Rivière , Fleuve etc...

6 . Autre (à préciser)

Prénoms et NOM de l'enquêtrice

Prénoms et NOM du controleur

Pour chaque femme agée de 15 à 44 ans dans la concession , remplir le tableau suivant

No D'ordre	Prénoms et NOM	Age	Situation Matrimoniale	a/ Prénoms et NOM du conjoint (époux)	A des enfants		b/ de l'interview Résultat final
					OUI	NON	
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

a) SITUATION MATRIMONIALE

- 1 . Mariée
- 2 . Union libre
- 3 . Séparée , Divorcée
- 4 . Veuve
- 5 . Célibataire

b) RESULTAT FINAL DE L'INTERVIEW

- 1 Complete
- 2 . Femme absente
- 3 . Refuse de répondre
- 4. Femme non concernée (célibataire sans enfant ou âge faux)
- 5 . Autre

RESULTAT DE L'INTERVIEW DANS LA CONCESSION

Vsité

Date (jour / mois)

 1
 2
 3

25. 26

- 1 . Liste des femmes de 15 à 44 ans obtenue
- 2 . Pas de femme agée de 15 à 44 ans
- 3 . Persnne à la maison
- 4 . Refus de répondre
- 5 . Concession vide
- 6 . Autre (à préciser)

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

27. 28
29

Nombre identifiant

1	2	3	4

Nombre de questionnaires individuels

5	6

ENQUETE SUR LA SANTE FAMILIALE DANS LA REGION DU SINE SALOUM

QUESTIONNAIRE COLLECTIF

IDENTIFICATION

Département:

7

Arrondissement

8

Communauté Rurale

9

District de recensement

10	11

Village

Concession No

12	13

Nom du chef de concession

RENSEIGNEMENT SUR LA CONCESSION

Nombre de résidents

14	15

Source d'approvisionnement en eau

24

Nombre d'hommes

16	17

1 . Forage

Nombre de femmes

18	19

2 . Puits interieur

Nombre de femmes de 15 à 44 ans

20	21

3 . Puits exterieur

Nombre d'enfants de moins de 6 ans

22	23

4 . Source

5 . Rivière , Fleuve etc...

6 . Autre (à préciser)

Prénoms et NOM de l'enquêtrice

Prénoms et NOM du controleur

Pour chaque femme âgée de 15 à 44 ans dans la concession , remplir le tableau suivant

No D'ordre	Prénoms et NOM	Age	Situation Matrimoniale	a/ Prénoms et NOM du conjoint (époux)	A des enfants		b/ de l'interview Résultat final
					OUI	NON	
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

a) SITUATION MATRIMONIALE

- 1 . Mariée
- 2 . Union libre
- 3 . Séparée , Divorcée
- 4 . Veuve
- 5 . Célibataire

b) RESULTAT FINAL DE L'INTERVIEW

- 1 Complete
- 2 . Femme absente
- 3 . Refuse de répondre
- 4. Femme non concernée (célibataire sans enfant ou âge faux)
- 5 . Autre

RESULTAT DE L'INTERVIEW DANS LA CONCESSION

Vsité	1	2	3	<table border="1" style="display: inline-table; width: 40px; height: 20px;"> <tr><td> </td><td> </td></tr> </table>		
Date (jour / mois)	/	/	/	25 . 26		
1 . Liste des femmes de 15 à 44 ans obtenue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<table border="1" style="display: inline-table; width: 40px; height: 20px;"> <tr><td> </td><td> </td></tr> </table>		
2 . Pas de femme âgée de 15 à 44 ans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<table border="1" style="display: inline-table; width: 40px; height: 20px;"> <tr><td> </td><td> </td></tr> </table>		
3 . Persnne à la maison	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<table border="1" style="display: inline-table; width: 40px; height: 20px;"> <tr><td> </td><td> </td></tr> </table>		
4 . Refus de répondre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<table border="1" style="display: inline-table; width: 40px; height: 20px;"> <tr><td> </td><td> </td></tr> </table>		
5 . Concession vide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<table border="1" style="display: inline-table; width: 40px; height: 20px;"> <tr><td> </td><td> </td></tr> </table>		
6 . Autre (à préciser)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<table border="1" style="display: inline-table; width: 40px; height: 20px;"> <tr><td> </td><td> </td></tr> </table>		

405. Où a eu lieu votre dernier accouchement ?

279

- 1. Hôpital
 - 2. P.M.I., centre de santé, circonscription médicale
 - 3. Poste de santé, dispensaire
 - 4. Chez la Sage-femme
 - 5. Case de Santé
 - 6. Chez la matrone ou l'Auxiliaire accoucheuse
 - 7. Chez l'accoucheuse traditionnelle
 - 8. Domicile, chez des voisins, parents amis
 - 9. Autre
- (A PRECISER)
- 0. Pas d'accouchement

PASSER A 408

(PASSER A 407)

(PASSER A 406)

(PASSER A 414)

406. Qui vous a assisté durant votre accouchement ?

280

- 1. sage femme, infirmière
 - 2. auxiliaire accoucheuse
 - 3. matrone
 - 4. accoucheuse traditionnelle
 - 5. autre personne
 - 6. sans assistance
- (A PRECISER)

407. Avec quel instrument le cordon ombilical a-t-il été coupé ?

281

.....

408. Avez-vous subi une ou des visites post-partum après votre dernier

282

- accouchement ?
- 1. OUI
 - 2. NON
 - 9. Ne se souvient pas

(PASSER A 409)

(PASSER A 410)

409. Combien de temps (en mois) après l'accouchement avez-vous subi la première visite ?

283 284

410. Votre dernier enfant a-t-il subi une ou des visites post-natales avant qu'il ait un an ?

- 1. OUI (PASSER A 411)
- 2. NON
- 9. Ne se souvient pas } (PASSER A 414)

285

411. Quel âge (en mois) avait votre enfant au moment de sa première visite post-natale ?

286 287

412. Est-ce parce qu'il était malade qu'il a subi cette visite ?

- 1. OUI
- 2. NON
- 9. Ne se souvient pas

288

413. Où a eu lieu cette première visite de l'enfant ?

- 1. Hôpital
- 2. P.M.I, centre de santé, circonscription médicale
- 3. poste de santé, dispensaire
- 4. case de santé
- 5. autre (A PRECISER)

289

414. Où iriez-vous en premier lieu pour faire soigner votre enfant en cas de maladie ou de blessure graves ?

290

415. Comment traiteriez-vous un cas de diarrhée très grave chez un enfant ?

.....

291

416. Avez-vous entendu parler des cases de santé (ou postes de santé) ?

- 1. OUI (PASSER A 417)
- 2. NON (PASSER A 422)

292

417. a/ Il faut combien de temps pour y aller par votre moyen de transport habituel ? Nombre de mn
autre mesure du temps

- 997. Connaît le lieu mais pas le temps de parcours
- 998. Ne connaît pas le lieu
- 999. N'y est jamais allée

(PASSER A 418)

(PASSER A 417 b)

293 295

417. b/ Par quel moyen vous y rendez-vous habituellement ?

296

418. Je voudrais maintenant vous poser des questions sur les services et médicaments qui sont offerts ou vendus à la case ou au poste de santé

Selon vous, quels sont ces services et médicaments ?

	connaissance spontanée	connaissance dirigée (services cités par l'enquêtrice)	utilisation par la femme ou l'enfant
a - nivaquine (contre le paludisme)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b - fer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c - piperazine (contre les vers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d - ORS (pour traiter la diarrhée)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e - aspirine (contre les maux de tête)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f - gouttes pour les yeux	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g - pansements, alcool, etc ... (pour traiter les blessures)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h - autre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(A PRECISER)			

297
298
299
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301
302
303
304

(SI UN SERVICE OU UN MEDICAMENT EST UTILISE, PASSER A 420)

(SI AUCUN N'EST UTILISE, PASSER A 419)

419. Pourquoi n'avez-vous jamais demandé à bénéficier des services de la case ou du poste de santé ?

305 306

420. Etes-vous jamais allée chez un guérisseur pour traiter une maladie que vous ou votre enfant avez eue pendant les deux dernières années ?

307

1. OUI (PASSER A 421)

2. NON (PASSER A 422)

421. Si OUI, pour quelle raison principale n'êtes-vous pas allée dans une formation sanitaire ?

308 309

(SI L'ENQUETEE N'A PAS EU DE NAISSANCE VIVANTE, PASSER A 500)

422. Avez-vous entendu parler du PPNS (Programme de Protection Nutritionnelle et Sanitaire) ?

310

(DONNER UNE PRESENTATION DU PPNS SI L'ENQUETEE NE CONNAIT PAS LE SIGLE)

1. OUI (PASSER A 423)

2. NON (PASSER A 425)

423. Avez-vous ou aviez-vous un enfant inscrit dans un centre du PPNS ?

1. OUI (PASSER A 500)

2. NON (PASSER A 424)

424. Pour quelle raison ?

1. un seul enfant décédé trop tôt

2. centre du PPNS trop loin,
difficultés de transport

3. n'en a pas besoin

4. cotisation trop chère

5. autre (A PRECISER)

425. Un de vos enfants bénéficie-t-il ou a-t-il bénéficié de vivres gratuitement
offerts par un ou plusieurs programmes alimentaires autres que le PPNS
durant ces deux dernières années ?

1. OUI (PASSER A 426)

2. NON (PASSER A 500)

426. Lesquels ?

311

312

313

314

E - ESPACEMENT DES NAISSANCES ET PLANIFICATION FAMILIALE

500. Pensez-vous être capable de concevoir (d'être enceinte) à l'heure actuelle ?

315

1. OUI (PASSER A 502)
2. actuellement enceinte (PASSER A 504)
3. NON (PASSER A 501)

501. Pour quel(les) raison(s) ?

316

1. Ménopause
2. Problèmes médicaux chirurgicaux temporaires ou définitifs
3. Essayé sans succès durant les 3 dernières années (PASSER A 507)
4. stérilisée en guise de contraception
5. inactivité sexuelle
6. post-partum, allaitement (PASSER A 502)
7. pratique la contraception
8. autre
(A PRECISER)

502. Voulez-vous avoir (des enfants) ou d'autres enfants ?

317

1. OUI (PASSER A 503)
2. NON (PASSER A 507)
3. indécise, n'y a pas pensé
ne sait pas, Dieu décidera, etc ... (PASSER A 506)

503. Combien en voulez-vous dans l'avenir ?

318 319

- 98 autant qu'elle pourra, autant que lui en donnera Dieu, etc ...
- 99 ne sait pas, n'y a pas pensé, etc ...

(PASSER A 506)

504. Après cette grossesse, désirez-vous avoir d'autres enfants ?

320

1. OUI (PASSER A 505)
2. NON (PASSER A 507)
3. indécise, etc ...

505. Combien d'enfants voulez-vous avoir en plus après cette grossesse ?

321 322

- 98 autant qu'elle pourra, autant que lui en donnera Dieu, etc ...
- 99 ne sait pas, n'y a pensé, etc ...

(PASSEZ A 507)

506. Aimerez-vous être enceinte actuellement ?

323

- 1. OUI
- 2. NON
- 3. indécise, n'y a pensé, Dieu décidera, etc ...

(SI LA FEMME N'A JAMAIS ETE ENCEINTE -NON A LA QUESTION 102- PASSER A 509)

507. Désirez-vous être enceinte la dernière fois que vous avez été en grossesse

324

(y compris l'actuelle grossesse) ?

- 1. OUI (PASSEZ A 509)
- 2. NON (PASSEZ A 508)
- 3. n'y a (ou avait) pas pensé etc. (PASSEZ A 509)

508. Est-ce parce que vous :

325

- 1. Ne vouliez plus d'enfants ?
- 2. Vouliez attendre plus longtemps ?

509. Je vais vous poser des questions sur des méthodes préventives que les couples utilisent pour éviter une grossesse

	AVEZ-VOUS JAMAIS ENTENDU PARLER DE :	SI OUI, AVEZ-VOUS JAMAIS UTILISE :	SI OUI UTILISEZ-VOUS ACTUELLEMENT :	
1. Pilule	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	326
2. Stérilet, DIU, appareil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	327
3. Ligature des trompes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	328
4. Piqure, injection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	329
5. Condom, capote	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	330
6. Mousse, diaphragme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	331
7. Rythme (ogino)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	332
8. Retrait	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	333

- 9. Abstinence
- 10. Racine, poudre
- 11. Gris-gris
- 12. Autre

Méthode actuelle (oo - non utilisatrice)

334

 335

 336

 337

 338 339

SI L'ENQUETEE :

- UTILISE ACTUELLEMENT UNE METHODE CONTRACEPTIVE (METHODE 1 à 6)
(PASSER A 510)
- UTILISE ACTUELLEMENT UNE METHODE CONTRACEPTIVE (METHODES 7 A 12)
(PASSER A 515)
- N'UTILISE PAS ACTUELLEMENT UNE METHODE MAIS EN A DEJA UTILISE DANS
LE PASSE, (PASSER A 517)
- N'A JAMAIS UTILISE UNE METHODE CONTRACEPTIVE, (PASSER A 520)

510. A quel lieu (ou de qui) obtenez-vous vos contraceptifs (y compris la stérilisation) ?

340

.....

511. Il faut combien de temps (en minutes) pour y aller par votre moyen de transport habituel ?

341 343

Nombre de mn

Autre mesure du temps

} (PASSER A 512)

997. connaît le lieu mais pas le temps de parcours

998. ne connaît pas le lieu

999. n'y est jamais allée } (PASSER A 513)

512. Par quel moyen vous y rendez-vous habituellement ?

.....

344

513. En quelle année avez-vous commencé à pratiquer la contraception ?

Année

345 346

514. Combien d'enfants aviez-vous lorsque vous avez commencé à pratiquer la contraception ?

347 348

FIN DE L'INTERVIEW

515. En quelle année avez-vous commencé à pratiquer la contraception ?

Année

349 350

516. Combien d'enfants aviez-vous lorsque vous avez commencé à pratiquer la contraception ? (PASSER A 521)

351 352

517. En quelle année avez-vous commencé à pratiquer la contraception ?
Année

353 354

518. Combien d'enfants aviez-vous lorsque vous avez commencé à pratiquer la contraception ?

355 356

519. Pourquoi avez-vous cessé de pratiquer la contraception ?
.....
(PASSER A 522)

357 358

520. Pourquoi ne pratiquez-vous pas la contraception ?
.....
(PASSER A 522)

359 360

521. Savez-vous où vous pouvez obtenir des contraceptifs autres que ceux utilisés actuellement ?

361

- 1. OUI (PASSER A 523)
- 2. NON (FIN DE L'INTERVIEW)

522. Savez-vous où vous pouvez obtenir des contraceptifs ?

362

- 1 OUI (PASSER A 523)
- 2 NON (FIN DE L'INTERVIEW)

523. A quel lieu ?

363 364

524. Il faut combien de tems (en minutes) pour y aller par votre moyen de transport habituel ?

365 367

Nombre de minutes
Autre mesure du temps

997. connaît le lieu mais pas le temps de parcours

998. ne connaît pas le lieu } (FIN DE L'INTERVIEW)

999. n'y est jamais allée }

525. Par quel moyen vous y rendez-vous habituellement ?

368

(FIN DE L'INTERVIEW)

(PASSER A 525)

RESULTAT DE L'INTERVIEW INDIVIDUELLE

Visite	Jour	Mois	Résultat (a)
1	<input type="checkbox"/>
2	<input type="checkbox"/>
3	<input type="checkbox"/>

369

- (a) RESULTAT :
- 1. Interview complète
 - 2. femme absente
 - 3. refuse de répondre
 - 5. autre

Nombre de visites :

Dernière visite : Jour Mois

370

371 374

Département:

375

Arrondissement

376

Communauté Rurale

377

District de recensement

378 379

Village

Concession No

380 381

Nom du chef de concession

ENQUETE SUR LA SANTE FAMILIALE
REGION DU SINE SALOUM
DOSSIER VILLAGE

Population au 16 Avril 1976

Nom

Département

Arrondissement

Communauté Rurale

District de recensement

RENSEIGNEMENTS / VILLAGE

1. Existence d'un forage

OUI NON

2. Existence de puits

3. Existence d'une case de santé ou d'un poste de santé

Si NON, distance de l'unité sanitaire la plus proche
 en (Km)

4. Existence d'une école

OUI NON

Si NON, distance de l'école la plus proche

5. Existence d'une coopérative

OUI NON

Si non, distance du Chef lieu de C.R. d'appartenance

6. Est ce chef lieu de CR

OUI NON

Si NON, distance du chef lieu de CR le plus proche

7. Existence d'un marché

OUI NON

8. Existence d'un Centre PPNS

OUI NON

Si non, distance du Centre PPNS le plus proche