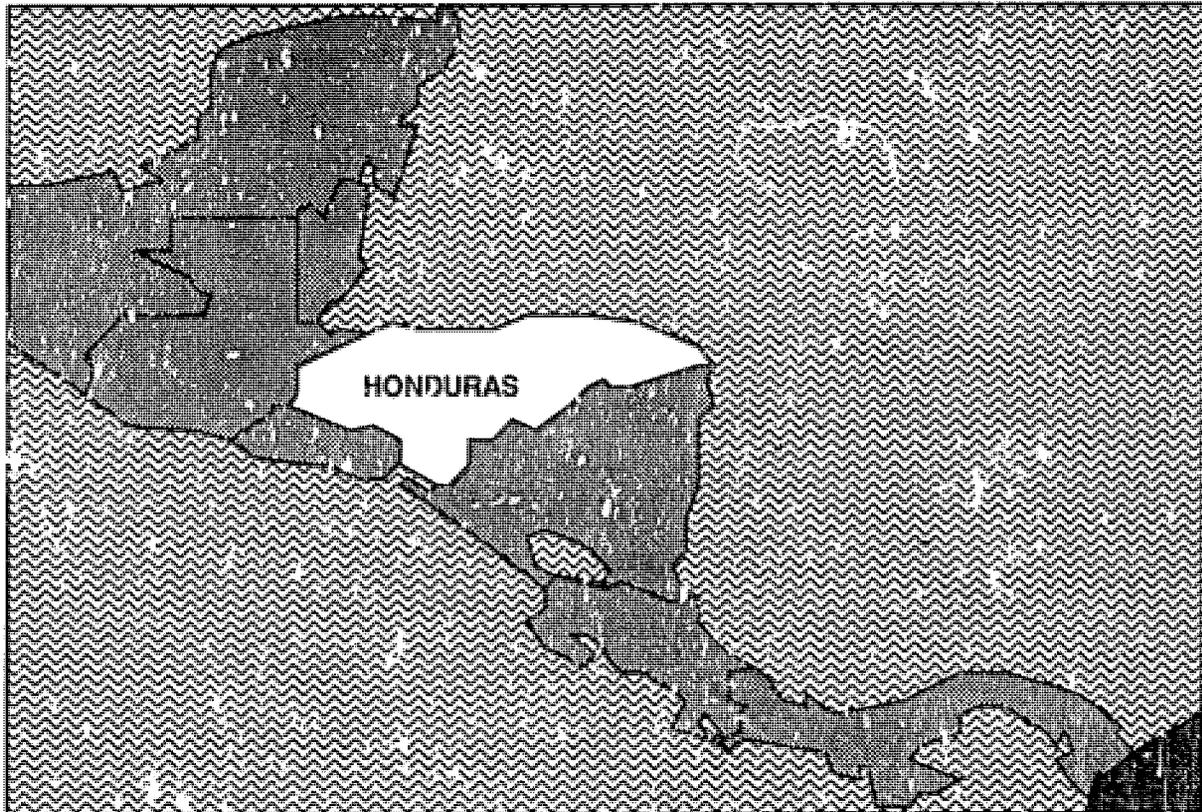


Epidemiology and Family Health Survey Honduras, 1987

Final Report



Honduran Ministry of Public Health

**Association for Family Planning
in Honduras (ASHONPLAFA)**

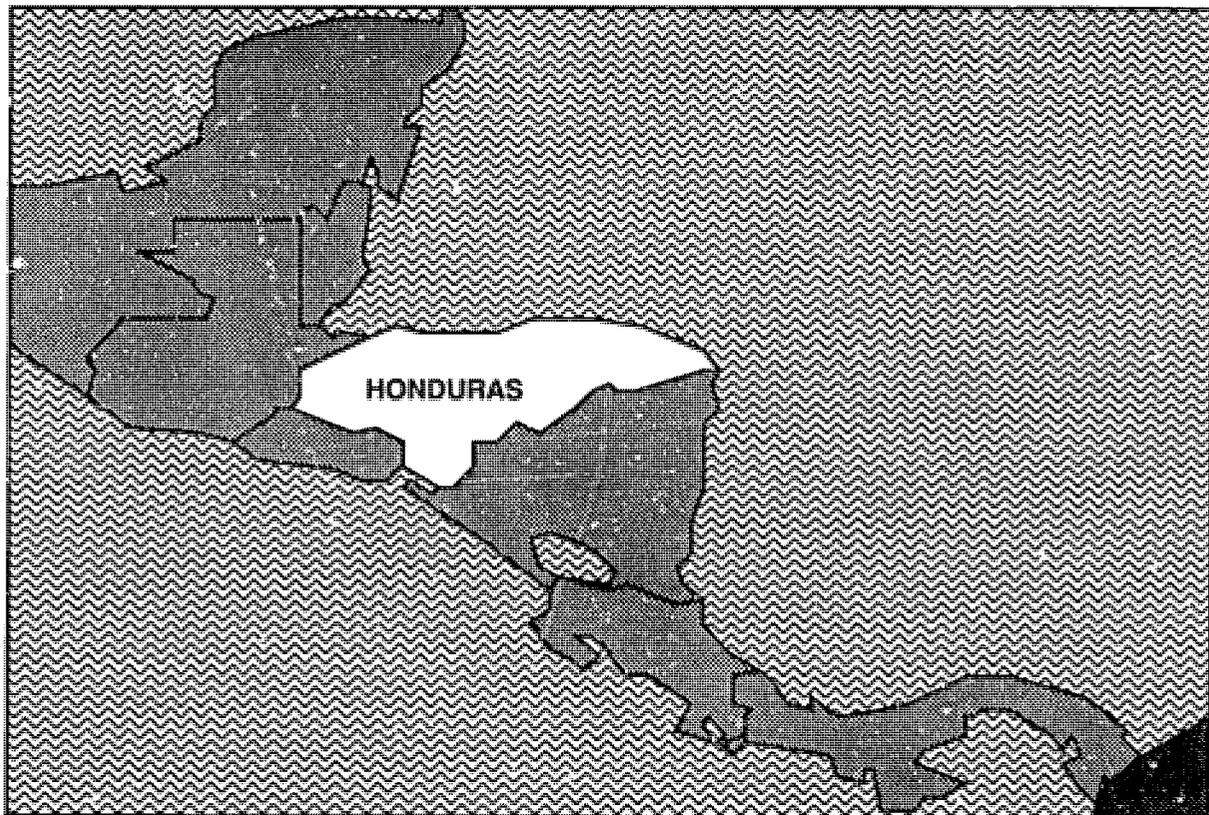
Management Sciences for Health

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May, 1989

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TABLE OF CONTENTS

	<u>Page</u>
Executive Summary	1
Chapter I Background	6
A. Objectives of the 1987 EFHS	6
B. Country Setting	8
C. Health Priorities and Programs	8
Chapter II Survey Methodology	12
A. Organization of the Survey	12
B. Sample Design for the 1987 EFHS	16
Chapter III Completion Rates and Characteristics of the Survey Population	24
A. Completion Rates	24
B. Household Residents	29
C. Household Characteristics	32
D. Characteristics of Surveyed Women and Comparisons with External Sources	37
Chapter IV Demographic Analysis	46
A. Age-Structure of the Population and Miscellaneous Demographic Indices	46
B. Fertility	52
C. Infant and Child Mortality	61
D. Migration	76
Chapter V Maternal-Child Health	80
A. Prenatal, Delivery and Postpartum Care	80
B. Breastfeeding, Weaning Patterns and Postpartum Amenorrhea	112
C. Immunization	130
D. Diarrhea	140
E. Acute Respiratory Infections	148
Chapter VI Family Planning	166
A. Planning Status and Fertility Plans	166
B. Contraceptive Knowledge, Use and Source	171
C. Initiation, Discontinuation and Resumption of Contraception	205
D. Oral Contraceptives	212
E. Female Sterilization	221
F. Young Adults 20-24 Years of Age	234
G. Miscellaneous	259
Chapter VII Sexually Transmitted Diseases and AIDS	266
A. Awareness of STDs and AIDS	266
B. Knowledge of STD Transmission	275
C. Knowledge of Modes of AIDS Transmission	282
D. Knowledge of Risk Reducing Measures	267
E. Attitudes about AIDS and Sex Education	291
Appendix	296
A. Standard Error and Design Effect Estimates for Selected Variables	296

Executive Summary

In 1987 the Epidemiology and Family Health Survey was carried out in Honduras. The survey was coordinated by the Unit of Science and Technology of the Ministry of Public Health and ASHONPLAFA with technical assistance provided by Family Health International and Management Sciences for Health.

The survey was a multistage area probability survey. Interviews were conducted in 10,441 households from 550 sample sectors. There were 11,233 women aged 15-44 eligible for interview and of these, 90 percent were interviewed.

Among the most important findings of the survey are the following:

Fertility and Mortality

(1) The total fertility rate has declined by almost one birth (0.8) since 1981 but has not changed since 1984. It is currently 5.6 for Honduras as a whole and ranges from 3.5 in Tegucigalpa/San Pedro Sula to 6.9 in rural areas.

(2) Estimates of the infant mortality rate using direct techniques based on real cohorts show the rate to be 47 per 1000 live births in 1985. The estimate for Tegucigalpa/San Pedro Sula for the period 1980-84 was 34 for other urban areas 62, and for rural areas 58. For this same period, the neonatal and postneonatal rates were equal at 27 per 1000. Child mortality, measured for children one to four, is about 30 per 1000 for the time period 1980-81. Diarrheal diseases and acute respiratory infections account for 46 percent of the deaths to all children under the age of five.

Prenatal, Delivery and Postpartum Care

(1) Eighty-six percent of women reported that they received prenatal care during their last pregnancy; almost two-thirds received institutional care and 54 percent received care from a traditional birth attendant (TBA). Although residence did not affect the proportion who received care, it did influence the source; institutional care was most common in Tegucigalpa/San Pedro Sula and least common in rural areas, while care by TBAs was least common in Tegucigalpa/San Pedro Sula and most common in rural areas. About 46 percent of women received a tetanus immunization during their last pregnancy and half of them received two doses. Tetanus coverage has increased by about 40 percent since 1984.

(2) Sixty percent of births took place at home. Home births accounted for 11 percent of all deliveries in Tegucigalpa/San Pedro Sula, 36 percent in other urban areas and 79 percent in rural areas. Fourteen percent of institutional deliveries were cesarean sections.

(3) Only 26 percent of women had a postpartum check-up but 82 percent of mothers took their baby for a check-up.

Breastfeeding

(1) The mean duration of breastfeeding was 17.3 months; 19.4 months in rural areas and 12.4 months in urban areas. It increased by one month since the 1984 survey. The largest increases occurred in urban areas and among women ages 15-24. Supplementation occurred early. Only 28 percent of babies two months of age or less were exclusively breastfed.

Child Health

(1) Among children less than five years of age, the percent that had complete immunization coverage was 73 percent for both polio and BCG, 71 percent for DPT and 75 percent for measles. The proportions completely immunized have probably been underestimated slightly since only children whose mothers could produce an immunization card for confirmation were considered appropriately immunized. Nevertheless, these data indicate improvement since 1984, and especially since 1981.

(2) Eighteen percent of the children less than age five were reported to have had diarrhea on the day of the survey or during the previous two days. The rate was highest in rural areas (19%) and lowest in Tegucigalpa/San Pedro Sula (16%). Seventy-four percent of children with diarrhea received some treatment. Seventeen percent received oral rehydration therapy (ORT) only, or in combination with other medications.

(3) Mothers reported more than half (57.5%) of their children under the age of five had shown signs or symptoms of acute respiratory infections (ARI) in the past 15 days. Four out of five of these children showed moderate or severe symptoms. Prevalence of ARI was highest among children under the age of two.

Family Planning

(1) Forty percent of the women in union who have ever been pregnant reported their last pregnancy was mistimed (20%) or unwanted (20%). Half the women said they desired no more children.

(2) The percent of women in union in the age group 15-44 that were contracepting was 41 percent. The two most prevalent methods were oral contraceptives and female sterilization. Contraceptive use was highest in Tegucigalpa/San Pedro Sula (63%) and lowest (30%) in rural areas. Oral contraceptives were the most prevalent method in rural areas and female sterilization in urban areas, although the differences are small. Over the period 1984-1987, the percentage of women who were contracepting increased from 35 percent to 41 percent. About half of this increase was accounted for by the increase in the prevalence of withdrawal and rhythm. Contraceptive use increased by eight percentage points in urban areas but only by six percentage points in rural areas.

(3) ASHONPLAFA was the source of more than half the oral contraceptives used, the commercial sector provided 21 percent and the Ministry of Health seven percent. Since 1984, the proportion of OCs attributed to the commercial sector and the MOH have decreased slightly.

(4) Sterilization was provided at Ministry of Health and private hospitals through agreements with ASHONPLAFA. These accounted for over 70 percent of sterilizations.

(5) Using standard definitions described in the report, of women in union aged 15-44, 15.8 percent were in need of contraception; 7.6 percent had an unmet need for spacing and 8.2 percent had an unmet need for limiting.

(6) Almost half of ever users of oral contraceptives said that they experienced problems with the method. Between about half and three quarters of the women who have ever used OCs knew to take two pills if they missed a day. Among women who have never used the pill, when asked if they could recommend a specific brand, 21 percent named Perla.

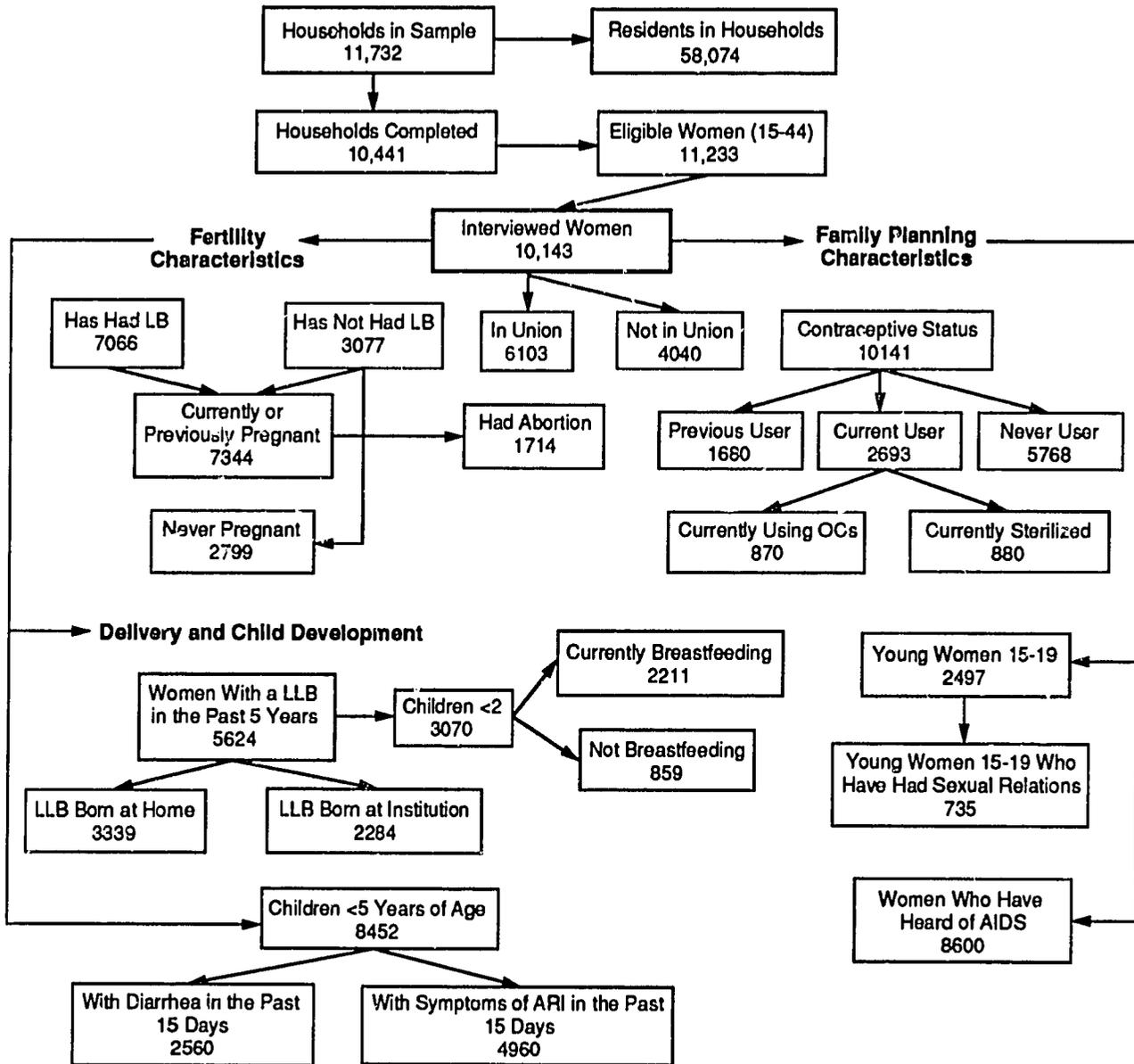
(7) Of women who had been sterilized, 4. percent were sterilized at the time they were hospitalized for their last delivery; of these women, 61 percent had vaginal and 39 percent had cesarean deliveries. About 90 percent of sterilized women said that they were satisfied with the sterilization.

(8) The median age at which Honduran women have intercourse for the first time is 19 years of age in Teg/SPS and 17 in rural areas. Only 4.0 percent of the women used a contraceptive method at first sex; the primary reason for not contracepting is lack of knowledge about methods.

STDs and AIDS

(1) More than eight out of ten women have heard about AIDS; awareness of STDs, such as syphilis or gonorrhea, are not as well known. About three fourths of all women correctly identified modes of transmission of AIDS, such as injections, transfusions, homosexual or heterosexual. However, a third to two thirds also mentioned such modes as toilet seats, kissing or shaking hands.

Summary results of the Honduras Epidemiology and Family Health Survey, 1987



CHAPTER I BACKGROUND

A. Objectives of the 1987 EFHS Survey

During the past ten years there have been several national level household surveys related to health and demography. In 1981, a Contraceptive Prevalence Survey (ENPA 1981) was carried out by the Honduran Association for Family Planning (ASHONPLAFA), the Bureau of Census and Statistics, the Superior Council for Economic Planning (CONSUPLANE) and the Ministry of Public Health (MOH). Westinghouse Health Systems provided technical assistance. Like other contraceptive prevalence surveys, it was designed to collect data that would be used by family planning program administrators and development planners.

In 1983 the Latin American Center for Demography (CELADE) carried out a demographic survey (EDENH-II) to estimate fertility rates and infant, child and adult mortality rates. The survey also provided data on internal and international migration.

The Maternal and Child Health/Family Planning Survey, 1984 (MCH/FP 1984) was carried out by the MOH and ASHONPLAFA with technical assistance from Family Health International and Management Sciences for Health. It was broader in scope than either of the two earlier surveys. In addition to data on family planning, fertility and infant mortality, it also obtained information on maternal and child health. Finally, the 1987 Epidemiology and Family Health Survey (EFHS 1987) was modeled after the 1984 survey, and was carried out by the same agencies.

Results of the 1981, 1984, and 1987 surveys can be used to evaluate ongoing maternal and child health and family planning programs of the Ministry of Public Health, the Honduran Social Security Institute, and ASHONPLAFA. They also serve to aid in the design of new programs, to restructure ongoing programs, and to serve as baseline data to evaluate new initiatives.

Between 1981 and 1987 many health programs were initiated or expanded. Several examples follow. The polio epidemic of 1984 stimulated massive immunization campaigns. The large number of infants dying of dehydration led to diarrhea control programs and the promotion of oral rehydration therapy. Campaigns to encourage breastfeeding have been initiated to reduce the incidence of diarrhea and to improve the nutritional status of infants. Family planning efforts have also been stepped up. These include expansion of facilities and training of physicians in sterilization, IUD insertion, the expansion of the Community Based Distribution Program, the introduction of a Social Marketing Program for contraceptives, and new family planning clinics operated by the Honduran Institute of Social Security. In recent years, AIDS has become a problem. To control the spread of AIDS, the MOH has implemented educational messages in the media.

The objectives of the survey included the following:

1. Estimate current levels of fertility.
2. Estimate levels of neonatal, infant and child mortality.
3. Determine the prevalence, pattern and mean duration of breastfeeding.
4. Determine the prevalence and severity of diarrhea and acute respiratory infections among children under age five, the percentage that received treatment, and the type of treatment received.
5. Determine the percentage of children under five that have been immunized against various childhood diseases.
6. Determine the sources of prenatal, delivery and postpartum care and for women delivering at home, the care provided by traditional birth attendants.
7. Determine contraceptive prevalence by method and by source.
8. Identify reasons for terminating the use of family planning and for not using contraception: determine the extent of unmet need for contraception.
9. Determine the percentage of women who have experienced unplanned pregnancies, the pregnancy intentions of all women, ideal family size and the percentage of women who want more children.
10. Determine what advice is given and the impact of this advice on the decision to discontinue pill use among women with problems related to oral contraception.
11. Explore characteristics of adolescents and young women 20-24 as they relate to first intercourse and patterns of family building.
12. Determine levels of knowledge concerning STDs and AIDS.

B. Country Setting

Honduras is located in Central America and borders the Republics of El Salvador, Guatemala and Nicaragua (Figure I B1). It has a territorial extension of 112,088 km² with approximately two thirds of forested mountains and one third valleys and plains used for agriculture. In general, it has two well defined seasons: a rainy and a dry season.

According to the preliminary results of the 1988 Census, the population is almost 4.4 million. About 60 percent live in rural areas and 40 percent in the urban zone where noticeable growth in the marginal areas of the cities is taking place. The population is characterized as relatively young with about 47 percent under the age of 15.

Agriculture and cattle raising are the main economic activities while industry is just beginning to develop. The gross national product (Producto Interno Bruto - PIB) for 1984 was 2099 million Lempiras* with a per capita income of L. 466. It is estimated that approximately 40 percent of the population has a per capita income of less than L. 100 per year. The educational level in Honduras is low. The illiteracy rate has been estimated at 40 percent among the population older than 10 years of age. A study undertaken in the region of Danli, however, showed that 87 percent of the homes had residents who were able to read and write (Stanford University). In 1982 it was estimated that there was a shortage of 450,000 homes, mostly in rural areas (CARE).

C. Health Priorities and Programs

Health conditions are affected by a low level of environmental hygiene and malnutrition. In 1987, almost two thirds (63%) of Honduran families consumed less than 1900 kcal. and 73 percent less than half of the recommended Vitamin A (MOH). Diarrheal diseases, acute respiratory infections, immuno-preventable diseases and malaria continue to be the main causes of child morbidity and mortality. Anemia and problems related to pregnancy are also prevalent among women of reproductive age. There are no reliable data with which to estimate maternal mortality.

The Honduran Ministry of Public Health has based its policies on the goal of "Health for All by the Year 2000", which was promoted at the 1978 meeting on Primary Health Care at Alma Ata. This goal includes lowering infant mortality to 30 deaths per thousand live births and reducing the mortality rate for children ages 1-4 to 2.4 per thousand by the year 2000. All children younger than five should be immunized and health services should be accessible to everyone. The ten priority programs of the Ministry of Public Health focus on tuberculosis, immunizations, AIDS and STDs, diarrheal control, acute respiratory infections, nutrition, growth monitoring, rabies, malaria, and MCH services, including prenatal, delivery, and postpartum care.

*US \$1.00 = 2 Lempiras

Central America and Mexico



Figure B1

It is estimated that 70 percent of the population has access to some institutional health service, public or private. However, it is important to emphasize that this accessibility varies among programs and activities. Many people also depend on traditional medicine including home remedies based on herbs and rituals (Stanford University).

The structure of the health care system is based on two subsystems, one which is institutionally based and a second, based on the community. The institutional system is organized on five levels:

Rural Health Center (Centro de Salud Rural - CESAR),
staffed by nurse auxiliaries;

Health Center with physician (Centro de Salud con Médico - CESAMO),
staffed by medical doctors, professional nurses and nurse
auxiliaries;

Area Hospital (Hospital del Area - HA), provides the four basic
specialties of pediatrics, general medicine, surgery and
obstetrics/gynecology;

Regional Hospital, provides a high degree of specialization,
including otorrinolaringology, radiology, and orthopedics;

National Hospital, all specialties available.

The community subsystem has a service network composed of health volunteers who have been specially trained. Volunteers include traditional birth attendants who provide care to the mother and to the newborn at the time of delivery, the health guardian who offers services in primary health care, the health representative who works in basic sanitation activities, and the voluntary collaborator who participates in the malaria control program.

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CHAPTER II SURVEY METHODOLOGY

A. Organization of the survey

Staff

The field staff consisted of sixteen interviewers and four supervisors. They worked in four groups, each assigned a vehicle and a driver.

Staff at the central office in Tegucigalpa included three high school graduates who were employed to receive the questionnaires from the field, code and organize them. There were six keypunchers, working two different schedules, who entered the data. They were supervised by a systems analyst who was also in charge of handling the different computer software packages that were used in the survey. Also, there was an accountant and a secretary trained in word processing.

Activity at the different levels was coordinated by two physicians (general practitioners) under the supervision of the Head of the Unit of Science and Technology.

Interviewer selection and training

The selection and training of the interviewers began with a review of the resumes of 120 candidates and a personal interview. Thirty were chosen to participate in the interviewer training and were required to have a minimum of a high school education; seven supervisor candidates were also chosen, all of whom were university graduates.

The training took place during the last two weeks of May, 1987, and it consisted of a theoretical classroom component and practice in the field. The first week covered general aspects of the survey and its objectives, training in the handling of questionnaires and interviewer techniques, as well as background information regarding the different modules of the questionnaire. Representatives from different divisions of the Ministry of Health and representatives of interested institutions (ASHONPLAFA, PROALMA, etc.) were present and gave informal lectures.

During the second week, candidates were evaluated on their performance as interviewers or supervisors in urban and rural areas. Also, candidates were trained in reading maps, familiarized themselves with the organization of the field work and increased their skills in interviewing and handling of the questionnaires.

The group of 37 was reduced to 16 interviewers, four supervisors and three keypunchers. Field staff were females, given the maternal-child health focus of the survey and the fact that only females would be interviewed. During the selection process, potential field staff were evaluated on their cultural and social sensitivity. Other factors taken into consideration were their adaptability to travel and spend extended periods of time in the interior of the country, their motivation to be involved in this kind of activity, and the results of a written evaluation.

Study documents

The following study documents were prepared.

Questionnaires

We prepared two questionnaires: one for the household and another for individual respondents. The household questionnaire included a complete roster of household members and questions related to characteristics of the household and its residents, basic sanitation, identification of symptoms of respiratory ailments and malaria, accessibility to health services, and recent mortality. This questionnaire could be answered by any knowledgeable member of the household older than 15 years of age.

The individual questionnaire was directed towards all women 15 to 44 years of age who were members of the household. This questionnaire covered various sociodemographic aspects of the female population including age, education, marital status, parity and residence. For women who had had their last live birth within five years prior to the interview, inquiries were made about the pregnancy. These women were asked about the delivery and puerperal period, breastfeeding and weaning patterns. For all children under five years of age, immunization status and morbidity related to diarrhea and acute respiratory infections were investigated. The questionnaire also included modules about family planning, pregnancy intentions, knowledge and attitudes about STDs, the sexual behavior of young women (15-24 years), mass media communication and a module to determine cause of death for children who were born and subsequently died in the past five years.

Elaboration of the questionnaire was demanding and at times, exhausting, considering the sheer quantity of information to be gathered. Use of appropriate language was stressed. The questionnaire had complex skip patterns and required different recall periods depending on the variable being investigated.

Multiple revisions were made. The majority of the questions were pre-coded. Household questionnaires were consecutively numbered before entering the field and the individual questionnaires were linked by the household questionnaire number and a woman number.

The final pre-test was carried out during the last week of May, 1987, in the town of Comayagua, where teams visited urban and rural areas not included in the final sample. During this activity, the supervising staff evaluated how well the questionnaire functioned, the average length of an interview, the ease or difficulty with which the respondent answered, as well as the performance of the trained field staff. The pre-test identified inconsistencies which were corrected.

Manual

A manual was created for each questionnaire in order to standardize criteria and technical procedures for the staff.

Sector control sheet

These sheets were completed by the supervisor in the field to keep a running tally of the result of each visit to every household and for each eligible woman of every sample sector.

Delivery of questionnaires sheet

Each supervisor completed a "delivery" sheet for every sector which was sent from the field to the office in Tegucigalpa where the questionnaires were received. The coders verified that the material received was complete.

Organization of field work

These guidelines described the different functions of each participant, travel instructions, rules of conduct, etc.

Other documents

These include the internal administrative regulations of the survey, control sheets for keypunching of data, etc.

Field work

Field work began June 8 and was completed on November 20, 1987. Data collection began in Tegucigalpa and required three weeks. Visits to other parts of the country were planned according to seasonal accessibility, availability of maps, and the distribution of sampling units within the sector segment.

The four teams worked in close geographical proximity whenever possible, which helped the supervisor to move from one group to another. The average length of a trip was about 30 days, with four days in between for rest. In spite of adverse weather conditions, there were few significant deviations from the original plan.

Since a high response rate from households and eligible women was important for this survey, field workers were strongly encouraged to complete interviews with all women in the sample. The planning of revisits to households and/or to women not initially interviewed helped raise the response rates considerably. The questionnaires were periodically reviewed and sent to the Tegucigalpa office for coding and data entry.

The report prepared by the supervisor of each group after each trip and a general report prepared by the group coordinator permitted the identification of problems and limitations in the field as well as a measurement of each group's production.

To carry out these activities each group was assigned sufficient office materials as well as raincoats, flashlights, etc. A complete package of maps, reviewed and verified for each planned trip, was given to the supervisor before the trip.

Supervision and quality control of information

To minimize errors, the interviewer reviewed the questionnaire as soon as it was complete. It was then reviewed by the supervisor and/or coordinator. In Tegucigalpa, coders verified the integrity of information and consistencies in logic were checked at the time of data entry with a special edit program.

The supervisor and/or coordinator frequently observed interviews to identify errors. Likewise, periodic meetings among field staff created an ongoing review.

Data processing

IBM personal computers (ATs) and XT microcomputers as well as EPSONs (compatible with an IBM-XT) were used for data processing. The program Survey was used for data entry. It contains a special program to identify inconsistencies in logic and creates ASCII files. This program was adapted specifically for this survey with the collaboration of the Centers for Disease Control (CDC) in Atlanta and Family Health International (FHI). The entry process was finalized in December having registered 11,732 households and 11,233 eligible women. Survey helped significantly to accelerate the preparation of preliminary fertility, mortality and prevalence results. The two databases (household and individual respondents) were transformed into the following smaller data files:

- Family Planning
- Fertility
- Births
- Acute Respiratory Infections (ARI)
- Immunization
- Diarrhea
- Household
- Maternal Health

FOXBASE was used to create the smaller files. SPSS-PC (version 2.0) was used to run frequencies and crosstabulations. Also, PANDEM was used for the indirect estimation of infant mortality. Each of the files used the GENOA back-up system. A UNISYS A4 mainframe computer was used at FHI for some of the analyses too difficult to perform on the microcomputers.

B. Sample design for the 1987 EFHS

The 1987 National Epidemiology and Family Health Survey (EFHS) employed a multistage probability sample of over 11,000 households. Two departments were excluded from the sample, Gracias a Dios and the Bay Islands, due to difficult access and their small and scattered population. Together they make up only 1.5 percent of the total population of Honduras.

To carry out such a survey, adequate maps must be available to construct small area units to serve as sampling units in the later stages of selection. However, for the 1987 survey, current maps were not readily available for all parts of the country. At the time of sample preparation, the Honduran Bureau of Census and Statistics was updating maps for the 1988 Census and had updated maps of municipios (counties) representing a little less than half of the country's population. Included in the updated maps were those of 16 major cities. These cities had been selected for their importance in terms of employment by the Bureau of Census and Statistics which in September of 1986 carried out the Encuesta de Hogares (Labor Force Survey) to determine employment patterns of the labor force. Thus for the 1987 survey, two groups of recently updated maps were available: urban maps of 16 cities divided into colonias (neighborhoods) which were divided into sectors for the Encuesta de Hogares, and census maps of rural municipios divided into aldeas (villages) which Ministry of Health and Management Sciences for Health staff subsequently divided into sectors.

In the remainder of the country where Census personnel had not updated maps, the 1974 Census sector maps were used for the first stage of selection. Once these area units were selected, teams composed of survey staff and cartographers from the Vector Control Division of the Ministry of Public Health visited the sites and updated the maps.

The partial availability of current maps led to the designation of the following four cells (Table II B1) which served as the first level of stratification in the primary sample.

This four cell partitioning of the primary sample is not equivalent to stratification using the official definition of urbanization since Cells 2, 3 and 4 in Table II B1 contained both urban and rural areas. However, it is important to note that this feature of the design did not compromise our ability to produce estimates by official urban or rural designations¹.

¹Once the interview was completed and questionnaires were coded for data processing, all sectors were classified according to strata: 1) urban Tegucigalpa and urban San Pedro Sula, 2) other urban areas, and 3) rural areas. This classification of strata maintains the final strata designation used in the 1984 MCH/FP Survey. Urban was defined according to criteria used by the Bureau of Census and Statistics: population greater than 2000 inhabitants with public utilities, water and sewage. Since population estimates are based on 1974 census information, rural areas with less than but close to 2000 inhabitants were assumed to have grown and were reclassified as urban.

The 1986 population of Honduras based on estimates from the Latin American Center for Demography (CELADE) and the Secretary for Planning and Finances (SECPLAN) was about 4.2 million inhabitants. With about 5.5 persons per household, this corresponds to 763,636 households. Thus the overall sampling rate in selecting 11,660 households was 0.0153, or about one out of every 65 households. Our aim was to select a sample in which the sample and Census distributions by cell were approximately equal (Table II B2).

In January of 1987 the Ministry of Public Health implemented the National Nutrition Survey which used the sampling frame originally designed for the 1987 Epidemiology and Family Health Survey. Cell 1 of the Nutrition Survey was a subsample of the Encuesta de Hogares.

We selected 550 primary sampling units (PSUs) for the EFHS, 275 of which had been chosen earlier for the Nutrition Survey. However, new segments or secondary sampling units (SSUs) were selected for the EFHS in the previously used PSUs. An additional 275 PSUs were chosen independently from the four original stratified listings which correspond to the 4 design cells. To facilitate selection of the additional PSUs, we doubled the number of PSUs in each cell. To achieve the desired sample size for the EFHS, we increased the segment size used in the Nutrition Survey by 50 percent. The targeted number of households per segment varied as Table II B3 indicates.

Selection Protocol for each Cell

Cell 1

In preparation for the Encuesta de Hogares, cartography staff made a rapid enumeration of blocks and households in the 16 selected cities. Blocks were grouped in units that averaged 50 households. However, the units ranged from 25 to 125 households. These units were called PSUs and were listed and sorted hierarchically by health region, city, socioeconomic status, and population size or geographic proximity. Since probability proportional to size (PPS) systematic sampling was used ultimately to choose the PSU sample for each design cell, ordering according to the above variables implicitly stratified the sample. In the Encuesta de Hogares, the measure of size for PPS selection was the number of HHs. PSUs were selected with PPS. For the EFHS and Nutrition Surveys, a subsample of the Encuesta de Hogares sample was chosen. PSUs for these surveys were selected at random using equal probability.

Once the appropriate number of PSUs was selected, the SSUs or segments were delineated to contain approximately 15 households in Tegucigalpa and San Pedro Sula and about 8 households in the other 14 cities. Survey staff chose one segment at random and identified it on the map. In the field, the supervisor counted the number of households in the segment and when there were more than the predetermined cluster size, she chose at random a house with which to begin. Following a clockwise direction, interviewers visited households until the appropriate number was attained. An interview was attempted with all eligible respondents (women aged 15 to 44) in each household selected.

Cell 2

The updated (as of October 24, 1986) rural and urban maps not included in Cell 1, were used to define Cell 2. Municipios were divided into villages which were designated as the PSUs. PSU selection was done by PPS systematic sampling where the selection probability for each PSU was proportional to its size (total number of households) and an interval of fixed length was applied to the frame after a random start. The list of PSUs was ordered according to health region, department, municipio and geographical proximity which means a serpentine route was followed so that any two consecutive PSUs on the list were neighbors geographically. Once chosen, the PSU was divided into segments of about 33 households and one segment was chosen at random. All households in that chosen segment were contacted.

Cells 3 and 4

These cells used 1974 Census sector maps at the first stage of selection. The PSUs for urban areas were ordered according to health region, municipio, city and SES status when possible or geographic proximity. In rural areas, lists were sorted by health region, department, municipio and geographic proximity. PSUs were chosen separately in each cell by PPS systematic sampling and these "census sector maps" were updated for the EFHS and Nutrition Survey. The updated sectors averaged 70 households but ranged from 25 to 130 households. As in Cell 2, one segment of about 33 households was chosen at random for each PSU.

The final distribution of households by department and health region is shown in Table II B4.

Summary of the sample for the 1987 Epidemiology and Family Health Survey

General description: Two stage area sample of households with stratification in the first stage and area segments of 8-23 households as the ultimate sampling unit.

Expected number of selected households: 11,660

Overall household sampling rate: About 1 in 65 households

Expected number of responding households: 9,736*

Expected number of responding eligible women in selected households: 9,713

Expected number of eligible children in selected households: 7,334*

*Based on sample attrition in the 1984 MCH/FP Survey.

Table II B1

Profile of the four design cells

Epidemiology and Family Health Survey, Honduras, 1987

Cell	Description	Estimated Percent of Households in the Population
1	The 16 cities included in the Encuesta de Hogares	31.6
2	Any other urban or rural part of a municipio in which map updating had been completed as of 24 October 1986	13.5
3	Municipios which included urban areas for which map updating had <u>not</u> been completed as of 24 October 1986	17.9
4	Mostly rural municipios for which map updating had <u>not</u> been completed as of 24 October 1986	37.0

Table II B2
1974 Census and EFHS sample distributions
Epidemiology and Family Health Survey, Honduras, 1987

Cell	1974 Census Distribution %	Expected Sample Distribution %	Actual Sample Distribution %
1	31.6	32.1	31.7
2	13.5	13.6	14.1
3	17.9	17.5	19.5
4	<u>37.0</u> 100.0	<u>36.8</u> 100.0	<u>34.7</u> 100.0

Table II B3

Sample profile for the 1987 National Nutrition Survey and the EFHS
Epidemiology and Family Health Survey, Honduras, 1987

Cell	Targeted Number of HHs per Segment		Number of Selected PSUs	Number of Expected HHs		Number of Actual HHs		
	Nutrition	EFHS		Nutrition	EFHS	Nutrition	EFHS	
1 Teg/SPS	10	15	90	180	900	2700	1270	2819
14 other cities	5	8	65	130	325	1040		896
2	22	33	24	48	528	1584	505	1657
3	22	33	31	62	682	2046	738	2288
4	22	33	<u>65</u> 275	<u>130</u> 550	<u>1430</u> 3865	<u>4290</u> 11660	<u>1423</u> 3936	<u>4072</u> 11732

Table II B4

Distribution of households according to department
and health region

Epidemiology and Family Health Survey, Honduras, 1987

	Number of Households Interviewed	%
<u>Department</u>		
Atlántida	690	5.9
Colón	360	3.1
Comayagua	609	5.2
Copán	577	4.9
Cortés	1904	16.2
Choluteca	819	7.9
El Paraíso	563	4.8
Fco. Morazán	2312	19.7
Intibucá	263	2.2
La Paz	288	2.5
Lempira	360	3.1
Ocotepeque	223	1.9
Olancho	642	5.5
Sta. Bárbara	903	7.7
Valle	276	2.4
Yoro	943	8.0
<u>Health region</u>		
1	1060	9.0
2	1126	9.6
3	3448	29.4
4	1260	10.7
5	1233	10.5
6	1279	10.9
7	642	5.5
Metropolitan	1684	14.4
Total	11732	100.0

CHAPTER III COMPLETION RATES AND CHARACTERISTICS OF THE SURVEY POPULATION

A. Completion rates

Completion rates are an important aspect of any survey since they reflect the proportion of sampled households and women from whom information was collected. As shown in Table III A1, 11,732 households were visited during the course of the survey: 7,273 (62.0%) households were located in rural areas, 2,712 (23.1%) in Tegucigalpa/San Pedro Sula and 1,747 (14.8%) were located in other urban areas. Residents of 89.0 percent of the households granted a household interview, a rate that did not vary with zone of residence and only slightly with health region. This household completion rate improves on the 1984 MCH/FP Survey, in which 83.5 percent of household visits resulted in a completed interview.

The completion rate that generally comes under the greatest scrutiny is the completion rate for eligible women (Table III A2). In this case, a woman was considered eligible if she was a resident of the household and between the ages of 15 and 44. Ninety percent of the identified eligible women were interviewed (the 1984 survey had an 88.0 percent completion rate). The primary reason an interview was not completed was because the woman was not found at home after several attempts to locate her. Very few refusals were made either at the household level or at the individual level.

Table III A3 shows that the non-response rate has no effect on the age structure of the sample. The second column shows the female age distribution of the household regardless of whether an interview was completed. Column four shows the age distribution of women who completed interviews. The two columns are virtually identical. Average and median ages of the women in the final sample were also unaffected by the loss of those women not encountered or who declined to be interviewed.

Table III A4 provides information on the number of eligible women found in the households. Twenty-one percent of the households contained no women between the ages of 15 and 44. The residential areas where eligible women were most likely to be found were Tegucigalpa and San Pedro Sula.

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Table III A1

**Distribution of results of household visits
by residence and health region**

Epidemiology and Family Health Survey, Honduras, 1987

Residence and Region	Result of Household Questionnaire					Total	No. of Households
	Interview Completed	Residents Absent	Refusals	Vacant Households	Other		
Total	89.0	2.3	0.6	6.9	1.2	100.0	(11732)
<u>Residence</u>							
Teg/SPS	88.8	3.1	1.2	6.3	0.5	100.0	(2712)
Other urban	88.2	3.7	0.2	6.9	1.0	100.0	(1747)
Rural	89.3	1.7	0.4	7.1	1.6	100.0	(7273)
<u>Health Region</u>							
1	85.8	4.2	0.1	9.1	0.9	100.0	(1060)
2	86.2	2.0	0.3	9.7	1.9	100.0	(1126)
3	91.0	1.3	0.4	6.3	1.0	100.0	(3448)
4	88.8	3.1	0.5	5.8	1.8	100.0	(1260)
5	88.3	1.9	1.5	7.5	0.8	100.0	(1233)
6	90.5	1.1	0.2	5.7	2.5	100.0	(1279)
7	92.4	1.9	0.0	5.6	0.2	100.0	(642)
Metropolitan	87.0	4.5	1.3	6.5	0.7	100.0	(1684)

Table III A2

Distribution of results of eligible women
by residence and health region

Epidemiology and Family Health Survey, Honduras, 1987

Residence and Region	Result of Individual Questionnaire					No. of Women
	Interview Completed	Residents Absent	Refusals	Other	Total	
Total	90.3	7.7	0.9	1.1	100.0	(11233)
<u>Residence</u>						
Teg/SPS	88.6	8.6	2.0	0.8	100.0	(3076)
Other urban	86.1	12.4	0.5	1.0	100.0	(1795)
Rural	92.3	6.0	0.5	1.2	100.0	(6362)
<u>Health Region</u>						
1	92.1	6.2	0.6	1.1	100.0	(951)
2	90.0	8.7	0.6	0.7	100.0	(978)
3	92.3	6.2	0.6	0.9	100.0	(3411)
4	88.1	9.4	0.9	1.5	100.0	(1103)
5	91.3	7.0	0.5	1.3	100.0	(1091)
6	90.4	8.2	0.3	1.1	100.0	(1188)
7	92.3	6.0	0.3	1.3	100.0	(598)
Metropolitan	86.1	10.4	2.6	0.9	100.0	(1913)

Table III A3

Age structure of women ages 15-44 by type of questionnaire

Epidemiology and Family Health Survey, Honduras, 1987

Age	<u>Household Questionnaire</u>		<u>Individual Questionnaire</u>	
	No. of Women	%	No. of Women	%
15-19	2831	25.0	2497	24.6
20-24	2363	20.8	2080	20.5
25-29	2088	18.4	1877	18.5
30-34	1599	14.1	1443	14.2
35-39	1385	12.2	1274	12.6
40-44	1070	9.4	972	9.6
Total	11336*	100.0	10143	100.0
Average Age:	30.1		30.0	
Median Age:	26.1		26.3	

*According to the HH questionnaires there were 11,336 eligible women. However, according to the individual questionnaires there were 11,233, 10,143 of whom were successfully interviewed. The difference between the two questionnaire totals is due to interviewers who failed to update the household roster, eg., women who were thought to be 15 and were only 14, etc.

Table III A4

Distribution of eligible women by residence
Epidemiology and Family Health Survey, Honduras, 1987

Eligible Women	Total	Residence		
		Teg/SPS	Other Urban	Rural
0	21.0	16.4	22.0	22.5
1	57.5	53.2	50.9	60.7
2	15.3	19.8	18.5	12.8
3	4.6	7.9	5.6	3.1
4	1.3	2.2	2.3	0.7
5	0.2	0.3	0.4	0.1
6	0.1	0.2	0.1	0.0
7-9	0.0	0.0	0.2	0.0
Total	100.0	100.0	100.0	100.0
Average number of eligible women 15-44 per household interviewed	1.08	1.28	1.18	0.99
No. of Households	(10441)	(2409)	(1540)	(6492)

B. Household residents

There are 58,074 residents reported living in the 11,732 households visited. Twenty-one percent live in Tegucigalpa or San Pedro Sula, while 14.0 percent live in other urban centers and 65.4 percent live in rural areas (Table III B1). On average, 5.6 persons make up a Honduran household, with smaller families in Tegucigalpa and San Pedro Sula, and the largest in rural areas.

According to Table III B2, the health regions with the largest populations are Health Regions 3 and 8 (Metropolitan), where San Pedro Sula and Tegucigalpa are located, respectively. Health Region 7 is comprised of one department, Olancho, and consists of only 6.3 percent of the residents surveyed.

Further descriptions of the entire household population are included in the chapter on Demographic Analysis (Chapter IV) under the heading of Age-Structure of the Population.

Table III B1

Percent distribution of residents by residence

Epidemiology and Family Health Survey, Honduras, 1987

Residence	%	Mean Number of Residents per Household
Teg/SPS	20.6	5.0
Other urban	14.0	5.3
Rural	65.4	5.8
Total	100.0	5.6
No. of Residents	(58074)	

Table III B2

**Percent distribution of residents by health region
Epidemiology and Family Health Survey, Honduras, 1987**

Health Region	%	Mean Number of Residents per Household
1	9.0	5.8
2	9.8	5.8
3	29.1	5.4
4	11.0	5.7
5	10.8	5.7
6	11.2	5.6
7	6.3	6.2
Metropolitan	12.8	5.1
Total	100.0	5.6
No. of Residents	(58074)	

C. Household characteristics

The quality of life of a population can be measured in part by environmental conditions. Several household characteristics serve as proxies for such conditions. The coexistence of several unfavorable indicators can predispose a population to poor health and predict groups likely to be at risk. For example, the improvement of sanitation facilities is known to reduce the transmission and ingestion of pathogens which are the principal causal agents of diarrhea. A reduction in the prevalence of diarrhea among infants and children would have a favorable impact on morbidity and mortality levels.

There are at least three basic mechanisms and types of services that benefit child health (as well as adult health) which are sometimes lacking in developing countries: an increase in the quantity of water supplies, an improvement in the quality of water for consumption, and the provision of sanitary facilities for the adequate disposal of human excrement and solid wastes.

This section examines the source of water for consumption, human waste and garbage disposal. Other household variables used as SES indicators include the predominant floor material, and possession of electricity, a radio or refrigerator. Possession of a radio assumes accessibility to health related messages while a refrigerator indicates adequate storage of food. Finally, the household respondent was also asked about the time required to reach the health facility most frequently attended.

As shown in Table III C1, piped water inside the home is available in one fifth of the households, with the highest percentage in Teg/SPS (48.4%) and the lowest in rural areas (7.5%). In rural areas, nearly half of the households obtain their water either from a river, lake, spring, creek or well. Outdoor faucets are also an important source, providing water for at least one third of the households in all areas.

Indoor toilets are available in a quarter (28.2%) of the households, with a much higher percentage in Teg/SPS (73.5%) than in other urban areas (42.9%) and especially rural areas (7.8%). Nearly three of five rural households (58.2%) reported not having waste disposal facilities either inside or outside the house.

Only a fifth of the households have garbage removal services. Another 29.6 percent dispose of their garbage by burning or burying it. If both of these means of disposal are assumed to be adequate from a sanitation engineer's point of view, then the remaining half of the homes in Honduras are not appropriately disposing of their solid wastes. The situation deteriorates from urban to rural areas.

Table III C2 shows that at the national level, half of the households have dirt floors. The second most frequently used material is a slab of cement. As with other SES indicators, rural areas have the highest proportion of homes with the least desirable flooring.

Electricity is available in 40.8 percent of the households, with almost full coverage in Teg/SPS (91.6%) and widespread availability in other urban areas (70.9%). Only 14.8 percent of the households in rural areas have electricity.

Radios are more frequently encountered than electricity. Almost two thirds of households possess a radio. Better than half of rural homes report having a radio. A third of all households have a television with about three out of four households in Teg/SPS possessing a television. Refrigerators are less common than televisions; only a fifth of the households were found to have a refrigerator.

Finally, the time it takes for the residents of a household to get to a health facility by the usual mode of transportation is shown in Table III C3. At the national level, almost two thirds of the household residents require less than an hour to get to the health facility they customarily visit. Size of the urban area does not seem to influence the time needed to get to a health center or hospital and nine out of ten urban respondents live within an hour's travel of a center. In rural areas, only about half have such convenient access.

Table III C1

Distribution of households by source of water,
human waste and garbage disposal, and residence

Epidemiology and Family Health Survey, Honduras, 1987

Type of Service	Total	Residence		
		Teg/SPS	Other Urban	Rural
<u>Source of Water</u>				
Faucet inside the home	20.5	48.4	31.4	7.5
Faucet outside the home but on the property	35.4	34.5	45.9	33.2
River, stream, spring, creek	25.7	1.1	4.1	40.0
Public faucet	6.4	3.8	8.5	6.8
Traditional well	4.0	1.1	2.2	5.4
Purchased	3.7	10.4	3.5	1.2
Well with pump	2.2	0.1	2.1	2.8
Other	2.4	0.5	2.3	3.1
<u>Human Waste Disposal</u>				
Toilet	28.2	73.5	42.9	7.8
Hydraulic latrine	6.2	2.6	3.9	8.0
Outhouse	25.1	16.3	35.4	26.0
None	40.6	7.6	17.8	58.2
<u>Garbage Disposal</u>				
Yard or empty lot	44.7	7.3	24.7	63.4
Burn or bury	29.6	19.6	42.4	30.2
City pick-up	20.4	65.6	24.9	2.5
Thrown in running water	3.0	4.7	4.8	1.9
Other	2.3	2.7	3.1	2.0
No. of Households*	(10441)	(2409)	(1540)	(6492)

*Some variables may have 2-3 missing cases.

Table III C2

Distribution of households by type of floor, possession of electricity, radio, and refrigerator according to residence

Epidemiology and Family Health Survey, Honduras, 1987

Household Characteristics	Total	Residence		
		Teg/SPS	Other urban	Rural
<u>Flooring</u>				
Dirt	50.3	12.9	26.7	69.8
Cement slab	23.1	30.7	32.8	18.0
Cement tiles	19.1	51.9	27.6	4.9
Wood	4.5	3.9	6.8	4.2
Other	3.0	0.6	6.2	3.1
<u>Electricity</u>				
Yes	40.8	91.6	70.9	14.8
No	59.2	8.4	29.1	85.2
<u>Radio</u>				
Yes*	64.6	83.3	75.7	55.0
No	35.4	16.7	24.2	45.0
<u>TV</u>				
Yes*	31.4	76.3	49.5	10.5
No	68.6	23.7	50.4	89.5
<u>Refrigerator</u>				
Yes*	21.1	49.2	33.6	7.6
No	78.9	50.8	66.4	92.4
No. of Households	(10441)	(2409)	(1540)	(6492)

*Includes functioning and non-functioning machines at the time of interview.

Table III C3

Distribution of households by accessibility to health facility
according to travel time by usual mode of
transportation, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Travel Time	Total	Residence		
		Teg/SPS	Other urban	Rural
Less than an hour	63.3	87.8	87.2	48.6
More than an hour	35.7	11.6	11.5	50.3
Never visits health facility	1.0	0.6	1.3	1.1
Total	100.0	100.0	100.0	100.0
No. of Households	(10441)	(2409)	(1540)	(6490)

D. Characteristics of surveyed women and comparisons with external sources

The tables of this section serve three important purposes: 1) they provide basic descriptive information about the sample population, 2) they help evaluate the reliability of the data collected in the 1987 survey through comparisons with earlier surveys, and 3) they suggest possible trends.

There are potentially three other surveys with which to compare results of the 1987 survey -- the 1981 ENPA (National Contraceptive Prevalence Survey), the 1983 EDENH-II (National Demographic Survey), and the 1984 MCH/FP (Maternal-Child Health/Family Planning Survey).

In order to compare 1987 results with those of previous surveys that designated only two strata, the two urban strata are sometimes grouped. The EDENH-II 1983 and the EFHS 1987 have similar bases of 10,000 plus households, more than twice the size of the 1981 or 1984 surveys.

Characteristics of the households of 1987 more closely resemble 1983 households than 1984 households (Table III D1). For example, 20.3 percent of households in 1983 had water inside the household compared with 20.5 percent in 1987 and 25.1 percent in 1984. The proportions of households with adequate waste disposal or electricity are also slightly lower in 1983 and 1987 compared with 1984. Although the 1984 households appear to be slightly higher SES, the differences are not great.

Table III D2 compares the age distribution of eligible women aged 15-44 by residence for all four surveys. The distributions suggest a slight aging of the female population, particularly among urban women.

The distributions of women by level of education and residence for the 1983, 1984 and 1987 surveys are shown in Table III D3. Across surveys a much higher percentage of urban women than rural women have completed primary education. A higher percentage of women have completed seven or more years in 1987 than the earlier surveys, suggesting a positive trend.

A more detailed view of education levels in 1987 is shown in Table III D4. There is a clear association between residence and education with the highest levels found in Tegucigalpa and San Pedro Sula. Although there are marked differences between Teg/SPS and other urban areas, women in other urban areas resemble metropolitan women more than they do rural women.

The proportion of women in union by age groups and residence for four surveys is shown in Table III D5. At each age group and across surveys, the proportion of women in union is always higher in rural areas than in urban areas. By age 35 the proportions begin to decrease, suggesting spousal demise or separation. Between surveys no clear trend is evident.

Female employment is increasing in most parts of the world and is a change with far reaching consequences for the health and well being of the entire family. Work status was defined as receiving some kind of remuneration, either in money or in kind. Women in Teg/SPS (43.7%) are more likely to be employed than rural women (20.0%), and not surprising, women who are separated, divorced or widowed are more likely (49.9%) to be working than women who are single (25.6%) or in union (26.3%) (Table III D6). About a third of the employed women work exclusively at home. Among the three strata, rural women are the most likely to work at home. As for marital status, women in union are the most likely to be employed at home, also not unexpected since childcare can be an issue.

Employed Honduran women pursue traditionally female occupations. About one in five women is involved in domestic services. In Teg/SPS, the two most frequently reported occupations are domestic services and clerical work (46.8%); in other urban areas - domestic services and nurses/teachers (38.3%); and in rural areas - domestic services and seamstresses (34.2%). Women in union are more likely to do a wide variety of activities than single or separated/divorced/widowed women.

Table III D1

Distribution of households by source of water, waste disposal, electricity and residence in the EDENH-II 1983, MCH/FP 1984, and EFHS 1987

Epidemiology and Family Health Survey, Honduras, 1987

Type of Service	EDENH-II 1983			MCH/FP 1984			EFHS 1987		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
<u>Source of Water</u>									
Faucet inside the home	20.3	43.1	3.8	25.1	46.3	9.4	20.5	41.8	7.5
Faucet outside the home	38.3	43.2	34.7	42.8	48.5	38.6	25.4	38.9	33.2
Other	41.4	13.7	61.5	32.0	5.1	51.9	44.2	19.2	59.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<u>Waste Disposal</u>									
Toilet	30.5	66.1	4.5	30.9	64.4	6.2	28.2	61.6	7.8
Outhouse and other	27.2	23.7	29.7	33.0	26.6	37.7	31.3	26.9	34.0
None	42.3	10.2	65.8	36.1	9.0	56.1	40.6	11.5	58.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<u>Electricity</u>									
Yes	41.9	84.7	10.7	44.4	86.9	13.2	40.8	83.5	14.8
No	58.1	15.3	89.3	55.6	13.1	86.9	59.2	16.5	85.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Households	(10885)	(4587)	(6298)	(4818)	(2702)	(2116)	(10441)	(3949)	(6492)

Table III D2

Distribution of women by age groups and residence in the EDENH-II, MCH/FP 1984, and EFHS 1987

Epidemiology and Family Health Survey, Honduras, 1987

Age	ENPA 1981			EDENH-II 1983			MCH/FP 1984			EFHS 1987		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
15-19	25.7	28.2	23.8	26.5	27.4	25.5	25.6	26.9	24.3	24.6	24.8	24.5
20-24	22.7	25.2	20.7	22.5	23.4	21.6	22.2	24.0	20.4	20.5	21.5	19.8
25-29	16.9	17.5	16.4	17.1	17.3	16.9	17.7	17.6	17.8	18.5	19.3	18.0
30-34	13.1	11.7	14.3	13.4	13.4	13.4	13.9	12.4	15.4	14.2	14.8	13.8
35-39	11.4	8.6	13.6	11.5	10.6	12.3	11.5	11.1	11.8	12.6	11.7	13.2
40-44	10.2	8.8	11.2	9.1	7.9	10.2	9.1	8.0	10.3	9.6	8.0	10.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(3377)	(1299)	(2078)	(13179)	(6479)	(6700)	(4805)	(3000)	(1805)	(10143)	(4270)	(5873)

Table III D3

Distribution of women by education and residence in the EDENH-II 1983,
MCH/FP 1984, and EFHS 1987

Epidemiology and Family Health Survey, Honduras, 1987

Education	EDENH-II 1983			MCH/FP 1984			EFHS 1987		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
None	17.2	7.3	26.7	15.5	7.6	23.1	16.5	6.6	23.6
Primary 1-3	26.0	15.6	36.0	26.9	17.5	36.0	26.2	14.5	34.6
Primary 4-6	31.6	32.3	30.9	33.7	32.9	34.6	32.7	31.1	33.8
≥ 7 years	25.3	44.8	6.4	23.9	42.0	6.4	24.7	47.7	8.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(13168)	(6469)	(6699)	(4805)	(3000)	(1805)	(10139)	(4270)	(5869)

Table III D4**Distribution of women by education and residence****Epidemiology and Family Health Survey, Honduras, 1987**

Education	Teg/SPS	Other Urban	Rural
None	4.7	9.9	23.6
Primary 1-3	12.3	18.6	34.6
Primary 4-6	31.0	31.4	33.6
≥ 7 years	52.0	40.2	8.0
Total	100.0	100.0	100.0
No. of Women	(2724)	(1546)	(5869)

Table III D5

Percentage of women in union by age groups and residence
in the ENPA 1981, EDENH-II, MCH/FP 1984, and EFHS 1987

Epidemiology and Family Health Survey, Honduras, 1987

Age	ENPA 1981			EDENH-II 1983			MCH/FP 1984			EFHS 1987		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
15-19	23.7	14.7	31.9	18.5	11.1	26.1	20.8	12.9	29.2	21.7	14.0	27.3
20-24	54.7	40.5	68.2	51.3	39.0	64.2	53.5	43.4	64.9	59.5	50.1	67.0
25-29	76.2	63.9	86.5	68.5	58.7	78.3	74.0	64.6	83.6	74.5	66.5	80.8
30-34	84.5	80.2	87.0	74.2	66.8	81.3	79.4	72.7	84.0	81.2	75.2	85.8
35-39	80.2	67.7	86.4	76.8	70.4	82.1	79.6	72.9	85.6	79.0	72.6	83.2
40-44	80.1	77.7	81.7	72.0	65.1	77.1	76.9	71.5	80.9	76.9	68.7	81.3
Total	59.8	47.6	69.2	53.4	43.9	62.7	57.5	48.1	66.6	60.2	52.1	66.0
No. of Women	(3377)	(1299)	(2078)	(13179)	(6479)	(6700)	(4805)	(3000)	(1805)	(10143)	(4270)	(5873)

Table III D6

**Distribution of women by employment status
according to residence and marital status**

Epidemiology and Family Health Survey, Honduras, 1987

Employment	Total	Residence			Marital Status		
		Teg/SPS	Other Urban	Rural	Single	In Union	Other†
<u>Employment Status</u>							
Employed	29.3	43.7	38.9	20.0	25.6	26.3	49.9
Unemployed	70.7	56.3	61.1	80.0	74.4	73.7	50.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(10142)	(2724)	(1545)	(5873)	(2680)	(6103)	(1360)
<u>Work Location</u>							
At home	36.0	31.1	31.2	43.3	36.0	38.7	29.4
Outside the home	56.4	65.8	61.4	44.2	59.6	52.5	62.1
Both	7.7	3.1	7.3	12.5	4.4	8.7	8.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(2965)	(1190)	(599)	(1176)	(684)	(1603)	(678)
<u>Occupation</u>							
Domestic services	22.2	26.1	24.5	17.0	40.0	9.9	33.0
Seamstress	11.7	8.6	7.0	17.2	11.1	12.9	9.3
Clerical	11.6	20.7	10.5	2.9	15.2	11.2	8.7
Food preparation	11.4	8.7	12.0	13.9	3.2	15.0	11.2
Store clerk	10.0	7.9	9.8	12.3	4.8	14.2	5.6
Nurse, teacher	10.0	9.0	13.8	9.2	8.3	12.2	6.8
Laborer, farmer	7.8	4.2	6.8	12.0	7.7	6.5	11.1
Small business	6.9	5.5	9.2	7.2	1.8	8.8	7.7
Professional	1.0	2.0	1.0	0.1	1.6	0.8	1.0
Other	7.3	7.4	5.5	8.2	6.3	8.5	5.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(2967)	(1190)	(601)	(1176)	(685)	(1604)	(678)

†Includes separated, divorced and widowed.

**CHAPTER IV
DEMOGRAPHIC ANALYSIS**

A. Age Structure of the population and miscellaneous demographic indices

From the household questionnaire, information was collected on the age and sex of all residents in the 10,441 households that completed this questionnaire. With this information the following have been calculated:

1. the percent distribution by age and sex
2. the dependency and sex ratios
3. the Myers' and Whipple's Indices

The age and sex structure of the Honduran population is shown in Table and Figure IV A1. Of the 58,074 residents listed, 29,012 are males and 29,062 females. The population is relatively young with 47.5 percent below the age of 15. There appears to be a slight decrease in the size of the 0-4 year old group over time, suggesting a decline in fertility. In 1974, this group accounted for 18.3 percent of the population (data not shown), in 1987, 17.2 percent. The mean age of the population is 21.9 years and the median, 16.2.

**Figure IV A1
Population Pyramid, EFHS, Honduras, 1987**

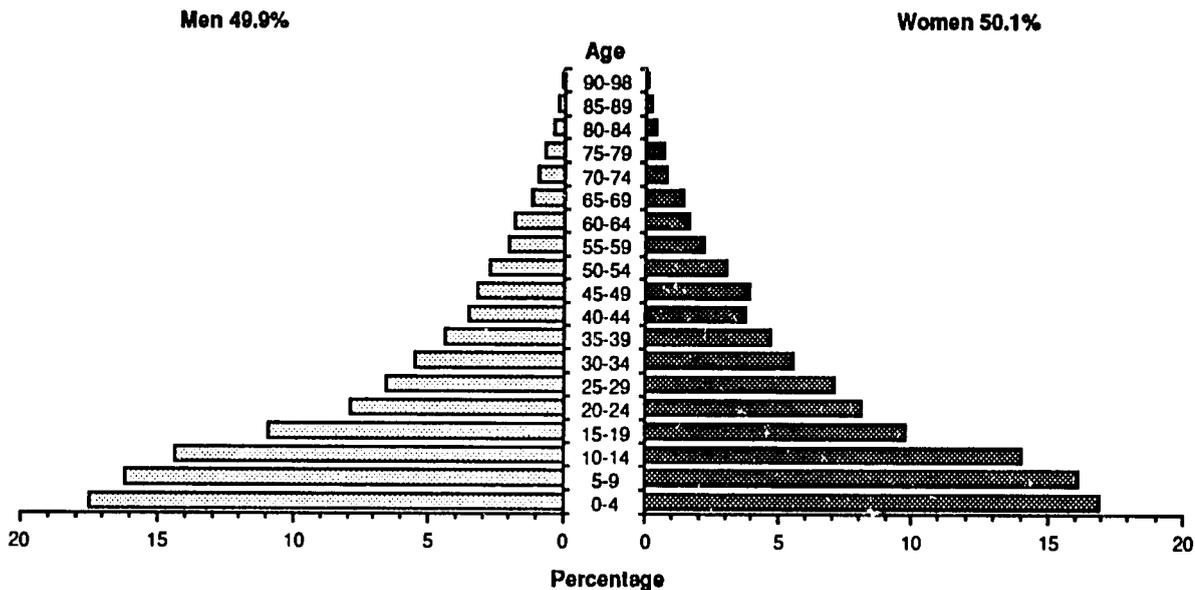


Table IV A2 shows age structure comparisons based on three broad age groups for three survey periods and the 1974 Census. Between 1971-72 and 1987 there is evidence of a slight aging of the population.

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The dependency ratio is the number of children 0 to 14 years of age and the elderly 65 and over, divided by the population of "active" age (15-64) of both sexes. Between 1971-72 and 1983 the dependency ratio decreases slightly but appears to have gone back to the 1974 level by 1987. Compared to 1974, there is a slightly lower percentage of those under 14 in 1987 but a slightly higher percentage of those over age 65, yielding a constant dependency ratio.

The sex ratio or masculinity ratio is defined as the number of males per 100 females. A sex ratio above 100 means an excess of males. At birth the sex ratio begins a little above 100, and between the ages of 5 and 40 has values close to 100. Above age 40, the ratio begins to drop. In general, national sex ratios tend to fall in the narrow range from about 95 to 102, barring special circumstances, such as a history of heavy war losses or heavy in or out migration. Table IV A3 provides the sex ratio by five year age groups from three surveys and the 1974 Census. The values calculated from the 1987 survey appear to be more consistent with the expected values between birth and 40 than those of other data sources. However, for the age groups 60-64 and 70-74 the sex ratios of the EFHS 1987 are higher than expected. These abrupt changes in the ratio may be attributable to migration of one of the sexes or age misreporting. This survey and two previous efforts (EDENH I and the 1974 Census) estimated ratios above 100 for the 60-64 year old age group; these unusual findings may be due to selective migration of women or men at that age. Survey analysts have recognized repeatedly that many respondents misreport their ages. In order to evaluate the reliability of age reporting, demographers have developed certain techniques. The Myers' Index reflects the preference for each terminal digit by measuring the deviation from 10.0 percent of the proportion of the total population reporting a specific digit. When no preference for a digit can be detected, the index is equal to zero. If everyone declared a specific digit, the index would be 90. Table IV A4 presents the values of Myers' Index using the information collected in the household questionnaire. These results suggest that respondents declare women's age more accurately than they do men's ages. (Most of the respondents of the household questionnaire were in fact women.) The reported ages of both sexes demonstrate a preference for 0 and 5 and an aversion to 1 and 9. In the same table is a summary of the Myers' Index calculated in surveys from other countries as well as in Honduras in earlier studies.

The Whipple's Index measures a digit preference of 0 or 5. It varies between 100, representing no preference for "0" or "5", and 500, indicating that only digits "0" and "5" were reported. This index also shows better quality of age reporting for the women than men. On the basis of these indices and comparisons, the data quality of the EFHS 1987 appear to be very good.

Table IV A1

**Age structure by five-year age groups and sex
Epidemiology and Family Health Survey, Honduras, 1987**

Age Groups	Both Sexes	%	Male	%	Female	%
Total	58074	100.0	29012	100.0	29062	100.0
0-4	9976	17.2	5057	17.4	4919	16.9
5-9	9370	16.1	4683	16.1	4687	16.1
10-14	8232	14.1	4167	14.4	4065	14.0
15-19	5987	10.3	3150	10.8	2807	9.7
20-24	4636	8.0	2295	7.9	2341	8.0
25-29	3975	6.9	1909	6.6	2066	7.1
30-34	3186	5.5	1601	5.5	1585	5.4
35-39	2631	4.6	1261	4.3	1370	4.7
40-44	2084	3.6	1019	3.5	1065	3.7
45-49	2050	3.5	921	3.2	1129	3.9
50-54	1633	2.8	772	2.7	861	3.0
55-59	1225	2.1	574	2.0	651	2.2
60-64	997	1.7	531	1.8	466	1.6
65-69	743	1.3	341	1.2	402	1.4
70-74	489	0.8	249	0.8	240	0.8
75-79	389	0.7	197	0.7	192	0.7
80-84	217	0.4	102	0.4	115	0.4
85-89	109	0.2	57	0.2	52	0.2
90+	46	0.1	17	0.1	29	0.1
Unknown	129	0.2	109	0.4	20	0.1
0-14	27578	47.5	13907	48.1	13671	47.1
15-64	28404	49.0	14033	48.6	14371	49.4
65+	1993	3.4	963	3.3	1030	3.6
Mean Age:	21.9		21.6		22.3	
Median Age:	16.2		15.9		16.5	

Table IV A2

Age structure by major age groups
and dependency ratio by selected survey sources

Epidemiology and Family Health Survey, Honduras, 1987

Major Age Groups	Survey			
	EDENH I 1971-72*	Census 1974*	EDENH II 1983*	EFHS 1987
0-14	48.74	48.07	46.85	47.52
15-64	48.85	49.17	49.58	49.05
65+	2.41	2.76	3.57	3.44
Dependency Ratio	104.7	103.4	101.7	104.1

*Source: Informe General de la EDENH II 1983, Vol. 2, Serie A. 1047/II, CELADE, 1985, p. 29.

Table IV A3

Sex ratio by age groups according to the EDENH I, 1974 Census,
EDENH II, and EFHS 1987

Epidemiology and Family Health Survey, Honduras, 1987

Age Groups	Sex Ratio			
	EDENH I 1971-72*	Census 1974*	EDENH II 1983*	EFHS 1987
0-4	104.0	102.7	106.3	102.8
5-9	103.4	103.3	99.6	99.9
10-14	101.8	103.8	102.6	103.0
15-19	78.4	93.8	90.3	111.3
20-24	86.7	90.6	85.2	97.1
25-29	96.7	90.3	84.9	91.4
30-34	99.0	96.3	95.9	100.1
35-39	99.2	93.7	82.4	91.0
40-44	101.0	95.8	92.0	95.2
45-49	97.8	97.6	91.3	82.6
50-54	93.3	97.0	86.9	90.6
55-59	94.4	97.7	95.1	88.7
60-64	102.9	103.2	93.4	114.7
65-69	85.6	96.5	96.8	84.8
70-74	92.9	98.3	83.3	103.8
75+	81.8	88.8	87.6	96.1
Total	96.6	98.3	95.2	99.6

*Source: Informe General de la EDENH II 1983, Vol. 2, Serie A. 1047/II,
CELADE, 1985, p.32.

Table IV A4

Myers and Whipple's indices by sex according to selected sources

Epidemiology and Family Health Survey, Honduras, 1987

Myers: Digit	Both Sexes		Males		Females	
	Relative Deviation	10% Deviation	Relative Deviation	10% Deviation	Relative Deviation	10% Deviation
0	11.78	1.78	12.54	2.54	11.05	1.05
1	8.00	-2.00	7.34	-2.66	8.64	-1.37
2	10.37	0.37	10.43	0.43	10.31	0.33
3	9.97	-0.03	10.01	0.01	9.93	-0.10
4	9.66	-0.34	9.93	-0.07	9.41	-0.57
5	10.89	0.89	10.95	0.95	10.83	0.81
6	9.89	-0.11	9.89	-0.11	9.88	-0.15
7	10.29	0.29	10.07	0.07	10.51	0.56
8	10.37	0.37	10.44	0.44	10.30	0.33
9	8.77	-1.23	8.39	-1.61	9.14	-0.88
Myers (Summary) EFHS 1987		7.41		8.89		6.14
Myers (Summary): EDENH II		5.7		6.0		5.8
Nicaragua, 1971 Census		27.8				
Guatemala, 1971 Census		21.7				
Mexico, 1980 Census		13.4				
Honduras, 1974 Census		11.6				
Costa Rica, 1973 Census		10.6				
Mexico, 1979 Survey		8.6				
Panamá, 1980 Survey		5.0				
Whipple's Index EFHS 1987		120.41		127.11		114.12

B. Fertility

Fertility in Honduras dropped in the late 1970s and continued to do so in the early 1980s. Thereafter, the decline appears to have stalled. The estimated total fertility rate (TFR) for 1987 is 5.60 for the nation as a whole, 3.85 for women in urban areas and 6.86 in rural areas, as shown in Table IV B1. The TFR is lower in Tegucigalpa and San Pedro Sula (3.5) than it is for other urban areas (4.5). The total fertility rate measures the average number of births a woman is likely to have during her lifetime (assuming fertility rates remain the same) and is based on the number of births occurring in the 12 month period before the interview. The 1987 total fertility rate was calculated for the 24 month period prior to interview as well and was found to be virtually identical to the rate using a 12 month reference period.

Since 1981 the TFR has dropped by almost one birth. The decrease has been greater in rural areas than in urban areas. Although the 1987 TFRs are slightly higher than the rates calculated in 1984, the differences are sufficiently small that we assume that fertility levels have probably not changed. In fact, the age specific fertility rates calculated for 1987 fall within the confidence intervals calculated for the 1984 age specific rates.

Estimates of the total marital fertility rates (TMFR) are included as a refinement of observed fertility rates (Table IV B2). Their base population is currently married women since most births in Honduras occur within marriage or consensual unions. As expected, their values are on the order of one to two births higher than the TFRs. As with the TFRs, urban rates are lower than rural rates.

The first two tables have shown the important fertility differentials associated with residence. Table IV B3 examines the changes in the level and extent of fertility decline according to maternal education levels, a variable known to be strongly associated with fertility levels. The TFR of women with no formal schooling is between four and almost six births greater than the TFR of women who have begun their secondary education (≥ 7 years). At most levels of education, the TFR decreased between 1981-1987.

Table IV B4 summarizes the total and marital fertility rates for 1984 and 1987 and shows the crude birth rates (the number of live births per 1000 population). Crude birth rates have not changed since 1984. The rate was 38 in 1987 and 37 in 1984. Although the household questionnaire included information about the number, sex and age of all inhabitants in the household, it did not obtain data on all births of the household. Specifically, we do not have information about births to the 10 percent of the eligible women not interviewed. To estimate the number of births for these women, the age-specific fertility rates of interviewed women were applied. To the extent that uninterviewed women have lower or higher fertility rates, these rates will over- or underestimate prevailing fertility.

Another indication of fertility in Honduras is the mean number of children ever born to women aged 40-44. Since these women are at the end of their childbearing years, the mean number of children ever born is a measure of

cumulative fertility and represents fertility levels prevailing in the past. Table IV B5 shows that the mean number of children born to Honduran women appears to have decreased slightly since 1981 but no change is evident since 1983. The greatest decrease appears to have taken place among women in the older age groups. Furthermore, when the means for women aged 40-44 are compared to levels of current fertility, as measured by the TFR, we see more evidence of a decline. For example, women 40-44 in 1987 had a mean of 6.6 children while the TFR was 5.6 births. Table IV B6 shows the urban/rural differentials in the mean number of children ever born. They reflect the same differentials observed in the fertility rates: higher in rural areas than in urban and a greater decline in rural areas than in urban areas.

Higher fertility in rural areas suggests earlier marriage in rural areas than in urban areas. Based upon all women ever in union, the results in Table IV B7 support a residential differential. Mean age at marriage in rural areas is 17.6 and in urban areas 18.9; age at first union has not changed since 1981. The higher the level of formal schooling, the older a woman is likely to be when she marries for the first time.

There is some inconsistency in trends, depending on which fertility indicators are used. However, we conclude that fertility has declined since the early 1980s but has basically remained constant since the 1984 survey.

Table IV B1

Age specific fertility rates based on 12 months prior to interview and the total fertility rate by residence in the ENPA 1987, MCH/FP 1984, and EFHS 1987

Epidemiology and Family Health Survey, Honduras, 1987

Current Age	ENPA 1981			MCH/FP 1984			EFHS 1987		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
15-19	.1580	.1133	.1983	.1157	.0746	.1611	.1348	.0934	.1654
20-24	.3040	.2075	.3984	.2492	.2038	.2988	.2706	.2114	.3190
25-29	.2736	.2193	.3166	.2682	.2050	.3278	.2414	.1698	.2956
30-34	.2411	.1781	.2816	.2006	.1321	.2530	.2111	.1463	.2618
35-39	.2066	.1267	.2459	.1553	.1193	.1863	.1618	.0913	.2069
40-44	.0942	.0221	.1376	.0772	.0434	.1038	.1002	.0572	.1234
TFR	6.39	4.34	7.89	5.33	3.89	6.65	5.60	3.85	6.86

	MCH/FP 1984*				EFHS 1987			
	Total	Teg/SPS	Other Urban	Rural	Total	Teg/SPS	Other Urban	Rural
15-19	.1229	.0846	.0960	.1609	.1348	.0801	.1157	.1654
20-24	.2682	.1799	.2601	.3288	.2706	.1942	.2417	.3181
25-29	.2676	.1855	.2235	.3287	.2414	.1639	.1822	.2956
30-34	.1840	.1099	.1698	.2252	.2111	.1418	.1549	.2618
35-39	.1672	.0855	.1575	.2076	.1618	.0757	.1160	.2069
40-44	.0864	.0321	.0582	.1202	.1002	.0408	.0809	.1234
TFR	5.48	3.39	4.82	6.86	5.60	3.48	4.47	6.86

*Based on 24 months prior to interview

Table IV B2

Age specific marital fertility rates* based on 12 months prior to interview and the total marital fertility rate by residence in the ENPA 1987, MCH/FP 1984, and EFHS 1987

Epidemiology and Family Health Survey, Honduras, 1987

Current Age	ENPA 1981			MCH/FP 1984			EFHS 1987		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
15-19**	.3247	.2382	.3734	.2678	.2578	.2756	.2750	.2410	.2956
20-24	.4329	.3176	.4978	.3570	.3438	.3674	.3666	.3214	.3941
25-29	.3122	.2610	.3440	.2987	.2243	.3575	.2810	.2115	.3263
30-34	.2701	.2071	.3071	.2343	.1630	.2837	.2304	.1644	.2738
35-39	.2355	.1544	.2690	.1750	.1296	.2092	.1796	.0927	.2292
40-44	.1140	.0314	.1538	.0971	.0577	.1260	.1134	.0711	.1325
TMFR	8.45	6.05	9.72	7.15	5.88	8.10	7.23	5.51	8.26

*These rates are based on women currently in union.

**The 15-19 year old ASMR is calculated by taking 75% of the 20-24 year old ASMR since the direct estimate for 15-19 year olds tends to be unreliable.

Table IV B3

Total fertility rates for women 15-44 based on 12 months
prior to interview by education in the
ENPA 1981, MCH/FP 1984, and EFHS 1987

Epidemiology and Family Health Survey, Honduras, 1987

Education	Total Fertility Rates		
	ENPA 1981	MCH/FP 1984	EFHS 1987
None	8.68	7.31	8.12
Primary 1-3	7.58	5.87	7.09
Primary 4-6	6.36	5.11	4.82
≥ 7 years	2.96	3.24	3.17

Table IV B4

**Fertility and crude birth rates based on 12 months
prior to interview by residence
in the MCH/FP 1984 and ENESF 1987**

Epidemiology and Family Health Survey, Honduras, 1987

Rate	MCH/FP 1984 Residence			EFHS 1987 Residence		
	Total	Urban	Rural	Total	Urban	Rural
Total fertility rate	5.33	3.89	6.65	5.60	3.85	6.86
Total marital fertility rate						
15-44*	7.15	5.88	8.10	7.23	5.51	8.26
20-44	5.81	4.59	6.72	5.86	4.30	6.78
Crude birth rate**	37	34	39	38	34	40

*The TMFR of the 15-19 year olds is based on 75% of the TMFR of the 20-24 years olds.

**The 1984 CBR is based on 24 months prior to interview.

Table IV B5

**Mean number of children ever born by age in the ENPA 1981,
EDENH-II, MCH/FP 1984, and EFHS 1987**

Epidemiology and Family Health Survey, Honduras, 1987

Current Age	ENPA 1981	EDENH-II 1983	MCH/FP 1984	EFHS 1987
15-19	0.3	0.2	0.2	0.2
20-24	1.5	1.4	1.4	1.4
25-29	3.1	2.9	3.0	2.9
30-34	4.6	4.2	4.4	4.2
35-39	6.1	5.7	5.6	5.6
40-44	7.0	6.5	6.6	6.6
Total				
Not standardized	3.0	2.7	2.8	2.8
Standardized*	3.0	2.8	2.8	2.8
No. of Women	(3377)	(13179)	(4805)	(10143)

*Standardized by the age distribution of women in the EFHS 1987.

Table IV B6

Mean number of children ever born by age and residence in the
ENPA 1981, MCH/FP 1984, and EFHS 1987

Epidemiology and Family Health Survey, Honduras, 1987

Current Age	ENPA 1981		MCH/FP 1984		EFHS 1987	
	Urban	Rural	Urban	Rural	Urban	Rural
15-19	0.2	0.3	0.2	0.3	0.2	0.3
20-24	1.0	2.0	1.1	1.9	1.0	1.8
25-29	2.2	3.8	2.2	3.8	2.2	3.4
30-34	3.7	5.2	3.6	4.9	3.3	4.9
35-39	4.2	6.9	4.6	6.6	4.2	6.5
40-44	5.4	7.9	5.4	7.5	5.0	7.5
Total						
Not standardized	2.0	3.7	2.1	3.4	2.1	3.4
Standardized*	2.2	3.5	2.3	3.4	2.1	3.3
No. of women	(1299)	(2078)	(3000)	(1805)	(4270)	(5873)

*Standardized by the age distribution of women in the EFHS 1987.

Table IV B7

Mean age at first union among ever in union women by
education and residence in the ENPA 1981, MCH/FP 1984, and EFHS 1987

Epidemiology and Family Health Survey, Honduras, 1987

Education	ENPA 1981*			MCH/FP 1984			EFHS 1987		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
Total*	18.1	18.8	17.7	18.5	19.1	18.0	18.1	18.9	17.6
<u>Education</u>									
None	17.4	17.2	17.5	17.8	18.2	17.6	17.1	17.2	17.1
Primary 1-3	17.8	18.1	17.7	18.1	18.2	18.1	17.5	17.8	17.4
Primary 4-6	18.1	18.4	17.7	18.2	18.5	17.9	18.0	18.3	17.8
Secondary 1-3	18.9	19.2	17.6	19.1	19.0	19.5	18.6	18.7	18.5
Secondary 4-6 and university/ superior	21.5	21.5	21.6	21.5	21.5	21.2	21.3	21.2	21.9
No. of Women	(2643)	(1001)	(1642)	(3335)	(1930)	(1405)	(7392)	(2861)	(4531)

*Women aged 45-49 are included in the denominator of the ENPA 1981.

C. Infant and child mortality

The study of levels and trends of infant and child mortality provides an indication of the health status of a population and its changes over time. Besides its descriptive value, the information is important in the formation of policy and the evaluation of programs to determine which appear to have an impact on mortality.

Mortality data can come from a vital registration system, censuses or surveys, either retrospective or from multiround prospective surveys. In many countries, data based on vital statistics are known to be poor and incomplete, especially for mortality. In these cases, surveys and censuses provide the best alternative for the estimation of mortality levels.

Unlike the series of national surveys carried out in Honduras in the last decade, the 1987 EFHS included a complete birth history for each female respondent. Mothers were asked for each live birth the date of birth, sex, survival status, and for those who died, exact age at death. Because we used a birth history and not a pregnancy history, we do not have information on stillbirths or late fetal deaths. Furthermore, despite intense efforts to verify dates with documentation in order to obtain accurate dates for each birth, some dates may be misreported, or some dead children omitted. Underreporting of events and misreporting of dates become less serious in the time periods close to the survey date. Another limitation of most survey data is the small number of cases upon which many estimates are based. For this reason, and because of censoring (discussed below), rates are generally calculated for periods of several years.

An additional problem of survey data entails censoring. Women 45 or older are not interviewed. Mortality estimates for the past exclude progressively larger numbers of women as the analysis extends further into the past. For example, mortality rates for infants born 10 years before the survey are based on women 34 and younger at the time of birth and thus exclude births to women 35 and older who were never interviewed. Where higher mortality rates are associated with advanced maternal age, the censoring underestimates mortality for past periods.

Despite the problems associated with survey data, retrospective maternity histories have been used for many years by demographers studying results from the World Fertility Surveys (Rutstein, 1984). The use of histories has been vigorously evaluated and they are generally considered to be a source of high quality when compared to other sources.

Methodology

Data from birth histories are usually analyzed by calculating synthetic cohort probabilities of death or other direct methods. In this report, however, two methodologies have been used: indirect techniques and direct estimates based on real cohort calculations. For the sake of comparison with past estimates based on indirect methods, the software PANDEM was used. These estimates are based on Brass-type indirect techniques.

Indirect techniques were originally created for occasions when good data quality and/or quantity were unobtainable. Developed by Brass (1968), and modified by Sullivan (1972) and Trussell (1975), this methodology utilizes the number of children ever born (CEB) for each interviewed woman, and the number of children surviving (CS) as of the interview date. The analysis of CEB-CS data involves classifying women into five-year age groups and calculating the proportion dead of CEB to the women of each age group. These age-specific proportions are then transformed into IMR estimates using an estimation model developed by Trussell (UN, 1983).¹

When good data are available, direct methods for estimating infant mortality are preferred over indirect methods. Not only is it generally recognized that indirect estimations tend to overestimate mortality levels, they also are based on a series of assumptions which are not likely to be true. For example, indirect methods implicitly assume that both fertility and childhood mortality have remained constant in the recent past, and the risk of a child dying is a function only of the age of the child and not of other factors.

The direct rates used here are real cohort rates: the denominator includes all live births that occur in a specific year adjusted for the number of children surviving at the time the period is initiated. The numerators are the number of neonates that failed to survive 30 days, infants who survived the neonatal period but not the postneonatal period, infants who did not survive 12 months, children who died between the ages of one and four, or all deceased children under five. (An infant, therefore, could be born in 1980 but die in 1981 before completing his/her first birthday.) Rates are given for three five year periods 1970-74, 1975-79, and 1980-84. The most recent child mortality rates are for 1980-81 so that by 1986, children born in 1981, would have had five years of exposure to life before the mother's 1987 interview date.

¹Two features of the Trussell model must be understood to interpret the IMR estimates which are produced. First, the model has four variants, denoted as the North, South, East and West variants. Each variant is based on a different assumption concerning the age pattern of infant and childhood mortality, and each variant produces marginally different estimates. In the case of Honduras, the current IMR estimates come from the West variant of the model. This variant has been chosen for comparative purposes since recent estimates made by CELADE of the 1983 EDENH data, have utilized the West variant. Second, the IMR estimates derived from the proportion dead statistics of each age group of women apply to somewhat different time periods: the estimates based on the data from older age groups of women pertain to earlier time periods than the estimates based on data from younger age groups. In presenting the results, the time period to which an estimate applies is indicated.

Trends over the last 20 years

Infant mortality in Honduras has declined substantially in the past 20 years, from 127 infant deaths per 1000 live births in 1967-68, to 47 in 1985-86, a 63% decline (Table IV C1). Compared to estimates from other Central American countries, infant mortality in Honduras falls between the lower levels of Costa Rica and Panama, and the higher ones of its immediate neighbors Nicaragua, El Salvador and Guatemala (Table IV C2). However, if one compares the indirect IMR of Honduras (see Table IV C1) to these other countries, Honduras resembles its neighbors more closely.

Current levels of mortality by socioeconomic characteristics

A word of caution is warranted for mortality estimates according to SES characteristics. Residence, education and household characteristics pertain to the year of interview, 1987, and do not necessarily reflect conditions at the time of the infant's birth or death. The effect of this bias would be to underestimate the impact of those variables usually associated with rural living, since virtually all migration is rural-urban, and to inflate mortality levels.

The period of infancy can be divided into the neonatal period (the first month of life or days 1-29) and the postneonatal period (exact age 30 days to one year or 30 x 12 months). Characteristic of many developing countries is the high proportion of deaths in the postneonatal period compared to the neonatal period. The higher postneonatal death rates are generally attributed to exogenous or environmental factors. In more developed countries, on the other hand, generally two-thirds or more of the infant deaths occur in the first month and most of those occur within the first week. In Honduras for the period 1970-74, postneonatal mortality rates exceed neonatal rates by almost a third. By 1980-84, neonatal and postneonatal rates are equal. For this most recent period, 27 of every 1000 live births die before completing their first month, while of those surviving the neonatal period another 27 die before they reach their first birthday (Table IV C3). The overall infant mortality rate (IMR) for this period is 53.8. In general, infant mortality rates have decreased over time.

Children born or living in rural areas or in urban areas other than Teg/SPS are at greatest risk. For the most recent time period, infant mortality in Teg/SPS is 42 percent lower than that in rural areas. Because of small sample sizes, Health Region 1 and 7 have been combined. Health Region 6 has the highest mortality rate. In contrast, the IMR of the Metropolitan Region (Tegucigalpa) is 20 points less than that of most other regions.

Parental education, especially maternal education, is known to be an important determinant of mortality. Increased levels of education are thought to translate into a less fatalistic attitude about illness and death, improved hygienic conditions and nutrition, and more active health care seeking behaviors, especially those of a preventive nature. Both maternal and paternal education are inversely associated with mortality levels. For the most recent period, a twofold differential or greater is noted between mothers or fathers with no formal education and those with some secondary education. Rates for maternal and paternal educational

categories are quite similar except for the no education category. These rates are slightly higher for infants whose mothers have no formal schooling than fathers with no schooling.

Table IV C4 shows the same SES characteristics for children one to four years of age and for all children under five. Between 1970 and 1980, the 1-4 rate declined by 27 percent. By 1980, among those children who survive their first year, about 30 die before the age of five. This rate, compared to the IMR of 53.8 per 1000 live births, supports the premise that a child's first year is the most critical or vulnerable year in his/her life. Finally, a total of 86 children out of every 1000 live births die before reaching the age of five. The stated goal of the 1988 Declaration of Talloires and the Task Force for Child Survival for the year 2000 is an under five mortality rate of 70, or half the rate of 1980, whichever is lower. In the case of Honduras this would imply a rate of about 43.

Residential differentials are more apparent for the 1-4 year old age group than for infants, however, over time the gap has narrowed. As for infants, the lowest child mortality rates are found in the Metropolitan Health Region, and the highest in Regions 5 and 6.

Although the number of parents with at least some secondary education is at times small, the child mortality differentials between the least and the best educated mothers and fathers are striking. Declines in mortality are most noticeable between 1970-74 and 1975-79 while the declines between 1975-79 and 1980-81 are small or nonexistent.

Tables IV C5 and C6 present infant and child mortality levels by common household characteristics which serve as indicators of a family's socioeconomic status. Some of these variables, such as source of water, type of human waste and garbage disposal, and floor type may also serve as important indicators of the potential spread of infectious diseases.

The implications of an adequate supply of water are twofold. A clean source suggests lower risks of bacterial and parasitic infections. A sufficient supply of water permits adequate cleaning of hands, clothing, cooking utensils, and bodies. The source of household water that suggests the lowest risks of infant and child mortality is piped water provided through a faucet inside the home or located on the property. The highest risks are found in households with water sources other than piped water. These sources include wells, rivers, lakes and ponds. The most recent infant mortality rate increases by 28% from households with their own faucets to households with a supply classified as "other." The largest differentials appear to be for children 1-4.

The well known oral-fecal route of contamination, determined in part by the method of human waste disposal, is an important factor in the cause of diarrheal diseases. The cycle can be broken if human wastes are disposed of properly and hands are washed frequently. The lowest risks of infant and child mortality are associated with inside flush-type toilets.

Dirt floors are another indicator of high mortality rates. Garbage disposal other than city pick-up or burning is also associated with higher than usual rates. Associated with lower levels of mortality is electricity in the home, and the possession of a radio or a refrigerator.

Distance (as measured by travel time) to the health facility that the household respondent is most likely to frequent is probably an indirect measure of urban/rural status. As expected, infant and child mortality are higher for families living in households an hour or further from a facility than for households within an hour's distance.

Table IV C7 includes infant mortality rates according to several demographic characteristics of the infant and mother. As is usually the case, mortality rates are higher for males than for females. Sixty-one male infants per 1000 die before reaching the age of one compared to 47 females. The male/female differential has decreased since 1970-74.

The relationship between maternal age and infant mortality is known to usually present a U-shaped curve, with infants born to very young mothers or those of advanced age to be of greatest risk. The pattern in Honduras resembles a reverse-J relationship. Teenage mothers present the highest mortality rates for all infant age groups while infants of mothers 35 and older at the time of birth appear to be of slightly higher risk than infants of mothers 20-34. (Although mothers 40-44 are not shown in the table because of their small number of births, rates do rise as expected.) Adolescent mothers present an infant mortality rate 40 percent higher than mothers 25-29 for the most recent time period.

Mortality is expected to have a U-shaped relationship with birth order of the child since first-born children are more likely to be born to mothers who may not be biologically or economically prepared for motherhood. Also, high birth order children are more likely to be born to mothers whose reproductive systems are compromised with age. These same children are also more likely to be cared for by older siblings rather than the mother. They may also be disproportionately from lower SES families since women from higher SES families tend to have smaller families. The U-shaped pattern is evident for periods 1970-74 and 1975-79 but does not describe the most recent infant mortality estimate. Nor does it characterize child mortality.

Another important maternal characteristic is the length of the intergestational period. The recommended period between births is at least two years. Closely spaced births can cause maternal depletion resulting in premature births and/or low birth weight infants. Short intervals may interrupt breastfeeding for the earlier child, or foment competition among siblings for parental attention and care.

As expected, infants are at increased risk of dying if they were born less than 24 months following the birth of an older sibling. The infants at least risk are those whose mothers had an intergestational period of two or more years; these rates do not appear to have changed over time. Compared to these infants, infants whose mothers have never had an earlier birth (first order births) are also at elevated risk.

As Table IV C8 shows, the relationships between infant mortality and the demographic characteristics generally do not hold true for child mortality. After the first year of life, the sex differential almost disappears. By 1980-81, mother's age at birth also appears to be relatively unimportant. Nor is there a large difference in the 1-4 rate between long or short birth intervals.

Causes of Death

Cause of death was assigned by a group of four physicians who reviewed the respondents' answers to all questions in the infant mortality module. These questions related to signs and symptoms shortly before death and on the day of death, the mother's opinion as to the cause of death, and what treatment was sought or administered to the child.

As mentioned above, the causes of death vary according to the age of the child when s/he died. Most of the neonatal deaths (70.2%) are attributed to causes related to birth, prematurity, and congenital defects (Table IV C9). These same causes account for only about six percent of the deaths occurring in the postneonatal period. Infectious diseases are the principal cause of death during the postneonatal period (78.5%) and of deaths to children between the ages of one and four (75.3%).

Table IV C1

Recent IMR estimates from various sources

Epidemiology and Family Health Survey, Honduras, 1987

Source	Type of Data	Type of Estimate*	Time Period	IMR Estimate
EDENH I	CEB-CS	Indirect	1967-68	127
Census 1974	CEB-CS	Indirect	1968-70	112
EDENH I	Birth and Infant Deaths Reported in a Multiround Survey	Direct	1971-72	117
ENPA 1981	CEB-CS	Indirect	1976-78	90
EDENH-II	CEB-CS	Indirect	1978-80	85
MCH/FP 1984	CEB-CS	Indirect	1981	71
EFHS 1987	Complete birth history	Indirect	1985	61
		Direct	1985	47

CEB = Children ever born.

CS = Children surviving.

*All indirect estimates were based on the Trussell model.

Table IV C2

Infant mortality rates* for selected Central American countries

Epidemiology and Family Health Survey, Honduras, 1987

Country	IMR
Nicaragua	64
El Salvador	61
Guatemala	61
Panama	23
Costa Rica	18

*Estimates for 1986. Source: The State of the World's Children, 1988, UNICEF, p.64-65.

Table IV C3

Infant mortality rates for 1970-84, by socioeconomic characteristics

Epidemiology and Family Health Survey, Honduras, 1987

SES Characteristic	1970-74			1975-79			1980-84		
	NN	PNN	IM	NN	PNN	IM	NN	PNN	IM
Total*	32.6	43.0	74.2	26.2	33.8	59.1	27.4	27.2	53.8
<u>Residence</u>									
Teg/SPS	23.4	30.2	52.9	24.5	22.7	46.6	16.2	17.7	33.6
Other urban	22.3	59.6	80.6	19.8	28.1	47.4	29.9	32.8	61.7
Rural	37.0	43.2	78.6	27.8	37.9	64.7	30.0	28.9	58.1
<u>Health Region</u>									
1&7	38.6	40.1	77.1	20.8	30.5	50.7	31.5	25.1	55.8
2	[41.7]	[24.2]	[64.8]	21.7	35.4	56.4	26.3	28.1	53.7
3	33.5	33.9	66.2	29.6	28.0	56.8	24.2	26.8	50.4
4	[25.8]	[57.4]	[81.7]	35.6	39.7	73.9	33.3	25.0	57.5
5	33.0	76.3	105.8	26.6	45.6	71.0	23.7	30.3	53.2
6	[16.5]	[52.4]	[68.0]	22.2	46.7	67.8	38.4	37.8	74.7
Metropolitan	[35.2]	[30.0]	[64.2]	23.3	22.5	45.3	18.6	19.0	37.3
<u>Maternal Education</u>									
None	38.2	54.3	90.4	34.2	37.6	70.6	35.0	34.5	68.3
Primary 1-3	35.0	38.0	72.6	23.9	41.9	64.8	27.3	29.4	55.9
Primary 4-6	22.1	45.3	66.4	25.6	26.8	51.7	24.2	22.8	46.4
≥ 7 years	[24.2]	[18.0]	[41.8]	14.6	14.8	29.1	18.6	16.1	34.4
<u>Paternal Education</u>									
None	39.9	45.8	83.8	23.6	40.8	63.4	29.5	30.9	59.4
Primary 1-3	36.8	37.4	72.9	32.0	33.1	64.1	29.1	25.4	53.7
Primary 4-6	23.8	41.6	64.4	26.9	31.7	57.8	26.6	27.9	53.7
≥ 7 years	[22.5]	[25.9]	[47.8]	11.9	15.1	26.8	19.7	15.9	35.3

*Number of deaths per 1000 live births.

[] Based on less than 500 births.

NN = neonatal mortality rate.

PNN = postneonatal mortality rate.

IM = infant mortality rate.

Table IV C4

Child mortality rates for 1970-81, by socioeconomic characteristics

Epidemiology and Family Health Survey, Honduras, 1987

SES Characteristic	1970-74		1975-79		1980-81	
	1-4 yrs	0-5 yrs	1-4 yrs	0-5 yrs	1-4 yrs	0-5 yrs
Total*	40.5	111.7	33.3	90.5	29.5	85.9
<u>Residence</u>						
Teg/SPS	13.0	65.2	24.0	69.6	11.3	48.1
Other urban	42.9	120.1	20.8	67.2	[27.2]	[102.8]
Rural	48.0	122.8	38.3	100.5	35.0	93.5
<u>Health Region</u>						
1&7	38.7	112.9	24.8	74.2	26.8	78.0
2	47.0	108.8	33.7	88.2	[36.5]	[94.3]
3	33.5	97.5	35.5	90.3	31.0	84.8
4	37.5	116.1	23.6	95.8	[20.1]	[81.8]
5	73.9	172.8	55.9	122.9	[44.0]	[100.8]
6	53.1	117.5	43.4	108.2	[40.5]	[112.3]
Metropolitan	15.5	78.7	16.3	60.8	[5.5]	[55.2]
<u>Maternal Education</u>						
None	60.6	145.6	50.8	117.8	51.0	118.9
Primary 1-3	50.2	119.1	33.8	96.4	33.8	98.2
Primary 4-6	17.2	82.5	24.6	75.0	13.9	57.5
≥ 7 years	[2.3]	[44.0]	9.6	38.4	[5.2]	[39.9]
<u>Paternal Education</u>						
None	50.6	130.2	47.3	107.7	50.9	112.0
Primary 1-3	52.2	121.3	31.6	93.7	26.8	82.8
Primary 4-6	18.0	81.2	24.4	80.8	20.6	81.7
≥ 7 years	[0.0]	[47.8]	7.7	34.3	[8.4]	[40.8]

*Number of deaths per 1000 live births.

[] Based on less than 500 births.

Table IV C5

Infant mortality rates for 1970-84, by socioeconomic characteristics
Epidemiology and Family Health Survey, Honduras, 1987

SES Characteristic	1970-74			1975-79			1980-84		
	NN	PNN	IM	NN	PNN	IM	NN	PNN	IM
Total*	32.6	43.0	74.2	26.2	33.8	59.1	27.4	27.2	53.8
<u>Source of Water</u>									
Owns piped water	18.5	31.4	49.3	21.4	22.8	43.6	20.8	25.4	45.6
Uses public piped water	36.1	43.7	78.2	24.3	34.1	57.6	23.1	29.3	51.7
Other	35.4	47.6	81.3	30.6	38.8	68.2	33.4	25.7	58.3
<u>Human Waste Disposal</u>									
Inside toilet	20.0	24.7	44.2	22.0	23.2	44.7	21.2	25.9	46.6
Latrine	37.7	39.8	76.0	26.2	34.3	59.6	34.0	25.6	58.8
Has no facilities	34.4	55.5	88.0	28.1	38.4	65.4	25.2	28.8	53.3
<u>Flooring in Home</u>									
Dirt	36.8	50.6	85.5	28.3	40.4	67.6	29.1	30.0	58.2
Other	27.4	33.8	60.3	23.4	24.6	47.4	24.7	23.0	47.1
<u>Garbage Disposal</u>									
City pick-up	15.0	28.9	43.5	20.7	21.1	41.3	21.2	25.0	45.6
Burn	35.6	44.1	78.1	29.3	32.7	61.1	23.8	26.1	49.4
Other	37.4	46.0	81.7	25.9	37.6	62.5	30.5	28.2	57.9
<u>Electricity in Home</u>									
Yes	26.0	37.4	62.5	21.5	25.6	46.6	24.3	23.1	46.8
No	36.1	46.0	80.4	28.4	37.9	65.3	28.8	29.2	57.1
<u>Radio in Home</u>									
Yes	31.2	39.8	69.8	25.4	31.5	56.1	24.5	24.9	49.0
No	36.5	51.0	85.6	27.4	37.9	64.3	27.0	31.9	58.1
<u>Refrigerator in Home</u>									
Yes	21.1	26.6	47.1	21.7	26.4	47.5	22.1	14.8	36.6
No	35.1	46.7	80.2	27.1	35.4	61.6	28.3	29.4	56.9
<u>Distance to Health Facilities</u>									
< 1 hour	30.1	43.2	72.0	27.7	31.5	58.4	25.3	27.4	52.0
≥ 1 hour	36.6	43.6	78.6	24.2	37.3	60.6	30.5	26.2	56.0

*Number of deaths per 1000 live births.

Table IV C6

Child mortality rates for 1970-81, by socioeconomic characteristics

Epidemiology and Family Health Survey, Honduras, 1987

SES Characteristic	1970-74		1975-79		1980-81	
	1-4 yrs	0-5 yrs	1-4 yrs	0-5 yrs	1-4 yrs	0-5 yrs
Total*	40.5	111.7	33.3	90.5	29.5	85.9
<u>Source of Water</u>						
Owns piped water	15.5	64.0	10.2	53.4	15.0	57.2
Uses public piped water	39.1	114.2	37.9	93.3	24.2	81.7
Other	54.2	131.0	38.9	104.5	39.4	99.3
<u>Human Waste Disposal</u>						
Inside toilet	14.3	57.9	14.1	58.2	11.3	56.8
Latrine	36.2	109.4	42.8	99.8	25.0	85.5
Has no facilities	59.4	142.2	38.2	101.2	40.7	98.5
<u>Flooring in Home</u>						
Dirt	56.8	137.5	41.9	106.6	36.1	98.7
Other	21.6	80.6	21.6	68.0	20.3	67.1
<u>Garbage Disposal</u>						
City pick-up	14.1	57.0	16.2	56.8	9.0	49.7
Burn	32.0	107.6	31.8	90.9	23.2	83.9
Other	51.7	129.2	39.4	99.4	37.5	95.5
<u>Electricity in Home</u>						
Yes	16.7	78.1	19.8	65.5	14.6	66.3
No	53.9	130.0	40.1	102.8	36.6	95.2
<u>Radio in Home</u>						
Yes	31.3	99.0	28.4	82.9	24.7	76.3
No	61.0	141.3	41.9	103.4	27.4	86.1
<u>Refrigerator in Home</u>						
Yes	13.0	59.5	7.0	54.2	7.6	48.8
No	50.2	126.4	39.0	98.2	33.9	93.2
<u>Distance to Health Facilities</u>						
< 1 hour	36.4	105.8	29.5	86.1	24.0	81.3
≥ 1 hour	46.9	121.8	38.3	96.6	36.4	90.5

*Number of deaths per 1000 live births.

Table IV C7

Infant mortality rates for 1970-84, by demographic characteristics

Epidemiology and Family Health Survey, Honduras, 1987

Demographic Characteristics	1970-74			1975-79			1980-84		
	NN	PNN	IM	NN	PNN	IM	NN	PNN	IM
Total*	32.6	43.0	74.2	26.2	33.8	59.1	27.4	27.2	53.8
<u>Sex of Infant</u>									
Female	26.9	36.4	62.4	21.7	29.4	50.5	22.6	24.6	46.6
Male	37.7	49.1	85.0	30.4	38.1	67.3	32.0	29.8	60.8
<u>Age of Mother at Birth</u>									
< 20	47.5	67.2	111.5	41.6	54.5	93.8	43.3	35.6	77.4
20-24	28.4	35.8	63.1	23.9	29.8	53.0	24.0	26.2	49.6
25-29	26.0	33.0	58.2	24.0	30.0	53.2	19.8	27.5	46.7
30-34	[39.7]	33.1	[71.4]	15.8	19.4	34.9	27.0	21.0	47.4
35-39	na	na	na	[19.0]	[19.4]	[38.1]	[24.7]	[26.5]	[50.5]
<u>Birth Order</u>									
1	33.4	49.3	81.0	25.8	35.7	60.5	28.3	25.0	52.6
2-3	28.0	39.8	66.7	28.9	30.2	58.2	31.0	23.7	54.0
4-5	36.4	37.8	72.9	19.4	37.1	55.8	17.6	29.6	46.7
≥ 6	[42.1]	[52.2]	[92.1]	29.7	36.7	63.4	30.5	31.5	61.1
<u>Interval since Previous Birth</u>									
< 24 months	39.0	51.9	88.9	32.9	37.4	69.0	32.7	36.2	67.6
> 24 months	18.7	23.3	41.5	15.6	25.3	40.6	21.9	20.5	42.0
No previous birth	34.9	49.1	82.3	26.2	36.1	61.4	29.2	24.9	53.4

*Number of deaths per 1000 live births.

[] Based on less than 500 births.

NN = neonatal mortality rate.

PNN = postneonatal mortality rate.

IM = infant mortality rate.

na = not available.

Table IV C8

Child mortality rates for 1970-81, by demographic characteristics

Epidemiology and Family Health Survey, Honduras, 1987

Demographic Characteristics	1970-74		1975-79		1980-81	
	1-4 yrs	0-5 yrs	1-4 yrs	0-5 yrs	1-4 yrs	0-5 yrs
Total*	40.5	111.7	33.3	90.5	29.5	85.9
<u>Sex of Infant</u>						
Female	40.3	100.2	34.1	82.9	27.4	80.1
Male	40.7	122.2	32.6	97.8	31.5	91.5
<u>Age of Mother at Birth</u>						
< 20	58.6	163.6	48.1	137.5	30.9	119.6
20-24	36.0	96.8	31.7	83.1	33.4	85.3
25-29	34.9	91.0	24.3	76.2	27.6	73.7
30-34	[25.6]	[95.2]	32.7	66.5	28.2	74.1
35-39	na	na	[19.8]	[57.1]	[17.5]	[66.4]
<u>Birth Order</u>						
1	33.6	112.0	19.2	78.6	12.1	65.6
2-3	45.0	108.7	34.1	90.3	24.3	80.3
4-5	40.4	110.3	39.8	93.4	46.7	42.6
≥ 6	[43.5]	[131.6]	40.9	101.7	39.8	109.4
<u>Interval Since Previous Birth</u>						
< 24 months	49.2	133.7	38.3	104.7	33.8	103.5
> 24 months	31.1	71.4	32.2	71.5	30.1	70.6
No previous birth	33.5	113.0	19.8	80.0	12.0	66.6

*Number of deaths per 1000 live births.

[] Based on less than 500 births.

na= not available.

Table IV C9

Distribution of the causes of death for children born since 1982, by age of death

Epidemiology and Family Health Survey, Honduras, 1987

Cause of Death	Total	Age at Death			
		Neonatal	Postneonatal	Infant	1-4 years
Diarrheal diseases	21.4	2.0	39.5	19.7	30.1
Acute respiratory infections	16.2	9.6	19.8	14.4	24.7
Diarrhea and ARI	8.9	1.0	14.7	7.5	16.4
Birth-related*	14.5	31.8	1.1	17.3	0.0
Prematurity	10.3	22.2	0.6	12.0	1.4
Congenital defects	8.9	16.2	4.5	10.7	0.0
Not readily preventable diseases**	8.0	4.0	10.2	6.9	13.7
Vaccine preventable diseases***	4.2	4.0	4.5	4.3	4.1
Accidents	2.0	0.5	2.3	1.3	5.5
SIDS	1.1	1.5	0.6	1.1	1.4
Other	0.4	0.0	0.6	0.3	1.4
Unknown	4.0	7.1	1.7	4.5	1.4
Total	100.0	100.0	100.0	100.0	100.0
No. of children	(448)	(198)	(177)	(375)	(73)

*Neonatal sepsis, respiratory insufficiency, delivery complications, postmaturity, Rh incompatibility, low birthweight, umbilical infection.

**Meningitis, jaundice, sepsis, liver dysfunction, malaria, erysipelas, etc.

***Measles, tetanus, whooping cough.

D. Migration

The 1987 survey included three questions to provide information about migration, one related to residence at birth, a second to residence at age 12, and a third to determine age at the time of move to her current residence. Table IV D1 shows this information by current residence. Clearly the migratory trend is from less to more urban areas. Of the women currently living in Teg/SPS, slightly more than a third were born in Teg/SPS, a quarter came from other urban areas and about a third migrated from rural areas. About half of the women now living in other urban areas were born there, while 40.3% migrated from rural areas. There is not much movement to rural areas: 12.8% were born in urban areas but now live in rural zones. About half of the women currently living in Teg/SPS moved there since their twelfth birthday. Keeping in mind that we interviewed only women 15-44 years of age, more women moved to their current residential stratum between the ages of 15 and 19 than at any other age.

Table IV D1

Distribution of all women in their current place of residence by residence at birth and at age 12, and by age when moved to current residence

Epidemiology and Family Health Survey, Honduras, 1987

Past Residence/Age Moved	Total	Current Residence		
		Teg/SPS	Other Urban	Rural
<u>At Birth</u>				
Teg/SPS	12.4	37.6	5.7	2.5
Other urban	20.5	24.7	52.2	10.3
Rural	66.0	35.9	40.3	86.7
Other country	1.0	1.8	1.8	0.5
Total	100.0	100.0	100.0	100.0
<u>At Age 12</u>				
Teg/SPS	15.1	50.7	3.5	1.7
Other urban	18.8	19.8	61.1	7.2
Rural	65.1	27.8	33.4	90.7
Other country	1.0	1.7	2.0	0.4
Total	100.0	100.0	100.0	100.0
No. of Women	(10142)	(2724)	(1545)	(5873)
<u>Age at Move to Current Residence</u>				
0-4	11.4	8.7	13.4	12.2
5-9	10.5	9.8	13.4	10.1
10-14	16.5	20.0	18.2	14.2
15-19	31.5	35.3	28.5	30.4
20-24	15.5	14.5	11.2	17.3
> 25	14.6	11.7	15.4	15.9
Total	100.0	100.0	100.0	100.0
No. of Women	(6062)	(1749)	(936)	(3377)

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**CHAPTER V
MATERNAL AND CHILD HEALTH**

A. Prenatal, delivery and postpartum care

Introduction

This chapter contains information on health care provided during the prenatal period, at delivery and postpartum. These data which cover pregnancy through the perinatal period are essential for the evaluation of maternal and infant health services. Infant care will be discussed here, while breastfeeding and child health will be examined in separate sections.

For more than a decade, the Honduran MOH has given their Maternal and Child Health Program high priority as a vehicle for decreasing maternal and child morbidity and mortality. Health goals specific to pregnancy and perinatal care outlined by the MOH National Plan include:

- increase prenatal and postnatal care coverage to 80 percent of all women.
- identify and treat all women with high risk pregnancies.
- immunize primiparous women with two doses of tetanus toxoid, and reinforce the protection of multiparous women with an additional dose every five years.
- strengthen the care provided to women delivering at home, and improve the hospital care of women with high risk deliveries.

Strategies to attain these goals have been developed and are being implemented. High risk obstetrical training of physicians has been improved at secondary and tertiary hospitals and prenatal service provision has been expanded. The obstetrics and gynecology staff has increased in all hospitals, improving attention especially during night shifts. Traditional birth attendant (TBA) and auxiliary nurse training has been upgraded, improving the quality and accessibility of perinatal services to women who deliver at home (the majority of Honduran women). Six thousand nine hundred and forty-one (6941) TBAs have been trained and 1,708 more have been identified but have never received formal training.

The health service infrastructure has been strengthened with the inauguration of the new IHSS hospital in Tegucigalpa as well as 17 rural health centers during 1987.

Results

The 1987 survey included a module on health care provision from the prenatal through the postpartum periods. All women whose last live birth occurred between 1982 and 1987 were asked about the care they and their infants received. *

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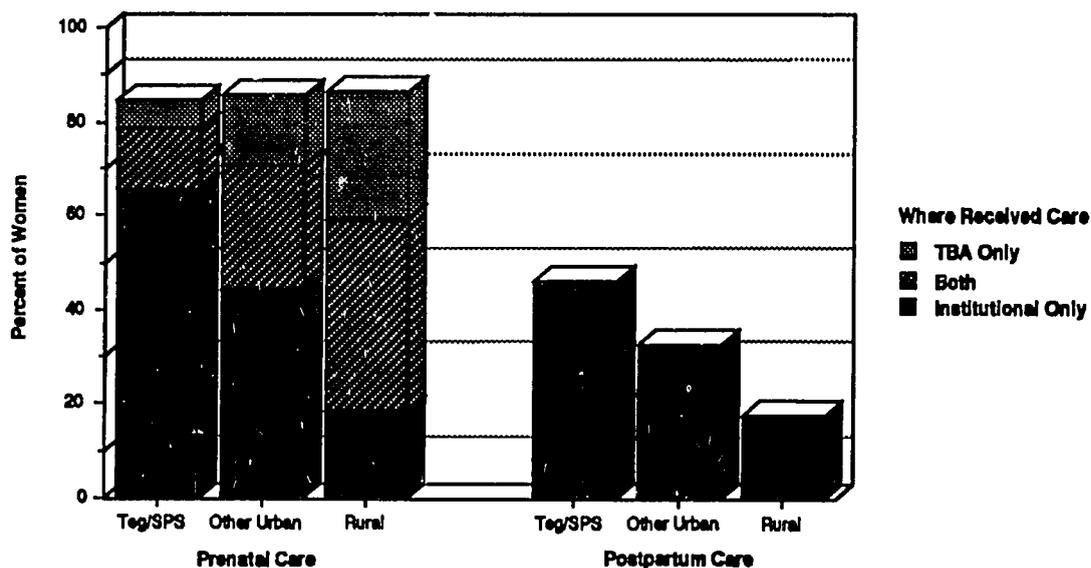
Women who consulted with a TBA at any time during pregnancy were asked about their referrals to other health care facilities. Only women who delivered with a TBA were asked about that provider's training status. Since three quarters of the women who saw a TBA during the prenatal period also delivered with a TBA, it is assumed that these TBAs are similar in training status, if not the same, as TBAs who were consulted prenatally. A TBA was classified as trained if her clients reported that she had a certificate and/or a kit, both of which are presented to the TBA upon completion of the training course. If a woman consulted with a TBA, for whatever reason, she was considered to have had prenatal attention from the TBA. Although these classifications might provide an overestimate of the percent of women receiving prenatal care from the TBA, and a crude estimate of training status, they can offer a rough assessment of the strengths and weaknesses of TBA training.

Prenatal care

Table and Figure V A1 present information on the proportion of women who received prenatal care by residence and source of care. (Postpartum care in Figure V A1 will be discussed below.) The table also includes information on the timing of the first prenatal visit. Eighty-six percent of the women report that they received some prenatal attention during their last pregnancy. This proportion is not affected by residence. Nearly two thirds (64.8%) received institutional care (one third of whom also saw a TBA), and one fifth consulted only a TBA during their pregnancy.

Figure V A1

Distribution of women whose last delivery occurred between 1982-1987 according to type of prenatal and postpartum care received, by residence



Although residence does not affect the proportion who received any prenatal care, the type of prenatal attention does vary with residence. The percentage of women who received some institutional care decreases with decreasing urbanization, from 78.6 percent in Tegucigalpa/San Pedro Sula (Teg/SPS) to 59.3 percent in rural regions, while care exclusively by TBAs increases progressively from 6.0 percent in Teg/SPS to 27.2 percent in rural areas. These regional variations are similar to those found in the 1984 MCH/FP Survey except that a greater proportion of rural women than in 1984 are obtaining prenatal care from both the TBAs and institutions (40.7% currently vs. 34.0% previously), and a smaller proportion report institutional care alone (18.6% vs. 25.1%). The proportion who received prenatal care from a TBA alone increased from 24.0 percent in 1984 to 27.2 percent in 1987. Factors that might have contributed to this shift were not examined.

The MOH provides nearly three-quarters (72.0%) of all institutional prenatal care, including that offered at hospitals, CESAMOs and CESARs. This represents an increase from 66.5 percent in the 1984 survey. Private and social security (IHSS) facilities serve the remaining prenatal clients.

In rural areas, in particular, the MOH remains the predominant source of care with nearly nine out of ten (86.7%) pregnant women obtaining care from those facilities. Less than half of the women in Teg/SPS (42.6%) report MOH facilities as their source of prenatal care. The IHSS hospitals and the private sector serve the same proportions of the prenatal population in those cities. In other urban areas, the CESAMO and the private clinicians provide most of the care.

Of the women who seek institutional prenatal care, 59.0 percent make their first visit during their first trimester of pregnancy, unchanged from 1984 data. Percentages range from 49.8 percent in rural areas to 76.3 percent in Teg/SPS. Ninety-two percent of all the women who seek prenatal care do so by the end of their second trimester.

Women who obtain prenatal care at a social security or private hospital are the most likely to initiate care during their first trimester (Table V A2). Prenatal clients in rural health centers are the least likely to seek care during those first months of pregnancy. IHSS clients averaged a high of seven prenatal visits during the last pregnancy, while women who attend rural health centers reported the fewest number of visits (four). This difference is probably due to the high proportion of women at the social security hospital who seek prenatal care during their first trimester. Some variation can be attributed to urbanization, as the number of prenatal visits increases with access and socioeconomic status. Nevertheless, as all hospitals are situated in urban centers, it is evident that the sooner prenatal care begins the more visits a woman makes. If, in fact, more prenatal visits mean more prenatal education, more clinical screening, monitoring and more appropriate referrals, then earlier care should imply better care. Information on the content of prenatal visits will be gathered in a follow-up survey.

Table V A3 presents information on the type of prenatal care received by the place of delivery. Women who had home births without a TBA were most likely to have received no prenatal attention, followed by women who delivered at

an MOH hospital (36.5% and 19.1% respectively). Surprising perhaps is the high proportion of women with unattended home births who have had institutional (20.3%) and/or TBA care (43.2%) during pregnancy. Of the women who gave birth at home with a TBA more than half (56.3%) received some prenatal attention at a health care facility. As expected, nearly all women who delivered at a social security or private facility received some clinical prenatal care.

Most of the women (84.8%) who attend medical facilities are seeking routine prenatal attention (Table V A4). The remainder initiate care due to prenatal problems. Motivation for obtaining routine prenatal care is not strongly affected by urbanization.

All women were asked about prenatal problems during their last pregnancy. This information was not confirmed by clinical records, yet when examined with prenatal care data, quality and adequacy of care can be estimated. Four fifths of all women report normal pregnancies (Table V A5). This proportion does not vary markedly across regions.

Information on the type of prenatal care, if any obtained, the presence of prenatal problems during last pregnancy and residence is presented in Table V A6. Of the women who reported prenatal problems, 92.4 percent received some prenatal attention, and 79.8 percent had medical care (exclusively institutional or in addition to TBA care). In contrast, 84.4 percent of the women reporting no prenatal complications received some prenatal care and just 61.1 percent of these women received some care at a medical center. In all regions, women without problems are approximately twice as likely to receive no prenatal attention as women with prenatal difficulties (15.3% vs. 7.6%).

The timing and number of institutional prenatal visits among women who have routine and difficult pregnancies is examined in Table V A7. Women reporting prenatal problems initiate prenatal care slightly earlier than women without problems (61.4% vs. 58.3% during the first trimester). Nevertheless, more than nine out of 10 of each group obtain care by the end of the second trimester. Furthermore, the average number of prenatal visits is virtually the same (5 visits) among women reporting problems as those reporting none.

MOH guidelines recommend that TBAs refer all prenatal clients for an initial clinical assessment, and that they provide two additional visits before delivery (Guia, 1983). In addition, the TBA is expected to refer any potentially high risk pregnancy, including any woman who experiences a high risk problem, who is less than 17 or more than 35 years of age, or has had at least six previous deliveries.

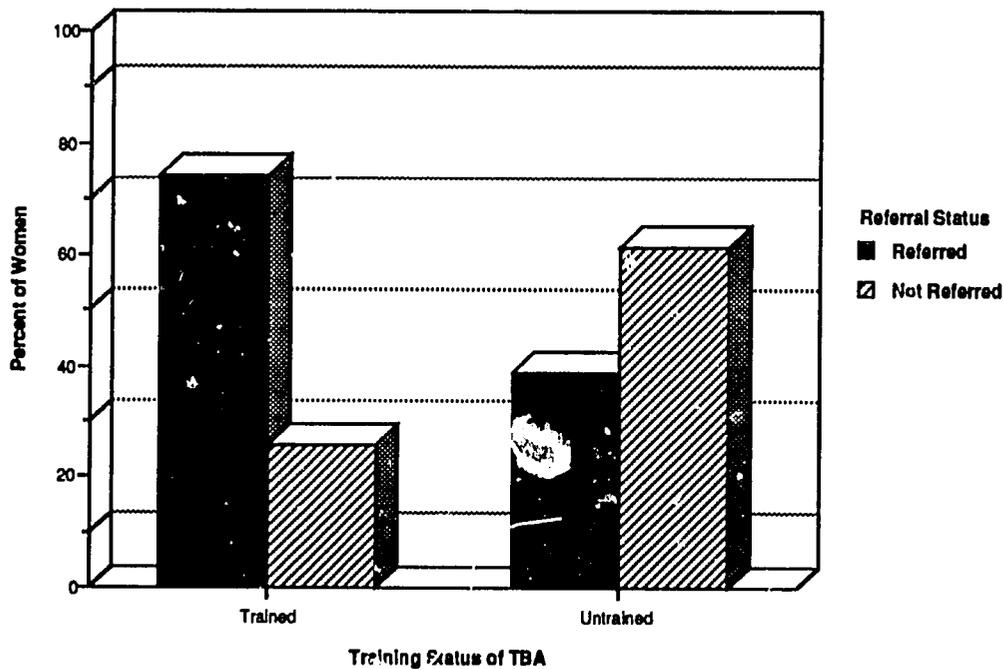
The distribution of women referred by a TBA is examined in light of prenatal problems, age and parity in Table V A8. High risk factors are highlighted to indicate conditions which should prompt TBA referrals. No causal inferences can be made since information on the timing and reason for referral is not available; i.e. if the condition preceded referral or if it was diagnosed after referral. With this caveat in mind, seventy percent of the women who report prenatal complications are referred by the TBA for medical attention. Women 36 years old or more, or have had at least 6

previous deliveries are equally as likely (70%) to have been referred by the TBA for clinical assessment. Referrals among young teenage mothers are not notably greater than those among lower risk women, e.g., those 18-35 years of age. In sum, 64.9 percent of all TBA prenatal clients are referred for additional medical attention and about 70 percent of the older multiparous women or those who report prenatal complications are referred.

The differences in the referral patterns between TBAs trained by the MOH and those who have not attended the MOH course are striking. Although trained and untrained TBAs have the same proportion of prenatal clients with problems (data not shown), 74.2 percent of the women attended by a trained TBA are referred to a health center, while only 38.8 percent of the women who see an untrained TBA are referred (Table V A9 and Figure V A2). This indicates that, indeed, TBAs who take the MOH training course are more aware of the need to refer clients and the advantage of utilizing clinical facilities, as well as being an active link in the health care chain. In addition, these data suggest that the TBA training should continue emphasizing the assessment and significance of high risk prenatal problems and the need to refer. Training should stress the importance of an initial institutional prenatal screening visit for all TBA clients.

Figure V A2

Distribution of women whose LLB occurred between 1982-1987 and who consulted a TBA during that last pregnancy according to referral status and TBA training status



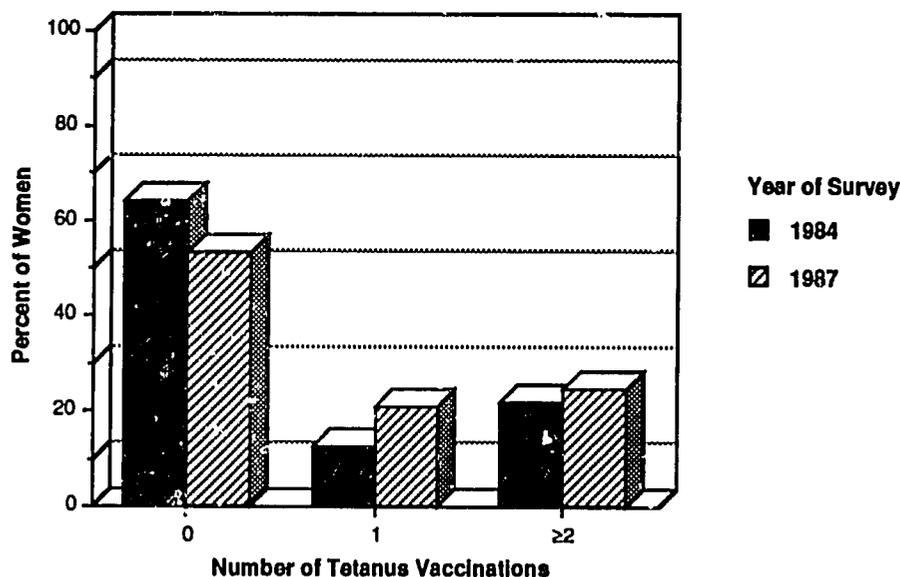
Finally, of all the women referred by a TBA (n=1976), two thirds (67.4%) actually go to an institution for prenatal attention, compared with half (49%.0) of the women who are not referred (data not shown). Given the cost (time, energy, monetary) of obtaining medical care, this degree of participation on the part of pregnant women is notable.

Tetanus toxoid (TT) vaccination

Although many countries are trying to improve tetanus toxoid coverage for pregnant women, few have done so successfully. Table V A10 provides information on the tetanus immunization coverage of women whose last live birth occurred between 1982 and 1987. Approximately half (53.1%) of the women report that they have not been vaccinated against tetanus during their last pregnancy; one fifth (21.1%) report receiving a single dose, and one fourth (24.6%) receive two or more doses. This indicates a marked improvement since the 1984 data were collected, when two thirds of the women reported that they had not been immunized during their last pregnancy (Figure V A3). The current proportions of women with at least one dose are similar in smaller urban and rural areas (47%), revealing a notable improvement in the protection of women in those areas since 1984. Furthermore, although coverage (with at least one dose) in Teg/SPS remains the lowest, it increased dramatically from 27.5 percent in 1984 to 40.7 percent in 1987.

Figure V A3

Percentage of tetanus immunization coverage, 1984 and 1987 Honduras surveys



Primigravidas continue to benefit from the MOH norms that recommend they receive two doses. Just under half (46.1%) report no immunizations, compared with nearly two thirds unprotected in 1984; and 30.0 percent receive two or more immunizations compared with 24.2 percent in 1984. Multiparous women are also more adequately protected in recent years than during the previous survey, although it appears that they are less adequately covered than primiparas.

Data collected during this survey does not include the interval between previous TT doses. Women who received no immunization during their last pregnancy may have received prior tetanus vaccinations as children, during other medical visits or during a prior pregnancy, rendering them fully protected if they are within the 10 year protective interval. Therefore, our estimate of coverage is conservative; a higher percentage probably has full coverage.

One third of the women who obtain institutional prenatal care receive at least two immunizations, while only one in ten women who consult only a TBA, or who obtain no prenatal care receive two or more doses. Although the latter groups are the least protected, these data demonstrate a threefold increase in their tetanus protection since 1984.

Women who receive prenatal attention at MOH facilities are the best protected, with between 30.0 and 39.1 percent reporting two or more doses of the tetanus vaccine, or between 54.9 and 65.9 percent reporting at least one vaccination. In fact, the greatest proportion of immunized prenatal clients are among women who attend CESAMOs and CESARs, e.g., two thirds of the prenatal population. Women who seek care at the social security or private facilities are twice as likely in 1987 to receive at least one immunization as in 1984. Despite the relatively poor coverage among these prenatal clients, this represents a notable increase in the awareness and activity of tetanus immunization in those sectors. Fortunately, these women are at the lowest risk of perinatal exposure to tetanus as they are the most likely to deliver at institutions where aseptic technique is practiced. Of the women who see only a TBA, or have no prenatal care, approximately three fourths have not been immunized during their last pregnancy.

The MOH recommends sequential tetanus immunizations in the fifth and seventh month of pregnancy. As in the 1984 survey, however, women who obtain early prenatal care are not more likely to receive tetanus inoculation than those who receive attention later in their pregnancies.

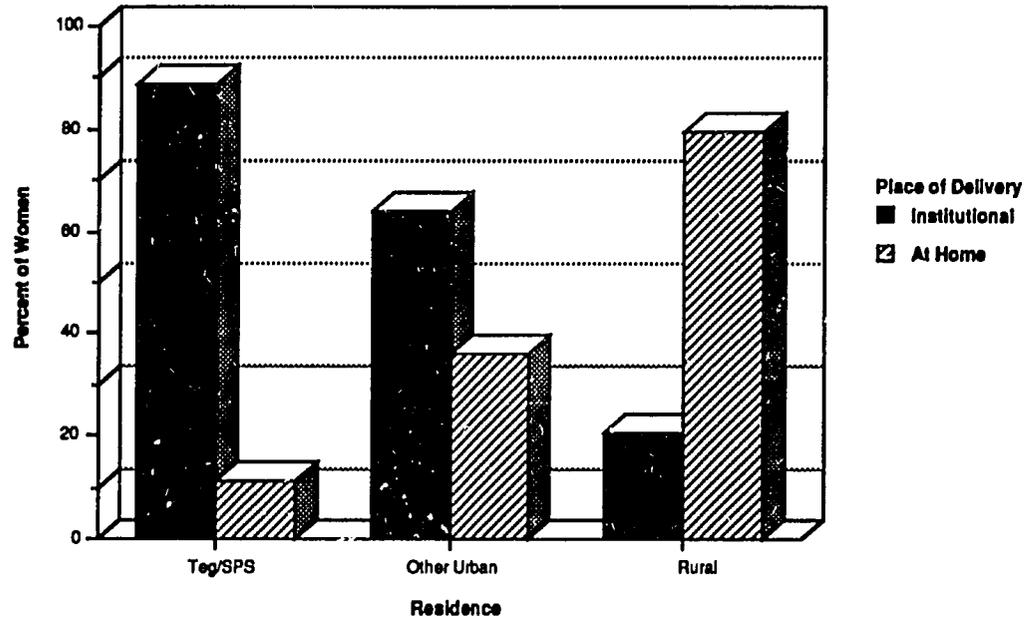
Women who deliver at clinics or hospitals are equally as likely to be protected against tetanus as women who give birth at home. Women who deliver at home, especially rural women, have the greatest need for TT and should continue to be a target for increased coverage. The fact that tetanus protection was greater among women who delivered at home than women who only saw a TBA during pregnancy or than those who had no prenatal care, probably indicates that they received some institutional prenatal care.

Delivery care

Table V A11 and Figure V A4 describe the place of last delivery by residence. Sixty percent of the births occur at home, roughly the same as in 1984. Home births account for 11.0 percent of all deliveries in Teg/SPS, 36.1 percent in other urban areas and 79.3 percent in rural regions. TBAs attend 48.3 percent of all deliveries, two thirds of all rural births, and four fifths of all home births. Approximately 10 percent of all births are not attended by a health worker.

Figure V A4

Distribution of women whose last delivery occurred between 1982-1987 according to place of delivery, by residence



Institutional deliveries comprise 40.5 percent of all births, with MOH facilities (primarily the hospitals) accounting for 68.0 percent of all institutional births (or 27.5 percent of all deliveries). Births at the IHSS hospitals account for only 7.1 percent of all deliveries, but 30.0 percent of those in Teg/SPS, where the hospitals are located. Deliveries at private hospitals represent 5.7 percent of all births, most of them in smaller urban areas and Teg/SPS. Across all regional groups, MOH facilities are the most important source of delivery care. In other urban areas, the private hospitals are the only other source of care, while in rural areas, institutional births occur almost exclusively at MOH hospitals.

To determine the impact of education on place of delivery, it is useful to control for residence, since women who live in more urbanized areas have higher levels of education than do those who live in rural areas. Table V A12 provides information on place of delivery by education and residence. Educational status was divided between three and four years of schooling since the level of functional literacy does not change markedly until after three years of education. More than three fourths (77.8%) of the women with three or less years of education deliver at home, while approximately three fifths (61.4%) of those women with at least four years of schooling have had their babies in a health care facility.

Although controlling for residence reduces the impact of education on place of delivery, it does not eliminate it. More than twice as many women with little formal education (compared with more educated women) deliver at home in Teg/SPS (21.5% vs. 7.8%) and in smaller urban areas (54.3% vs. 24.9%). With greater availability and accessibility of health care facilities in more urban centers, urban residence itself appears to "educate" women, increasing their awareness, ability to afford, number of options and utilization of delivery care, even among the least educated.

Educational status, perhaps as a proxy for economic status, appears to influence a woman's choice of institution for her delivery. In Teg/SPS, six out of ten (61.3%) women with less than four years of schooling deliver at the MOH hospital, with most of the remainder delivering at the IHSS hospital. In the same area, among women with more education, fewer than half (44.0%) deliver at the MOH hospital, one third at the social security hospital and 13 percent at private facilities.

More than half of the women living in other urban areas with less education deliver at home (54.3%) while the remainder deliver at MOH hospitals. In contrast, only one fourth of the better educated women have home births; more than half go mainly to MOH hospitals, and the rest attend private medical centers. In rural regions, the vast majority of women with little education (86.8%), and two thirds of the more educated women have home births, while the remainder give birth primarily at MOH facilities.

Compared with 1984 data, women in urban areas, who deliver at an institution, regardless of their educational levels, increasingly utilize the MOH facilities. In rural areas, the proportion of women using an institution has not changed. The new IHSS hospital in Teg/SPS that exclusively provides maternal-child care was inaugurated in 1987. Slight increases in utilization of that facility are seen among better educated women living in the major cities.

Education is correlated with economic status. More educated women in all regions are better able to afford private care, and are insured individually or under their spouses' coverage with the social security system. Utilization of these facilities in all urban centers is significantly greater among more educated women. This is not evident in rural areas probably because the MOH hospital is the only institutional option.

Table V A13 presents cesarean delivery rates by personal characteristics and prenatal care factors as reported by the women who delivered in a health care facility between 1982 and 1987. The overall cesarean delivery rate is 13.9 percent, up from that of the previous survey (10.7%), but still within the range considered justifiable by PAHO/WHO (10-15%) (Interregional Conference, 1985). Rates are similar across residence. The largest increase in the rate of surgical deliveries occurred in rural areas: from 8.7 percent in 1984 to 13.8 percent in this survey.

Women with the most education exhibit the highest C-section rate (17.6%). Women of all the remaining educational levels are similar with rates of about 12 percent. Marked increases from the 1984 data occurred among women who completed primary school (from 7.4% to 12.0%), and who had up to three years of schooling (from 9.0 to 12.0%). The rate among women with no formal

schooling, which was relatively high in the 1984 survey (11.3%), has remained unchanged. That the cesarean rate seems to increase with education probably reflects the different demands of the patients as well as the facilities at which they deliver.

The proportion of cesarean deliveries has increased in all institutions since the 1984 survey. Private and social security hospitals continue to display the highest rate (17.0%). In MOH hospitals, where more high risk women are attended, the rate of cesarean deliveries increased from 9.9 percent in 1984 to 12.8 percent in 1987. This difference may reflect the socioeconomic status of the patient population at each institution as well as the surgical criteria and practices of the professional staff and the facility itself.

Women who report having no prenatal care also report the lowest rate of cesarean births (8.9%), followed by women who initiate prenatal care during their second trimester (11.4%). Women who seek antenatal care during their first trimester are the most likely to have a cesarean delivery (15.7%). This, again, may be a reflection of the socioeconomic status of those prenatal clients and their parity as well as place of their delivery.

Parity appears inversely related to the rate of cesarean delivery. Primagravidas and women with one previous delivery demonstrate the highest C-section rate (20.2%). This represents a marked increase since 1984 (from 15.0%). Naturally, women with histories of surgical deliveries are less likely to have many children, and women with multiple deliveries are less likely to need a cesarean section. Similarly there appears to be a slight negative association of maternal age with the rate of C-section: the youngest women are the most likely to deliver surgically (14.6%) and women over 34 years of age the least likely (10.8%).

The proportion of women who undergo cesarean sections remains unchanged (about 14%) from the time period of 1982-1984 to the 1985-1987 period based on 1987 data. Future studies should examine the relationship of cesarean rates with obstetric training and trends, prenatal/perinatal complications and infrastructure resources, both human and material.

Traditional birth attendants

As seen in Table V A11 above, nearly half of all the women whose last live birth occurred between 1982 and 1987 delivered at home with a traditional birth attendant (TBA). Table V A14 displays the distribution of those women attended by TBAs at home, by TBA training status and residence. Training status is defined by the clients' reports: their awareness that the TBA possessed a certificate of training, and/or the kit which is presented upon completion of the training course. The majority of women attended by TBAs live in rural regions (2405 of 2711 or 89.0%) where four out of five (80.0%) TBAs were trained. In all urban regions, where women employ TBAs less, almost nine out of ten (88%) TBAs possess a certificate or kit. These proportions demonstrate the tremendous effort of the MOH to integrate the traditional providers into the formal health care system.

Table V A15 shows the utilization of injections by TBAs to induce labor. Training guidelines discourage TBAs from using injections to induce labor. Most TBAs do not employ such medications during deliveries; however, according to clients' reports, trained TBAs are more likely to have injected their clients than untrained TBAs (11.4% vs. 2.0%).

This pattern varies significantly by region. In rural areas, where institutional assistance is not easily accessible, 7.6 percent of the women are induced. In the more urban areas, TBAs have greater access to pharmaceutical supplies as well as to medical facilities should any negative consequences of an induction occur. It is not surprising, therefore, that in small urban areas almost one fourth, and in Teg/SPS nearly one third of the women attended by TBAs receive an injection. In all regions, virtually all of the women (96.1%) who were induced claim that their TBA was trained. (Data not shown in table)

Table V A16 presents information on the type and amount of compensation given to the TBA by TBA training status. Women attended by trained TBAs are more likely to have reported monetary compensation, with only 11.3 percent reporting no payment at all. In comparison, a full one fourth of those attended by untrained TBAs offer no payment of any kind. Trained TBAs average 19 lempiras (US\$ 9.50) while untrained TBAs are paid an average of 13 lempiras (US\$ 6.50). This difference should not represent a significant obstacle to women seeking delivery care. Women were not asked to qualify the extent of those services: length or difficulty of labor, delivery and newborn care, time of day or night, etc. These factors may affect TBA charges. However, this would probably be true regardless of TBA training status.

Postpartum care

One fourth (25.7%) of the women whose last live birth occurred between 1982 and 1987 received postpartum care (Table V A17 and Figure V A1), indicating no improvement since the 1984 survey. A postpartum visit had to have occurred within three months following the birth. Since the MOH postpartum criteria limits this period to 6 weeks, data here overestimate the proportion of women who sought postpartum care within the conventional period. Three quarters of the women who sought such care, went for a routine check-up, while the remainder returned due to an illness. (Data not shown) Fewer than half (46.4%) of the women in Teg/SPS, one third (32.8%) in other urban areas, and fewer than one in five (17.8%) rural women obtain a postpartum check-up. The MOH facilities provide postnatal services to most (58.9%) of the women who seek attention, with the CESAMO providing the most coverage. The private sector provides care to one fourth (26.1%) of the women who receive check-ups.

In Teg/SPS, private facilities and the IHSS hospital provide 61.8 percent of the postpartum visits. In smaller urban centers, fewer than half (40.8%) of the women receive check-ups in the private sector and half (55.4%) at MOH facilities. More than three fourths (79.2%) of the rural women receive postpartum care at MOH facilities.

Table V A18 presents the proportion of women who receive postpartum care by the place and type of their last delivery. Forty-one percent of the women who gave birth at a health care facility have a postpartum visit. Women who deliver at private and social security hospitals are the most likely to receive postpartum care (55.7% and 60.6%, respectively). Those who give birth at home, with a TBA or alone, are the least likely to have a postpartum check-up. Only one third of the women who deliver at the MOH hospital receive postpartum attention. Of the women who have cesarean sections, only half return for postpartum care, while 39.5 percent of those who have vaginal deliveries in health care facilities receive such attention.

At the very least, with the increasing rate of cesarean deliveries, this indicates a significant unmet need. As noted in the 1984 survey, it appears that the "cost" (time, money, effort, and other constraints) of seeking postpartum medical attention when one is feeling relatively well outweighs the perceived need of such care. Moreover, women who are unaccustomed to preventive care or to surgery may not understand the value of postnatal and/or postoperative attention. With two thirds of the women having received prenatal care at a health care facility, and forty-one percent having an institutional delivery, there is ample opportunity to stress the importance of postpartum care for the health and well-being of mother and child to a large proportion of women. Furthermore, TBAs as prenatal providers and birth attendants can and should encourage their clients to obtain postpartum check-ups.

Check-up for the newborn

Information on the first health care visit for the newborn is presented in Table V A19, including where and at what age it took place. An average of eight out of 10 women bring their newborns for check-ups, ranging from 90.4 percent of the mothers living in Teg/SPS to 77.8 percent of those in rural areas. The MOH system provides newborn care to more than three fourths of the women interviewed. It serves nearly all of the infants in the rural areas (90.0%), and three fourths in small urban centers where, essentially, the private sector serves the rest. In Teg/SPS, the MOH provides approximately half (47.1%) of the newborn care, with the remainder provided by social security or private facilities.

The majority (82.0%) of newborns have their first check-up by three months of age. Mothers in Teg/SPS are the most likely to bring in their infants within the first month, while rural women delay the newborn's first visit the longest. United Nations agencies recommend a first well-baby visit as soon as possible after birth for tuberculosis immunization (BCG), and again to begin the vaccination series (DPT, polio) at six weeks of age (UNICEF, 1989).

Two thirds of the women take their infant for a preventative, well-baby visit first (Table V A20). In rural and small urban areas, less than half of visits for newborns under one month of age, are for routine purposes. In contrast, well-baby care visits in Teg/SPS (for those less than one month of age) account for 62.3 percent of the visits; this reflects better health and hygiene as well as greater utilization of the medical system in the major metropolitan areas.

Table V A1

Distribution of women whose last delivery occurred between 1982-1987
according to prenatal care information, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Prenatal Care	Total	Residence		
		Teg/SPS	Other Urban	Rural
<u>Received Prenatal Care and With Whom</u>				
Institutional only	31.7	65.8	44.1	18.6
TBA only	21.3	6.0	15.0	27.2
Both	33.1	12.8	26.8	40.7
None	13.8	15.0	13.7	13.4
Unknown	0.2	0.3	0.4	0.1
Total	100.0	100.0	100.0	100.0
No. of Women	(5624)	(1170)	(732)	(3722)
<u>Source of Institutional Care</u>				
MOH hospital	6.9	5.2	15.9	5.5
CESAMO	37.6	36.0	38.9	38.0
CESAR	27.5	1.4	6.9	43.2
IHSS hospital	8.3	28.4	1.9	1.5
Private hospital, clinic, MD	18.4	28.1	33.3	10.8
Other	1.0	0.5	2.7	0.9
Unknown	0.2	0.3	0.4	0.1
Total	100.0	100.0	100.0	100.0
No. of Women	(3653)	(924)	(522)	(2207)
<u>Month of Pregnancy at First Institutional Visit</u>				
< 3 months	59.0	76.3	67.2	49.8
4-6 months	32.5	19.8	27.4	39.0
7-9 months	6.6	2.5	2.9	9.2
Unknown	1.9	1.4	2.5	2.0
Total	100.0	100.0	100.0	100.0
No. of Women	(3652)	(924)	(521)	(2207)

Table V A2

Distribution of women whose last delivery occurred between 1982-1987 according to the month of pregnancy of first institutional prenatal visit and average number of visits, by source of care

Epidemiology and Family Health Survey, Honduras, 1987

Month of Pregnancy	Total	MOH Hospital	CESAMO	CESAR	IHSS Hospital	Private Hospital	Other	Mean No. of Visits
< 3 months	59.0	61.0	55.9	44.2	82.3	75.1	60.5	6.0
4-6 months	32.5	26.9	35.4	44.4	15.4	18.6	28.9	3.6
7-9 months	6.6	7.5	6.8	9.8	1.6	3.3	10.5	1.9
Unknown	1.9	1.6	1.9	1.7	0.7	3.0	0.0	3.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Mean Number of Visits	4.9	4.7	4.6	3.9	7.0	6.3	5.3	
No. of Women	(3644)	(253)	(1374)	(1003)	(305)	(671)	(38)	

Table V A3

Distribution of women whose last delivery occurred between 1982-1987
according to type of prenatal care received, by place of delivery

Epidemiology and Family Health Survey, Honduras, 1987

Place of Delivery	Type of Prenatal Care				Doesn't Know	Total	No. of Women
	Institution Only	TBA Only	Both	None			
At Home							
With TBA	8.1	34.4	48.2	9.2	0.1	100.0	(2712)
Without TBA	20.3	23.1	20.1	36.5	0.0	100.0	(542)
Home w/ MD, Nurse	60.0	8.2	27.1	4.7	0.0	100.0	(85)
Institutional							
MOH hospital	53.4	7.5	20.0	19.1	0.0	100.0	(1525)
CESAMO, CESAR	56.5	8.7	34.8	0.0	0.0	100.0	(23)
IHSS hospital	83.8	0.2	11.5	4.0	0.5	100.0	(401)
Private hospital	73.6	3.0	17.8	5.6	0.0	100.0	(303)
Other	62.5	9.4	15.6	12.5	0.0	100.0	(32)
Total	31.8	21.2	33.0	13.9	0.1	100.0	(5623)

Table V A4

Distribution of women whose last delivery occurred between 1982-1987 who received institutional prenatal care according to reasons for seeking care, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Reason Sought Institutional Prenatal Care	Total	Residence		
		Teg/SPS	Other Urban	Rural
Routine care	84.8	87.2	84.7	83.9
Prenatal problem	15.2	12.8	15.3	16.1
Total	100.0	100.0	100.0	100.0
No. of Women	(3652)	(924)	(522)	(2207)

Table V A5

Distribution of women whose last delivery occurred between 1982-1987
according to presence of prenatal problems, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Presence of Prenatal Problem	Total	Residence		
		Teg/SPS	Other Urban	Rural
Yes	19.5	19.9	22.4	18.8
No	80.5	80.1	77.6	81.2
Total	100.0	100.0	100.0	100.0
No. of Women	(5624)	(1170)	(732)	(3722)

Table V A6

Distribution of women whose last delivery occurred between 1982-1987 according to presence of prenatal problem and residence, by type of prenatal care

Epidemiology and Family Health Survey, Honduras, 1987

Residence	Prenatal Care					Total	No. Wome
	Inst.	TBA	Both	None	Unknown		
<u>Total</u>							
Yes, had problem	37.2	12.6	42.6	7.6	0.0	100.0	(109
No problem	30.4	23.3	30.7	15.3	0.2	100.0	(452
<u>Teg/SPS</u>							
Yes, had a problem	72.1	3.0	17.2	7.7	0.0	100.0	(23
No problem	64.2	6.7	11.7	16.9	0.4	100.0	(93
<u>Other urban</u>							
Yes, had a problem	48.8	11.6	31.7	7.9	0.0	100.0	(16
No problem	42.8	16.0	25.4	15.3	0.5	100.0	(56
<u>Rural</u>							
Yes, had a problem	22.9	16.0	53.6	7.4	0.0	100.0	(69
No problem	17.6	29.8	37.6	14.8	0.2	100.0	(302

Table V 17

Distribution of women whose last delivery occurred between 1982-1987
according to presence of prenatal problem, by month of first
institutional prenatal visit and mean number visits

Epidemiology and Family Health Survey, Honduras, 1987

Month of Pregnancy at Time of First Institutional Prenatal Visit	Prenatal Problem	
	Yes	No
< 3 months	51.4	58.3
4-6 months	29.6	33.4
7-9 months	7.1	6.4
Unknown	1.9	1.9
Total	100.0	100.0
Mean number of visits	5.0	4.9
No. of Women	(875)	(2777)

Table V A8

Percentage of women whose last delivery occurred between 1982-1987
who consulted a TBA according to prenatal problem
and high risk characteristics, by referral

Epidemiology and Family Health Survey, Honduras, 1987

Prenatal Characteristics	% Referred by TBA	No. of Women
<u>Prenatal Problem</u> ¹		
Stomach and abdominal pain	72.5	(120)
Bleeding*	60.2	(93)
Blood pressure/Edema*	72.4	(58)
Malpresentation	78.8	(33)
Vomiting* ²	71.1	(38)
Headache/dizziness*	76.1	(46)
Genitourinary disorder*	78.1	(32)
Anemia	76.0	(25)
Poorly defined symptoms	71.0	(62)
Other	62.6	(91)
Total	69.9	(598)
<u>Age</u> ³		
< 17 years old*	65.1	(215)
18-35 years old	63.9	(2375)
> 36 years old*	69.8	(451)
Total	64.8	(3041)
<u>Parity</u>		
< 5	63.3	(2342)
≥ 6*	70.2	(702)
Total	64.9	(3044)

¹Only women who reported prenatal problems are included.

²Persistent vomiting is a high risk condition; respondents did not qualify or quantify the extent of their vomiting.

³All women are included regardless of prenatal problems.

*High risk signs or symptoms that, if present, TBA is instructed to refer.

Table V A9

Distribution of women whose last delivery occurred between 1982-1987 and who consulted a TBA according to referral to other health facility for prenatal attention, by TBA training status

Epidemiology and Family Health Survey, Honduras, 1987

Referral Status	Total	Training Status	
		Trained	Untrained
Referred Client to Health Center	67.8	74.2	38.8
Did not refer	32.2	25.8	61.3
Total	100.0	100.0	100.1
No. of Women	(2237)	(1831)	(400)

Table V A10

Distribution of women whose last delivery occurred between 1982-1987 according to tetanus vaccination, by residence, first live birth, prenatal care, month of first prenatal visit and place of delivery

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	Tetanus Vaccination			Unknown	Total	No. of Women
	Number of Doses					
	0	1	2 or more			
Total	53.1	21.1	24.6	1.2	100.0	(5624)
<u>Residence</u>						
Teg/SPS	57.0	20.5	20.2	2.3	100.0	(1170)
Other urban	52.2	21.6	25.0	1.2	100.0	(732)
Rural	52.1	21.2	25.9	0.8	100.0	(3722)
<u>First Live Birth</u>						
Yes	46.1	23.6	30.0	0.4	100.0	(1053)
No	54.8	20.6	23.3	1.3	100.0	(4571)
<u>Received Prenatal Care and Where</u>						
Institutional	41.1	25.3	32.1	1.5	100.0	(3645)
MOH hospital	42.7	24.9	30.0	2.4	100.0	(253)
CESAMO	34.0	27.5	37.8	0.7	100.0	(1374)
CESAR	33.5	26.8	39.1	0.6	100.0	(1003)
IHSS hospital	49.5	26.6	19.0	4.9	100.0	(305)
Private hospital, clinic, physician	62.5	18.0	17.0	2.5	100.0	(672)
Other	44.7	23.7	31.6	0.0	100.0	(38)
TBA only	74.9	13.7	10.7	0.8	100.0	(1193)
None	76.3	13.1	10.4	0.1	100.0	(776)
Unknown	50.0	16.7	16.7	16.7	100.0	(12)
<u>Month of First Institutional Prenatal Visit</u>						
1-3 months	42.2	24.1	31.6	2.1	100.0	(2155)
4-6 months	38.3	26.1	35.2	0.4	100.0	(1186)
7-9 months	44.0	30.7	24.5	0.8	100.0	(241)
Unknown	47.1	28.6	20.0	4.3	100.0	(70)
<u>Place of Delivery</u>						
Institutional	52.3	21.5	24.3	1.8	100.0	(2278)
At home	53.7	20.9	24.7	0.7	100.0	(3345)

Table V All

Distribution of women whose last delivery occurred between 1982-1987
according to place of delivery, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Place of Delivery	Total	Residence		
		Teg/SPS	Other Urban	Rural
At Home	59.5	11.0	36.1	79.3
With TBA	48.3	8.1	29.0	64.7
Without TBA	9.7	1.5	4.8	13.1
Home w/MD, Nurse	1.6	1.4	2.3	1.5
Institutional	40.5	89.0	63.9	20.7
MOH hospital	27.1	48.0	48.8	16.3
CESAMO, CESAR	0.4	0.3	1.4	0.3
IHSS hospital	7.1	30.0	1.6	1.0
Private hospital	5.7	10.7	12.0	3.0
Other	0.1	0.0	0.1	0.1
Total	100.0	100.0	100.0	100.0
No. of Women	(5623)	(1170)	(732)	(3721)

Table V A12

Distribution of women whose last delivery occurred between 1982-1987 according to place of delivery, by education and controlling for residence

Epidemiology and Family Health Survey, Honduras, 1987

Place of Delivery	Total Education		Teg/SPS Education		Residence Other Urban Education		Rural Education	
	≤ 3	≥ 4	≤ 3	≥ 4	≤ 3	≥ 4	≤ 3	≥ 4
	At Home	77.8	38.6	21.5	7.8	54.3	24.9	86.8
With TBA	62.2	32.4	15.7	5.8	43.5	20.0	69.5	55.5
Without TBA	14.9	3.7	5.1	0.4	9.7	1.8	16.5	6.8
Home w/MD, Nurse	0.8	2.5	0.7	1.6	1.1	3.1	0.7	2.9
Institutional	22.2	61.4	78.5	92.2	45.7	75.1	13.2	34.9
MOH hospital	18.9	36.5	61.3	44.0	42.8	52.4	11.4	25.6
CESAMO, CESAR	0.3	0.5	0.0	0.3	1.4	1.3	0.2	0.3
IHSS hospital	1.6	13.4	14.6	34.7	0.0	2.6	0.4	2.3
Private hospital	1.2	10.9	2.6	13.2	1.4	18.5	1.1	6.6
Other	0.1	0.1	0.0	0.0	0.0	0.2	0.1	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(2995)	(2624)	(274)	(896)	(278)	(454)	(2443)	(1274)

Table V A13

Distribution of women whose last delivery occurred institutionally between 1982-1987 according to type of delivery, by residence, education, place of delivery, prenatal care, parity, age of woman at last delivery and time period of last birth

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	Type of Delivery		Total	No. of Women
	Vaginal	Cesarean		
Total	86.1	13.9	100.0	(2278)
<u>Residence</u>				
Teg/SPS	85.6	14.4	100.0	(1041)
Other urban	87.0	13.0	100.0	(468)
Rural	86.2	13.8	100.0	(769)
<u>Education</u>				
None	88.4	11.6	100.0	(215)
Primary 1-3	88.0	12.0	100.0	(450)
Primary 4-6	88.0	12.0	100.0	(815)
≥ 7 years	82.4	17.6	100.0	(796)
<u>Place of Delivery</u>				
MOH hospital	87.2	12.8	100.0	(1526)
IHSS hospital	83.0	17.0	100.0	(401)
Private hospital	83.6	16.4	100.0	(323)
CESAMO/CESAR/Other	96.4	3.6	100.0	(28)
<u>Institutional Prenatal Care and Month First Visit*</u>				
Institutional care	85.3	14.7	100.0	(1824)
< 3 months	84.3	15.7	100.0	(1308)
4-6 months	88.6	11.4	100.0	(420)
7-9 months	86.2	13.8	100.0	(65)
Unknown	80.6	19.4	100.0	(31)
No prenatal care	91.1	8.9	100.0	(326)
<u>Parity</u>				
0-1	79.8	20.2	100.0	(609)
2-3	85.6	14.4	100.0	(871)
4-5	91.2	8.8	100.0	(467)
≥ 6	91.5	8.5	100.0	(331)
<u>Age of Woman at Last Delivery</u>				
13-17	85.4	14.6	100.0	(130)
18-34	85.8	14.2	100.0	(1924)
≥ 35	89.2	10.8	100.0	(222)
<u>Time Period of Last Delivery</u>				
1982-1984	86.2	13.8	100.0	(697)
1985-1987	86.0	14.0	100.0	(1581)

*Those women (n=127) who had prenatal care only with a TBA are not included.

Table V A14

Distribution of women whose last delivery occurred between 1982-1987 and was attended by a TBA according to TBA training status, by residence

Epidemiology and Family Health Survey, Honduras, 1987

TBA Training Status	Total	Residence		
		Teg/SPS	Other Urban	Rural
Trained*	80.8	88.4	88.2	79.9
Untrained	18.8	11.6	10.4	19.9
Unknown	0.3	0.0	1.4	0.2
Total	100.0	100.0	100.0	100.0
No. of Women	(2711)	(95)	(211)	(2405)

*With certificate and/or kit.

Table V A15

Distribution of women whose last live birth occurred between 1982-1987 and was attended by a TBA according to TBA use of injection to induce labor, by training status and residence

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	Gave Injection	Did not give Injection	Total	No. of Women
Total	9.6	90.4	100.0	(2701)
<u>Training Status</u>				
Trained	11.4	88.6	100.0	(2185)
Untrained	2.0	98.0	100.0	(508)
Unknown	0.0	100.0	100.0	(7)
<u>Residence</u>				
Teg/SPS	30.5	69.5	100.0	(95)
Other urban	23.0	77.0	100.0	(209)
Rural	7.6	92.4	100.0	(2397)

Table V A16

Distribution of women whose last delivery occurred between 1982-1987 and was attended by TBA, according to payment, by TBA training status

Epidemiology and Family Health Survey, Honduras, 1987

Payment	Total*	Trained	Untrained
<u>Payment Category</u>			
Money	82.7	85.9	69.0
Money & other	1.2	1.1	1.6
Other	2.1	1.7	3.5
No payment	14.0	11.3	25.9
Total	100.0	100.0	100.0
No. of Women	(2699)	(2181)	(509)
<u>Payment in Lempiras</u>			
0	14.3	11.5	26.8
1-9	13.8	12.5	19.3
10-19	32.9	32.6	34.6
> 20	37.6	42.0	18.5
Unknown	1.3	1.4	0.8
Total	100.0	100.0	100.0
No. of Women	(2647)	(2146)	(492)
Mean payment	17.8	18.8	12.9

*Includes payment for nine TBAs with unknown training status.

US \$1.00 = 2 Lempiras.

Table V A17

Distribution of women whose last delivery occurred between 1982-1987
according to postpartum care and source of care, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Postpartum Care and Type of Health Service	Total	Residence		
		Teg/SPS	Other Urban	Rural
<u>Postpartum Care</u>				
Yes	25.7	46.4	32.8	17.8
No	74.1	53.6	66.9	82.0
Unknown	0.2	0.0	0.3	0.2
Total	100.0	100.0	100.0	100.0
No. of Women	(5624)	(1170)	(732)	(3722)
<u>Type of Health Institution</u>				
MOH hospital	16.1	12.0	25.8	16.0
CESAMO	27.4	23.4	26.3	31.0
CESAR	15.4	0.2	3.3	32.2
IHSS hospital	12.8	29.3	2.5	3.0
Private clinic, hospital, or MD	26.1	32.5	40.8	15.4
Other	2.2	2.6	1.3	2.3
Total	100.0	100.0	100.0	100.0
No. of Women	(1443)	(542)	(240)	(661)

Table V A18

Percentage of women whose last delivery occurred between 1982-1987 who received postpartum care, by place of delivery and type of delivery

Epidemiology and Family Health Survey, Honduras, 1987

Place and type of Delivery	Received Postpartum Care	No. of Women
<u>Place of Delivery</u>		
Home Births	15.1	(3345)
Home, no TBA	12.0	(543)
Home with TBA	15.1	(2714)
Home with MD, Nurse	34.1	(88)
Institutional Births	41.2	(2278)
MOH hospital	33.2	(1526)
CESAMO, CESAR	43.5	(23)
IHSS hospital	60.6	(401)
Private hospital, MD, clinic	55.7	(323)
Other institutional place	*	(5)
Total	25.7	(5623)
<u>Type of Institutional Delivery</u>		
Vaginal	39.5	(1967)
Cesarean	50.9	(318)

*less than 20 cases.

Table V A19

Distribution of women whose last delivery occurred between 1982-1987 according to medical attention for the newborn, place and age of infant at the time of first medical visit, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Medical Attention, Place of Attention and Age of Infant	Total	Residence		
		Teg/SPS	Other Urban	Rural
<u>Medical Attention for Infant</u>				
Yes	82.0	90.4	89.8	77.8
No	17.7	9.2	10.1	21.9
Unknown	0.2	0.3	0.1	0.2
Total	100.0	100.0	100.0	100.0
No. of Women	(5624)	(1170)	(732)	(3722)
<u>Place of Attention</u>				
MOH hospital	9.3	12.3	19.3	5.9
CESAMO	37.3	33.6	49.8	35.8
CESAR	31.7	1.2	7.5	48.3
IHSS hospital	7.8	29.5	1.5	1.3
Private clinic, hospital, or MD	12.6	23.3	19.8	7.0
Other	1.4	0.2	2.1	1.7
Total	100.0	100.0	100.0	100.0
No. of Women	(4612)	(1058)	(657)	(2897)
<u>Age of Infant at First Visit</u>				
< 1 month	22.0	42.9	24.7	13.8
> 1 month and < 2 months	24.1	24.7	27.7	23.1
> 2 months and < 3 months	35.9	23.8	35.5	40.3
> 3 months	18.0	8.6	12.2	22.7
Total	100.0	100.0	100.0	100.0
No. of Women	(4610)	(1057)	(657)	(2896)

Table V A20

Distribution of women whose last delivery occurred between 1982-1987
according to the reason for first medical visit, age of infant
at time of visit, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Reason for First Medical Visit and Age of Infant	Total	Residence		
		Teg/SPS	Other Urban	Rural
<u>Reason for First Visit</u>				
Sick child	31.0	33.5	31.8	30.0
Well-baby care	68.3	66.1	67.7	69.2
Other	0.7	0.5	0.5	0.8
Total	100.0	100.0	100.0	100.0
No. of Women	(4612)	(1058)	(657)	(2897)
<u>Age of Infant</u>				
<u>< 29 days</u>				
Sick child	45.9	37.3	51.2	53.4
Well-baby care	53.1	62.3	48.1	44.9
Other	1.0	0.4	0.6	1.7
Total	100.0	100.0	100.0	100.0
No. of Women	(1016)	(453)	(162)	(401)
<u>> 30 days</u>				
Sick child	26.9	30.6	25.5	26.2
Well-baby care	72.6	68.9	74.1	73.2
Other	0.6	0.5	0.4	0.6
Total	100.0	100.0	100.0	100.0
No. of Women	(3594)	(604)	(495)	(2495)

B. Breastfeeding, Weaning Patterns and Postpartum Amenorrhea

Introduction

The physiological and psychological benefits of breastfeeding that are shared by both mother and infant have been recognized around the world. Breastmilk is the most complete food an infant can receive. In most cases exclusive consumption of breastmilk is appropriate during at least the first four to six months. Furthermore, the transmission of maternal antibodies contributes to the child's immunologic defense system. Exclusive breastfeeding also acts as an anti-infective mechanism by reducing the risk of ingesting infectious agents.

Extended breastfeeding can also prolong postpartum amenorrhea and have a positive impact on birth-spacing. At the Consensus Conference on Lactational Infertility in Bellagio, Italy, it was reported that "breastfeeding provides more than 98% protection from pregnancy during the first six months postpartum if the mother is 'fully' or nearly fully breastfeeding and has not experienced vaginal bleeding" (FHI, 1988).

In September of 1982, the MOH, the Honduran Institute for Social Security (IHSS), and the National Council for Social Welfare, signed an agreement to develop the National Project for the Support of Breastfeeding (PROALMA) to promote breastfeeding through the development of institutional guidelines and training of health professionals in its promotion (Convenio, 1982).

The project concentrated its initial efforts (PROALMA I) in the IHSS hospitals and the MOH's training hospitals in Tegucigalpa and San Pedro Sula. These cities were chosen because breastfeeding was thought to have declined the most dramatically in the catchment areas that they serve. Evaluations of PROALMA I indicate positive changes in behavior and attitudes towards breastfeeding among health care professionals as well as savings in hospital costs due to changes in practices, such as more rooming-in, and less bottle-feeding.

In 1984, the MOH created a breastfeeding component for their family planning program. Some of the activities included developing guidelines for hospital practices to affect breastfeeding, training of more than 1000 health professionals, development of educational materials and promotional seminars, and the establishment of hospital-based milk banks.

A second phase of PROALMA (PROALMA II 1985-88), has extended its promotion and training of health care personnel to the eight regional hospitals administered by the MOH. The findings of the evaluation of PROALMA II carried out by the Unit of Science and Technology in 1988 do not suggest a substantial impact. A paper is under preparation with the Carolina Population Center on the impact of some of the breastfeeding promotion activities in Honduras.

Results

The following sections address the initiation and duration of breastfeeding, and supplementary feeding patterns, including the use of the "chupón". Breastfeeding and contraception, and duration of postpartum amenorrhea, are also examined.

This analysis concentrates on women whose last live birth occurred within the 24 months prior to the interview date. About 50 women whose child died or who experienced another pregnancy in the 24 month interim have been excluded.

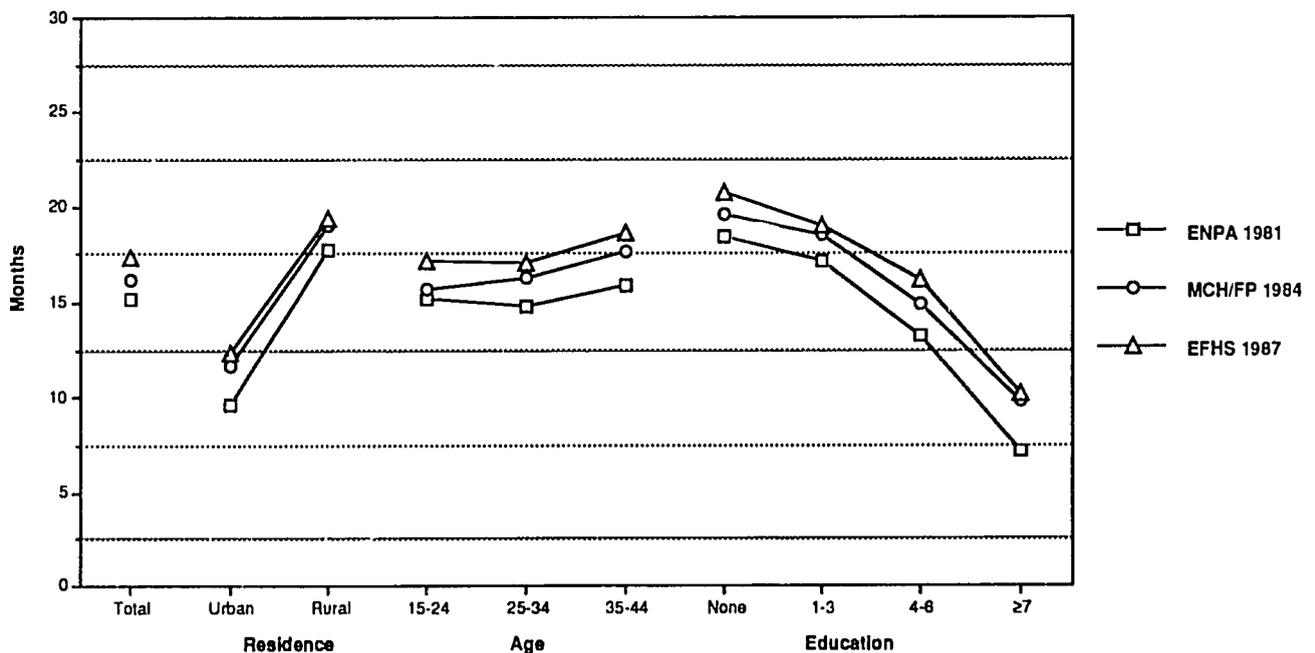
Mean duration of breastfeeding and of postpartum amenorrhea were calculated using the prevalence/incidence method that is commonly used by epidemiologists to determine the mean duration of an illness. Prevalence is based on the number of mothers who are currently breastfeeding or amenorrheic. Incidence is defined by the monthly average number of live births for the 24 months prior to interview. The use of current status data avoids recall error and the tendency to round off breastfeeding durations which is common in retrospective data.

Mean Duration of Breastfeeding

As societies become more modernized, the duration of breastfeeding is often reduced. Factors such as urban residence, education, and employment are often cited as having an impact on breastfeeding duration. Table and Figure V B1 present information on the mean duration of breastfeeding by residence and several other factors. Nationwide, the mean duration is 17.3 months. It is longer in rural areas (19.4 months) than in urban areas (12.4 months).

Figure V B1

Mean duration in months of breastfeeding by residence, maternal age and education in the ENPA 1981, MCH/FP 1984 and EFHS 1987



The more educated a woman is, the shorter her duration of breastfeeding and the more living children a woman has, the longer she breastfeeds. Women who give birth at home breastfeed about six months longer than women who deliver in hospitals (home deliveries occur mostly in rural areas and hospital deliveries in urban areas).

Maternal employment is negatively associated with breastfeeding duration even across areas of residence. Prenatal care is also negatively associated with breastfeeding duration, although the difference in breastfeeding duration between no prenatal care and some care is small. The greatest differences in breastfeeding duration are for urban and rural women, with rural women breastfeeding seven months longer. Multiple regression analysis is needed to determine which of these factors are the most important.

Table V B2 compares the mean duration of breastfeeding across three time periods: 1979-1981 from the ENPA 1981, 1982-1984 for the MCH/FP 1984, and 1985-1987 for the current survey. The mean duration increased by about one month each period. In each survey, the mean duration of breastfeeding is negatively associated with education and is longer in rural areas than in urban areas. The largest increases in duration have occurred in urban areas and among the more educated women, thereby slightly narrowing breastfeeding differentials.

Recent data from other countries in Latin America such as Panama, Guatemala, Costa Rica, Mexico, Brazil, Colombia and Paraguay also show an increase in the duration of breastfeeding. Declines in breastfeeding which often accompany modernization are by no means inevitable as many have thought.

Initiation of Breastfeeding

If the mother places the baby to the breast immediately after birth, the effect of suckling causes a release of oxytocin and uterine contractions that accelerate the delivery of the afterbirth. Early suckling also means the ingestion of colostrum, rich in maternal antibodies. Table V B3 provides information about when the baby is first placed at the mother's breast. One third (34.3%) of the women initiate breastfeeding within an hour postpartum. Women residing in rural areas are more likely to delay breastfeeding until the second day or later than are women in urban areas. Likewise, women with no formal schooling are more likely to delay initiation (25.6%) than more educated women. There is undoubtedly some overlap of rural women and the least educated.

There appear to be some differences in the timing of initiation according to place of delivery: women with home births delay initiation more than women with hospital births. Women delivering at the social security hospitals or at the health centers are the most likely to place the baby to the breast at birth.

Use of the Chupón

Until now there have been few studies that look at the use of the chupón. The chupón is a pacifier-like object made of herbs wrapped in gauze, and soaked in a bitter or sweet liquid. It is introduced into the newborn's mouth soon after birth. Whether it introduces an element of risk to the

newborn baby has not been scientifically determined, but it may introduce infectious agents very soon after birth. This issue deserves further research.

Chupón use is clearly affected by both residence and educational level: women who live in Teg/SPS and/or have ≥ 7 years of education are much less likely to use the chupón.

More than half (57.6%) of the infants receive a chupón (Table V B4): 39.1 percent of the newborns in Teg/SPS and 62.9 percent in rural areas. Chupón use does not vary by whether the mother breastfeeds (Table V B5). It does vary, however, with when the mother places the infant to her breast for the first time. Women who delay the initiation of breastfeeding the longest are the most likely to use a chupón, suggesting that the chupón may be a substitute for early breastfeeding (colostrum).

The primary reasons mothers report using the chupón are to pacify the baby, it is traditional/customary, or it cleans the infant's stomach or stops the secretion of phlegm (Table V B6). Reasons for use vary according to residence and maternal education. Urban women use the chupón largely because it is customary, or to clean the infant's stomach and stop phlegm, while rural women emphasize the chupón's pacifying qualities. Less educated women report reasons similar to the rural women while the more educated women resemble urban women (data not shown).

Among mothers who use a chupón, about 80 percent use it at someone's recommendation (Table V B7). In urban areas a relative is the person most likely to recommend the chupón, whereas in rural areas the TBA is the primary person.

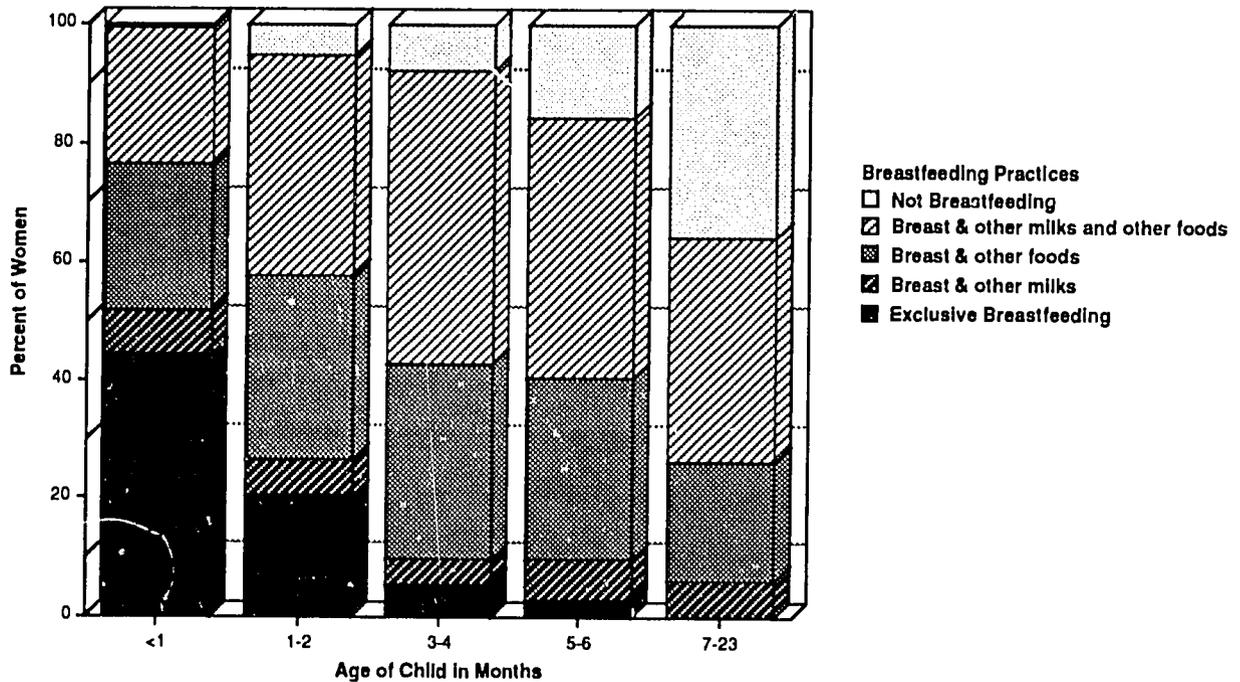
Supplementation and Weaning Practices

What and when foods and liquids other than breastmilk are introduced into an infant's diet can be crucial to the child's nutritional intake, growth and development, incidence of diarrhea and other infections, the mother's milk supply and duration of postpartum amenorrhea.

Exclusive breastfeeding is recommended for four to six months, with extended breastfeeding recommended for as long as is feasible. Exclusive breastfeeding, as defined for Table V B8 and Figure V B2, means that no water has been introduced into the infant's diet. However, exclusive breastfeeding does not exclude the use of a chupón. At less than a month of age, virtually all women are breastfeeding but less than half of the mothers are exclusively breastfeeding. Thirty percent have introduced other milks and 24.8 percent have added liquids other than milk. At age one to two months, only 20.5 percent of the mothers are exclusively breastfeeding and the proportion drops rapidly as age increases. Among infants five to six months of age, 15.5 percent receive no breastmilk.

Figure V B2

Distribution of women with a child less than 2 years of age at the time of interview according to current breastfeeding practices and supplementary feeding, by age of the child



The introduction of foodstuffs other than breastmilk varies with urban/rural residence (Table V B9). In general, urban infants receive water, other milks, juices, and strained foods earlier than rural infants, whereas children living in rural areas receive coffee or teas earlier than urban babies. At less than a month of age, about two thirds of the urban babies have been given water compared with 34.0 percent of the rural infants. At one or two months, urban infants begin to receive more juices or strained foods than rural infants, who on the other hand, are more likely than urban children to receive coffee or tea.

Mean Duration of Postpartum Amenorrhea

Table V B10 provides information about the mean duration of postpartum amenorrhea. The amenorrheic period has been calculated as the time between the last live birth (who is still alive and less than two years of age), and the resumption of menses. The mean duration is estimated to be 10.7 months. Breastfeeding is often used as a proxy for postpartum amenorrhea although it is widely known that there is not a one to one correlation. Nevertheless, as the duration of breastfeeding increases, so does the duration of postpartum amenorrhea. The mean duration of postpartum amenorrhea is, however, almost seven months shorter than the mean duration of breastfeeding. Postpartum amenorrhea (as well as breastfeeding duration) is associated with residence, education, number of living children, place of birth, work status, and prenatal care.

Table V B11 shows the percentages of women who are still breastfeeding, still postpartum amenorrheic, still abstaining, and at low risk of becoming pregnant. A woman is considered at low risk of pregnancy if she is either amenorrheic or abstaining. If these percentages were based upon a true cohort of women, the proportions of any particular status (such as breastfeeding or amenorrhea) would decline with the time since birth. Since the results are cross-sectional, there are small fluctuations. Grouping the data in two month intervals has smoothed some of the instability of the percentages.

The median duration of breastfeeding is 18.1 months, similar to the mean duration of 19.2 months calculated with the prevalence/incidence method. The median duration of postpartum amenorrhea is 8.6 months and the median duration of abstinence is 2.2 months. (Women without partners have not been excluded from these analyses.) The duration of a postpartum period that is a low risk for pregnancy is 9.4 months, not much higher than the amenorrheic period since Honduran couples do not abstain from sexual relations for an extended period of time.

If the abstinence period is little more than two months and only 20.5 percent of mothers exclusively breastfeed their infants at age one to two months (Table V B8), the risk of an additional pregnancy within the first six months postpartum may be higher than the 9.4 months calculated as a period of low risk at pregnancy. When women initiate postpartum contraception, the methods they use are of importance to the continuation of breastfeeding and the protection against an unwanted pregnancy.

Contraceptive use and infant feeding practices are examined in Table V B12 by the age of the child in months. As stated above, relatively few women exclusively breastfeed their infants and very few of these are contracepting. Among women who breastfeed and supplement their infant's diet with other milks or foods, only a quarter of the women are contracepting by the time the infant is a year old. The most prevalent method used is "other" which includes rhythm, withdrawal and barrier methods other than condoms. The use of oral contraceptives is much higher among women who are not breastfeeding, suggesting that most women know that pill use is contraindicated for women who are breastfeeding (unless the formulation is progesterone-only), or that they believe that by initiating the pill, lactation ceases. Some may even stop breastfeeding in order to use the pill.

Table V B1

Prevalence/incidence estimates of mean duration in months of breastfeeding in women with a child less than 2 years of age at the time of interview by education, number of living children, place of delivery, work status, and prenatal care, controlling for residence

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	Total	No. of Women	Residence			
			Urban	No. of Women	Rural	No. of Women
Total (in months)	17.3	(3071)	12.4	(953)	19.4	(2118)
<u>Education</u>						
None	20.7	(678)	16.5	(90)	21.3	(588)
Primary 1-3	19.2	(987)	15.6	(191)	20.1	(796)
Primary 4-6	16.2	(941)	12.6	(316)	18.0	(625)
≥ 7 years	10.2	(461)	9.6	(356)	12.3	(105)
<u>Number of Living Children</u>						
1	15.2	(635)	12.0	(264)	17.5	(371)
2	15.9	(604)	11.5	(247)	19.0	(357)
3	16.2	(483)	10.8	(160)	18.9	(323)
4-5	18.9	(714)	14.5	(195)	20.5	(519)
≥ 6	19.6	(635)	15.2	(87)	21.4	(548)
<u>Place of Delivery</u>						
Home	19.7	(1885)	15.2	(183)	20.2	(1702)
Hospital	13.5	(1172)	11.8	(766)	16.6	(406)
<u>Maternal Employment</u>						
Yes	14.1	(694)	9.9	(324)	17.7	(370)
No	18.2	(2377)	13.8	(629)	19.8	(1748)
<u>Institutional Prenatal Care</u>						
Yes	16.4	(1960)	12.0	(716)	18.9	(1244)
No	18.8	(1110)	13.7	(237)	20.2	(873)

Table V B2

Prevalence/incidence estimates of mean duration in months of breastfeeding
in women with a child less than 2 years of age at the time of interview
by residence, age of the mother and education in the
ENPA 1981, MCH/FP 1984 and ENESF 1987

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	ENPA 1981	No. of Women	MCH/FP 1984	No. of Women	ENESF 1987	No. of Women
Total (in months)	15.2	(1284)	16.2	(1290)	17.3	(3071)
<u>Residence</u>						
Urban	9.6	(352)	11.7	(663)	12.4	(953)
Rural	17.7	(932)	19.0	(627)	19.4	(2118)
<u>Age</u>						
15-24	15.2	(506)	15.7	(550)	17.1	(1199)
25-34	14.8	(553)	16.3	(537)	17.0	(1307)
35-44	15.9	(225)	17.6	(203)	18.6	(565)
<u>Education</u>						
None	18.4	(322)	19.6	(237)	20.7	(678)
Primary 1-3	17.1	(492)	18.5	(362)	19.2	(987)
Primary 4-6	13.2	(357)	14.9	(459)	16.2	(941)
≥ 7 years	7.2	(113)	9.8	(232)	10.2	(461)

Table V B3

Distribution of women with a breastfed child less than 2 years of age at the time of interview according to when newborn was placed at breast, by residence, education and place of delivery

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	When Baby Placed at Breast					Total	No. of Women
	At Birth	One hour Postpartum	Within 8 hours	8-24 hours	> 24 hours		
Total	15.5	18.8	29.4	13.3	22.9	100.0	(2965)
<u>Residence</u>							
Teg/SPS	16.3	21.8	30.6	16.2	15.0	100.0	(536)
Other urban	14.2	22.1	30.0	15.3	18.3	100.0	(353)
Rural	15.6	17.5	29.0	12.2	25.7	100.0	(2076)
<u>Education</u>							
None	15.5	18.8	27.2	12.9	25.6	100.0	(669)
Primary 1-3	15.8	18.3	30.1	12.0	23.9	100.0	(958)
Primary 4-6	15.6	19.6	30.0	12.8	22.0	100.0	(909)
≥ 7 years	14.6	18.4	30.4	18.1	18.5	100.0	(425)
<u>Place of Delivery</u>							
Home	11.3	15.8	31.5	13.5	28.0	100.0	(311)
Home with TBA	16.1	17.2	27.1	11.8	27.7	100.0	(1500)
Home with MD, nurse	11.8	23.5	26.5	11.8	26.4	100.0	(34)
MOH hospital	15.7	25.4	33.2	12.7	13.1	100.0	(798)
IHSS hospital	21.8	13.8	31.0	17.8	15.5	100.0	(174)
Private hospital, clinic	6.5	8.9	27.4	29.8	27.5	100.0	(124)
Health center/other	39.1	21.6	22.0	8.3	9.1	100.0	(23)

Table V B4

Percentage of women with a child less than 2 years of age at the time of interview who gave their infant a chupón at birth, by residence and education

Epidemiology and Family Health Survey, Honduras, 1987

Residence	Total	Education			
		None	Primary 1-3	Primary 4-6	\geq 7 years
Teg/SPS	39.1 (571)	42.5 (40)	41.7 (96)	48.0 (198)	30.0 (237)
Other urban	56.0 (382)	62.0 (50)	62.1 (95)	58.5 (118)	46.2 (119)
Rural	62.9 (2119)	64.3 (586)	63.3 (798)	63.1 (626)	49.5 (105)
Total	57.6 (3072)	62.9 (676)	61.1 (989)	59.3 (942)	38.6 (461)

Note: number of women in parentheses.

Table V B5

Percentage of women with a child less than 2 years of age at the time of interview who gave their newborn a chupón at birth by whether breastfed, and if so, when placed at breast

Epidemiology and Family Health Survey, Honduras, 1987

Breastfeeding and Timing	% Who Used a Chupón	No. of Women
Breastfed	57.8	(2965)
At birth	52.0	(460)
One hour postpartum	49.6	(558)
2-7 hours	54.6	(872)
8-24 hours	57.1	(394)
> 24 hours	72.9	(680)
Never Breastfed	54.5	(101)

Table V B6

Distribution of women with a child less than 2 years of age at the time of interview who was given a chupón according to reason for use and duration, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Chupón Use	Total	Residence		
		Teg/SPS	Other Urban	Rural
<u>Reason for Use</u>				
Pacify baby	30.2	8.6	17.8	35.9
Custom	18.2	26.1	21.0	16.4
Clean stomach	13.1	22.1	16.4	11.1
Stop phlegm	11.6	18.5	13.1	10.2
Protect against tetanus	6.9	1.8	8.4	7.5
Other	20.1	23.0	23.4	19.0
<u>Duration of Use</u>				
1 day	13.2	9.9	11.7	14.0
2 days	22.8	16.6	15.4	25.1
3 days	29.5	21.5	31.3	30.6
4-7 days	16.7	26.9	20.1	14.4
≥ 8 days	17.7	25.1	21.5	15.9
No. of Women	(1770)	(223)	(214)	(1333)

Table V B7

Distribution of women with a child less than 2 years of age at the time of interview who was given a chupón according to recommendation for use, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Chupón Use	Total	Residence		
		Teg/SPS	Other Urban	Rural
% Used at someone's recommendation	80.3	87.8	79.9	79.1
No. of Women	(1770)	(223)	(214)	(1333)
<u>Recommended by:</u>				
TBA	49.0	11.3	31.6	58.8
Relative	42.0	71.8	60.2	33.6
Neighbor	7.0	14.4	7.0	5.6
Health personnel	1.1	0.5	0.6	1.2
Other	0.9	2.1	0.6	0.8
No. of Women	(1421)	(195)	(171)	(1054)

Table V B8

Distribution of women with a child less than 2 years of age at the time of interview according to current breastfeeding practices and supplementary feeding, by age of the child

Epidemiology and Family Health Survey, Honduras, 1987

Feeding	Age of Child in Months				
	< 1	1-2	3-4	5-6	7-23
<u>Breastfeeding</u>					
Exclusive	44.4	20.5	5.5	2.9	0.1
Breast & other milks	7.5	6.0	4.3	6.8	6.2
Breast & other foods*	24.8	31.2	33.2	30.9	20.0
Breast, other milks and other foods*	22.6	37.2	49.2	43.9	38.1
Not breastfeeding	0.8	5.0	7.8	15.5	35.6
Total	100.0	100.0	100.0	100.0	100.0
No. of Women	(133)	(317)	(256)	(278)	(1894)

*Includes water, juice, coffee, teas, broth, porridge, strained or solid foods.

Table V B9

Percentage of women with a child less than 2 years of age at the time of interview by type of food and infant's age at the time of introduction, controlling for residence

Epidemiology and Family Health Survey, Honduras, 1987

Type of Food	Age of Child in Months									
	< 1		1-2		3-4		5-6		7-23	
	U	R	U	R	U	R	U	R	U	R
Water	65.0	34.0	79.0	54.4	93.2	80.0	95.9	87.3	100.0	98.5
Other milks	58.5	19.6	69.7	39.2	80.5	51.3	83.1	59.9	90.5	70.7
Coffee/tea	11.9	11.5	17.0	23.5	24.7	36.5	40.5	50.0	65.5	81.7
Mush/porridge	11.9	10.3	14.0	17.7	27.3	30.9	44.7	44.6	69.8	66.4
Juice	9.5	6.3	32.3	17.7	68.8	40.8	85.5	57.1	94.4	76.0
Broth	0.0	2.1	16.0	14.1	62.3	48.1	90.8	76.2	98.8	97.9
Strained foods	2.4	0.0	12.1	6.6	57.1	25.0	77.9	51.9	87.8	76.0
Solid foods	0.0	0.0	2.6	1.3	18.0	19.0	52.8	45.9	93.4	90.4
No. of Women	(40)	(96)	(100)	(225)	(72)	(190)	(72)	(207)	(673)	(1524)

U = Urban.

R = Rural.

Table V B10

Prevalence/incidence estimates of mean duration in months of postpartum amenorrhea for women with a child less than 2 years of age at the time of interview by education, number of living children, place of delivery, work status, and prenatal care, controlling for residence

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	Total	No. of Women	Residence			
			Urban	No. of Women	Rural	No. of Women
Total (in months)	10.7	(3071)	7.2	(953)	12.5	(2116)
<u>Education</u>						
None	14.2	(677)	10.9	(90)	14.7	(587)
Primary 1-3	12.1	(987)	8.3	(191)	13.0	(796)
Primary 4-6	9.2	(941)	7.0	(316)	10.2	(625)
≥ 7 years	5.6	(461)	5.2	(356)	7.1	(105)
<u>Number of Living Children</u>						
1	8.3	(635)	6.8	(264)	9.4	(371)
2	9.0	(604)	5.5	(247)	11.5	(357)
3	10.4	(483)	6.7	(160)	12.2	(323)
4-5	12.1	(714)	8.1	(195)	13.6	(519)
≥ 6	13.4	(634)	9.4	(87)	14.0	(547)
<u>Place of Delivery</u>						
Home	12.8	(1885)	9.0	(183)	13.2	(1702)
Hospital	7.4	(1172)	6.5	(766)	9.0	(406)
<u>Works</u>						
Yes	7.8	(694)	5.3	(324)	9.9	(370)
No	11.6	(2376)	7.8	(629)	12.9	(1747)
<u>Prenatal Care</u>						
Yes	10.0	(1960)	6.5	(716)	11.0	(1244)
No	12.0	(1110)	8.5	(237)	13.0	(873)

Table V B11

Percentage of women with a child less than 2 years of age at the time of interview who are still breastfeeding, still postpartum amenorrheic, still abstaining and unlikely to become pregnant, by age of child

Epidemiology and Family Health Survey, Honduras, 1987

Months Since Birth	Breastfeeding	Amenorrheic	Abstaining	At Low Risk of Pregnancy*	No. of Women
< 2	96.1	93.8	85.9	97.7	(306)
2-3	92.0	77.1	41.5	82.7	(300)
4-5	86.1	63.9	22.6	69.4	(288)
6-7	78.8	54.5	21.4	62.9	(298)
8-9	79.7	50.3	13.8	56.7	(296)
10-11	75.3	39.7	12.5	43.0	(271)
12-13	71.3	31.6	17.5	42.9	(275)
14-15	62.1	25.6	11.1	33.2	(261)
16-17	53.7	19.7	9.6	27.1	(218)
18-19	50.8	7.6	12.7	22.8	(197)
20-21	45.5	9.5	8.4	16.3	(190)
22-23	34.1	4.2	12.0	16.2	(167)
Total	72.1	44.6	24.5	51.7	(3067)
Median duration:**	18.1	8.6	2.2	9.4	

*Either amenorrheic or abstaining.

**Calculated from a 3 month moving average based on single month percentages.

Table V B12

Contraceptive use of women with a child less than 2 years of age at the time of interview, by current feeding practices and age of the child

Epidemiology and Family Health Survey, Honduras, 1987

Feeding and Contraceptive Use*	Age of Child in Months					
	0-2	3-5	6-8	9-11	12-17	18-23
Exclusive Breastfeeding†	26.6	4.7	0.7	--	--	--
Orals	--	--	--	--	--	--
IUD	--	--	--	--	--	--
Condom	--	--	--	--	--	--
Other	0.8	10.0	33.3	--	--	--
Not using	99.2	90.0	66.7	--	--	--
Breastfeeding and Supplementary Feeding	67.8	83.4	77.6	77.6	63.0	43.9
Orals	0.6	1.1	1.8	2.7	6.7	6.2
IUD	1.3	2.8	1.8	3.9	2.7	3.7
Condom	0.9	3.1	3.2	0.9	1.7	0.4
Other	8.5	11.8	9.1	15.5	13.5	16.9
Not Using	88.6	81.2	84.1	77.0	75.4	72.8
Not Breastfeeding	5.6	11.9	21.7	22.4	37.0	56.1
Orals	34.6	31.4	34.7	33.7	30.8	29.4
IUD	--	--	6.3	9.5	7.5	6.8
Condom	--	2.0	1.1	6.3	4.7	1.6
Other	3.8	23.5	18.9	20.0	19.0	20.3
Not using	61.5	43.1	38.9	30.5	38.0	41.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(466)	(428)	(438)	(425)	(754)	(553)

*Women abstaining at the time of interview are included in the category of "not using."

†Exclusive breastfeeding is defined as a child receiving only breastmilk; no water, other liquids, semi-solids or solids have been introduced to diet.

C. Immunization

The Expanded Program for Immunization (EPI) was initiated by the World Health Organization in 1974. At that time less than five percent of the children in developing countries were reached by immunization services. In its 15 years of action, EPI has achieved considerable success globally. Currently 50 percent of the world's infants are receiving a third dose of either polio or DPT vaccines. WHO estimates that each year immunizations prevent almost 200,000 children from becoming paralyzed from poliomyelitis, and more than a million deaths attributable to measles, neonatal tetanus, and pertussis (Henderson et al., 1988). Although coverage has increased rapidly in many countries, most developing countries have not reached the 80 percent coverage level that UNICEF considers a minimum indication of having achieved universal immunization or that level required to halt the transmission of EPI diseases (UNICEF, 1988).

The EPI focuses on the control of six childhood diseases through the improvement of immunization rates among children under the age of five and women of childbearing age. Initial emphasis has been placed on childhood tuberculosis (BCG), poliomyelitis, diphtheria-pertussis-neonatal tetanus (DPT), and measles.

In Honduras, immunizations have been mandatory since 1981. The presentation of an immunization card is required at day care centers, government health care facilities, supplementary feeding posts and at orphanages. EPI activities are carried out at all health service facilities. In addition, mass immunization campaigns are held several times a year.

Mothers were interviewed about the immunization status of each child under the age of five who was either their own child or under their care. Mothers were first asked if a particular child had ever been vaccinated and, if so, if an immunization card could be produced. If a card was shown to the interviewer, she copied the number of doses and dates of administration of each vaccine to determine if the child was completely vaccinated. When the mother reported there was no card or could not find it, the child was assumed to be inappropriately immunized and no further questions were asked. Thus, the proportions of children considered to be appropriately vaccinated are underestimated.

Complete immunization was determined by comparing the number of doses documented on the card to the vaccination schedule recommended by the EPI. For infants, the guidelines used in this analysis are as follows: BCG at birth, three doses of DPT and polio (at two, four, and six months), and a measles vaccine at nine months. Since the regimen of DPT and polio begins in the second month, children younger than two months old are excluded from the analysis. Similarly, children under the age of nine months are excluded when examining the coverage of measles vaccination. Since BCG can be given at birth, all children are included for those analyses.

Four out of five mothers are able to provide their child's immunization card for perusal (Table V C1). The proportion of mothers who cannot locate the card or have never received a card, despite reporting that the child has been vaccinated, is higher among urban residents than among the rural. This inability to confirm the number of doses and dates in urban areas probably

explains the slightly higher coverage in rural areas (Table V C2). Independent of residence, the education group least likely to produce cards is the best educated (Table V C1). Their children may be immunized routinely at the IHSS or with a private pediatrician and although records are kept at these health facilities, the mothers should have copies as well.

Coverage ranges between a low of 71.3 percent for DPT to 75.2 percent for measles. In many countries, measles coverage lags behind that of other immunizations (UNICEF, 1988). This is not the case for Honduras.

By the time infants have attained their first birthday, complete immunization reaches or exceeds 75 percent (Table V C3). However, the lower proportions for children under the age of one indicate that children are immunized later than recommended. Although nine months is the recommended age for the measles vaccination, less than half of the children between the ages of nine and eleven months have received it. Rates for polio and DPT are very similar, not surprising since they are usually administered together.

Table V C4 provides information on coverage for each vaccine by the mother's level of education. Generally it is expected that children of better educated mothers would have the more complete coverage. As shown in Table V C1, the mothers who cannot produce the immunization cards are often urban and well educated, and whose children, therefore, are coded as inadequately vaccinated. This probably explains why the children of these women have the same low coverage (or lower, in the case of measles and BCG) as children of women with no formal education.

The increase in complete immunization since 1981 is shown in Table V C5. In the 1981 Contraceptive Prevalence Survey (ENPA 1981), the analysis of coverage was based on the youngest child under the age of five years. The 1984 coverage, like 1987, is based on all children less than five years of age living in the household. To compare rates from these surveys, the age distribution of children in the ENPA 1981 was adjusted using the age distribution found in the MCH/FP 1984, which was identical to the age distribution in the 1987 survey.

Since 1981, coverage has increased by 60-68 percent for polio and DPT vaccines, and somewhat less for measles and BCG. Since 1984, coverage has continued to improve substantially in rural areas for DPT, measles and BCG (while urban coverage is probably underestimated). There appears to be a slight decrease in the coverage of polio since 1984. However, it should be remembered that in 1984 there was a polio epidemic, and the week before the survey field work began tremendous efforts were carried out in a national campaign to reach as many children as possible.

Mothers who could produce a date for their child's last oral polio vaccine were asked where the dose had been administered. Table V C6 shows that 44.1 percent received it in the community rather than at an official health facility. Immunizations that occur in the community are attributable to the national mass campaigns carried out by the MOH and to weekly community

The bulk of immunizations administered through the health care infrastructure takes place at the MOH health centers (CESAMOs and CESARs). In Tegucigalpa and San Pedro Sula, the IHSS administered the last polio vaccination to about one in five children.

If the immunization card is filled out correctly, health care personnel pencil in the date of the next scheduled immunization. A quick comparison between the interview date and the date in pencil would indicate if the child is lagging behind in his or her vaccination regimen. When such a child was identified, the interviewer asked the mothers the reason for the child's poor compliance. More than a third of the children's mothers reported that the child had not been well and either was refused immunization or she decided herself not to take the child (Table V C7). About a third of the mothers assumed responsibility and reported that they had been careless, themselves ill, or had no time or money for transportation.

Overall, these results are very encouraging for the Ministry EPI program and reflect the successful efforts of the past six years to protect children from immuno-preventable diseases. Such efforts must be continued.

Table V C1

Distribution of children under the age of 5 by reporting of immunization and possession of immunization card, by education, controlling for residence

Epidemiology and Family Health Survey, Honduras, 1987

Residence and Education	Yes	Ever Immunized Showed card	Never immunized/ Could not/ Did not show	Don't know	Total	No. of Children
Total	93.6	79.6	14.0	6.4	100.0	(8451)
<u>Teg/SPS</u>	97.9	77.1	20.8	2.1	100.0	(1551)
None	93.9	74.6	19.3	6.1	100.0	(114)
Primary 1-3	96.9	83.7	13.2	3.1	100.0	(289)
Primary 4-6	98.1	80.8	17.3	1.9	100.0	(526)
<u>≥ 7 years</u>	98.9	71.4	27.5	1.1	100.0	(622)
<u>Other urban</u>	95.1	76.3	18.8	4.9	100.0	(1009)
None	97.5	77.3	20.2	2.5	100.0	(163)
Primary 1-3	94.8	79.1	15.7	5.2	100.0	(268)
Primary 4-6	95.0	79.9	15.1	5.0	100.0	(303)
<u>≥ 7 years</u>	94.2	69.1	25.1	5.8	100.0	(275)
<u>Rural</u>	92.2	80.8	11.4	7.7	100.0	(5891)
None	89.1	78.0	11.1	10.9	100.0	(1675)
Primary 1-3	92.7	81.4	11.3	7.3	100.0	(2267)
Primary 4-6	94.5	83.1	11.4	5.5	100.0	(1684)
<u>≥ 7 years</u>	94.2	78.0	16.2	5.8	100.0	(259)

Table V C2

Percentage of children under the age of 5 who for their age are adequately immunized, by type of immunization and residence

Epidemiology and Family Health Survey, Honduras, 1987

Residence	Type of Immunization			
	Polio*	DPT*	Measles†	BCG
Teg/SPS	70.1 (1503)	68.8 (1503)	69.6 (1323)	67.5 (1552)
Other urban	70.9 (966)	68.7 (966)	69.7 (848)	69.1 (1009)
Rural	74.1 (5670)	72.4 (5670)	77.7 (4943)	75.0 (5891)
Total	73.0 (8139)	71.3 (8139)	75.2 (7114)	72.9 (8452)

Note: Number of children in parentheses.

*Based on children > 1 month of age.

†Based on children > 8 months of age.

Table V C3

Percentage of children under the age of 5 who for their age are adequately immunized, by type of immunization and age of child

Epidemiology and Family Health Survey, Honduras, 1987

Age of child (in months)	Type of Immunization			
	Polio*	DPT*	Measles†	BCG
< 3	38.3 (149)	36.5 (149)	- -	32.0 (462)
3-4	55.8 (276)	53.6 (276)	- -	60.1 (276)
5-6	46.5 (301)	45.8 (301)	- -	65.4 (301)
7-11	57.6 (787)	54.1 (787)	47.3 (488)	74.2 (787)
12-23	76.7 (1745)	75.2 (1745)	77.9 (1745)	79.7 (1745)
24-35	78.6 (1747)	78.0 (1747)	79.5 (1747)	78.1 (1747)
36-59	77.4 (3134)	75.4 (3134)	75.7 (3134)	73.8 (3134)

Note: Number of children in parentheses.

*Based on children > 1 month of age.

†Based on children > 8 months of age.

Table V C4

Percentage of children under the age of 5 who for their age are adequately immunized, by type of immunization and level of maternal education

Epidemiology and Family Health Survey, Honduras, 1987

Level of Education	Type of Immunization			
	Polio*	DPT*	Measles†	BCG
None	68.9 (1880)	66.0 (1880)	72.2 (1645)	69.4 (1952)
Primary 1-3	74.2 (2730)	72.5 (2730)	78.1 (2381)	74.9 (2824)
Primary 4-6	76.9 (2415)	75.7 (2415)	78.1 (2132)	77.1 (2514)
≥ 7 years	68.5 (1109)	67.9 (1109)	66.6 (953)	64.9 (1156)

Note: Number of children in parentheses.

*Based on children > 1 month of age.

†Based on children > 8 months of age.

Table V C5

Percentage of children under the age of 5 who are adequately immunized according to type of immunization, by residence and survey

Epidemiology and Family Health Survey, Honduras, 1987

Survey and Residence	Type of Immunization			
	Polio	DPT	Measles	BCG
<u>ENPA 1981</u>				
Urban	52.7	49.9	67.3	60.0
Rural	38.3	39.5	56.6	44.9
Total	45.5	42.3	60.4	50.3
<u>MCH/FP 1984</u>				
Urban	76.0	60.2	67.4	69.8
Rural	74.5	63.7	70.4	69.1
Total	75.0	62.4	69.3	69.3
<u>EFHS 1987</u>				
Urban	70.4	68.9	69.6	68.1
Rural	74.1	72.4	77.7	75.0
Total	73.0	71.3	75.2	72.9

Note: Immunization coverage reported in the ENPA 1981 has been adjusted to the age distribution of children less than 5 years of age in the MCH/FP 1984 which is virtually identical to the 1987 age distribution.

Table V C6

Source of the last dose of polio for children
under the age of 5, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Where Last Dose of Polio Received	Total	Residence		
		Teg/SPS	Other Urban	Rural
Health facility	55.9	68.3	58.1	52.5
MOH hospital	2.9	5.4	10.5	1.1
CESAMO	24.3	36.4	36.8	19.3
CESAR	22.9	1.3	7.4	30.6
IHHS hospital	3.8	19.6	0.1	0.5
Private hospital, clinic, MD	1.4	5.4	1.5	0.4
Other	0.4	0.1	1.5	0.3
Unknown	0.2	0.2	0.4	0.2
In the community	44.1	31.7	41.9	47.5
Total	100.0	100.0	100.0	100.0
No. of Children	(6582)	(1156)	(745)	(4681)

Table V C7

Distribution of reasons for incomplete coverage, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Reason	Total	Residence		
		Teg/SPS	Other Urban	Rural
Child not well	34.2	36.0	34.8	33.4
Carelessness	22.0	27.9	29.6	18.6
Health Center closed or has no vaccines	11.3	8.6	6.1	13.2
Mother sick, has no time or money	10.2	8.6	12.2	10.4
Other	22.2	18.9	17.4	24.3
Total	100.0	100.0	100.0	100.0
No. of Children	(971)	(222)	(115)	(634)

D. Diarrhea

Diarrheal diseases constitute one of the most significant health threats to young children in the developing world. Nearly one billion diarrheal episodes and five million deaths occur in preschool children throughout the world each year (Snyder and Merson, 1982). In Honduras, diarrhea is the principal cause of death (21.4%) to children under the age of five. Another 8.9 percent of deaths are attributable to multiple causes including diarrhea (See Table IV C9). Social, economic and environmental factors contribute to disease incidence and severity. In particular, housing conditions, parental education, child care practices (including breastfeeding, weaning, food preparation, birth spacing) and nutritional status have been found to affect diarrhea morbidity (Tsui, 1988; Black, 1984; Sepulveda, 1988). Deaths from acute diarrhea are largely attributed to dehydration, the loss of body fluids and electrolytes. It is widely recognized that deaths due to dehydration are preventable with the timely and appropriate administration of rehydration therapy (Hirschhorn, 1980). Strategies to decrease the incidence of and mortality due to diarrheal disease include those addressing sociodemographic and environmental factors as well as such child-specific interventions as oral rehydration therapy (ORT).

The prevalence, severity and treatment of diarrhea among children under five are examined below. Mothers were asked if their children under five and/or those they take care of had had diarrhea in the past 15 days. (No specific definition of diarrhea was used by the interviewer; respondents used their own subjective judgement.) When the answer was affirmative, they were asked to report on the episodes occurring in the past three days. Information was collected about the severity of the episode, and source and type of treatment used, if any. According to the norms of the MOH, antibiotics are not to be used unless the appropriate examinations are performed and antibiotics are warranted. Oral rehydration salts (ORS), or Litrosol as they are known in Honduras, are obtainable through MOH hospitals, health centers and community health workers. At the time of the survey, free packets of ORS provided by UNICEF were distributed at about 3000 points.* The MOH intends to expand its community network to include 20,000 distribution points in 1989.

Prevalence of Diarrhea: In 1984, data from the MCH/FP Survey showed that 20.1 percent of the children under five had diarrhea on the day of interview or during the two days prior to interview. This number does not appear to have changed (seasons for the two surveys overlap). When asked about diarrhea in the last 15 days, 30.3 percent of the children had experienced an episode (Table V D1) and 18.0 percent in the three day period.

*Beginning in 1986, packets have been distributed freely to mothers with small children who participate in the vaccination campaigns.

The prevalence of diarrhea is expected to be lowest among infants who are exclusively breastfeeding and among the oldest children. Diarrheal episodes are most likely to be frequent at the time weaning occurs. And in fact, the results support this idea: nearly half of the children between six and 24 months of age have had diarrhea in the past 15 days.

Poor socioeconomic conditions are also associated with more frequent episodes. Focusing on the 15 day reference period, a higher proportion of children with diarrhea are found in rural areas, with mothers with low levels of education or who live in less comfortable households. These patterns are consistent with those found for the past three days, only the magnitude changes with about a third fewer children reported to have diarrhea.

To examine severity of the episode, questions were asked about accompanying signs and symptoms, and how long the episode lasts. Most of the episodes last three or fewer days and 38.4 percent present no accompanying symptoms (Table V D2). Nearly one fifth of the children had diarrhea for at least one week, and almost a quarter present with mucus, blood and/or both in the stools. Although the proportions of children also suffering from vomiting (3.9%) or fever (7.8%) are not large, these children are at increased risk of dehydration. Finally, more than a quarter of the children have two or all three of the accompanying symptoms.

When controlling for age, it is shown that older children have fewer additional symptoms compared to younger children. As the length of the episode increases so does the proportion of children with more severe diarrhea. Almost half of the children whose episodes are one to three days, are free of additional symptoms, while 41.7 percent of the children with prolonged or chronic diarrhea (14 or more days), suffer from two or all three of the accompanying ailments.

The relationship between maternal education and severity of diarrhea is not entirely clear; in general, children of better educated mothers present fewer additional symptoms. However, the largest proportion of children with two symptoms occurs among women with some secondary education. It may be that better educated women are more likely than less educated women to recognize and report signs and symptoms of morbidity (Tsui, 1988).

Almost half of the children who reside in Teg/SPS do not present additional symptoms but more than a quarter present two or all three. Diarrheal episodes containing blood, mucus or both in the stools are most likely to occur in rural areas.

Mothers were asked if the child was taken to a health facility for consultation. Independent of the visit, mothers were also asked if the child received any form of treatment for the diarrhea. If the answer was affirmative, she was asked specifically if pills, syrups, injections, herbal remedies, Litrosol, intravenous (IV) fluid or a massage was administered. Brand names were asked of the pills, syrups and injections, and later were reclassified as antibiotics, antiemetics, antispasmodics, antidiarrheals, antiparasitics and others. (Interviewers requested to see the box or bottle in order to report the brand more accurately.) If an herbal remedy was given, the name of the herb was solicited. Only 15.4 percent of the

quarters receive some type of treatment (Table V D3). As the duration of the episode increases, the proportion of children who consult a health care facility and the number who receive treatment also increase. Maternal education shows a positive association with seeking or administering treatment.

Table V D3 also provides the percentage of children who receive specific treatments. The percentages receiving antibiotics and antidiarrheal medications may be underestimated since some mothers were unable to recall the brand name of the medicine given or the coding team was unable to classify the brand. Therefore, not all treatments are shown in the table.

Interestingly, the longer the episode the less likely the child is to receive antibiotics. That the children with episodes of short duration are the most likely to receive antibiotics (46.1%) suggests that there is considerable misuse or abuse of antibiotics.

In general, the use of all other types of treatment increases with the duration of the episode. The use of antidiarrheal agents has decreased considerably since 1984 when it was found that 15.0 percent of the children were given antidiarrheals. Since 1984, the MOH has attempted to control the distribution of these agents.

No clear pattern of antibiotic use according to maternal education appears. Between 40.4 and 49.9 percent of children whose mothers completed primary school or less are given antibiotics compared with only a quarter of the children whose mothers have some secondary education. In the previous table (V D2), the children of better educated women do not present a dramatically different clinical picture. If anything, they present greater signs of severity than the other children. It appears, therefore, that these women are more aware than the less educated women of the harm of indiscriminately administering antibiotics. Finally, the use of IV fluid increases with education while the use of Litrosol, herbal remedies or massage decreases.

Overall, 23.6 percent of the children who are treated are given oral rehydration salts, the preferred clinical treatment in most cases. This implies that of all children with diarrhea (1515), only 17.5 percent (265) are appropriately treated. Some of these children are probably given inappropriate treatments as well. The use of ORS has not changed since 1984 when 17.1 percent of the children received Litrosol alone or in combination with other treatments.

Before asking mothers about their children's recent diarrheal episodes, they were asked if there was Litrosol in the home and to recall the steps involved in the preparation of Litrosol. About a quarter of all mothers could produce a packet (data not shown). Each preparatory step is evaluated separately in Table V D4. The step most likely to be remembered is the boiling of water (82.3%) and the step least likely, is cooling the water (56.3%). Less educated women seem to be better equipped to prepare ORS than the most educated. This is probably a reflection of where and how the educational campaigns have been targeted.

Overall, women are less successful at spontaneously recognizing the signs of dehydration than they are at recalling how ORS is prepared. The sign most frequently remembered, sunken eyes, is also one of the most serious, but less than a third of the women report this sign. Unlike the recognition of the preparatory steps of ORS, there is a clear association with education: as education increases, reporting of symptoms also increases. Nevertheless, no one symptom is recalled by as many as half the women. The earliest signs of dehydration are decreased urination and dry mouth, both of which a caregiver can readily assess, and might be emphasized in public health messages.

Table V D1

Prevalence of diarrhea among children under the age of 5 in the last 15 and 3 days, by selected characteristics

Epidemiology and Family Health Survey, Honduras, 1987

Selected Characteristics	% With Diarrhea in the Last 15 Days	% With Diarrhea in the Last 3 Days
Total	30.3	18.0
<u>Child's Age</u>		
0-5 months	30.3	19.9
6-11 months	45.4	28.4
12-23 months	46.6	28.6
24-35 months	28.6	15.9
> 36 months	17.7	9.5
No. of Children	(8450)	(8451)
<u>Residence</u>		
Teg/SPS	25.5	15.9
Other urban	28.4	15.6
Rural	31.9	18.9
No. of Children	(8439)	(8451)
<u>Maternal Education</u>		
None	33.9	21.3
Primary 1-3	31.4	18.5
Primary 4-6	30.8	17.4
> 7 years	20.6	11.9
No. of Children	(8433)	(8445)
<u>Toilet Facilities</u>		
Flush toilet	22.0	12.3
Latrine	31.8	18.7
None	32.5	19.7
No. of Children	(8438)	(8450)
<u>Source of Water</u>		
Faucet inside the home	20.4	10.5
Faucet outside but on property	30.8	17.8
Other	32.6	20.3
No. of Children	(8439)	(8451)
<u>Floor</u>		
Dirt	32.9	19.6
Other	26.6	15.6
No. of Children	(8430)	(8442)

Table V D2

Distribution of children under the age of 5 with diarrhea in past 3 days according to severity and symptoms of the episode, by selected characteristics

Epidemiology and Family Health Survey, Honduras, 1987

	No Additional Symptoms*	Mucus/Blood/Both**	Vomiting	Fever	Two Symptoms	All Three Symptoms	Total	No. of Children
Total	38.4	24.1	3.9	7.8	18.6	7.2	100.0	(1509)
<u>Child's Age (months)</u>								
0-5	32.4	25.0	8.5	6.8	20.5	6.8	100.0	(176)
6-11	31.1	25.1	1.9	7.1	26.6	8.2	100.0	(267)
12-23	36.0	26.6	3.2	8.0	17.4	8.8	100.0	(500)
24-35	43.2	20.5	3.6	8.3	17.6	6.8	100.0	(278)
≥ 36	48.7	21.5	4.4	8.0	12.8	4.7	100.0	(298)
<u>Duration of Episode (days)</u>								
1-3	47.6	22.4	3.7	6.6	14.6	5.0	100.0	(907)
4-6	24.8	31.6	3.9	9.8	22.8	7.2	100.0	(307)
7-13	25.1	20.3	3.7	10.7	29.9	10.2	100.0	(187)
≥ 14	22.2	23.1	5.6	7.4	20.4	21.3	100.0	(108)
<u>Maternal Education</u>								
None	34.3	24.2	6.0	8.9	19.2	7.4	100.0	(417)
Primary 1-3	37.1	24.5	2.7	8.4	19.3	8.0	100.0	(523)
Primary 4-6	42.9	25.1	2.5	7.5	15.3	6.6	100.0	(438)
≥ 7 years	41.6	19.0	6.6	2.9	23.4	6.6	100.0	(137)
<u>Residence</u>								
Teg/SPS	45.3	18.0	4.9	5.3	18.4	8.2	100.0	(245)
Other urban	36.4	22.7	4.5	7.1	20.8	8.4	100.0	(154)
Rural	37.1	25.6	3.6	8.5	18.3	6.8	100.0	(1110)

*No symptoms other than loose, frequent stools.

**In stool.

Table V D3

Percentage of children under 5 with diarrhea in the past 3 days whose mother consulted a health facility, received treatment, and type of treatment, by duration of diarrheal episode and level of maternal education

Epidemiology and Family Health Survey, Honduras, 1987

	% Consulted Health Facility	% Received Treatment	Type of Treatment Received						No. of Children
			% Antibiotics	% Antidiarrheals	% Litrosol	% IV Fluid	% Herbal Remedies	% Massage	
Total	15.4 (1516)	74.1 (1515)	42.9	4.3	23.6*	1.4	24.6	11.5	(1122)
<u>Duration of Episode</u>									
(in days)									
1-3	8.9 (908)	65.3 (907)	46.1	4.9	19.3	1.2	19.4	6.3	(592)
4-6	19.5 (307)	85.0 (306)	42.7	3.5	26.2	0.8	29.2	11.5	(260)
7-13	27.8 (187)	88.8 (187)	37.3	3.6	31.3	1.8	29.5	20.6	(166)
≥ 14	35.2 (108)	91.7 (108)	33.3	5.0	29.3	3.0	35.4	27.3	(99)
<u>Maternal Education</u>									
None	10.6 (417)	70.7 (416)	43.4	3.0	24.7	1.0	32.2	17.7	(295)
Primary 1-3	15.1 (524)	73.1 (524)	49.9	6.3	26.4	1.0	25.8	12.6	(383)
Primary 4-6	16.2 (438)	74.9 (438)	40.4	3.4	20.5	1.2	19.6	6.7	(327)
≥ 7 years	28.5 (137)	85.4 (137)	24.8	3.4	20.5	4.3	14.5	6.0	(117)

*265 children received Litrosol of 1515 with diarrhea --> 17.5%.

Table V D4

Percentage of children under the age of 5 whose mother recognized the steps involved in preparing ORS and the symptoms of dehydration, by level of education

Epidemiology and Family Health Survey, Honduras, 1987

ORS Preparation/ Dehydration	Total	Maternal Education			
		None	Primary 1-3	Primary 4-6	≥ 7 Years
<u>Preparing ORS</u>					
Boil water	82.3	84.8	85.6	81.9	70.0
Cool water	56.3	58.1	57.0	57.5	48.8
Measure 1 liter	65.8	61.9	64.0	64.9	63.9
Dissolve salts	74.1	71.0	74.4	77.2	71.9
No. of Children	(8150)	(1871)	(2744)	(2476)	(1055)
<u>Symptoms of Dehydration</u>					
Sunken eyes	30.9	19.9	27.4	35.4	44.5
Dry mouth	23.4	11.5	20.3	29.4	34.0
Sunken fontanelle	18.2	9.6	14.8	22.7	28.0
Loose skin	15.7	6.7	10.7	19.4	31.3
No urination	8.4	4.2	7.2	11.9	9.1
Crying without tears	7.3	4.2	6.8	8.7	9.8
No. of Children	(7471)	(1516)	(2482)	(2344)	(1127)

E. Acute Respiratory Infections

Acute respiratory infections (ARI) include a variety of infections that affect the upper and lower respiratory system and are caused by a large number of etiological agents. They are characterized by high levels of morbidity and mortality and although they affect people at all ages, it is among children under five that they occur most frequently and with the greatest severity.

The most severe respiratory diseases are pneumonia, bronchitis and croup, with pneumonia being the most frequent cause of an ARI-related death among children under five. In 1987, it has been estimated that about 14 million infant deaths occurred in developing countries, 2.9 million of which were attributed to ARI (UNICEF, 1988). This number would undoubtedly be greater if deaths due to respiratory compromise secondary to measles were included. In many places, only diarrheal diseases cause more deaths (UNICEF, 1988; UNICEF/WHO, 1985; Delgado, 1988; Pio, 1982).

The incidence of ARI does not appear to vary greatly between developed and developing countries, at least in urban areas. The greatest difference lies in the greater frequency and severity of infections in lesser developed countries. Mortality attributed to ARI in less developed countries is 30 to 70 times higher than in developed countries (UNICEF/WHO, 1985). Between 10 and 20 percent of the children with pneumonia die in the former whereas less than 2 percent die in the latter (Pio, 1982). In Central America, ARIs constitute a primary reason for utilization of health care services, accounting for 25 to 50 percent of the ambulatory pediatric visits and 10 to 30 percent of the hospitalizations among infants (Delgado, 1988).

In order to obtain a better understanding of the phenomenon of ARIs, and to develop guidelines to be used by mothers and health care personnel for the identification and management of these infections according to their degree of severity, we have used a classification of mild, moderate and severe, based on symptoms reported by the mother.

Mild ARI: Many authors believe that the mild forms of ARI make up the majority of ARI episodes. They are self-limiting, do not require treatment, and are most likely to affect the upper respiratory system. The presence of the following symptoms indicates the existence of a mild infection:

1. Light cough
2. Nasal obstruction
3. Clear mucus
4. Sore throat
5. Hoarseness

Moderate ARI: The presence of the following symptoms generally implies the involvement of a greater extension of the respiratory tract and can require medication:

1. Moderate or intense cough
2. Rhonchi (rattling)
3. Wheezing
4. Bronchial secretions
5. Pleural inflammation and pain
6. Ear infection
7. Yellow or green mucus

Severe ARI: These infections occur with less frequency; nevertheless, they are responsible for a substantial number of deaths in the population under five. Characteristically, they present the following symptoms: (in addition to those of moderate ARI)

1. Suprasternal or intercostal retractions
2. Flaring of the nasal passages
3. Cyanosis
4. Stridor

Prevalence of ARI in Honduras: Mothers were asked about the presence of a cough in the last 15 days for each child under the age of five that lived with them. If her answer was affirmative, the cough's intensity was determined with a series of questions. Based on the symptoms that she reported and the classification discussed above, the ARI was classified as: not having ARI, when no symptoms or only one symptom of mild ARI is mentioned; mild ARI, when two or more symptoms of mild ARI are mentioned and no symptoms of the moderate or severe type; moderate ARI, when at least one symptom of moderate ARI is present but no sign of severe ARI; and severe ARI, if the mother mentions at least one sign of severe ARI.

As shown in Table V E1, in both the EFHS and the National Nutrition Survey (NNS), more than half of the children under the age of five presented symptoms or signs of ARI in the last 15 days. Mild episodes were not the most prevalent form in either study. Of the children with ARI, only one out of five have mild ARI, while 15.8 percent present signs of severe respiratory infection. The NNS was carried out during the hot dry season, between February and May of 1987, while the EFHS took place between the months of June and November, during a particularly rainy season. According to the NNS, the prevalence of ARI was higher (69.9%) but a smaller proportion of children were classified as suffering from severe ARI. (The classification system was the same for both surveys.) These findings are particularly interesting in view of the fact that much of the literature suggests that the incidence of ARI is higher during rainy or cooler conditions when persons are more likely to be indoors with closer contact with other people and inadequate ventilation (Williams; AHRTAG, 1987; Pandey, 1988).

Differences in socioeconomic circumstances help explain the increased morbidity and mortality from ARI in developing countries. Table V E2 shows the percentages of children with signs of ARI by selected household characteristics which serve as proxies for socioeconomic status (SES) as well as more direct indicators of health status. The prevalence of ARIs is markedly reduced in urban areas (49.3%) where families have greater

employment and educational opportunities, higher income, improved living conditions and access to health services. In rural areas, where more than two thirds of the children live, the prevalence of ARIs rises to 61.1 percent. The availability of running water and/or a flush toilet is shown to be associated with decreased prevalence. The greatest difference in ARI prevalence, however, is observed with various materials used for cooking fuel. ARIs are considerably less common in homes that use combustibles other than wood (i.e., kerosene, gas, electricity). Exposure to the potentially toxic respiratory irritants contained in smoke from wood fires, increases for those who spend the most time cooking, particularly in homes with poor ventilation (AHRTAG, 1987; WHO, 1987; Pandey, 1988; Gilman, 1988).

Electricity in the home represents an elevated standard of living as well as a decreased likelihood of exposure to the environmental hazards and irritants associated with the burning of wood and other materials for cooking and illumination. As expected, the prevalence of ARI varies inversely with the presence of this amenity in the home. Similarly, children living in homes with dirt floors have a higher prevalence of ARI than those living in homes with floors of other building materials (such as cinder block, brick, wood, etc.).

Radio and television represent additional indirect indicators of a family's socioeconomic status. Furthermore, they are the most important mass media utilized by which the MOH disseminates messages of health promotion and disease prevention. Here, again, the absence of a radio or television in the house is associated with a higher prevalence of ARI.

Access to and utilization of the formal health care system is essential for the adequate identification, prevention and treatment of diseases. In the present study such accessibility is measured in the time needed to reach a health care facility from home with the usual means of transportation. Children living within an hour from a health center are less likely to present with an ARI than those who live more than one hour away.

In daily life, the mother or primary caregiver (subsequently referred to as mother) is responsible for making decisions regarding a child's eating habits, immunization status, treatment and management of diarrhea or respiratory infections. She therefore represents a principal target at whom health information should be directed. Examination of the mother's characteristics may help to determine factors associated with a greater risk of ARI and subsequently to tailor health interventions.

In Table V E3, the prevalence of ARI is presented according to the child's age and selected maternal characteristics. Susceptibility to infection appears to vary inversely with the child's age. Several studies have demonstrated a greater prevalence or severity of ARI in children under one year of age. In the present study, the association is significantly greater among children less than two years old. This pattern is consistent with the National Nutrition Survey data which demonstrate a more severe nutritional deficit among children between 12 and 24 months of age.

Neither age nor employment status of the mother appears to be associated with ARI prevalence. In contrast, the prevalence of ARIs varies inversely with educational status, gradually through primary school and precipitously thereafter. According to UNICEF, maternal education is directly associated with a child's health, even more so than family income. Increased prevalence of ARI is found among children whose mothers are grand multiparas or are not in union.

Treatment of Acute Respiratory Infections: For all children who had an ARI during the 15 days prior to the interview, treatments received, if any, were examined, including traditional remedies, who recommended treatment and where it was obtained. Mild cases of ARI are self-limited and generally require no more than home remedies, if even that. Moderate and severe cases of ARI usually require antibiotic therapy and occasionally hospitalization. To limit the grave consequences of severe respiratory disease, the mother, caregiver or community should identify and treat moderate infections in a timely manner.

Table V E4 shows that of all children with ARI, four out of five (79.9%) received some treatment. The proportion treated increased from 67.0 percent with mild infection, to 80.2 percent with moderate and 94.5 percent with severe respiratory infection. As most children with ARI are treated, even those with mild cases, an evaluation of the appropriateness of such treatment should be the subject of further investigation.

Table V E5 presents the proportion of children with ARI who were treated, by type of treatment received. The most commonly used treatments are pills (71.8%) and syrups/liquids (53.6%), the least common, traditional abdominal massage (11.5%). Use of all remedies, especially injections (excepting pills), increases with the severity of infection. Traditional remedies appear important in the management of ARI as more than half of the children with severe cases receive herbal infusions, and approximately one third massage. The folk practices of administering oils, topically (ointments and salves) and orally, also markedly increase with the severity of the infection. In contrast, the increased use of pills and syrups and, to a lesser extent injections, for treatment of mild cases suggests excessive, inappropriate use of pharmaceuticals. Such treatment may aggravate a child's condition unnecessarily, deplete family resources and, in the case of antibiotics, may increase the proliferation of resistant bacterial strains when, in fact, most mild ARIs are viral in etiology. Almost five percent of the children with mild ARI were treated with antibiotics (Table V E6). Although antimicrobial therapy is indicated for more severe respiratory infections, barely one tenth of the children with moderate, and one fifth with severe infections receive such treatment.

The relative importance of each of the community and institutional factors that contribute to making a treatment decision must be considered in developing and evaluating strategies to improve diagnosis and management of ARIs. Table V E7 presents the children who received treatment for ARI according to the person who recommended such care. A child's mother or caregiver most commonly suggests treatment (65.4%), followed by health personnel (36.4%). With increasing severity of the infection, health

personnel, relatives and neighbors more frequently make recommendations. In contrast, neither the community health worker who is trained to assess mild ARI and refer more complicated cases, nor private physicians, are consulted with much frequency.

Finally, the general store proved to be the most important source of medicine for all grades of ARI, where more than half (54.2%) of the mothers buy drugs (Table V E8). Mothers provide the treatment for one quarter of the children (home remedies), while only 15.9 percent obtained medication at a pharmacy.

Table V E1

Distribution of children under 5 according to the presence and severity of ARI during the 15 days preceeding the interview by data source

Epidemiology and Family Health Survey, Honduras, 1987

Presence and Severity of ARI	EFHS 1987	NNS 1987*
ARI	57.5	69.9
Mild	19.7	31.5
Moderate	64.5	62.5
Severe	15.8	6.0
No ARI	42.5	30.1
Total	100.0	100.0
No. of Children	(8452)	(3142)

*NNS = National Nutrition Survey, 1987

Table V E2

Prevalence of ARI in children under 5 during the 15 days preceeding the interview according to residence and household characteristics

Epidemiology and Family Health Survey, Honduras, 1987

Household Characteristics	Prevalence of ARI %	No. of Children
National	57.5	(8452)
<u>Residence</u>		
Urban	49.3	(2561)
Rural	61.1	(5891)
<u>Water Supply</u>		
Tap, faucet, spigot	54.8	(4650)
Other	60.9	(3802)
<u>Waste Disposal</u>		
Toilet	46.4	(1592)
Latrine	59.0	(2734)
None	60.0	(4125)
<u>Cooking fuel</u>		
Wood	60.2	(6793)
Other	46.4	(1659)
<u>Electricity</u>		
Yes	50.5	(2667)
No	60.7	(5784)
<u>Floor</u>		
Dirt	60.6	(5062)
Other	52.9	(3381)
<u>Radio</u>		
Yes	54.4	(5000)
No	62.1	(3452)
<u>Television</u>		
Yes	48.4	(1999)
No	60.3	(6452)
<u>Time it takes to get to Health Center with usual transportation</u>		
< 1 hour	55.6	(4913)
≥ 1 hour	60.1	(3482)

Table V E3

Prevalence of ARI in children under 5 during the 15 days preceding the interview according to age of child and maternal characteristics

Epidemiology and Family Health Survey, Honduras, 1987

Infant and Maternal Characteristics	Prevalence of ARI %	No. of Children
National	57.5	(8452)
<u>Age of child (years)</u>		
0	61.3	(1826)
1	62.7	(1746)
2	59.5	(1746)
3	52.4	(1617)
4	50.3	(1517)
<u>Maternal age</u>		
15-24	58.1	(2655)
25-34	56.9	(3890)
35-44	58.0	(1907)
<u>Maternal education</u>		
None	60.8	(1955)
Primary 1-3	59.8	(2825)
Primary 4-6	57.5	(2514)
≥ 7 years	46.7	(1152)
<u>Employment status of mother</u>		
Yes	56.7	(2012)
No	57.8	(6440)
<u>Number of live births</u>		
< 3	56.9	(2454)
3-5	56.3	(3475)
≥ 6	59.7	(2523)
<u>Marital status</u>		
Married/in union	57.0	(7294)
Other	60.6	(1158)

Table V E4

**Distribution of children under 5 with history of ARI during the 15 days
preceeding the interview according to whether they received treatment**

Epidemiology and Family Health Survey, Honduras, 1987

Received Treatment	Total	ARI		
		Mild	Moderate	Severe
Yes	79.9	67.0	80.2	94.5
No	20.1	33.0	19.8	5.5
Total	100.0	100.0	100.0	100.0
No. of Children	(4861)	(959)	(3133)	(769)

Table V E5

Percentage of children under 5 with a history of ARI during the
15 days preceeding the interview who received treatment
according to type of treatment

Epidemiology and Family Health Survey, Honduras, 1987

Type of Treatment Received	Total	ARI		
		Mild	Moderate	Severe
Pills	71.8 (3874)	76.6 (642)	69.7 (2509)	74.7 (723)
Syrups, liquids	53.6 (3866)	38.2 (641)	53.8 (2502)	66.9 (723)
Injections	15.3 (3881)	5.0 (642)	12.8 (2512)	33.1 (727)
Herbal remedies	28.9 (3882)	15.1 (642)	28.0 (2513)	44.0 (727)
Massage	11.5 (3867)	5.9 (641)	10.8 (2503)	18.5 (723)
Oils	34.6 (3879)	21.5 (643)	33.3 (2509)	51.0 (727)

Note: number of children in parentheses.

Table V E6

Distribution of children under 5 with a history of ARI during the 15 days preceding the interview according to use of antibiotics by severity of ARI

Epidemiology and Family Health Survey, Honduras, 1987

Antibiotic Use	Total	History of ARI		
		Mild	Moderate	Severe
Yes	10.5	4.3	9.9	21.1
No	89.5	95.7	90.1	78.9
Total	100.0	100.0	100.0	100.0
No. of Children	(486)	(959)	(3133)	(769)

Table V E7

Percentage of children under 5 with a history of ARI during the 15 days preceding the interview according to source of advice

Epidemiology and Family Health Survey, Honduras, 1987

Source of Advice	Total	History of ARI		
		Mild	Moderate	Severe
Mother/caregiver	65.4 (3884)	65.2 (643)	65.0 (2514)	66.9 (727)
Health professionals	36.4 (3883)	27.8 (643)	35.3 (2514)	47.9 (726)
Relative/neighbor	15.1 (3883)	11.4 (643)	14.4 (2513)	21.2 (727)
Private physician	6.2 (3884)	6.4 (643)	6.2 (2514)	6.1 (727)
Pharmacy	4.1 (3884)	3.4 (643)	4.5 (2514)	3.3 (726)
Community health worker	3.6 (3883)	4.2 (643)	3.3 (2513)	4.1 (727)
General store	2.5 (3882)	3.1 (642)	2.2 (2513)	2.8 (727)
Midwife	1.6 (3883)	0.9 (643)	1.4 (2514)	3.2 (726)
Healer	1.3 (3884)	0.5 (643)	1.1 (2514)	2.8 (727)
Drug outlet ("puesto")	0.9 (3884)	0.6 (643)	0.8 (2514)	1.2 (727)

Note: number of children in parentheses.

Table V E8

Percentage of children under 5 with a history of ARI during the 15 days preceding the interview and received treatment according to source

Epidemiology and Family Health Survey, Honduras, 1987

Source of Treatment	Total	History of ARI		
		Mild	Moderate	Severe
General store	54.2 (3384)	58.5 (643)	54.2 (2514)	50.3 (727)
Health professionals	33.0 (3384)	23.5 (643)	32.1 (2514)	44.3 (727)
Mother/caregiver	24.5 (3384)	20.1 (643)	23.2 (2514)	33.1 (727)
Pharmacy	15.9 (3384)	13.2 (643)	16.5 (2514)	16.2 (727)
Relative/neighbor	7.7 (3384)	5.3 (643)	7.3 (2514)	11.1 (727)
Drug outlet ("puesto")	3.9 (3382)	2.3 (643)	3.7 (2512)	5.6 (727)
Community health worker	3.6 (3384)	4.2 (643)	3.2 (2514)	4.5 (727)
Private physician	3.4 (3382)	3.0 (643)	3.3 (2512)	3.9 (727)
Healer	0.7 (3383)	0.2 (643)	0.7 (2513)	1.1 (727)
Midwife	0.4 (3384)	0.0 (643)	0.2 (2514)	1.1 (727)

Note: number of children in parentheses.

CHAPTER V RECOMMENDATIONS

The majority of all women, whose last live birth occurred between 1982-1987, obtained prenatal attention and most sought well-baby care. These results provide evidence that the MOH goal established in 1974, has been attained. However, only a minority of these women receive postpartum care, underscoring the need for increased institutional attention.

Great strides have been taken to improve protection of this population against tetanus, an essential service since more than half of the births in Honduras still occur at home.

Recommendations are presented regarding:

- a) Training TBAs as prenatal care givers as well as birthing attendants;
- b) All MCH service providers, including TBAs;

a) TBA training and continuing education must re-emphasize:

- the importance of tetanus toxoid protection for pregnant women, especially since the majority of rural and less educated women deliver at home and seek TBA prenatal advice;
- the advantages of referring all clients to a health care facility for an initial routine prenatal screening examination;
- the value of referring pregnant women with high risk signs or symptoms, including those with age and parity risk factors, for clinical evaluation;
- the risks associated with the use of injectables to induce labor and, either,
 - 1) strongly discourage TBAs from inducing labor, or;
 - 2) accept that TBAs will continue to induce labor, and therefore, instruct them how to use injectables appropriately, and to identify and manage the negative sequelae of such treatment.

Although the latter option may be less acceptable to the medical establishment, it may be a more realistic, implementable strategy.

- b) All MCH service providers should recognize and re-emphasize the importance of:
- initiation of prenatal care during the first trimester;
 - full tetanus toxoid coverage regardless of intended place of delivery; to this end, women between the ages of 15 and 44 who arrive at a health facility for any visit, should have their vaccination card checked to assess their tetanus immunization status and the necessity for inoculation at that time.
 - the presence of a trained birth attendant or medical professional at all home births;
 - timely postpartum care for all women, especially for those with surgical deliveries;
 - integration of postpartum care with the first well-baby visit;
 - initiation of well baby care from six weeks to two months of age to ensure adequate immunization as well as to assess infant growth and development.
 - breastfeeding for all women, emphasizing the physiologic and psychologic benefits to mother and infant
 - immediate and exclusive breastfeeding for up to six months underscoring the contraceptive advantages;
 - initiation or resumption of contraceptive use within three months postpartum when exclusive breastfeeding is not possible since sexual activity is likely to resume.
 - discouraging the addition of unsterile liquids or foods, and all stimulants such as coffee, particularly during the infants first five months of life;
 - further exploration of the perceived benefits and potential harm of using a chupón with the objective of suggesting appropriate modifications that preserve custom and reduce risks.
 - MCH providers should recognize and re-emphasize the necessity of vaccinating children according to the standard immunization schedule, adhering to the recommended dose intervals, especially for children during their first year of life.
 - revise educational strategies to improve understanding of each of the steps in the preparation of Litrosol, and recognition of the signs of dehydration.

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CHAPTER VI FAMILY PLANNING

A. Planning status and fertility plans

This section reports family size experience and intentions. Because relatively few single women have families, most of the analyses of this section are based only on women in union. Women who had ever been pregnant were asked a series of questions concerning their last or current conception. Planned pregnancies are defined as those that are both desired and occur when intended. Mistimed are desired yet occur before intended, and unwanted are those pregnancies which are not wanted at any time. Pregnancies of 83 women (1.8%) could not be classified because of missing information. Table VI A1 shows that three fifths (58.5%) of 5911 pregnancies were planned. Women classified as urban, younger, better educated or with fewer living children are more likely to report planned pregnancies than other women. Most striking is that over a third (36.7%) of the pregnancies to women aged 40-44 are unwanted. Similarly, 45.0 percent of the pregnancies to women with 6 or more living children are unwanted.

Reproductive intentions among women in union (including those currently pregnant) are the focus of Table VI A2. Women who reported a hysterectomy, had gone through menopause, or had not used a family planning method for three or more years and had been sexually active but had not become pregnant, have been classified as having impaired fecundity. These women comprise a separate column, regardless of their answers to the reproductive intention questions. Nearly half of the women desire no more additional children (this category includes sterilized couples). Women who are older, less educated, or have greater numbers of living children are more likely to desire no more children.

Table VI A3 shows mean perception of small, ideal and large family size by age, residence and education. Many women could not quantify their responses to these three questions and have been omitted from the table. The overall mean for a small family is 3.0, ideal is 3.2, and large is 7.5 children. For each question, the differences were slight across the six age groups, yet the means for rural or less educated women on all three questions were noticeably higher than their counterparts. The last column in this table shows the percent of women whose ideal family size is actually less than their perception of a small family; overall the figure is 33 percent. When examined by residence or education, a higher percentage of women from rural areas and with less education report their ideal family size to be less than their perception of a small family.

Table VI A4 shows the distribution of all women in their perception of the ideal time span between children; nearly one-third report 2 to 3 years and another 29.8 percent, 3 to 4 years. Women aged 15-19 are the most likely to report an interval less than 2 years as well as to report that they do not know, not surprising, since they have less childbearing experience than older women. The greatest differences among educational groupings or residence is the increased proportion of women with no education and women living in rural areas who report that they do not know.

Table VI A1

Distribution of women in union who have been pregnant according to their planning status of the last pregnancy, by residence, age, number of living children and education

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	Planning Status of Last Pregnancy			Unknown	Total	No. of Women
	Planned	Mistimed	Unwanted			
Total	58.5	20.1	20.0	1.4	100.0	(5911)
<u>Residence</u>						
Teg/SPS	66.6	19.8	13.0	0.7	100.0	(1403)
Other urban	64.7	18.0	15.7	1.5	100.0	(823)
Rural	54.4	20.6	23.4	1.6	100.0	(3877)
<u>Age</u>						
15-19	67.4	27.5	4.1	1.1	100.0	(466)
20-24	59.0	32.1	7.8	1.1	100.0	(1189)
25-29	60.2	23.3	15.1	1.5	100.0	(1371)
30-34	57.9	16.1	24.3	1.7	100.0	(1146)
35-39	55.2	11.9	31.5	1.4	100.0	(997)
40-44	54.9	7.1	36.7	1.3	100.0	(742)
<u>Number of Living Children</u>						
0	85.8	11.4	2.0	0.8	100.0	(254)
1	78.1	18.7	2.5	0.8	100.0	(930)
2	61.7	31.9	5.4	0.9	100.0	(975)
3	58.0	25.8	14.5	1.6	100.0	(984)
4-5	54.0	18.3	26.0	1.8	100.0	(1523)
≥ 6	41.8	11.2	45.2	1.7	100.0	(1245)
<u>Education</u>						
None	52.2	16.2	29.8	1.9	100.0	(1231)
Primary 1-3	52.7	19.6	25.6	2.0	100.0	(1803)
Primary 4-6	62.5	22.1	14.4	0.9	100.0	(1818)
≥ 7 years	69.2	21.6	8.6	0.6	100.0	(1055)

VI A2

Distribution of women in union* according to
reproductive intentions, by selected characteristics

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	Desires No More Additional Children†	Desires Additional Children		Impaired Fecundity‡	Undecided	No. of Women
		Near Future	Later**			
Total	49.3	13.6	21.0	4.7	11.3	(6090)
<u>Residence</u>						
Urban	49.9	15.9	22.2	4.7	7.3	(2221)
Rural	48.9	12.3	20.4	4.7	13.6	(3869)
<u>Age</u>						
15-19	13.5	25.9	46.7	0.6	13.3	(540)
20-24	29.9	20.9	35.4	1.6	12.2	(1236)
25-29	45.5	15.8	24.8	2.5	11.4	(1397)
30-34	59.7	10.6	12.5	4.1	13.2	(1170)
35-39	72.0	6.2	6.3	6.9	8.6	(1001)
40-44	67.6	3.4	4.8	15.0	9.2	(746)
<u>Living Children</u>						
0	5.4	36.3	38.1	10.8	9.3	(443)
1	14.9	28.7	43.1	4.2	9.1	(927)
2	34.5	17.8	31.2	3.5	12.9	(973)
3	54.4	11.6	18.8	4.6	10.7	(984)
4-5	67.9	5.5	10.1	4.4	12.0	(1520)
≥ 6	75.3	2.6	5.6	4.3	12.2	(1243)
<u>Education</u>						
None	54.2	8.3	16.1	6.1	15.4	(1248)
Primary 1-3	53.0	11.5	17.4	5.5	12.6	(1848)
Primary 4-6	46.3	15.3	24.2	3.6	10.6	(1889)
≥ 7 years	42.5	20.4	27.2	3.8	6.0	(1101)

*Pregnant women included.

†Includes sterilized couples.

**Women who say they want to wait more than 2 years before having another child.

‡Women in menopause, with hysterectomy, haven't used FP for 3 years.

Table VI A3

Mean perception of ideal, large and small family size,
by age, residence and education

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	Family Size			% whose ideal is less than small family
	Small (n=7679)*	Ideal (n=6218)*	Large (n=7046)*	
<u>Mean</u>	3.0	3.2	7.5	
<u>Age</u>				
15-19	3.0	3.2	7.7	37.8
20-24	2.9	3.1	7.3	34.3
25-29	2.9	3.2	6.9	29.2
30-34	3.0	3.3	7.3	28.7
35-39	3.0	3.5	7.8	30.5
40-44	3.2	3.4	8.5	33.5
<u>Residence</u>				
Teg/SPS	2.5	3.0	6.6	24.9
Other urban	2.8	3.1	7.2	33.0
Rural	3.4	3.5	8.3	40.1
<u>Education</u>				
None	3.8	3.8	8.8	45.4
1-3 years	3.4	3.6	8.4	40.6
4-6 years	3.0	3.2	7.5	37.3
≥ 7 years	2.4	3.0	6.4	22.3

*All women were asked this question, yet for the purpose of calculating the mean, those who answered "don't know" were omitted. Between 2443 and 3861 cases reported "don't know" to the three questions.

Table VI A4

Distribution of all women in their perception of ideal time span between children,
by age, education and residence

Epidemiology and Family Health Survey, Honduras, 1987

	Number of Years				Whatever Occurs	Don't Know	Total	No. of Women
	< 2	2 < 3	3 < 4	≥ 4				
Total	6.4	32.9	29.8	20.4	0.2	10.4	100.0	(10139)
<u>Age</u>								
15-19	10.9	35.8	22.1	15.6	0.0	15.5	100.0	(2493)
20-24	5.7	32.7	31.4	22.0	0.0	8.1	100.0	(2080)
25-29	4.7	31.9	33.4	21.6	0.1	8.3	100.0	(1877)
30-34	4.9	30.0	33.0	24.3	0.2	7.6	100.0	(1443)
35-39	4.3	30.7	33.2	22.3	0.2	9.3	100.0	(1274)
40-44	4.0	34.6	30.2	18.4	1.0	11.7	100.0	(972)
<u>Education</u>								
None	7.0	28.5	23.8	16.2	0.5	24.0	100.0	(1670)
Primary 1-3	6.1	31.0	28.1	20.7	0.2	13.8	100.0	(2651)
Primary 4-6	6.0	32.3	31.6	22.9	0.1	7.2	100.0	(3312)
≥ 7 years	6.6	38.5	33.4	19.5	0.1	1.9	100.0	(2502)
<u>Residence</u>								
Teg/SPS	6.9	33.8	32.3	23.6	0.1	3.2	100.0	(2721)
Other urban	5.0	33.9	33.3	22.3	0.2	5.4	100.0	(1545)
Rural	6.5	32.1	27.8	18.4	0.2	15.0	100.0	(5873)

B. Contraceptive knowledge, use and source

Introduction

In 1983 the Ministry of Public Health initiated a family planning program as a component of its Maternal and Child Health Division. Honduran policymakers view family planning as the right of the individual to choose the number of children desired, free of imposition or coercion; family planning is also viewed as a means to improve maternal and infant survival. The general objectives of the program are as follows:

- Promote and offer family planning services to decrease maternal and child morbidity and mortality.
- Contribute to fertility regulation with the development of information, education and communication (IEC) programs.
- Decrease the incidence of illegally induced abortion by increasing the use of family planning.

Family planning services are delivered at regional and area hospitals, CESAMOs (urban health centers) and CESARs (rural health centers). At the community level, some methods and educational activities are offered.

Because of the resources necessary to perform sterilization and to treat infertility, these specific activities are carried out by the MOH only in hospitals. CESAMOs offer oral contraceptives, IUD insertion and barrier methods, while CESARs offer only oral contraceptives and barrier methods.

The program established as high priority the provision of methods to poor women, women under 35, and women who are postpartum, postabortion or at high risk for other reasons.

The Honduran Family Planning Association (ASHONPLAFA) was the first Honduran agency to offer family planning services and began operation in 1963 with a two-fold mission: first, to provide the population with information and counseling in sex education and family planning, using responsible parenthood as its guiding theme; and secondly, to provide contraceptive methods through the establishment of clinics, a community-based distribution (CBD) program, and a voluntary sterilization program.

ASHONPLAFA maintains three clinics, one each in Tegucigalpa, San Pedro Sula, and Choluteca where IUDs are inserted, oral contraceptives prescribed, and barrier methods made available. Male and female sterilizations are performed at the clinics in Tegucigalpa and Choluteca. Laboratory facilities are available for blood and urine exams, pregnancy tests and pap smears. Besides the provision of these services, occasional home visits are made to motivate women and frequent discussion groups are held at the clinics and in the community. ASHONPLAFA has developed information dissemination programs aimed at community and national leaders (PIPOM).

In 1975 ASHONPLAFA initiated an urban based CBD program in Tegucigalpa and San Pedro Sula. A year later, the program was extended to other communities. The program has grown substantially since its inception. In

1978 there were 414 distributors and at the time of EFHS 1987, there were more than 1200 distribution points serving urban and rural communities. The distributors work out of their homes or small shops and are supervised by promoters who visit the distributors once every three months.

Distributors may sell as many as six different products, including two standard-dose brands of oral contraceptives, a low-dose brand, foaming tablets, aerosol foam and condoms. As of late 1986, the CBD program, was serving 44,477 active users, 93 percent of whom were using oral contraceptives.

ASHONPLAFA's voluntary sterilization program was initiated in 1977, using governmental and private hospitals. Today it is carried out in 16 hospitals most of which belong to the MOH, and the ASHONPLAFA clinics in Tegucigalpa and Choluteca.

In 1981, ASHONPLAFA started the Social Marketing Program (SMP) to increase knowledge and use of contraceptive methods through the use of commercial establishments authorized by the Law of Pharmacies and Health Stores. The SMP markets Perla, a standard dose oral contraceptive, Norminest, a low dose pill, the condom Guardian, and as of 1988, it began to sell IUDs to be inserted by the women's physician.

Results

Data on women's knowledge, past use and current practice of contraception provide important information to family planning administrators and suppliers of such methods. The results of this survey provide the most current information available on these topics and is easily compared with earlier surveys (ENPA 1981, MCH/FP 1984). The discussion herein will highlight salient features of the 1987 survey findings and also present historical trends in Honduran family planning.

For each method, respondents were asked whether they had heard of, used, and/or currently use the contraceptive in question. Where necessary, local expressions were used to help women identify methods that carry other names.

Contraceptive Knowledge

Table and Figure VI B1 show how knowledge of methods has increased to the highest level since 1981 for all contraceptives. Even orals, whose base of familiarity was 92.9 percent in 1984, showed an increase such that only 2.6 percent of respondents say they have never heard of this method. The largest gain is found in condoms, where knowledge increased 18 percentage points over the 1984 level; significant gains can also be noted in knowledge of withdrawal. Nevertheless, withdrawal and vasectomy continue to be the two least known methods.

Figure VI B1

Percentage of women with knowledge of contraceptive methods in the ENPA 1981, MCH/FP 1984 and EFHS 1987

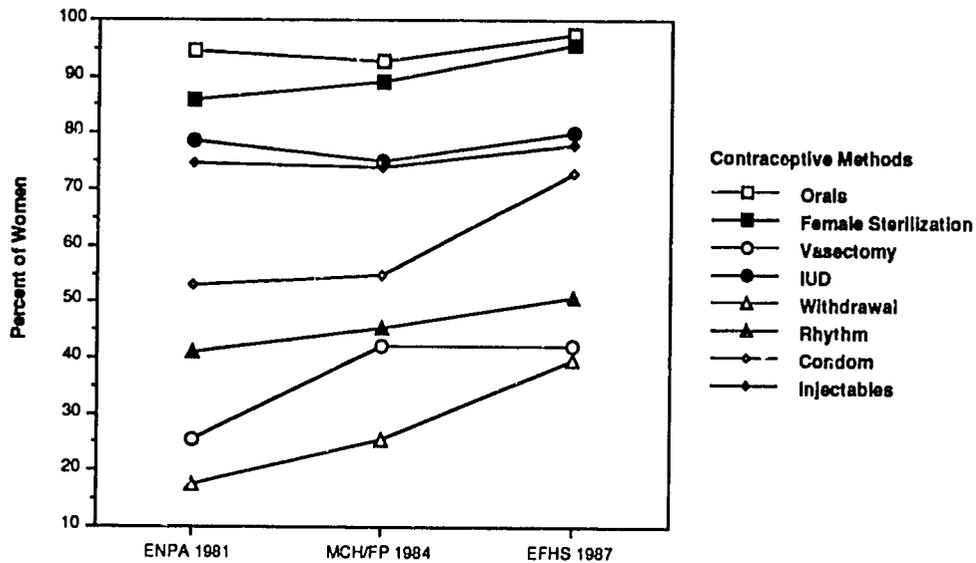


Table VI B2 shows that women in Tegucigalpa/San Pedro Sula are the most knowledgeable; knowledge levels in other urban areas are close to levels in Teg/SPS, while rural areas lag further behind. In comparison to the previous survey, what is most interesting to note is that current levels of knowledge in rural areas are similar or superior to overall levels in 1984.

Current and ever use of contraceptives

The tables in this section require every contracepting woman to be matched with only one method; for those who currently (in the last 30 days) use more than one method, the most efficacious is selected (from most to least efficacious, the following order is used: female sterilization, vasectomy, injectables, IUD, orals, condom, vaginal spermicides, rhythm, withdrawal, other). A total of 102 (1.7%) women report using a combination of methods, one of which is usually rhythm or withdrawal.

In Table VI B3, all women in union are classified into one of four groups (no knowledge, never used, previous user, and current user) for each method. Each method was asked about individually; thus the number of women who answer the item varies for each method because of missing data. The two best known methods, oral contraceptives and female sterilization, are also the most frequently used. Although 13.5 percent of women in union are using orals, twice that proportion have used them in the past but have since discontinued. (See Section D of this chapter for further information on use of oral contraceptives.)

Table VI B4 compares the 1987 level of knowledge, ever use, and current use among women in union to that of 1984. The changes in knowledge parallel those noted among all women in Table VI B1. The percentage of women in union that have ever used the methods has increased for every method (except injectables) from the 1984 levels. Small increases in current use are evident for most methods with the largest increases appearing in the use of condoms or withdrawal.

Contraceptive prevalence (Tables VI B5, B6 and Figure VI B2) for women in union rose to 40.6 percent from the 1981 level of 26.8 percent. Orals and female sterilization have always been the most common methods. Rural prevalence continues to be lower (29.9%) than urban prevalence (59.3%). Both rural and urban prevalence have increased but at different rates over the time period. With regard to methods, the increases between 1981 and 1984 are found largely in more modern methods. The increase in prevalence between 1984 and 1987 is attributable largely to gains in traditional methods. Table IV B6 shows that contraceptive patterns of Honduran women living in other urban areas resemble those of women in Teg/SPS more than those in rural areas.

Figure VI B2
Distribution of women in union and current contraceptive use, by residence

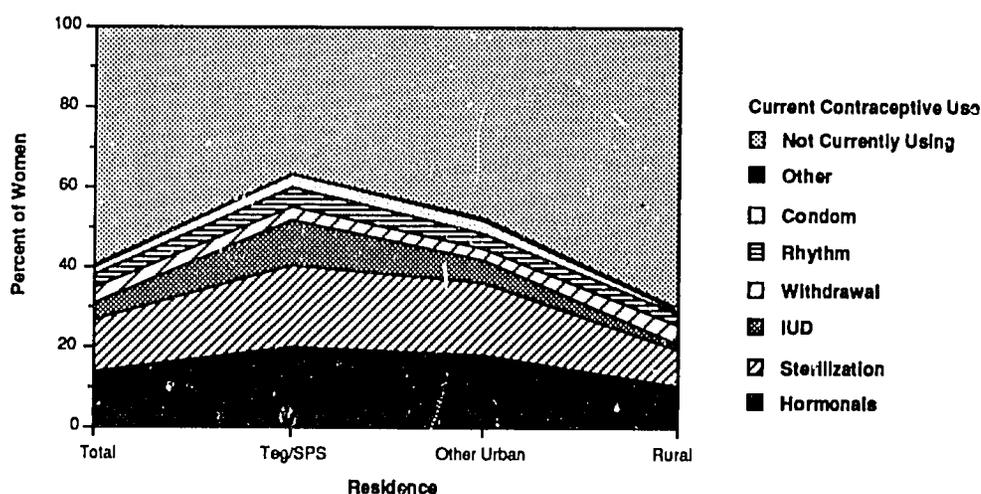


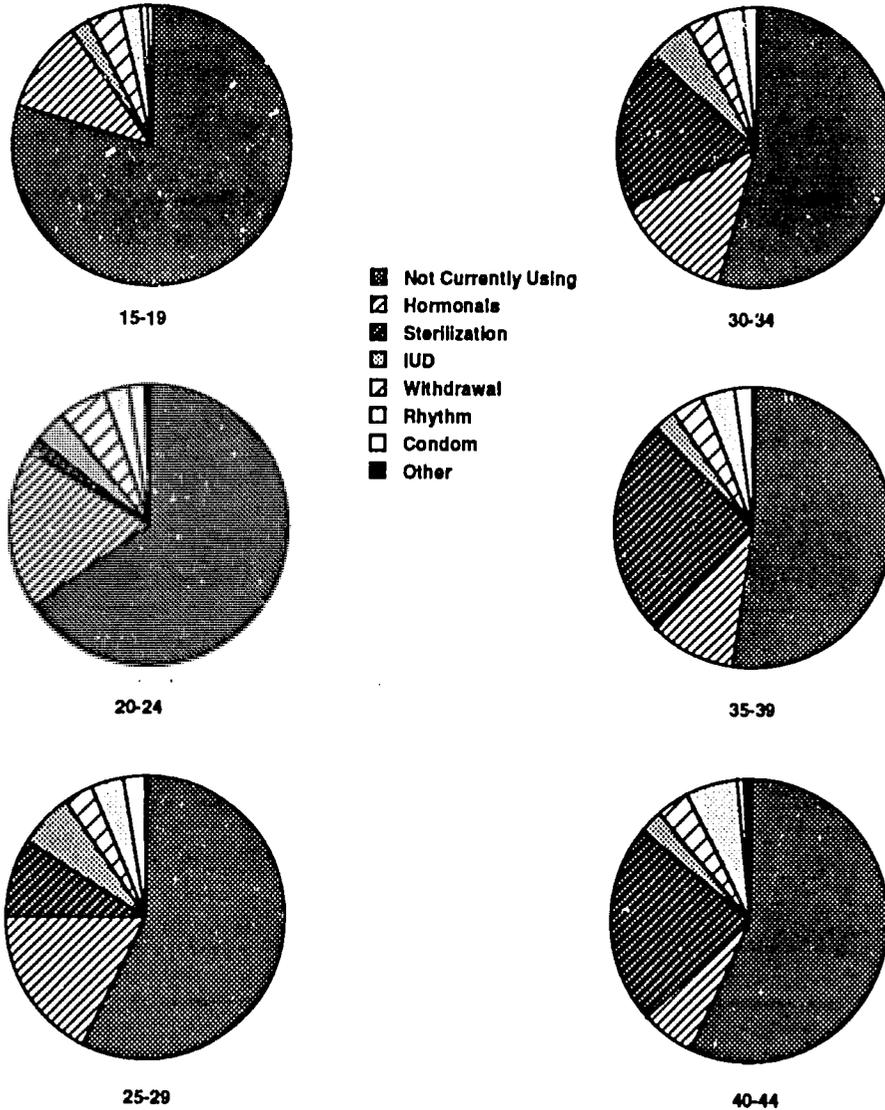
Table VI B7 shows the distribution of contraceptive use for three groups of women: all women regardless of marital status, women who are not currently in union but are now separated, divorced or widowed, and finally, never married women. Prevalence is considerably lower than that of women in union for these groups of women since many of them are not sexually active.

The distribution of methods currently used by contracepting women in union is provided in Table VI B8. It shows sterilization and orals account for nearly two thirds of total contraceptive use for both urban and rural respondents. IUD use and withdrawal are strongly associated with residence; IUD prevalence is high in Teg/SPS where withdrawal is low and the opposite is true in rural areas.

Table VI B9 and Figure VI B3 shows the prevalence and distribution of methods by age groups; prevalence is at its highest among women aged 35 to 39 (47.7%) and lowest among women 15 to 19 (20.2%). With regard to method choice, the young tend to rely heavily on oral contraceptives, while the older find sterilization more acceptable. Pill use peaks at ages 25-29, and is replaced by sterilization in the older age groups. Since the 1984 survey, contraceptive prevalence has increased in all age groups with the greatest change (10 percentage points) among those aged 40-44.

Figure VI B3

Distribution of women in union and current use of contraceptive methods, by age



A small portion of the increase for this age group is attributable to an increase in modern methods but most of the increase comes from the increased reporting of rhythm and withdrawal. Many of these 40-44 year olds were 35-39 in the 1984 survey. The age group reporting the greatest use of rhythm and withdrawal in 1984, in fact, was the 35-39 year olds (6.9%). The 40-44 year olds reported 4.9 percent. In 1987 these methods account for 7.4 percent for 35-39 year olds and 9.8 percent for 40-44 year olds.

A three point percentage increase among 40-44 year olds from 1984 to 1987 is not completely unreasonable. However, the relatively large increase in knowledge and use of withdrawal and rhythm from 1984 to 1987 raises questions about interviewing techniques. Is the increase in the reporting of traditional methods real? The questions used in 1984 and 1987 were identical, and many of the interviewers worked in both surveys. Because of the longer interview in 1987, it is unlikely that interviewers spent more time in 1987 explaining methods which were not readily recognizable to the respondent. It is possible that the church has increased their activities to promote traditional methods, but the evidence has been anecdotal. Differences between 1984 and 1987 could also be attributed to variation in sampling.

Table VI B10 shows the relationship between method choice and the number of living children. Because of the high correlation between age and number of children, these results show a similar pattern to VI B9 above. Overall contraceptive prevalence is the lowest in women with no children, peaks at 3 children, and drops among women with 4 or more living children. Sterilization, as a fraction of overall current use, increases steadily as the number of living children increases, while the pill becomes less important. For each category of living children, prevalence has increased since 1984.

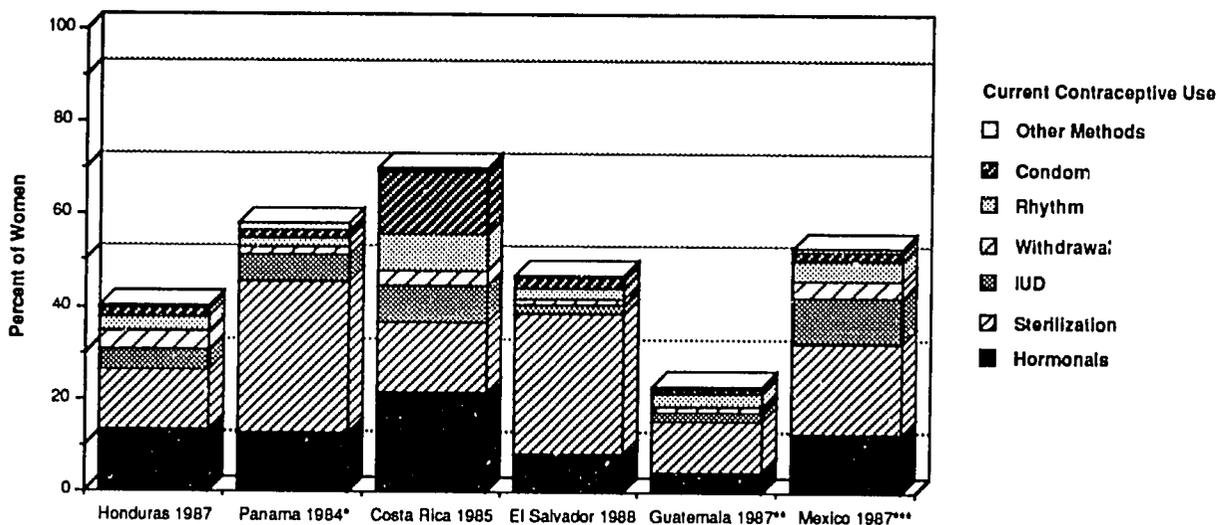
Table VI B11 shows that as the level of formal education increases, so does the prevalence of contraceptive use; prevalence among those with some secondary education is nearly three times greater than those with no education. Injectables, condoms, the IUD, orals, and female sterilization increase with each level of education. Again, overall prevalence within each educational level has increased since 1984.

The relationship between education and contraceptive prevalence is often a product of residence; Table VI B12 shows that urban prevalence is higher than rural prevalence for each education group. For each category of residence, the percent of women contracepting is higher for those with at least four years of education.

Table VI B13 and Figure VI B4 provide information on contraceptive use for countries in Central America in which a Contraceptive Prevalence Survey (CPS) or a Demographic and Health Survey (DHS) has recently been conducted. Only Guatemala has a significantly lower percentage of women using contraception. Among the countries cited here, only Costa Rica has a higher proportion of women using oral contraceptives and only Guatemala a smaller proportion sterilized.

Figure VI B4

Distribution of women in union and current use of contraceptive methods in Central American countries, Panama and Mexico



*Includes all Indians and all residents of Darien and the San Blas Regions.
 **Preliminary data.
 ***Preliminary data, women 15-49 years of age.

Source of contraception

An item of great importance to family planning programs and donor agencies is a clear understanding of where couples obtain their contraceptive methods. The sources of oral contraceptives and female sterilization are examined in detail. These two methods account for more than 60 percent of the methods used. During the interview, contracepting women were asked where they received or purchased their methods, what brand, if using the pill, and how much they paid. Based on these three pieces of information, a declared source (the direct response of the woman) and an attributed source (incorporating the additional information of price and brand) can be determined.

The primary discrepancy between the declared and attributed sources for oral contraceptives comes from the sales of Perla and Norminest in the private sector. Perla and Norminest are products of the Social Marketing Program which at the time of the 1987 survey was an ASHONPLAFA program.

Table VI B14 shows that all ASHONPLAFA programs combined provide more than half of the oral contraceptives (57.8%), the private sector 21.0 percent, and public sector (Ministry of Health and Social Security Institute) programs 17.8 percent. Since 1984, there has been a substantial increase in the role of the Social Marketing Program. When source is examined by region (Table VI B15), ASHONPLAFA continues to provide the majority of orals: 62 percent in rural areas compared to 52 percent in metropolitan Honduras. The private sector is strongest in Tegucigalpa and San Pedro Sula (34.4%) while the Ministry of Health is strongest in rural areas (24.3%).

Female sterilization is performed at both Ministry of Health and private hospitals through official agreements with ASHONPLAFA. Most sterilizations at the MOH can be attributed to ASHONPLAFA. However, sterilizations performed at private hospitals must be examined by cost since those provided by ASHONPLAFA are subsidized.

ASHONPLAFA provides more than 70 percent of the female sterilizations, most of these through contractual agreements with Ministry hospitals (Table VI B16). Ministry hospitals are the primary source in all regions (Table VI B17). In Tegucigalpa and San Pedro Sula, the Honduran Institute for Social Security (IHSS) is responsible for about a quarter of the procedures. Its impact is negligible in other areas.

Source of condoms and IUDs may also be of interest to program planners. Their declared sources are shown in Table IV B18.

Non-use of contraception

The reasons women have for not contracepting provide important information for planners in their desire to attract new acceptors. Table VI B19 includes only women in union who are not currently contracepting and shows that 70 percent are not contracepting for reasons related to pregnancy, fecundity, breastfeeding and sexual activity; such reasons are generally outside the bounds of programmatic interest. (See Table IV A2 for the definition of subfecundity.) Over 50 percent of the remainder ("other reason") are for reasons of fear/bad experience/distrust of methods, lack of knowledge and husband's opposition. These reasons are more prevalent in the rural sector.

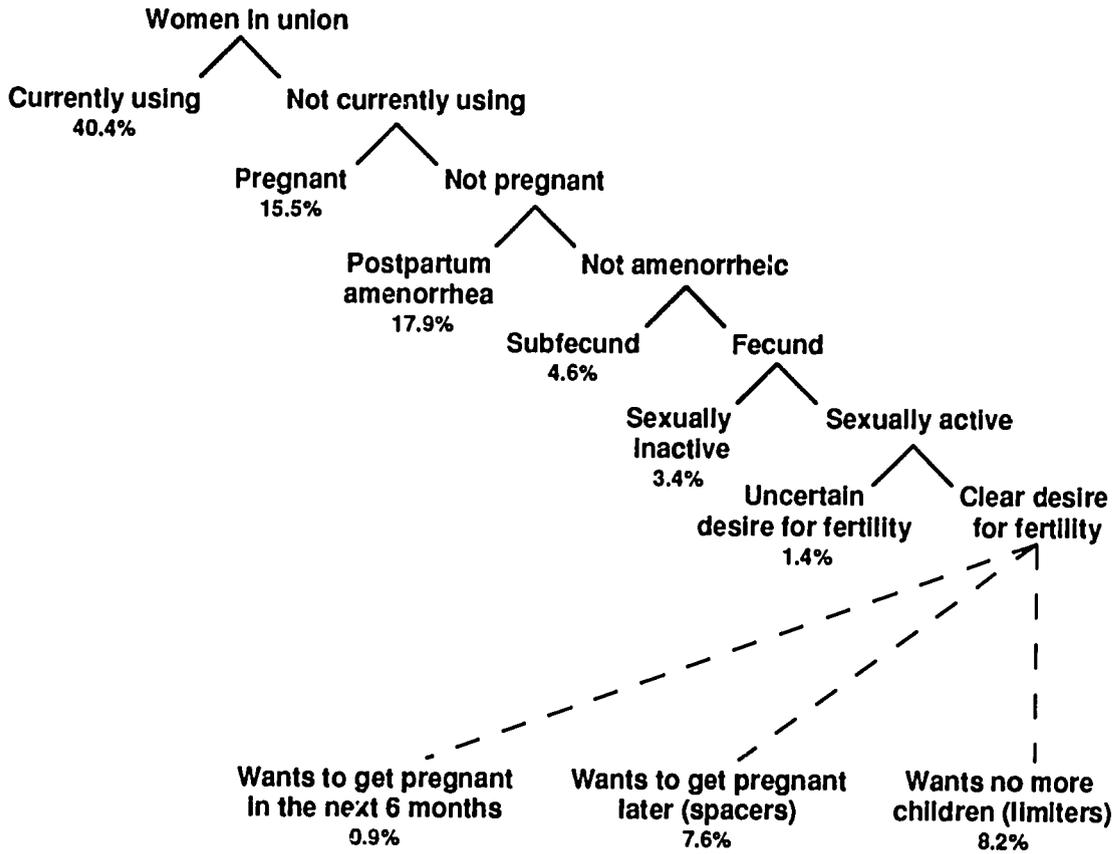
Table VI B20 shows that over 60 percent of non-contracepting (yet fecund) women in union report that they may adopt a contraceptive method. As expected, rural women are less likely to expect to contracept than urban women. The outlook for contracepting peaks in the 25-29 age group and reaches its lowest level in the 40-44 age group, where only 37.5 percent say they may adopt a method. Desire to contracept increases with education and previous use.

For fecund women in union who are not currently contracepting yet intend to do so, their preferred method and source are of important interest (Table VI B21). One third of respondents intend to adopt orals and 23.5 percent sterilization. Of the various sources, nearly two thirds view the Ministry of Health as their most likely provider.

As discussed above, nearly 60 percent of women in union are not using any form of contraception. It would be incorrect, however, to declare this population as having immediate need for contraception. Figure VI B5 filters out those non-contracepting women who do not currently have a need for a method, and concludes that as many as 15.8 percent of the women in union have unmet needs. Almost eight percent are women who want to get pregnant any time after 6 months from the date of the interview (henceforth referred to as spacers), and the remaining 8.2 percent want no more children (limiters).

Figure VI B5

Determination of unmet need for contraception among women in union (potential demand for contraception)



Wants to get pregnant later (spacers)	7.6%
Wants no more children (limiters)	8.2%
Potential demand for contraception (unmet need)	15.8%

Number of Women = 6103

Table VI B22 examines the demographic characteristics of the 15.8 percent of women in union with unmet family planning needs. Briefly, it shows the percentage of women with unmet needs is higher among rural women and decreases with education. The youngest and oldest age groups, along with women who have the smallest and largest numbers of living children, have the greatest percentages with unmet need. For the most part, these directions are maintained when controlling for residence.

Women with unmet needs (both spacers and limiters) are shown in Table VI B23 by their reason for not contracepting. Although spacers specified their desire for a pregnancy to occur more than six months from the date of the interview, about 25 percent claim their non-use is because they desire more children. This is the most significant difference between spacers and limiters.

The 16.1 percent of women who report postpartum/breastfeeding as their reason for not contracepting is a source of concern since their menses have returned. Prenatal and postpartum visits are an important opportunity in which health care providers can educate women as to the relationship between fertility and breastfeeding, basically, that once menses and sexual activity have resumed, their protection against pregnancy is limited.

The demographic characteristics of women with unmet needs is important information for planners and providers of contraceptive methods (Table VI B24). Although 63.5 percent of the overall sample is rural, 74.4 percent of those classified as having unmet needs are from rural areas. Spacers are more likely to be younger and have fewer children than limiters.

Table VI B1

Percentage of all women with knowledge of
contraceptive methods in the ENPA 1981, MCH/FP 1984 and EFHS 1987

Epidemiology and Family Health Survey, Honduras, 1987

Method	ENPA 1981	MCH/FP 1984	EFHS 1987
Orals	94.7	92.9	97.4
Female sterilization	86.0	89.1	95.8
Vasectomy	25.4	42.1	42.2
IUD	78.8	75.0	80.2
Withdrawal	17.5	25.4	39.8
Rhythm	41.1	45.3	51.0
Condom	52.9	54.7	73.0
Injectables	74.7	73.9	77.9
Vaginal methods			53.8
No. of Women	(3377)	(4805)	(10137)*

*The average number of respondents for each method (range = 10126 to 10142).

Table VI B2

Percentage of all women with knowledge of contraceptive methods,
by residence and year of survey

Epidemiology and Family Health Survey, Honduras, 1987

Method	Residence					
	Teg/SPS		Other Urban		Rural	
	1984	1987	1984	1987	1984	1987
Orals	97.1	99.4	96.7	99.3	89.0	95.9
Female sterilization	93.4	97.7	94.3	98.4	84.6	94.3
Vasectomy	51.6	54.1	49.0	43.6	33.9	36.4
IUD	86.0	92.8	80.9	87.2	66.3	72.5
Withdrawal	35.3	49.4	31.3	46.9	17.4	33.5
Rhythm	61.8	70.0	53.1	63.5	32.8	38.9
Condom	73.0	89.2	67.5	86.1	43.2	62.0
Injectables	81.2	83.4	81.0	84.5	68.6	73.7
Vaginal methods	59.1	69.2	52.2	63.8	32.1	44.0
Foam and jelly	49.6	--	46.2	--	26.1	--
No. of Women	(1740)	(2722)*	(1260)	(1544)*	(1805)	(5871)*

*The average number of respondents for each method varied slightly due to missing information.

Table VI B3

Distribution of women in union according to knowledge and use,
by contraceptive method

Epidemiology and Family Health Survey, Honduras, 1987

Method	No Knowledge	Has Knowledge			Total	No. of Women
		Never Used	Previous User	Current User*		
Orals	1.6	57.4	27.5	13.5	100.0	(6103)
Female sterilization	2.7	84.6	0.0	12.7	100.0	(6103)
Vasectomy	54.9	44.9	0.0	0.2	100.0	(6096)
IUD	14.2	74.4	7.1	4.3	100.0	(6101)
Withdrawal	54.0	33.3	7.8	5.0	100.0	(6101)
Rhythm	44.4	44.7	7.1	3.8	100.0	(6103)
Condom	23.5	67.0	7.5	2.0	100.0	(6100)
Injectables	16.1	80.4	3.1	0.3	100.0	(6100)
Vaginal methods	41.9	54.1	3.7	0.3	100.0	(6098)

*Women using more than one method have not been designated a single "more efficacious" method.

Table VI B4

Percentage of women in union according to knowledge and use,
by contraceptive method in the MCH/FP 1984 (n=2639) and EFHS 1987 (n=6103)

Epidemiology and Family Health Survey, Honduras, 1987

Method	Knowledge		Ever Use		Current Use	
	1984	1987	1984	1987	1984	1987
Orals	94.8	98.4	39.8	41.0	12.7	13.4
Female sterilization	92.0	97.3	12.1	12.7	12.1	12.6
Vasectomy	47.1	45.1	0.2	0.2	0.2	0.2
IUD	80.9	85.8	10.7	11.4	3.8	4.3
Withdrawal	28.8	46.0	5.1	12.8	1.7	3.9
Rhythm	50.8	55.6	8.3	10.9	2.9	3.5
Condom	62.0	75.5	5.5	9.5	0.9	1.8
Injectables	81.7	83.9	4.6	3.4	0.3	0.3
Vaginal methods	*	58.1	*	4.0	*	0.3

*Vaginal methods are not a separate category in the 1984 survey.

Table VI B5

Distribution of women in union and current contraceptive use
in the ENPA 1981, MCH/FP 1984 and EFHS 1987, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Current Use and Method	ENPA 1981*			MCH/FP 1984			EFHS 1987**		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
Currently Using	26.8	47.4	16.0	34.9	50.9	23.8	40.6	59.3	29.9
Orals	11.7	22.0	6.3	12.7	19.6	7.9	13.4	18.8	10.4
Female sterilization	8.0	13.1	5.4	12.1	14.9	10.1	12.6	19.4	8.8
Vasectomy	0.2	0.2	0.1	0.2	0.3	0.1	0.2	0.3	0.1
IUD	2.4	5.5	0.9	3.8	7.2	1.5	4.3	9.0	1.6
Withdrawal	1.6	0.8	2.0	1.7	1.8	1.6	3.9	3.1	4.4
Rhythm	1.6	2.9	0.9	2.9	4.1	2.0	3.5	4.5	3.0
Condom	0.3	0.8	0.1	0.9	1.7	0.1	1.8	3.2	1.1
Injectables	0.3	0.6	0.2	0.3	0.6	0.1	0.3	0.6	0.2
Vaginal methods	0.7	1.4	0.3	0.4	0.7	0.2	0.3	0.3	0.3
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
Not currently using***	73.2	52.6	84.0	65.1	49.1	76.2	59.4	40.7	70.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(2185)	(754)	(1431)	(2639)	(1442)	(1197)	(6093)	(2222)	(3871)

*Women 15-49 have been included.

**Data on contraceptive use is missing for 10 cases.

***For the 1981 and 1984 surveys douches and other ineffective methods are included.

Table VI B6

**Distribution of women in union and current contraceptive use,
by residence**

Epidemiology and Family Health Survey, Honduras, 1987

Current Use and Method	Total	Residence		
		Teg/SPS	Other Urban	Rural
Currently Using	40.6	63.4	52.3	29.9
Orals	13.4	19.6	17.4	10.4
Female sterilization	12.6	20.0	18.3	8.8
Vasectomy	0.2	0.4	0.1	0.1
IUD	4.3	11.1	5.5	1.6
Withdrawal	3.9	3.4	2.7	4.4
Rhythm	3.5	4.8	3.9	3.0
Condom	1.8	3.2	3.2	1.1
Injectables	0.3	0.6	0.6	0.2
Vaginal methods	0.3	0.2	0.4	0.3
Other	0.2	0.1	0.2	0.2
Not currently using	59.4	36.6	47.7	70.1
Total	100.0	100.0	100.0	100.0
No. of Women	(6093)	(1401)	(821)	(3871)

Table VI B7

Distribution of all women, ever married women but not currently in union, and single women, by contraceptive use and residence

Epidemiology and Family Health Survey, Honduras, 1987

Method	All Women	Ever Married but Not Currently in Union	Never Married
Currently Using	26.6	14.5	0.8
Orals	8.6	3.2	0.5
Female sterilization	8.7	8.3	0.1
Vasectomy	0.1	0.0	0.0
IUD	2.9	2.3	0.0
Withdrawal	2.4	0.1	0.0
Rhythm	2.2	0.4	0.1
Condom	1.1	0.1	0.0
Injectables	0.2	0.0	0.0
Vaginal methods	0.2	0.0	0.0
Other	0.1	0.1	0.0
Not Currently Using	73.4	85.5	99.2
Total	100.0	100.0	100.0
No. of Women	(10116)	(1354)	(2669)

Table VI B8

Distribution of women currently in union and current
contraceptive method, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Method	Total	Residence		
		Teg/SPS	Other Urban	Rural
Orals	33.2	31.0	33.3	34.7
Female sterilization	31.1	31.5	35.0	29.4
Vasectomy	0.4	0.6	0.2	0.4
IUD	10.6	17.5	10.5	5.4
Withdrawal	9.7	5.4	5.1	14.7
Rhythm	8.6	7.5	7.5	9.9
Condom	4.5	5.1	6.1	3.5
Injectables	0.8	0.9	1.2	0.5
Vaginal methods	0.6	0.3	0.7	0.9
Other	0.4	0.2	0.5	0.5
Total	100.0	100.0	100.0	100.0
No. of Women	(2474)	(888)	(429)	(1157)

Table VI B9

Distribution of women in union and current use of contraceptive methods, by age
 Epidemiology and Family Health Survey, Honduras, 1987

Current Use and Method	Total	Age					
		15-19	20-24	25-29	30-34	35-39	40-44
Currently using	40.6	20.2	34.6	42.8	45.9	47.7	43.4
Orals	13.4	10.2	17.7	17.4	13.7	9.7	6.0
Female sterilization	12.6	0.0	1.6	8.7	17.9	25.1	22.5
Vasectomy	0.2	0.0	0.2	0.1	0.4	0.1	0.3
IUD	4.3	2.2	4.0	6.3	5.3	2.9	2.9
Withdrawal	3.9	3.7	5.6	3.4	3.3	3.6	3.9
Rhythm	3.5	2.4	2.7	3.5	3.2	3.8	5.9
Condom	1.8	0.9	2.0	2.6	1.6	2.0	0.9
Injectables	0.3	0.4	0.5	0.4	0.1	0.2	0.3
Vaginal methods	0.3	0.0	0.3	0.3	0.2	0.2	0.5
Other	0.2	0.4	0.0	0.1	0.3	0.2	0.1
Not currently using	59.4	79.8	65.4	57.2	54.1	52.3	56.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(6093)	(539)	(1237)	(1396)	(1169)	(1005)	(747)

Table VI B10

Distribution of women in union and current contraceptive use, by number of living children

Epidemiology and Family Health Survey, Honduras, 1987

Current Use and Method	Total	Number of Living Children					
		0	1	2	3	4-5	≥ 6
Currently using	40.6	11.5	35.8	41.0	51.9	46.8	36.2
Orals	13.4	4.5	18.1	18.9	17.3	12.4	7.2
Female sterilization	12.6	0.7	1.2	3.0	15.4	22.5	18.7
Vasectomy	0.2	0.2	0.1	0.0	0.3	0.1	0.3
IUD	4.3	0.5	5.4	7.3	7.4	3.4	1.3
Withdrawal	3.9	2.0	5.3	4.2	4.8	3.3	3.5
Rhythm	3.5	2.5	2.7	5.1	3.8	3.2	3.5
Condom	1.8	0.5	2.3	3.5	1.8	1.5	1.1
Injectables	0.3	0.5	0.3	0.2	0.8	0.3	0.0
Vaginal methods	0.3	0.0	0.1	0.6	0.1	0.2	0.4
Other	0.2	0.2	0.3	0.2	0.2	0.0	0.2
Not currently using	59.4	88.5	64.2	57.0	48.1	53.2	63.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(6093)	(442)	(928)	(974)	(983)	(1522)	(1244)

Table VI B11
Distribution of women in union and current contraceptive use, by education
Epidemiology and Family Health Survey, Honduras, 1987

Current Use and Method	Total	Education			
		None	Primary 1-3	Primary 4-6	≥ 7 Years
Currently using	40.6	23.6	32.2	45.7	65.3
Orals	13.5	7.9	9.9	16.1	21.1
Female sterilization	12.6	8.3	10.8	14.9	17.0
Vasectomy	0.2	0.2	0.1	0.1	0.4
IUD	4.3	0.8	3.0	4.5	10.3
Withdrawal	3.9	3.9	3.9	4.4	3.1
Rhythm	3.5	1.4	3.4	3.0	7.2
Condom	1.8	0.6	0.8	2.0	4.8
Injectables	0.3	0.0	0.2	0.3	0.9
Vaginal methods	0.3	0.3	0.0	0.4	0.5
Other	0.2	0.2	0.2	0.1	0.3
Not currently using	59.4	76.4	67.8	54.3	34.7
Total	100.0	100.0	100.0	100.0	100.0
No. of Women	(6089)	(248)	(1850)	(1889)	(1102)

Table VI B12

Distribution of women in union and current use of contraceptive methods,
by education, controlling for residence

Epidemiology and Family Health Survey, Honduras, 1987

Current Use and Method	Total Education		Residence					
			Teg/SPS Education		Other Urban Education		Rural Education	
	≤ 3	≥ 4	≤ 3	≥ 4	≤ 3	≥ 4	≤ 3	≥ 4
Currently using	28.7	53.0	49.8	67.0	47.3	55.1	24.0	40.7
Orals	9.1	18.0	14.6	21.0	14.4	19.1	7.8	15.1
Female sterilization	9.7	15.6	19.0	20.3	20.1	17.2	7.4	11.3
Vasectomy	0.2	0.2	0.0	0.5	0.3	0.0	0.2	0.1
IUD	2.1	6.6	9.5	11.5	3.7	6.5	1.0	2.7
Withdrawal	3.9	3.9	2.4	3.7	3.7	2.1	4.2	4.8
Rhythm	2.6	4.5	3.4	5.2	2.7	4.6	2.4	4.0
Condom	0.7	3.0	0.7	3.9	1.7	4.0	0.6	1.9
Injectables	0.1	0.5	0.3	0.6	0.0	1.0	0.1	0.3
Vaginal Tablets	0.1	0.4	0.0	0.3	0.3	0.4	0.1	0.5
Other	0.2	0.1	0.0	0.2	0.3	0.2	0.2	0.1
Not currently using	71.3	47.0	50.2	33.0	52.7	44.9	76.0	59.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(3098)	(2991)	(295)	(1106)	(298)	(523)	(2505)	(1362)

Table VI B13

Distribution of women in union and current use of contraceptive methods in
Central American countries, Panama and Mexico

Epidemiology and Family Health Survey, Honduras, 1987

Current Use and Method	Honduras 1987	Panama 1984*	Costa Rica 1986	El Salvador 1988	Guatemala 1987**	Mexico 1987***
Currently using	40.6	58.2	69.5	47.1	23.2	53.0
Orals	13.4	11.8	20.7	7.6	3.9	9.8
Female sterilization	12.6	32.4	13.9	29.6	10.4	18.8
Vasectomy	0.2	0.4	0.5	0.6	0.9	0.7
IUD	4.3	6.0	8.0	2.0	1.8	10.3
Condom	1.8	1.6	13.4	2.4	1.2	1.9
Withdrawal	3.9	1.4	3.1	1.0	1.2	3.5
Rhythm	3.5	2.3	8.1	2.4	2.8	4.4
Injectables	0.3	0.8	1.0	0.9	0.5	2.8
Vaginal methods	0.3	1.2	0.7	0.4	0.4	0.6
Other	0.2	0.3	0.1	0.0	0.1	0.2
Not currently using	59.4	41.8	30.5	52.9	76.8	47.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(6093)	(5222)	(1914)	(2276)	(3377)	(6239)

*Includes all Indians and all residents of Darien and San Blas Health Regions.

**Preliminary data.

***Preliminary data, women 15-49 years of age.

Table VI B14

Distribution of women and their declared and attributed source of oral contraceptives

Epidemiology and Family Health Survey, Honduras, 1987

Source	Declared	Attributed	
	1987	1987	1984
MOH hospital	1.4	1.8	--
CESAMO	9.2	7.8	--
CESAR	8.8	7.0	--
TBA	0.1	0.1	--
MOH subtotal	19.6	16.7	18.9
IHSS hospital	1.1	1.1	2.0
Private MD, hospital	2.4	1.9	--
Pharmacy	34.4	18.9	--
Health shop	1.1	0.2	--
General store	0.8	0.0	--
Private subtotal	38.7	21.0	26.4
ASHONPLAFA clinic	1.8	1.1	--
ASHONPLAFA CBD	37.0	41.3	46.0
Social Marketing Program*		15.4	6.5
ASHONPLAFA subtotal	38.8	57.8	52.5
Other	1.8	1.5	0.2
Unknown†	0.1	1.9	0.0
Total	100.0	100.0	100.0
No. of Women**	(843)	(843)	(377)

* Perla and cost L. 51-20.00 (n = 7 ≠ 1.50) & Norminest = free.

† Inconsistency in brand, cost or source.

**32 cases not included because of missing information on source, brand, or cost.

Table VI B15

Distribution of women and their attributed
source of oral contraceptives, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Source	Total	Residence		
		Teg/SPS	Other Urban	Rural
MOH Hospital	1.8	1.4	2.8	1.7
CESAMO	7.8	5.9	8.3	9.0
CESAR	7.0	0.0	2.8	13.4
TBA	0.1	0.0	0.0	0.2
MOH subtotal	16.7	7.3	13.9	24.3
IHSS hospital	1.1	2.8	0.0	0.2
Private MD, hospital	1.9	1.4	1.4	2.4
Pharmacy	18.9	33.0	23.6	7.3
Health shop	0.2	0.0	0.0	0.5
Private subtotal	21.0	34.4	25.0	10.2
ASHONPLAFA clinic	1.1	2.8	0.0	0.2
ASHONPLAFA CBD	41.3	30.6	38.2	49.9
Social Marketing Program*	15.4	18.4	20.8	11.4
ASHONPLAFA subtotal	57.8	51.7	59.0	61.6
Other	1.5	0.7	2.1	1.9
Unknown**	1.9	3.1	0.0	1.7
Total***	100.0	100.0	100.0	100.0
No. of Women	(843)	(288)	(144)	(411)

*Perla and cost L .51-20.00 (n = 7 ≠ 1.50) & Norminest = free.

**Inconsistency in brand, cost or source.

***32 cases missing information on source, brand or cost.

Table VI B16

Distribution of women and their declared and attributed source of female sterilization

Epidemiology and Family Health Survey, Honduras, 1987

Source	Declared	Attributed
Ministry of Health	51.2	0.9
ASHONPLAFA clinic	5.5	5.5
ASHONPLAFA w/ MOH	-	50.3
ASHONPLAFA w/ private	-	15.6
Private \geq L.85	30.8	15.2
IHSS	10.0	10.0
Other	2.4	2.4
Total	100.0	100.0
No. of Women	(859)	(859)

Table VI B17

Distribution of women and their attributed source of female sterilization, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Source	Total	Residence		
		Teg/SPS	Other Urban	Rural
Ministry of Health	0.9	0.6	1.8	0.9
ASHONPLAFA clinic	5.5	7.4	4.2	4.4
ASHONFLAFA w/ MOH	50.3	39.7	53.9	58.0
ASHONPLAFA w/ private	15.6	8.9	16.7	21.0
Private \geq L. 85	15.2	19.4	16.2	11.2
IHSS	10.0	23.1	2.4	1.9
Other	2.4	0.9	4.8	2.7
Total	100.0	100.0	100.0	100.0
No. of Women	(859)	(325)	(167)	(367)

Table VI B18

Distribution of condom and IUD users, by declared source
Epidemiology and Family Health Survey, Honduras, 1987

Source	Condom	IUD
Ministry of Health	6.3	43.0
ASHONPLAFA	16.7	29.4
Social Marketing Program	58.3	0.0
Private	18.8	21.0
Social Security	0.0	6.6
Total	100.0	100.0
No. of Women	(48)	(286)

Table VI B19

Distribution of women in union and their reason for not using
a contraceptive method, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Reason for Not Using a Method	Total	Residence		
		Teg/SPS	Other Urban	Rural
<u>Reason related to pregnancy, fecundity, and sexual activity</u>	70.0	74.6	74.5	68.6
Postpartum/breastfeeding	27.3	18.0	21.1	30.0
Currently pregnant	26.3	31.3	23.5	25.8
Menopause/subfecund	7.9	11.7	11.6	6.7
Desires pregnancy	4.0	7.7	6.7	2.9
No/infrequent sexual activity	4.5	5.9	11.6	3.2
<u>Other reason</u>	30.0	25.4	25.5	31.4
Fear/bad experience/distrust	8.1	4.6	7.7	8.8
Lack of knowledge	3.8	0.8	0.8	4.7
Husband opposes	3.8	2.2	3.6	4.2
Does not like	1.7	1.8	2.1	1.6
Methods too expensive	1.2	0.6	0.5	1.4
Religious reasons	2.2	1.2	1.0	2.6
Medical reasons	1.2	3.8	1.0	0.7
Other	8.0	10.5	8.8	7.4
Total	100.0	100.0	100.0	100.0
No. of Women	(3591)	(505)	(388)	(2698)

Table VI B20

Percentage of fecund women in union (not contracepting) who report they may adopt a method, by residence, age, education, reason for non-use and previous use

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	May Adopt a Method	No. of Women
Total	63.0	(3332)
<u>Residence</u>		
Teg/SPS	79.0	(453)
Other urban	72.2	(345)
Rural	58.8	(2534)
<u>Age</u>		
15-19	65.4	(428)
20-24	70.5	(789)
25-29	67.8	(765)
30-34	63.0	(586)
35-39	56.7	(455)
40-44	37.5	(309)
<u>Education</u>		
None	48.9	(877)
Primary 1-3	60.6	(1152)
Primary 4-6	71.8	(957)
≥ 7 years	82.2	(342)
<u>Reason for Not Using a Contraceptive Method</u>		
Pregnant/postpartum	68.8	(1933)
Desires pregnancy	70.3	(145)
Inactive sexually	67.1	(158)
Other reasons	51.1	(1096)
<u>Previous Use</u>		
Yes	80.3	(1077)
No	54.7	(2255)

Table VI B21

Distribution of fecund women in union who are not contracepting
and think they may adopt a method, by preferred method and source

Epidemiology and Family Health Survey, Honduras, 1987

Method and Source	Intends to Adopt a Method
<u>Preferred Method</u>	
Orals	33.9
Sterilization	23.5
IUD	8.0
Injection	7.1
Rhythm	5.2
Withdrawal	1.9
Condom	1.8
Vaginal methods	0.6
Other	2.3
Don't Know	15.8
Total	100.0
No. of Women	(2102)
<u>Source of Method</u>	
MOH	65.7
Private	16.9
ASHONPLAFA	8.9
IHSS	1.9
Other	0.7
Don't Know	5.9
Total	100.0
No. of Women	(1941)

Table VI B22

Percentage of women in union with potential demand for contraception, by age, education, and number of living children, controlling for residence

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	Total (n = 6103)	Residence		
		Teg/SPS	Other Urban	Rural
Total	15.8	10.1	12.7	18.5
<u>Age</u>				
15-19	18.1	10.2	15.0	20.4
20-24	16.6	14.8	14.9	17.6
25-29	14.0	9.1	12.4	16.4
30-34	13.6	8.8	11.4	16.2
35-39	15.7	7.0	14.4	19.1
40-44	19.9	12.1	7.8	24.4
<u>Education</u>				
0-3 years	19.2	14.2	15.4	20.3
≥ 4 years	12.3	9.0	11.1	15.4
<u>Number of Living Children</u>				
0	21.9	19.8	21.4	22.9
1	16.9	12.0	14.9	20.1
2	15.2	10.2	13.0	18.8
3	12.9	6.3	11.0	16.8
4-5	12.7	7.0	9.9	15.1
≥ 6	19.4	14.2	11.8	20.7

Table VI B23

Distribution of women in union and their potential demand for
contraception, by reason for not using a contraceptive method

Epidemiology and Family Health Survey, Honduras, 1987

Reason Not Using a Contraceptive Method	Total	Desires Pregnancy In the Future (Spacers)	Does not Desire More Children (Limiters)
Fear or bad experience with methods	20.7	17.8	23.3
Postpartum/breastfeeding	16.1	11.4	20.4
Desires more children*	10.6	21.6	0.6
Husband opposition	8.8	7.8	9.7
Lacks knowledge of methods	8.1	7.3	8.7
Religious opposition	4.8	6.0	3.6
Does not like	4.7	4.7	4.7
Medical reasons	3.6	4.7	2.6
Methods too expensive	2.9	2.7	3.0
Plans to use	1.6	1.6	1.6
Other	17.8	14.0	21.3
Don't Know	0.4	0.4	0.4
Total	100.0	100.0	100.0
No. of Women**	(943)	(449)	(494)

*This category exists because of inconsistencies found in the interviews.

**22 women are excluded because of missing information.

Table VI B24

Distribution of women in union and their potential demand for contraception and distribution of all women in union, by residence, age, education and number of living children

Epidemiology and Family Health Survey, Honduras, 1987

Characteristic	Potential Demand for Contraception			Women In Union
	Total	Desires Pregnancy In the Future (Spacers)	Does not Desire More Children (Limiters)	
Total %		7.6	8.2	15.8
No. of Women		(6103)	(6103)	(6103)
<u>Residence</u>				
Teg/SPS	14.8	18.1	11.8	23.0
Other urban	10.8	14.0	7.8	13.5
Rural	74.4	67.8	80.5	63.5
<u>Age</u>				
15-19	10.2	17.5	3.4	8.9
20-24	21.2	31.5	11.8	20.3
25-29	20.3	22.5	18.3	22.9
30-34	16.5	14.0	18.7	19.2
35-39	16.4	9.1	23.1	16.5
40-44	15.4	5.4	24.7	12.2
<u>Education</u>				
None	26.9	17.9	35.3	20.5
Primary 1-3	34.8	33.7	35.9	30.4
Primary 4-6	28.7	34.3	23.5	31.0
≥ 7 years	9.5	14.0	5.4	18.1
<u>Number of Living Children</u>				
0-1	26.4	48.6	6.0	22.5
2	15.3	20.7	10.4	16.0
3	13.2	13.4	12.9	16.1
4-5	20.1	11.2	28.3	25.0
≥ 6	25.0	6.0	42.4	20.4
No. of Women	(965)	(463)	(502)	(6103)

C. Initiation, Discontinuation and Resumption of Contraception

Initiation

Table VI C1 shows the distribution of ever-married women according to the number of living children at the time of first use of contraception. The table shows that although greater proportions of younger women have not yet initiated contraceptive use, when they begin contracepting they have fewer living children than the older women. As many as a third of the women currently 40-44 delayed the use of a method until they had four or more living children. The same patterns are seen with regard to education and residence; better educated women and urban women adopt methods for the first time with fewer numbers of living children than less educated women or rural women.

Discontinuation

Table VI C2 shows the distribution of each discontinued method by the reason for discontinuation. Overall, a quarter of the women stopped contracepting in order to become pregnant and 20.9 percent discontinued because of infrequent sex. Over 25 percent discontinued because of reported side effects or because of health concerns. The latter two reasons are slightly more prevalent among users of the pill and IUD. Partner disapproval is noticeably more prevalent among condom and withdrawal, methods which require a high degree of cooperation between partners. The women most likely to report method failure are previous users of withdrawal, rhythm and users of other methods.

Resumption

A mother who is exclusively breastfeeding and whose menses have not returned is known to be more than 98 percent protected from pregnancy during the first six months postpartum (FHI, 1988). When a woman is no longer protected she may choose to initiate (or resume) contraception. If the mother does not or cannot exclusively breastfeed, contraception should begin earlier.

Table VI C3 uses lifetable analysis to show the probability of initiating contraception at different postpartum periods. Almost half (48%) of all women will initiate contraception by 24 months postpartum. The probabilities by method are a reflection of both choice and timing. The bulk of sterilization will occur soon after childbirth while probabilities for oral contraceptive use increase quickly with time.

Table VI C4 examines the length of postpartum interval before initiation of contraception by the subsequent method choice. Seventy-nine percent of sterilization procedures and 48.3 percent IUD insertions occur within the first month after delivery. Less than one in ten women who select orals as their first method postpartum begin using them in the first month after delivery. However, by month six, 64.4 percent of pill users have begun taking pills. This is a period when (exclusive) breastfeeding can be very advantageous for the infant. Most other methods are likely to be initiated at 3-4 months. The relationship between contraceptive use and breastfeeding is also examined in the breastfeeding section of Chapter V (Table V B12).

Method Recommendation

Table VI C5 divides women into two groups based on their contraceptive experience (never used a method and has used a method) and shows the distribution of their recommendation of a family planning method. The pill is the most commonly recommended method among both groups. For those who never used a method, over 35 percent cannot recommend a single method.

Table VI C1

Distribution of ever-married women according to the number of living children at the time of first use of contraception, by current age, education and residence

Epidemiology and Family Health Survey, Honduras, 1987

Characteristic	Never Used Contraception	Number of Living Children						Total	No. of Women
		0	1	2	3	≥ 4	Unknown		
Total	42.4	7.2	18.3	9.9	7.2	14.8	0.1	100.0	(746)
<u>Current Age</u>									
15-19	69.7	12.7	14.5	2.3	0.6	0.0	0.1	100.0	(68)
20-24	48.5	11.9	22.1	11.0	4.3	2.2	0.0	100.0	(153)
25-29	36.8	8.2	23.1	12.3	9.2	10.3	0.1	100.0	(168)
30-34	35.0	5.4	19.5	11.4	10.4	18.3	0.0	100.0	(137)
35-39	35.6	3.8	14.4	10.4	8.1	27.7	0.0	100.0	(123)
40-44	42.2	1.2	9.8	6.5	7.6	32.2	0.4	100.0	(94)
<u>Education</u>									
None	61.8	1.9	5.0	4.8	5.2	21.1	0.2	100.0	(149)
Primary 1-3	51.4	2.8	10.4	8.3	8.0	19.0	0.1	100.0	(225)
Primary 4-6	35.7	7.0	21.9	13.9	8.7	12.8	0.0	100.0	(232)
≥ 7 years	17.9	20.5	39.6	11.3	5.8	4.8	0.1	100.0	(138)
<u>Residence</u>									
Teg/SPS	20.8	13.9	35.0	13.5	8.2	8.6	0.1	100.0	(181)
Other urban	29.0	9.9	25.0	13.3	8.9	13.8	0.0	100.0	(106)
Rural	54.0	4.0	10.2	7.7	6.5	17.5	0.1	100.0	(458)

Table VI C2

Distribution of women who have used a method and discontinued it according to the reason for discontinuation, by specific method

Epidemiology and Family Health Survey, Honduras, 1987

Reason for Discontinuation	Total	Pill	IUD	Condom	Other*	Rhythm	Withdrawal	Combined†
To become pregnant	25.9	25.8	31.3	3.5	14.3	38.3	27.9	19.1
Infrequent sex	20.9	22.2	9.8	42.1	10.2	23.5	17.0	11.9
Experienced side effects	16.2	20.1	20.5	8.8	22.4	4.3	0.0	11.9
Health concerns	10.1	12.1	14.3	8.8	10.2	3.5	1.4	7.1
Method failed	8.7	4.8	9.8	5.3	16.3	16.5	24.5	9.5
Wanted to change method	2.6	1.0	3.6	5.3	10.2	2.6	3.4	19.0
Partner disapproved	3.6	2.1	1.8	10.5	0.0	1.7	13.6	7.1
Access/cost	3.3	3.0	0.9	8.8	12.2	1.7	2.0	4.8
Tired of using	1.7	2.3	0.0	3.5	0.0	0.0	1.4	0.0
Other	5.5	6.0	8.0	3.5	4.1	3.5	2.7	7.1
Don't remember	1.5	0.7	0.0	0.0	0.0	4.3	6.1	2.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(1442)	(920)	(112)	(57)	(49)	(115)	(147)	(42)

*Includes injectables, vaginal methods and other.

†Combined methods usually included either rhythm or withdrawal.

Table VI C3

Cumulative probability of initiating postpartum contraception among women whose last live birth occurred in the last 24 months, by method

Epidemiology and Family Health Service, Honduras, 1987

Elapsed Months Since Childbirth	All Methods	Orals	Withdrawal	Rhythm	Sterilization	IUD	Condom
< 1	.09	.01	.01	.00	.04	.02	.00
2	.15	.04	.02	.01	.05	.02	.01
3	.21	.07	.04	.02	.05	.03	.02
4	.23	.08	.05	.02	.05	.03	.02
5	.26	.10	.05	.02	.05	.03	.02
6	.28	.12	.06	.03	.05	.04	.02
9	.33	.15	.07	.04	.05	.04	.03
12	.38	.18	.07	.04	.06	.05	.03
18	.44	.24	.09	.05	.06	.05	.04
24	.48	.27	.10	.06	.06	.05	.04

Table VI C4

Cumulative proportion of women whose last live birth occurred in the last 24 months and who have adopted contraception, by postpartum interval and method

Epidemiology and Family Health Service, Honduras, 1987

Elapsed Months Since Childbirth	Orals	Withdrawal	Rhythm	Sterilization	IUD	Condom
< 1	9.0	13.2	8.1	79.2	48.3	16.9
2	23.6	38.1	29.3	86.7	63.3	42.9
3	41.6	58.7	43.4	89.6	78.3	57.2
4	49.1	67.2	52.5	91.9	81.6	63.7
5	56.2	72.0	57.6	94.2	83.3	70.2
6	64.4	78.9	66.7	94.8	88.3	76.7
9	78.1	88.4	85.9	96.5	95.8	83.2
12	88.2	93.2	91.0	98.8	99.1	96.2
18	98.1	98.5	98.1	100.0	100.0	100.0
24	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(466)	(189)	(99)	(173)	(120)	(77)

Table VI C5

Distribution of all women and their recommendation of a family planning method, by contraceptive experience

Epidemiology and Family Health Survey, Honduras, 1987

Recommendation	Contraceptive Experience	
	Never Used A Method	Has Used A Method
Pill	30.0	39.2
IUD	3.5	11.1
Female sterilization	9.0	8.3
Vasectomy	0.1	0.1
Condom	1.5	1.9
Injectables	4.2	2.2
Vaginal methods	0.3	0.9
Rhythm	9.3	10.4
Withdrawal	1.0	2.9
Other	0.7	0.8
Should see a physician	4.6	6.0
No recommendation	35.9	16.3
Total	100.0	100.0
No. of Women	(2988)	(3491)

D. Oral Contraceptives

The tables in this section report upon use, side effects and other miscellaneous topics of oral contraceptives (OCs). All current and previous pill users were asked when they initiated pill use, if they had experienced any side effects associated with the pill, and if they had, their course of action. Table VI D1 shows the distribution of all women and their perception of oral contraceptive side effects, by age, education, and residence. Overall, 48.4 percent view oral contraceptives as a health risk; this perception is more prevalent among better educated or urban women than their counterparts.

Tables VI D2 through D5 include only women in union who initiated oral contraceptive use since 1982. The year 1982 was chosen somewhat arbitrarily so as to reflect recent experiences with OC use. Table VI D2 shows 38.1 percent initiate OC use between the ages of 20 and 24; more rural women, compared to urban, initiate use at age 30 and beyond. Only 36.1 percent of the women receive a medical check-up prior to use.

In Table VI D3, 47.0 percent of women in union who have initiated OC use since 1982 report side effects, and of these, only 43.5 percent seek medical attention. When controlling for residence no distinct patterns emerge. The more education a woman has, the more likely she is to report side effects, but education does not affect whether she seeks medical attention. Women who initiate OC use at age 19 or less, are the least likely to report side effects. Although no clear pattern exists, women who are 30 and older when they initiate pill use, are the most likely to seek medical attention if side effects are experienced.

Table VI D4 further selects only those women with reported side effects and shows the subsequent action taken; 29.9 percent continue use of the same OC, 17.0 change brands, and 38.4 percent terminate OC use completely. For those adopting a new method, the IUD, withdrawal, and rhythm are most popular. The IUD and rhythm are more prevalent among those who seek medical attention (compared to those who do not) while the opposite is true of withdrawal.

Table VI D5 shows the type of side effect from OC use, and its duration. Dizziness and head or body aches are the most widely reported complaints (22.7 percent and 22.0 percent, respectively). Fifty-eight percent report that the side effect lasted for the duration of OC use.

Solutions to missing a pill, asked of all women who ever used OCs, are presented in Table VI D6. Groups of women classified as urban, better educated, or current users are more knowledgeable than their counterparts (rural, less educated, or past users, respectively) in the correct action of taking two pills as soon as they remember.

The final table (Table VI D7) shows pill experience by brand name recommendation. For those who have never used an oral contraceptive, Perla was mentioned most frequently (20.9%), while 65.3 percent could not recommend any brand. Among ever users, name brands are cited more evenly; Perla and Noriday are the two brands most frequently recommended. That such large proportions of the women who have never used oral contraceptives would recommend Perla or Norminest suggests that the Social Marketing Program,

which distributes both pills, has successfully reached a large segment of the population, especially those women who may be in need of family planning, or could be new acceptors. However, when women were asked to spontaneously identify a low dose pill, Norminest, the only low dose pill available in the commercial sector, was identified by relatively small groups of women.

Table VI D1

**Distribution of all women and their perception of oral contraceptive
side effects, by age, education, and residence**

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	Health Benefit	Health Risk	Risk & Benefit	No Health Effect	Other	Doesn't Know	Total	No. of Women
Total	11.4	48.4	13.4	3.6	0.2	22.9	100.0	(10141)
<u>Age</u>								
15-19	12.7	44.4	11.3	1.7	0.1	29.9	100.0	(2495)
20-24	12.2	46.7	14.4	3.5	0.3	22.9	100.0	(2080)
25-29	12.3	49.9	13.3	4.7	0.1	19.8	100.0	(1877)
30-34	9.8	52.2	12.5	4.8	0.6	20.2	100.0	(1433)
35-39	8.8	51.3	14.8	4.6	0.1	20.5	100.0	(1274)
40-44	10.2	50.2	16.5	4.1	0.4	18.6	100.0	(972)
<u>Education</u>								
None	11.4	38.7	10.3	1.7	0.2	37.1	100.0	(1670)
Primary 1-3	13.5	41.6	13.1	3.4	0.2	28.2	100.0	(2652)
Primary 4-6	12.6	47.3	14.7	4.1	0.2	21.1	100.0	(3312)
> 7 years	7.6	63.6	13.7	4.6	0.2	10.4	100.0	(2503)
<u>Residence</u>								
Teg/SPS	8.2	61.1	11.2	5.1	0.2	14.2	100.0	(2723)
Other urban	11.8	52.2	16.9	3.4	0.2	15.5	100.0	(1545)
Rural	12.7	41.5	13.5	3.0	0.2	29.0	100.0	(5873)

Table VI D2

Distribution of women in union who have used oral contraceptives for the first time since 1982 according to age and whether she had a medical check-up before taking OCs, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	Total	Residence		
		Teg/SPS	Other Urban	Rural
<u>Age Initiated OC Use</u>				
< 19	24.5	26.2	28.9	22.3
20-24	38.1	45.1	39.3	34.0
25-29	21.4	20.3	19.4	22.6
> 30	16.0	8.5	12.4	21.0
Total	100.0	100.0	100.0	100.0
<u>Had medical check-up</u>				
Yes	36.1	40.6	32.3	34.9
No	63.9	59.4	67.7	65.1
Total	100.0	100.0	100.0	100.0
No. of Women	(1232)	(355)	(201)	(676)

Table VI D3

Percentage of women in union who have used oral contraceptives for the first time since 1982, reported side effects associated with the method, and sought medical attention, by residence, education, and age initiated OC use

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	Reported Side Effects	No. of Women Who Have Used OCs	Sought Attention	No. of Women
Total	47.0	(1232)	43.5	(579)
<u>Residence</u>				
Teg/SFS	48.5	(355)	42.4	(172)
Other urban	47.3	(201)	45.3	(95)
Rural	46.2	(676)	43.6	(312)
<u>Education</u>				
None	43.9	(269)	39.0	(118)
Primary 1-3	44.6	(473)	40.3	(211)
Primary 4-6	50.3	(324)	52.8	(163)
> 7 years	52.4	(166)	40.2	(87)
<u>Age Initiated OC Use</u>				
< 19	41.7	(302)	38.9	(126)
20-24	49.5	(469)	45.3	(232)
25-29	49.2	(264)	40.0	(130)
> 30	46.2	(197)	50.5	(91)

Table VI D4

Distribution of women in union who have used oral contraceptives for the first time since 1982 and reported side effects associated with the OCs according to action taken and new method if change of methods occurred, by whether they sought medical attention

Epidemiology and Family Health Survey, Honduras, 1987

Action Taken to Correct Side Effect	Total	Sought Attention	Did Not Seek Attention
<u>Initial Action</u>			
Continued with OC	29.9	24.6	34.0
Changed brands	17.0	22.2	12.9
Quit taking OCs	38.4	34.9	41.1
Changed method	14.0	17.9	11.0
Other	0.7	0.4	0.9
No. of Women	(578)	(252)	(326)
<u>New Method</u>			
IUD	21.0	24.4	16.7
Withdrawal	21.0	8.9	36.1
Rhythm	18.5	24.4	11.1
Condom	14.8	13.3	16.7
Injectables	13.6	20.0	5.6
Vaginal methods	7.4	4.4	11.1
Female sterilization	1.2	0.0	2.8
Other	2.5	4.4	0.0
No. of Women	(81)	(45)	(36)

Table VI D5

Distribution of women in union who have used oral contraceptives for the first time since 1982 and reported side effects according to type of side effect and duration, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Side Effects	Total	Residence		
		Teg/SPS	Other Urban	Rural
<u>Type of Side Effect</u>				
Dizziness	22.7	20.3	30.5	21.5
Head or body aches	22.0	20.9	21.1	22.8
Nausea	15.2	21.5	15.8	11.6
Abdominal/stomach pain	10.6	5.2	8.4	14.1
Menstrual irregularities	9.2	4.1	5.3	13.2
Weight changes	5.0	7.0	6.3	3.5
Circulation problems/ varicose veins/BP	3.3	5.8	2.1	2.3
Nerves	2.9	4.7	3.2	1.9
Facial discoloration	2.8	3.5	4.2	1.9
Other	6.4	7.0	3.2	7.1
Total	100.0	100.0	100.0	100.0
<u>Duration of Side Effects</u>				
Duration of OC use	58.0	58.7	58.9	57.4
< 1 month	10.9	9.3	7.4	12.8
1-3 months	21.1	21.5	22.1	20.5
> 3 months	8.6	10.5	8.4	7.7
Don't remember	1.4	0.0	3.2	1.6
No. of Women	(579)	(172)	(95)	(312)

Table VI D6

Distribution of all women who have used oral contraceptives and their solutions to missing a pill, by residence, age, education and user status

Epidemiology and Family Health Survey, Honduras, 1987

	Take 2 pills	Less appropriate solutions*	Don't know	Total	No. of Women
<u>Residence</u>					
Teg/SPS	74.7	9.5	15.9	100.0	(1066)
Other urban	68.6	9.6	21.8	100.0	(583)
Rural	53.9	11.1	34.9	100.0	(1377)
<u>Age</u>					
15-19	48.4	10.2	41.4	100.0	(157)
20-24	66.0	9.7	24.4	100.0	(570)
25-29	64.8	9.5	25.6	100.0	(788)
30-34	66.1	9.9	23.9	100.0	(635)
35-39	65.4	10.6	24.0	100.0	(538)
40-44	60.1	13.4	26.6	100.0	(338)
<u>Education</u>					
None	42.1	10.0	47.9	100.0	(363)
Primary 1-3	52.5	14.2	33.3	100.0	(718)
Primary 4-6	66.9	10.0	23.1	100.0	(1102)
≥ 7 years	79.8	7.3	13.0	100.0	(841)
<u>User Status</u>					
Current	71.7	9.9	18.4	100.0	(875)
Past	60.9	10.4	28.6	100.0	(2151)

*Adopt another method until next cycle, wait for menstruation and begin new cycle, other.

Table VI D7

Distribution of women recommending a specific brand of oral contraceptives and recognition of a low dose pill, by pill experience

Epidemiology and Family Health Survey, Honduras, 1987

Brand Names	Pill Experience	
	Never Used	Ever Used
<u>Brand Name</u>		
Perla	20.9	9.9
Nordette	1.2	5.8
Noriday	1.0	9.2
Microgynon	0.5	7.0
Norminest	7.4	6.0
Ovral	1.4	9.2
Other	2.4	21.1
Don't Know	65.3	31.9
Total	100.0	100.0
<u>Low Dose Pill</u>		
Norminest	10.4	13.1
Other pill*	6.4	13.9
Don't know	83.2	73.0
Total	100.0	100.0
No. of Women	(1043)	(1220)

*The only low dose pill on the market in Honduras is Norminest.

E. Female Sterilization

Commonly perceived side effects of sterilization (myth or reality) can affect acceptance. Table VI E1 shows how sterilized women differ from non-sterilized women in their beliefs about possible side effects (weakness, changes in sexual desire or menstruation, and sexual attractiveness to spouse). In general, a higher percentage of non-sterilized women, compared to those who are sterilized, believe sterilization has certain side effects. The exception is where 30.3 percent of sterilized women believe the method decreases sexual desire, compared to 25.0 percent of non-sterilized women. Also, non-sterilized women are more likely to respond that they do not know if sterilization has the side effect in question.

Currently Sterilized Women

Table VI E2 provides historical and current data on 769 sterilized women in union. Mean age at the time of sterilization is 30.2 (two years less than in 1984), and over a third were performed since 1985. Urban women, though only 36.5 percent of the total number of women in union, constitute over 55 percent of the number of sterilized women. In comparison to all women in union, the rural and less educated appear to be under-represented in terms of sterilization.

Fewer than 45 percent of all sterilizations are performed at the time of delivery (Table VI E3). Neither residence nor age at sterilization appears to alter this pattern. Interval procedures have become more common since 1983 among the less educated and among women with four or more living children. The women most likely to be sterilized at the same time a cesarean section is performed are residents of Teg/SPS, women who are relatively well educated and of low parity.

About 44 percent of sterilized women choose this method because they do not want more children, 18.7 percent because of a physician's recommendation, and 17.3 percent because of socioeconomic reasons (Table VI E4).

Table VI E5 shows 16 percent of sterilized women report problems associated with the procedure; abdominal pain is the most prevalent complaint (26.8%). Nearly 40 percent report incapacitation for more than 30 days.

Of the sterilized women, 10.5 percent claim to have been pressured to do so (Table VI E6); of these, 39.5 percent were pressured by a physician, and 25.9 percent by their husband. About one in ten women regret having been sterilized. The primary reason reported is a desire to have more children. One third of those who report feeling pressured also regret having had the procedure.

Non-sterilized Women

Fecund women in union who are not currently pregnant but have had at least one pregnancy are the focus of the following tables. Table VI E7 further selects for those women who want no additional children, and examines their interest in sterilization by different demographic characteristics. In total, over 50 percent of such respondents are interested in sterilization.

There are no strong patterns across characteristics that predict high interest levels in sterilization. The two groups of women most interested are women ages 25-29, and women under 30 with 3 or more living children.

Of the 5.0 percent of women interested in sterilization within 3 months, 73.0 percent cite the Ministry of Health as the institution from which to obtain information, while 18.0 percent cite ASHONPLAFA. All know of some source of information (Table VI E8). When asked why, despite their interest in sterilization, they had not yet become sterilized, 27.0 percent report economic barriers, while 13.5 percent are planning to become sterilized (Table VI E9).

The final two tables in this section present data on women who desire no more children but are not interested in sterilization. Overall, the fear of dying is the most prevalent reason (59.2%), especially among rural women (Table VI E10). The second most commonly reported reason, sterilization is not necessary, is more frequently reported in urban areas than in rural areas.

Reported reasons also vary with education according to Table VI E11. Women with ≥ 7 years of formal schooling are the least likely to report a fear of dying (40.8%). They are also the most likely to think sterilization is not necessary or prefer another method.

Table VI E1
Distribution of women in union in response to possible side effects of
sterilization, by whether they are sterilized
Epidemiology and Family Health Survey, Honduras, 1987

Possible Side Effects	Sterilized (n= 770)				Not Sterilized (n= 5323)			
	Yes	No	Don't Know	Total	Yes	No	Don't Know	Total
Leaves the woman weak	19.6	77.5	2.9	100.0	36.3	30.3	33.4	100.0
Increases sexual desire	6.2	88.1	5.7	100.0	13.9	28.5	57.5	100.0
Decreases sexual desire	30.3	64.7	5.1	100.0	25.0	19.4	55.6	100.0
Suspends menstruation	8.6	86.1	5.3	100.0	14.4	44.3	41.3	100.0
Decreases attractiveness to spouse	12.7	77.5	9.7	100.0	19.8	29.5	50.7	100.0

Table VI E2

Distribution of women in union using female sterilization at the time of interview, and distribution of all women in union, by residence, age, education, number of living children and year of sterilization

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	Sterilized Women		All Women in Union
	Time of Sterilization	Time of Interview	
<u>Residence</u>			
Teg/SPS	-	36.3	23.0
Other urban	-	19.5	13.5
Rural	-	44.2	63.5
<u>Age</u>			
15-19	1.3	0.0	8.9
20-24	10.1	2.5	20.3
25-29	34.0	15.7	22.9
30-34	33.1	27.2	19.2
35-39	18.1	32.8	16.5
40-44	3.4	21.8	12.2
Mean	30.2	34.8	29.5
<u>Education</u>			
None	-	13.4	20.5
Primary 1-3	-	25.9	30.4
Primary 4-6	-	36.5	31.0
> 7 years	-	24.2	18.1
<u>Number of Living Children</u>			
0	-	0.4	7.3
1	-	1.4	15.3
2	-	3.8	16.0
3	-	19.5	16.1
4-5	-	44.6	25.0
≥ 6	-	30.3	20.4
Mean	-	4.8	3.6
<u>Year of Sterilization</u>			
< 1978	11.9	-	-
1979-80	14.9	-	-
1981-82	16.1	-	-
1983-84	22.2	-	-
1985-87	35.0	-	-
No. of Women	n (769)	(769)	(6103)

Table VI E3

Distribution of women in union using female sterilization according to time of sterilization and type of delivery, by residence, education, year of sterilization, age at sterilization and number of living children

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	At Delivery		Interval Procedure	Total	No. of Women
	Vaginal	Cesarean			
Total	27.4	16.4	56.2	100.0	(767)
<u>Residence</u>					
Teg/SPS	25.9	21.2	52.9	100.0	(278)
Other urban	27.3	16.0	56.7	100.0	(150)
Rural	28.6	12.7	58.7	100.0	(339)
<u>Education</u>					
None	27.2	11.7	61.2	100.0	(103)
Primary 1-3	23.7	13.6	62.6	100.0	(198)
Primary 4-6	29.5	13.2	57.3	100.0	(281)
≥ 7 years	28.1	27.0	44.9	100.0	(185)
<u>Year of the Sterilization</u>					
< 1978	43.3	13.3	43.3	100.0	(90)
1979-80	31.9	19.5	48.7	100.0	(113)
1981-82	31.7	16.3	52.0	100.0	(123)
1983-84	21.8	12.9	65.3	100.0	(170)
1985-87	22.0	18.7	59.3	100.0	(268)
<u>Age at Sterilization</u>					
< 30	25.9	16.8	57.4	100.0	(340)
≥ 30	29.6	16.7	53.6	100.0	(412)
<u>Number of Living Children</u>					
0-2	14.0	44.2	41.9	100.0	(43)
3	23.3	24.7	52.0	100.0	(150)
≥ 4	29.4	12.2	58.4	100.0	(574)
<u>Age and No. of Living Children</u>					
< 30 and ≥ 3	22.5	12.4	65.1	100.0	(129)
≥ 30 and ≥ 3	29.4	15.3	55.3	100.0	(595)

Table VI E4

Distribution of women in union using female sterilization
and their reason for sterilization

Epidemiology and Family Health Survey, Honduras, 1987

Reason for Sterilization	Women in Union Using Female Sterilization
Did not want more children	43.6
Physician recommended	18.7
Socioeconomic reasons	17.3
Health reasons	9.4
Adverse effects of last delivery	5.5
Other method side effects/failure	0.5
Other	5.1
Total	100.0
No. of Women	(769)

Table VI E5

Distribution of women in union using female sterilization and whether they had a problem thought to be associated with the operation, nature of the problem and number of days incapacitated

Epidemiology and Family Health Survey, Honduras, 1987

<u>Problems After Sterilization</u>	<u>Women in Union Using Female Sterilization</u>
Yes	16.0
No	84.0
No. of Women	(769)
<div style="border-left: 1px solid black; border-bottom: 1px solid black; padding-left: 10px; margin-left: 60px;"> } </div>	
Problem	
Abdominal pain	26.8
Body aches	17.1
Irregular menses	17.1
Scar/umbilical pain	13.8
Uterine inflammation/discharge	8.1
Weight loss or gain	5.7
No libido	3.3
Other	8.1
No. of Women	(123)
<div style="border-left: 1px solid black; border-bottom: 1px solid black; padding-left: 10px; margin-left: 60px;"> } </div>	
<u>Days Incapacitated</u>	
< 7	12.4
8-14	12.9
15-30	34.9
> 30	39.5
Don't remember	0.4
No. of Women	(769)

Table VI E6

Distribution of women in union using female sterilization and whether they were pressured to become sterilized or regret being sterilized

Epidemiology and Family Health Survey, Honduras, 1987

<u>Pressured to Become Sterilized?</u>	<u>Women in Union Using Female Sterilization</u>
Yes	10.5
No	89.5
No. of Women	(769)
→ <u>Who Pressured</u>	
Physician	39.5
Husband	25.9
Friend	12.3
Nurse/FP Counselor	4.9
Other	17.3
No. of Women	(81)
<u>Regret Having Been Sterilized?</u>	
Yes	10.7
No	89.3
No. of Women	(769)
→ <u>Why the Regret</u>	
Desires more children	62.2
Subsequent health problems	20.7
Religion/Guilt	7.3
Husband unhappy	2.4
Other	7.3
No. of Women	(82)
% pressured who regret	33.3

Table VI E7

Distribution of women in union, fecund* and not pregnant, who have had at least one pregnancy and want no more children according to their interest in sterilization, by residence, education, age, number of living children and desire for last pregnancy

Epidemiology and Family Health Survey, Honduras, 1987

Characteristic	Interest in Sterilization		Not Interested	Total	No. of Women
	Within 3 Months	Later			
Total	5.0	46.8	48.3	100.0	(515)
<u>Residence</u>					
Teg/SPS	5.9	50.5	43.6	100.0	(289)
Other urban	6.8	46.3	46.9	100.0	(177)
Rural	4.4	45.9	49.8	100.0	(1049)
<u>Education</u>					
None	3.3	44.6	52.2	100.0	(395)
Primary 1-3	4.8	46.4	48.9	100.0	(526)
Primary 4-6	6.7	49.7	43.6	100.0	(390)
≥ 7 years	5.4	46.3	48.3	100.0	(203)
<u>Age</u>					
15-19	2.4	45.2	52.4	100.0	(42)
20-24	4.9	52.9	42.2	100.0	(206)
25-29	5.8	62.5	31.7	100.0	(328)
30-34	6.7	51.1	42.2	100.0	(329)
35-39	5.4	41.3	53.3	100.0	(334)
40-44	1.8	25.4	72.8	100.0	(276)
<u>Number of Living Children</u>					
0-1	0.0	45.5	54.5	100.0	(66)
2	3.6	52.6	43.9	100.0	(196)
3	5.7	53.4	40.9	100.0	(264)
4-5	6.3	49.0	44.8	100.0	(480)
≥ 6	4.5	39.3	56.2	100.0	(509)
<u>Age and Number of Living Children</u>					
< 30 and < 3 children	2.7	55.4	41.9	100.0	(186)
< 30 and ≥ 3 children	6.4	59.0	34.6	100.0	(390)
≥ 30 and < 3 children	2.6	39.5	57.9	100.0	(76)
≥ 30 and ≥ 3 children	5.0	40.1	54.9	100.0	(863)
<u>Desired Last Pregnancy</u>					
Yes	4.0	49.3	46.7	100.0	(720)
No	5.8	45.0	49.2	100.0	(778)

*Women using a nonpermanent form of contraception were assumed fecund.

Table VI E8

Distribution of women in union, fecund and not pregnant who have had at least one pregnancy and are interested in sterilization now* according to knowledge of where to obtain information

Epidemiology and Family Health Survey, Honduras, 1987

Knowledge of Where to Obtain Sterilization Information	Women Interested in Sterilization
Knows where to obtain information	
Ministry of Health	73.0
ASHONPLAFA	18.0
Private hospital	7.9
Other	1.1
Does not know a source	0.0
Total	100.0
No. of Women	(89)

*Within the next 3 months.

Table VI E9

Distribution of women in union, fecund and not pregnant who have had at least one pregnancy and are interested in sterilization now* according to their reasons for not getting sterilized

Epidemiology and Family Health Survey, Honduras, 1987

Reason for Not Getting Sterilized	Women Interested in Sterilization
Economic reasons	27.0
Fear of the operation	14.6
Planning to get sterilized	13.5
Husband opposed	7.9
Physician refused: too young or too few children	6.7
Lack of time/carelessness	6.7
Lacks child care	6.7
Administrative problems	2.2
Medical reasons	3.4
Lack of knowledge	1.1
Other	10.1
Total	100.0
No. of Women	(89)

*Within the next 3 months.

Table VI E10

Distribution of women in union, fecund and not pregnant who have had at least one pregnancy but desire no more children and are not interested in sterilization according to their reasons, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Reason Not Interested in Sterilization	Total	Residence		
		Teg/SPS	Other Urban	Rural
Fear of dying	59.2	48.4	45.8	64.0
It is not necessary	12.4	16.7	18.1	10.5
Prefers other method	5.2	7.1	9.6	4.0
Husband opposed	3.9	4.8	7.2	2.9
Religious reasons	6.4	6.3	3.6	6.9
Lacks information	1.0	0.0	1.2	1.1
Family building not complete/uncertain future	2.2	7.1	2.4	1.0
Does not like or approve of	3.0	5.6	6.0	1.9
Economic reasons	1.4	0.0	1.2	1.7
No childcare	1.6	0.0	1.2	2.1
Other/don't know	3.8	4.0	3.6	3.8
Total	100.0	100.0	100.0	100.0
No. of Women	(731)	(126)	(83)	(522)

Table VI E11

Distribution of women in union, fecund and not pregnant who have had at least one pregnancy and want no more children and are not interested in sterilization according to their reasons, by education

Epidemiology Family Health Survey, Honduras, 1987

Reason Not Interested in Sterilization	Total	Education			
		None	Primary 1-3	Primary 4-6	≥ 7 Years
Fear of dying	59.2	63.1	57.2	68.2	40.8
It is not necessary	12.4	10.2	14.0	9.4	18.4
Prefers other method	5.2	1.5	5.4	5.3	12.2
Husband opposed	3.7	2.4	4.3	2.9	6.1
Religious reasons	6.4	6.3	7.4	5.9	5.1
Lacks information	1.0	1.9	0.4	1.2	0.0
Family building not complete/uncertain future	2.2	1.9	0.8	1.8	7.1
Does not like or approve of	3.0	2.9	3.5	0.6	6.1
Economic reasons	1.4	2.4	1.2	1.2	0.0
No childcare	1.6	2.4	1.9	0.6	1.0
Other/don't know	3.8	4.9	3.9	2.9	3.1
Total	100.0	100.0	100.0	100.0	100.0
No. of Women	(731)	(206)	(257)	(170)	(98)

F. Young Adults 15-24 Years of Age

Adolescent pregnancy has been recognized as a serious problem in the United States during the past 10 to 15 years. Other industrialized countries, such as Japan and the Western European countries, have not experienced this problem to the same extent. Until recently, there have been very few studies focusing on adolescent sexuality in developing countries. In the last decade there have been six large-scale reproductive health surveys of young adult men and women in Latin American countries or urban centers. Additional surveys designed to study women of reproductive age have included special modules for women 15 to 24 years of age. Such is the case for Honduras.

The young adult module for the 1987 survey includes questions related to the timing of first sexual intercourse, contraceptive use, and attitudes towards premarital sex. A total of 4,577 women between the ages of 15 and 24 were interviewed.

Table VI F1 shows that as age increases, the proportion in union also increases. About twice as many women are in a consensual union as are married. Women living in urban areas, especially in Tegucigalpa and San Pedro Sula, are more likely to delay union (marriage or consensual union) than are rural women. By the time women are 20 to 24, only 18.5 percent of the rural women have never been in a stable union compared with 61.8 percent in Teg/SPS.

Table VI F2 shows that the more educated a young woman is, regardless of age, the less likely she is to be in union. Among the very youngest women (15-17 years old), 32.0 percent of the women who have no formal education are currently or have been in union, compared to only 4.7 percent of those with seven years or more of schooling.

Table VI F3 shows the proportion of young women who reported having had intercourse by age, education and residence. At age 15, one in ten women has had sexual relations; by age 19, one in two has had relations. Among women 20-24, three out of four are sexually experienced. Education has a strong negative association with having had relations. Finally, rural women are more likely to have initiated relations at a given age than urban women.

The median age at which Honduran women first have intercourse is shown in Table VI F4. Based on a life table analysis, by 17.9 years of age, half of the Honduran women have had intercourse. This median age varies from 17.1 in rural areas to 19.4 in Teg/SPS. Among women who have had intercourse, the mean age at first intercourse is 16.6 (Table VI F5). This mean age is similar to that found in Guatemala City, 16.7 (1986), Mexico City, 17.0 (1985), and Costa Rica, 16.6 (1986). Their partners are considerably older, with a mean age of 22.9 years.

The next five tables focus on the preferred relationship in which to initiate sexual relations, and subsequently, what actually occurs. To assess their attitudes, the young women were asked if they agreed with two separate statements in the following order: it is okay to have intercourse when a couple has no plans for marriage, and, it is okay to have intercourse when a couple has plans for marriage. Generally, only about 20 percent of

the women agree that intercourse is appropriate if a couple has no plans to marry and slightly more than a third of the women agree if the couple has plans to marry (Table VI F6). The proportions agreeing are relatively constant across residence or level of education, but they do vary somewhat by age and sexual experience. Older women (ages 20-24) and those reporting premarital intercourse are more likely to agree with the statements than women ages 15-19 or who have never had sex or have had sex only within marriage. More than half of the women who have had premarital relations agree that sex is appropriate if the couple has plans to marry.

Whether a woman has had premarital sex has been determined by comparing the date of first intercourse (month and year) with the date of her first stable union. If a woman could not recall one of the dates or if they were the same, a question about her relationship to her first partner was used to distinguish between post-marital and premarital sex. Table VI F7 shows the percent of all women and the percent of never married women who have had premarital intercourse. For both groups of women there is generally a positive relationship between age and whether premarital sex has occurred. The proportion of all women having had premarital intercourse stabilizes at about 40 percent between the ages 20 and 24. That premarital sex tends to lead to marriage or union is suggested by the reduced proportion of never married women who report this activity: only 9.9 percent of the never married women 20-24 report premarital sexual relations.

Table VI F8 presents the proportion of sexually experienced women who engaged in premarital sex. More than half of all women ever sexually active report premarital sex except for women 15 years of age where better than two-thirds report premarital sex.

Women were asked what the ideal relationship with a partner is before initiating sexual relations. They were given the choice among husband (sex only when married), fiancé (sex only if the couple has plans to marry), and boyfriend (no plans to marry). About three fourths of the women report that "husband" is the ideal relationship, and approximately 20 percent report fiancé (Table VI F9). These proportions do not vary by education but as age increases, the proportions responding fiancé and boyfriend also increase. Women living in Teg/SPS are also more likely to answer fiancé and boyfriend than women living elsewhere. Again, reporting premarital sexual experience increases the likelihood of a fiancé or boyfriend as ideal relationships for sexual relations.

A direct comparison between the ideal partner and who the first partner actually was is seen in Table VI F10. Fewer than half (48.0%) of the women who have had sex report that their first partner was their husband. Even among women who said that the ideal relationship was husband/wife, only 57.1 percent reported that their first partner was their husband. Of the women who said boyfriend was the ideal relationship, 65.3 percent reported their first partner to be their boyfriend.

Early sexual activity will often lead to unplanned pregnancies if contraception is not used. Use of contraceptive methods implies prior knowledge of appropriate methods and access to them. As age increases,

levels of knowledge of specific methods also increase (Table VI F11). Oral contraceptives and female sterilization are consistently the best known methods while vasectomy, withdrawal and rhythm are the least known.

Very few couples use a contraceptive method at first intercourse (4.3%) (Table VI F12). The older the young woman is at the time of first intercourse, the more likely she is to use a method. Only about one in a hundred women who have sex for the first time at 14 or younger, use contraception, compared with one in ten who wait until they are between 20 and 24.

When asked why they did not use a method during first intercourse, adolescents less than 19 years of age report the two primary reasons for nonuse to be (1) lack of knowledge about contraceptive methods, and (2) they did not expect to have sexual relations (Table VI F13). At age 19 and older, the primary reason was also lack of knowledge but the second most important reason is their desire to become pregnant.

Although contraceptive prevalence at first intercourse is often low, current prevalence is generally higher. The prevalence for current contraceptive use among ever sexually active women ranges from 16.1 percent among 15 and 16 year olds to 28.5 percent among women 20 to 24 (Table VI F14). Oral contraceptives are the most frequently used method, regardless of age. There is some IUD use among women 20-24, while withdrawal and rhythm, two of the least effective methods, are also popular for women of all ages.

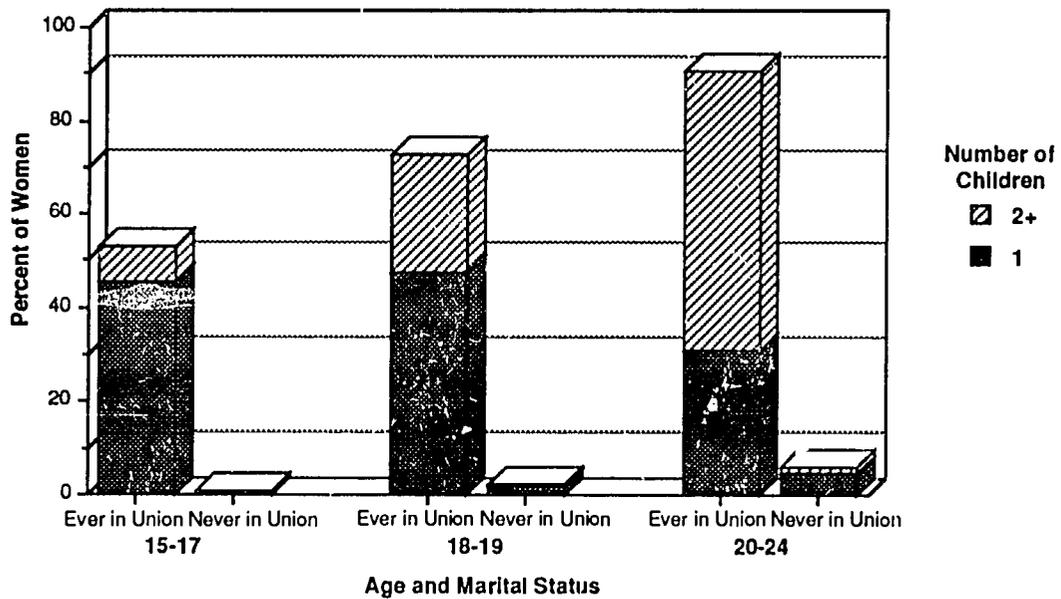
Table VI F15 shows that when ever sexually active women were asked why they are not using a method, their reasons vary by marital status. Women in union are most likely to report pregnancy-related reasons (currently pregnant, postpartum, desiring pregnancy, or perceived subfertility), while women not in union report that they are not currently sexually active (e.g., no sexual relations in the past 30 days).

An unplanned pregnancy is often more of a problem for single women than for women already in union. Considering the low prevalence rates of contraception, Table VI F16 shows that relatively few (9.9%) of the single sexually experienced women are currently active (defined as intercourse in the past 30 days). The highest proportion of currently active women is among the youngest women. Unfortunately, as Table VI F12 shows, the women under 20 are also the least likely to be contracepting.

As shown above, many unions begin early in Honduras and contraceptive prevalence is low. It is not surprising therefore that pregnancy occurs early. Table VI F17 and Figure VI F1 show the number of children ever born by residence, age, and whether the woman has ever been in union. Only small proportions of women who have never been in union have children, and this varies little by age or residence. Among women ever in union, as age increases, so do the number of children ever born. In general, cumulative fertility is highest in rural areas and lowest in Teg/SPS. By ages 20-24, 67.4 percent of the women in union living in rural areas have two or more children, compared with 45.4 percent in Teg/SPS. Other urban areas show intermediate levels.

Figure VI F1

Distribution of young women according to number of children ever born, by marital status and age



Fertility levels are also highly correlated with education as Table VI F18 shows. The more education a woman has completed, regardless of age, the less likely she is to have children. Fifty-seven percent of the young women ages 20-24 with seven or more years of schooling have no children compared with 16.0 percent of the women with no formal education.

As families grow in size, contraceptive use also increases. Based on all women 15-24, Table VI F19 shows that only 1.7 percent of the women with no children are currently contracepting. This proportion increases to 24.2 percent with one child and 30.7 percent for women with two children. Women currently not in union, although they might have children, are much less likely to be contracepting than their counterparts in union.

Pregnancy, even when desired and planned, creates adjustments in life style patterns. When a pregnancy is not planned, those adjustments can be stressful for a variety of reasons, including scarcity of financial resources or lack of familial support. Only a small percentage of women not in union are currently pregnant. A greater proportion of the women in union 15-17 are pregnant (30.6%) than women 20 to 24 (22.1%) (Table VI F20).

All women who have ever been pregnant, including those who were pregnant for the first time at the time of interview, were asked if her last pregnancy was intended. Those answering no were asked further as to whether the pregnancy was poorly timed or was not desired, even at a later date. Table VI F21 provides information related to the planning status of the last pregnancy by age, educational level, and residence of the woman. As age increases, so does the proportion of mistimed and unwanted pregnancies.

Table VI F1
Distribution of young women according to marital status,
by residence and age

Epidemiology and Family Health Survey, Honduras, 1987

Residence/Marital Status	Total	Age					
		15	16	17	18	19	20-24
Total							
Married	13.2	1.8	1.9	5.7	5.2	10.1	23.5
Consensual union	25.6	6.5	9.8	16.4	24.2	31.2	36.1
Separated/divorced							
widowed	9.6	1.1	3.2	7.3	9.1	8.9	14.3
Single	51.5	90.6	85.1	70.6	61.6	49.8	26.2
No. of Women	(4577)	(541)	(529)	(507)	(484)	(436)	(2080)
Teg/SPS							
Married	11.6	0.8	0.8	2.3	4.7	6.4	21.4
Consensual union	18.4	3.1	5.4	9.2	12.8	20.8	27.8
Separated/divorced							
widowed	8.2	0.8	3.8	4.6	4.7	5.6	13.2
Single	61.8	95.3	90.0	84.0	77.9	67.2	37.7
No. of Women	(1238)	(127)	(130)	(131)	(149)	(125)	(576)
Other Urban							
Married	11.1	1.2	0.0	3.7	0.0	12.8	20.0
Consensual union	20.8	1.2	7.9	8.6	12.3	29.5	31.5
Separated/divorced							
widowed	10.5	0.0	3.4	11.1	12.3	6.4	15.3
Single	57.6	97.6	88.8	76.5	75.4	51.3	33.2
No. of Women	(736)	(83)	(89)	(81)	(65)	(78)	(340)
Rural							
Married	14.6	2.4	2.9	7.8	6.7	11.2	25.5
Consensual union	30.4	9.1	12.3	21.7	33.3	37.3	41.5
Separated/divorced							
widowed	10.0	1.5	2.9	7.5	10.7	11.6	14.5
Single	44.9	87.0	81.9	63.1	49.3	39.9	18.5
No. of Women	(2603)	(331)	(310)	(295)	(270)	(233)	(1164)

Table VI F2

Distribution of young women according to marital status, by education and age
Epidemiology and Family Health Survey, Honduras, 1987

Age and Education	Married	In Union	Separated*	Single	Total	No. of Women
<u>15-17</u>						
None	4.1	23.8	4.1	68.0	100.0	(122)
Primary 1-3	4.2	19.9	6.4	69.6	100.0	(312)
Primary 4-6	3.3	9.9	4.2	82.6	100.0	(717)
≥ 7 years	1.6	1.9	1.2	95.3	100.0	(426)
<u>18-19</u>						
None	15.4	50.8	7.7	26.2	100.0	(65)
Primary 1-3	7.7	40.8	15.4	36.1	100.0	(169)
Primary 4-6	8.6	32.4	10.5	48.5	100.0	(373)
≥ 7 years	4.5	9.3	4.2	82.1	100.0	(312)
<u>20-24</u>						
None	17.2	52.0	17.6	13.2	100.0	(250)
Primary 1-3	24.4	46.1	15.0	14.5	100.0	(488)
Primary 4-6	25.3	40.6	16.6	17.4	100.0	(711)
≥ 7 years	23.2	16.7	9.8	50.3	100.0	(630)

*Separated, divorced or widowed.

Table VI F3

Percent of young women who have had intercourse,
by age, education and residence

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	Has Had Intercourse	No. of Women
<u>Age</u>		
15	10.2	(541)
16	18.0	(528)
17	31.6	(506)
18	40.3	(484)
19	52.8	(436)
20-24	76.3	(2070)
<u>Education</u>		
None	71.7	(435)
Primary 1-3	66.4	(966)
Primary 4-6	51.9	(1799)
≥ 7 years	31.3	(1363)
<u>Residence</u>		
Teg/SPS	41.2	(1234)
Other urban	45.0	(733)
Rural	56.8	(2597)

Table VI F4

Median age of first intercourse and cumulative probability of having had intercourse, by residence
Epidemiology and Family Health Survey, Honduras, 1987

Age	Total	Residence		
		Teg/SPS	Other Urban	Rural
< 13	2.9	1.8	1.9	3.7
14	8.7	5.3	6.9	10.8
15	18.0	11.4	12.6	22.7
16	28.2	17.7	20.3	35.6
17	40.2	28.3	31.6	48.6
18	50.8	37.1	43.2	60.0
19	59.6	46.8	51.0	68.5
20	66.4	54.8	57.8	74.7
21	72.4	62.4	62.9	80.2
22	76.7	65.6	69.1	84.5
23	81.2	70.4	79.7	86.8
24	84.5	74.2	83.4	89.8
Median Age	17.9	19.4	18.9	17.1
No. of Women	(4539)	(1235)	(728)	(2576)

Table VI F5

Distribution of sexually experienced young women according to age at first intercourse, mean age and her partner's mean age

Epidemiology and Family Health Survey, Honduras, 1987

Age at First Intercourse	Total	Partner's Mean Age**	No. of Women
< 12	1.6	20.2	(31)
13	4.1	21.8	(82)
14	11.3	22.8	(239)
15	17.2	21.6	(359)
16	16.4	22.7	(362)
17	16.5	23.3	(352)
18	12.1	22.6	(257)
19	8.0	24.6	(177)
20-24	11.3	24.1	(250)
Unknown	1.5		
Total	100.0		
Mean Age*	16.6	22.9	(2109)
No. of Women	(2315)		

*The 38 women whose age at first intercourse was unknown were excluded from this calculation.

**There are 206 cases with information about partner's age missing.

Table VI F6

Percent of young women agreeing that premarital sexual relations are acceptable, by residence, education, age, and sexual experience

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	% Agreeing Premarital Sex Acceptable if Couple Has:		
	No Plans to Marry	Couple Plans to Marry	No. of Women
<u>Residence</u>			
Teg/SPS	22.1	37.0	(1233)
Other urban	19.5	36.6	(734)
Rural	19.2	37.8	(2593)
<u>Education</u>			
None	19.6	38.7	(434)
Primary 1-3	17.3	37.6	(964)
Primary 4-6	20.1	39.0	(1797)
≥ 7 years	22.1	34.8	(1363)
<u>Age</u>			
15-17	17.2	32.2	(1572)
18-19	15.3	34.3	(920)
20-24	24.3	42.7	(2068)
<u>Sexual Experience</u>			
No experience	16.6	29.2	(2249)
Post-marital*	16.8	32.2	(1038)
Premarital	28.8	56.1	(1273)

*97 cases who reported first sexual relationship occurred during month of union whose first partner was "husband" were considered post-marital.

Table VI F7

Percent of all women and never married women reporting premarital intercourse, by age

Epidemiology and Family Health Survey, Honduras, 1987

Age	% of All Young Women Who Have Had Premarital Intercourse		% of Never Married Women Who Have Had Intercourse	
	%	No. of Women	%	No. of Women
15-19	16.6	(2497)	3.0	(1813)
20-24	41.4	(2080)	9.9	(545)
15	6.8	(541)	0.8	(490)
16	10.0	(529)	3.6	(450)
17	17.4	(507)	3.4	(358)
18	22.3	(484)	3.4	(298)
19	29.4	(436)	5.5	(217)
20	38.8	(436)	6.8	(161)
21	41.9	(415)	8.8	(125)
22	40.3	(472)	9.8	(123)
23	45.1	(401)	12.2	(74)
24	41.3	(356)	17.7	(62)

Table VI F8

Percent reporting premarital sex among ever sexually active
young women, by age

Epidemiology and Family Health Survey, Honduras, 1987

Age	% Reporting Premarital Sex	No. of Women
Total	55.1	(2315)
15	67.3	(55)
16	55.8	(95)
17	55.0	(160)
18	55.4	(195)
19	55.7	(230)
20-24	54.5	(1580)

Table VI F9

Distribution of young women according to ideal relationship before having sexual relations, by age, education, residence and sexual experience

Epidemiology and Family Health Survey, Honduras, 1987

Characteristics	Ideal Relationship			Total	No. of Women
	Husband	Fiance	Boyfriend		
Total	74.8	17.8	7.4	100.0	(4557)
<u>Age</u>					
15-17	80.8	12.5	6.7	100.0	(1570)
18-19	75.9	19.0	5.1	100.0	(920)
20-24	69.9	21.1	9.0	100.0	(2067)
<u>Education</u>					
None	73.5	18.7	7.8	100.0	(434)
Primary 1-3	75.3	18.1	6.6	100.0	(961)
Primary 4-6	75.7	17.4	6.9	100.0	(1797)
> 7 years	73.7	17.8	8.6	100.0	(1363)
<u>Residence</u>					
Teg/SPS	67.6	21.2	11.3	100.0	(1234)
Other urban	79.0	16.5	4.5	100.0	(734)
Rural	77.1	16.5	6.4	100.0	(2589)
<u>Sexual Experience</u>					
No experience	83.2	11.7	5.2	100.0	(2247)
Post-marital*	79.0	15.8	5.2	100.0	(1037)
Premarital	56.7	30.1	13.2	100.0	(1273)

*97 cases who reported first sexual relationship during month of union with husband considered post-marital.

Table VI F10

Distribution of young women and their actual relationship to partner
at first intercourse, by ideal relationship

Epidemiology and Family Health Survey, Honduras, 1987

Relationship at First Intercourse	Total	Ideal Relationship		
		Husband	Fiancé	Boyfriend
Husband	48.0	57.1	31.4	25.2
Fiancé	2.1	1.3	4.4	1.8
Boyfriend	47.1	39.6	61.1	65.3
Friend	2.1	1.6	1.8	6.8
Other	0.7	0.5	1.3	0.9
Total	100.0	100.0	100.0	100.0
No. of Women	(2310)	(1541)	(547)	(222)

Table VI F11

**Percentage of young women with knowledge of
contraceptive methods, by age**

Epidemiology and Family Health Survey, Honduras, 1987

Method	Age		
	15-17	18-19	20-24
Orals	92.3	97.5	97.8
Female sterilization	89.8	93.2	95.7
Vasectomy	28.0	38.1	40.9
IUD	53.9	70.4	81.2
Injectables	54.1	68.5	79.6
Condom	49.9	69.0	76.4
Vaginal methods	29.4	42.5	53.2
Rhythm	26.5	36.7	52.1
Withdrawal	17.4	25.8	40.2
No. of Women	(1576)	(920)	(2080)

Table VI F12

Distribution of ever sexually active young women according to
contraceptive use at first intercourse, by age at first intercourse

Epidemiology and Family Health Survey, Honduras, 1987

Method	Total	Age at First Intercourse						
		≤ 14	15	16	17	18	19	20-24
Used a Method	4.3	1.5	2.5	3.4	4.5	4.3	6.5	10.4
Pills	2.4	1.3	1.3	1.8	2.6	0.7	4.3	6.9
Other	1.9	.2	1.2	1.6	1.9	3.6	2.2	3.5
Did not use method	95.7	98.5	97.5	96.6	95.5	95.7	93.5	89.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(2277)	(393)	(398)	(380)	(381)	(279)	(186)	(260)

Table VI F13

Distribution of ever sexually active young women according to their reason for not using a method at first intercourse, by age at first intercourse

Epidemiology and Family Health Survey, Honduras, 1987

Reason	Total	Age at First Intercourse						
		≤ 14	15	16	17	18	19	20-24
Didn't know of a method	43.3	53.7	51.5	44.0	39.6	38.6	34.7	29.2
Didn't expect to have relations	13.6	14.7	11.3	12.0	14.3	17.6	13.3	12.9
Wanted to get pregnant	9.6	5.9	6.4	9.6	10.2	8.6	16.2	16.3
Partner opposed	7.4	7.0	7.7	8.7	8.0	6.0	5.8	7.7
Contraceptives bad for health	6.2	4.1	5.2	7.4	6.0	8.2	7.5	6.4
No knowledge of source	1.1	0.3	1.3	2.2	0.5	1.5	0.6	1.7
Better consult MD first	1.0	0.5	1.3	0.5	0.8	1.5	0.6	1.7
Sex not satisfying if contracepting	1.0	0.3	0.8	0.8	1.6	0.4	2.3	1.3
Religious reasons	0.9	0.8	0.3	0.5	1.4	0.7	1.2	2.1
Other reasons	10.3	7.2	6.7	8.7	11.5	12.4	15.0	16.3
Don't remember	5.5	5.4	7.5	5.5	6.0	4.5	2.9	4.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(2178)	(387)	(388)	(366)	(364)	(267)	(173)	(233)

Table VI F14

Distribution of ever sexually active young women according to current contraceptive use, by age

Epidemiology and Family Health Survey, Honduras, 1987

Method	Total	Age				
		15-16	17	18	19	20-24
Contracepting	24.6	16.1	16.4	12.4	19.3	28.5
Oral contraceptives	12.6	6.0	8.8	6.2	12.3	14.4
IUD	3.1	2.7	0.6	1.0	2.2	3.7
Withdrawal	3.9	2.7	3.8	3.1	1.8	4.5
Rhythm	2.1	2.7	3.1	1.0	1.3	2.2
Condom	1.3	0.7	0.0	0.5	1.3	1.6
Other	1.5	1.4	0.0	0.5	0.4	2.1
Not contracepting	75.4	83.9	83.6	87.6	80.7	71.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(2307)	(149)	(159)	(194)	(228)	(1577)

Note: Current contraceptive use defined as use in the last 30 days.

Table VI F15

Distribution of young women who have had sexual relations according to their reason for not currently contracepting, by marital status

Epidemiology and Family Health Survey, Honduras, 1987

Reasons for not contracepting	Total	Women Currently In Union	Women Not In Union
<u>Pregnancy related</u>			
Currently pregnant	28.1	34.8	12.1
Postpartum/breastfeeding	22.8	29.2	7.1
Wants to get pregnant	4.2	5.2	1.6
Can't get pregnant*	3.7	4.2	2.4
<u>Sex related</u>			
Infrequent sexual activity	24.0	4.5	71.3
<u>Method related</u>			
Afraid to use methods/ bad experience with	4.9	5.7	3.0
Lack of knowledge about methods	3.3	4.1	1.4
<u>Other</u>			
Partner dislikes	2.7	3.8	0.0
Religious reasons	1.4	1.9	0.2
She dislikes/disapproves	1.0	1.3	0.4
Economic reasons	0.8	1.1	0.0
Other	3.1	4.2	0.6
Total	100.0	100.0	100.0
No. of Women	(1734)	(1228)	(506)

*Has had unprotected intercourse for three years and hasn't become pregnant or doesn't think she can become pregnant.

Table VI F16

Distribution of ever sexually active young women not in union according to current sexual activity, by current age*

Epidemiology and Family Health Survey, Honduras, 1987

Current Sexual Activity	Total	Age				
		15-16	17	18	19	20-24
Active	9.9	18.6	8.3	5.7	5.9	10.3
Not Active	90.1	81.4	91.7	94.3	94.1	89.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(545)	(43)	(48)	(53)	(51)	(350)

*Current sexual activity is defined by having sexual relations in the past month.

Table VI F17

Distribution of young women according to number of children ever born,
by residence and age

Epidemiology and Family Health Survey, Honduras, 1987

Number of Children	Total	Age and Marital Status					
		15-17		18-19		20-24	
		Ever In Union	Never In Union	Ever In Union	Never In Union	Ever In Union	Never In Union
<u>Total</u>							
0	58.8	47.0	99.2	27.2	97.7	9.4	94.1
1	18.2	45.5	0.6	47.4	1.9	30.8	4.6
2+	23.0	7.5	0.2	25.4	0.4	59.8	1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(4577)	(279)	(1298)	(405)	(515)	(1535)	(545)
<u>Reg/SPS</u>							
0	68.3	45.0	99.4	43.2	98.5	13.9	93.5
1	16.7	45.0	0.6	37.8	1.5	40.7	4.6
2+	14.9	10.0	0.0	18.9	0.0	45.4	1.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(1238)	(40)	(348)	(74)	(200)	(359)	(217)
<u>Other Urban</u>							
0	62.9	29.0	99.1	33.3	96.6	9.7	95.6
1	19.0	61.3	0.5	40.7	3.4	39.6	4.4
2+	18.1	9.7	0.5	25.9	0.0	50.7	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(736)	(31)	(222)	(54)	(89)	(227)	(113)
<u>Rural</u>							
0	53.0	50.0	99.2	21.7	97.3	7.6	94.0
1	18.7	43.3	0.7	51.3	1.8	25.0	4.7
2+	28.2	6.7	0.1	27.0	0.9	67.4	1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(2603)	(208)	(728)	(277)	(226)	(949)	(215)

Table VI F18

Distribution of young women according to number of children
ever born, by age and education

Epidemiology and Family Health Survey, Honduras, 1987

Age and No. of Children	Total	Education			
		No Education	Primary 1-3	Primary 4-6	≥ 7 years
<u>Total</u>					
0	58.8	38.0	44.5	58.0	76.6
1	18.2	17.6	20.3	19.4	15.4
2+	23.0	44.4	35.2	22.6	8.0
No. of Women	(4575)	(437)	(969)	(1801)	(1368)
<u>15-17</u>					
0	90.0	81.1	83.3	90.4	96.7
1	8.6	14.8	13.5	8.5	3.3
2+	1.5	4.1	3.2	1.1	0.0
No. of Women	(1577)	(122)	(312)	(717)	(426)
<u>18-19</u>					
0	66.7	41.5	48.5	61.4	88.1
1	21.9	33.8	33.7	24.9	9.3
2+	11.4	24.6	17.8	13.7	2.6
No. of Women	(919)	(65)	(169)	(373)	(312)
<u>20-24</u>					
0	31.6	16.0	18.2	23.5	57.3
1	24.0	14.8	20.1	27.6	26.5
2+	44.4	69.2	61.7	48.9	16.2
No. of Women	(2079)	(250)	(488)	(711)	(630)

Table VI F19

Percent young women currently contracepting, by number of children ever born, current marital status and age

Epidemiology and Family Health Survey, Honduras, 1987

Age and Current Marital Status	Number of Children Ever Born					
	0	No. of Women	1	No. of Women	2+	No. of Women
Total	1.7	(2675)	24.2	(833)	30.7	(1049)
<u>15-17</u>						
In union	14.4	(104)	26.3	(99)	*	(16)
Not in union	0.4	(1308)	2.8	(36)	*	(7)
<u>18-19</u>						
In union	8.0	(87)	26.2	(141)	22.0	(91)
Not in union	0.2	(521)	1.7	(60)	*	(13)
<u>20-24</u>						
In union	10.2	(118)	38.3	(339)	36.4	(777)
Not in union	1.1	(537)	4.4	(158)	8.3	(145)

*Based on < 20 cases.

Table VI F20

Percent currently pregnant among young women, by age and marital status
 Epidemiology and Family Health Survey, Honduras, 1987

Age and Marital Status	% Pregnant	No. of Women
Total	10.9	(4577)
<u>15-17</u>		
In union	30.6	(219)
Not in union	1.3	(1358)
<u>18-19</u>		
In union	29.2	(322)
Not in union	2.2	(598)
<u>20-24</u>		
In union	22.1	(1238)
Not in union	4.0	(842)

Table VI F21

Distribution of young women who have been pregnant according to the planning status of the last pregnancy, by age, education and residence

Epidemiology and Family Health Survey, Honduras, 1987

Characteristic	Planned	Mistimed	Unwanted	Unknown	Total	No. of Women
<u>Age</u>						
15-16	68.0	27.0	5.0	0.0	100.0	(100)
17	67.7	26.3	3.8	2.3	100.0	(133)
18	62.5	31.5	5.4	0.6	100.0	(168)
19	61.7	32.5	4.3	1.4	100.0	(209)
20-24	59.0	30.5	9.4	1.1	100.0	(1508)
<u>Education</u>						
None	53.6	30.2	13.6	2.7	100.0	(295)
Primary 1-3	58.2	30.4	10.1	1.3	100.0	(593)
Primary 4-6	63.1	29.8	6.4	0.7	100.0	(857)
≥ 7 years	64.2	31.5	3.8	0.5	100.0	(371)
<u>Residence</u>						
Teg/SPS	65.6	28.6	5.5	0.2	100.0	(454)
Other urban	64.0	30.7	4.7	0.7	100.0	(300)
Rural	58.1	30.9	9.5	1.5	100.0	(1364)

G. Miscellaneous

Knowledge of the fertile period was determined with the following question: How many days after the beginning of a menstrual period is a woman most likely to become pregnant. The fertile period is defined here as approximately 12 to 16 days after menstruation begins, and is the focus of the next two tables. Overall, only 7.3 percent of all women cite a day within this range; 36.3 percent report a day outside this range, and 56.4 percent do not know (Table VI G1). The two most frequently cited days are day 8 (9.3%) and day 5 (6.7%). Younger or less educated women are less knowledgeable than older or more educated women. Neither marital status nor sexual experience reveal differences in knowledge.

Of women in union who are currently contracepting, rhythm users should ideally be most knowledgeable about the fertile period. Table VI G2 shows rhythm users are twice as likely to correctly identify the fertile period as users of other methods. Nevertheless, even the proportion of rhythm users who recognize the fertile period is very low (20.6%).

All women were asked if they had experienced an abortion without specifying whether it was spontaneous or induced. Interviewers were trained to ask about the gestational period at the time the pregnancy was terminated. We defined an abortion as a pregnancy ending before five months. Twenty-four percent of the women reported at least one abortion (Table VI G3). This percentage does not vary by residence. A greater proportion of women with no formal education report an abortion than do women with higher levels of education, however, this relationship may be confounded by age or parity. A strong relationship exists between parity and number of abortions. The more pregnancies a woman has had the more likely she is to experience an abortion. Only 12.9 percent of the women with no live births reported an abortion compared with 34.9 percent of the women reporting five or more live births.

Table VI G1

Distribution of all women and their knowledge of
fertile period, by selected characteristics

Epidemiology and Family Health Survey, Honduras, 1987

Selected Characteristics	Fertile Period			Total	No. of Women
	Days 12-16	Other*	Don't Know		
Total	7.3	36.3	56.4	100.0	(10142)
<u>Age</u>					
15-19	3.6	26.3	70.1	100.0	(2497)
20-24	6.8	37.9	55.3	100.0	(2099)
25-29	10.0	39.3	50.8	100.0	(1877)
30-34	8.5	40.5	51.0	100.0	(1443)
35-39	9.3	40.3	50.5	100.0	(1274)
40-44	8.2	41.5	50.3	100.0	(972)
<u>Education</u>					
None	2.2	24.3	73.5	100.0	(1669)
Primary 1-3	4.0	30.7	65.3	100.0	(2652)
Primary 4-6	4.5	38.7	56.8	100.0	(3312)
≥ 7 years	17.8	47.1	35.0	100.0	(2505)
<u>Marital Status</u>					
Single	6.1	25.3	68.6	100.0	(2679)
In union	7.7	39.3	53.0	100.0	(6103)
Widowed, separated, divorced	7.9	44.5	47.6	100.0	(1360)
<u>Sexual Relations**</u>					
Has had intercourse	4.7	38.8	56.5	100.0	(2315)
Hasn't had intercourse	5.4	24.0	70.6	100.0	(2249)

* Days outside this range.

**Based on women 15-24 years of age

Table VI G2

Distribution of women in union currently contracepting
and their knowledge of the fertile period, by method

Epidemiology and Family Health Survey, Honduras, 1987

Fertile Period	Total	Method	
		Rhythm	All Others
Days 12-16	11.7	20.6	10.9
Other	49.4	45.7	49.8
Don't Know	38.9	33.6	39.4
Total	100.0	100.0	100.0
No. of Women	(2691)	(223)	(2468)

Table VI G3

Distribution of women in union and abortion experience, .
by residence, education and parity

Epidemiology and Family Health Survey, Honduras, 1987

Characteristic	No. of Abortions		No Abortion	Total	No. of Women
	1	≥ 2			
Total	17.4	6.7	75.8	100.0	(6095)
<u>Residence</u>					
Teg/SPS	17.5	4.8	77.7	100.0	(1403)
Other urban	17.6	6.0	76.4	100.0	(822)
Rural	17.4	7.6	75.0	100.0	(3870)
<u>Education</u>					
None	19.0	10.5	70.5	100.0	(1247)
Primary 1-3	18.7	7.7	73.6	100.0	(1851)
Primary 4-6	15.8	5.2	78.9	100.0	(1890)
≥ 7 years	16.4	3.3	80.3	100.0	(1103)
<u>Parity</u>					
0	10.2	2.7	87.1	100.0	(410)
1-2	11.6	2.6	85.9	100.0	(1757)
3-4	18.3	5.1	76.6	100.0	(1718)
≥ 5	22.8	12.1	65.2	100.0	(2210)

CHAPTER VI

RECOMMENDATIONS

A large proportion of young women would like to better space their pregnancies. Contraceptive prevalence is low among many women. Women in union are often not contracepting because they are currently pregnant or they are breastfeeding and/or postpartum and consider themselves protected. Sexually active single women report infrequent sexual activity as the reason for not contracepting. Breastfeeding and sporadic sexual activity can reduce the risk of pregnancy but many women do not seem to perceive their needs or their risks. Lack of knowledge or fear of methods as well as previous unpleasant or unsuccessful experiences with family planning methods are also barriers to increased contraceptive use.

- Fortify family planning education and service delivery targeting young, less educated and rural women.
- Increase family planning options, in particular, the knowledge, availability and acceptability of such reversible techniques as condoms and vaginal spermicides.
- Adolescents should be encouraged to delay marriage and consensual unions (at least until they are 18 or older and have completed primary schooling).
- Many adolescents initiate sexual relations unprotected against pregnancy because they did not know of a method. Adolescents need to know about contraceptive methods and where to obtain them.
- Early childbearing should be discouraged and family planning encouraged. Everyone needs to be familiar with the concept of a planned pregnancy and know how to achieve their family goals.

REFERENCES

CHAPTER VI

1. FHI, 1988. Breastfeeding as a Family Planning Method. *Lancet*, Nov. 19, 1988. p. 1204-1205.

CHAPTER VII SEXUALLY TRANSMITTED DISEASES AND AIDS

Introduction

Knowledge of sexually transmitted diseases (STDs) and AIDS is examined in this chapter. Women were asked if they had heard of any STDs and their means of transmission; if they knew of AIDS, modes of its transmission, and measures to reduce risk of infection. Finally, they were asked their opinions about STD and sex education in the mass media and public institutions.

In 1986 the National AIDS Commission (NAC) was established to formulate and coordinate a comprehensive response to AIDS. Preliminary guidelines developed for AIDS detection, management and prevention provide the basis for the National AIDS Plan for 1988 and 1989, components of which include:

- Control of the blood supply
- Management of HIV positive people and AIDS cases
- Security of biological materials
- Epidemiologic surveillance
- Research
- Health education and training.

The last component - education of the general public, high risk populations and health care professionals - is critical in establishing the primary line of defense against HIV transmission, and essential in formulating an appropriate professional, technical, public and individual response to this epidemic. Communication strategies to increase public knowledge of AIDS, its transmission and prevention include: an NAC campaign slogan "AIDS or life, you decide", radio and television spots, and education campaigns targeted at high risk groups, public schools and universities.

The following pages examine public knowledge of sexually transmitted diseases and AIDS, as well as the potential receptivity to planned AIDS control strategies.

Results

A. Awareness of STDs and AIDS

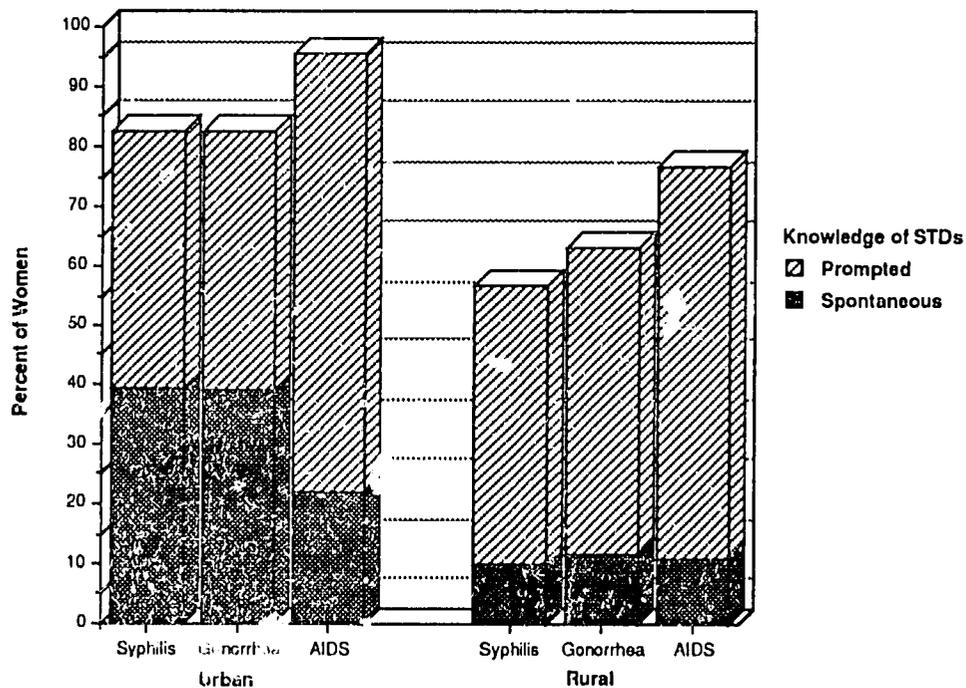
All women were asked to name any STDs about which they had heard. Responses were spontaneous or prompted by the interviewer, who used both proper and colloquial names of diseases. Women who did not recognize the STD after being prompted were coded as "Don't know".

Approximately three out of ten women do not name or recognize syphilis (32.4%) or gonorrhea (28.7%), while only 15.3 percent have not heard of AIDS (Table and Figure VII A1). Nearly half of all women recognize syphilis or gonorrhea as STDs (either spontaneous or prompted). Although fewer women spontaneously identify AIDS as an STD, over two-thirds (69.2%) recognize AIDS with prompting. Overall, AIDS is the most widely known, yet the least

likely to be spontaneously thought of as an STD. Although AIDS, or HIV infection is an STD, it can also be transmitted through blood or blood products and from mother to child. The lack of spontaneous recognition of AIDS as an STD may reflect the awareness of multiple modes of transmission.

Figure VII A1

Distribution of women according to knowledge of major sexually transmitted diseases, by residence



Awareness of STDs and AIDS appears to be associated with urbanization. More than four-fifths of urban women are able to name or recognize syphilis or gonorrhea (82.5% and 82.7% respectively), and nearly all (95.5%) are familiar with AIDS. In contrast, roughly three fifths of rural women can name or recognize syphilis and gonorrhea (56.8% and 63.1% respectively), and 76.9 percent have heard of AIDS. Few women in the cities or countryside spontaneously cite other STDs, such as herpes, vaginal infections and the Flower of Vietnam (Penicillin resistant gonorrhea).

Knowledge of STDs and AIDS is greater in areas of higher incidence of AIDS. Differences in knowledge according to high or low incidence of AIDS in the area are similar to those of urban-rural comparisons and probably reflect the effect of urbanization on STD/AIDS awareness.

Spontaneous awareness of STDs and AIDS appears to increase with educational status, particularly after primary school (Table VII A2). More than half of the women with at least seven years of schooling mention syphilis and gonorrhea without prompting (58.0% and 55.6% respectively), three times the percentage of women with a primary education. AIDS awareness appears to vary less markedly with higher education than the other two STDs: only 29 percent of the better educated women spontaneously name AIDS, less than double that of women with 4 to 6 years of education. In contrast, STD/AIDS name recognition (after prompting) remains largely unaffected by education

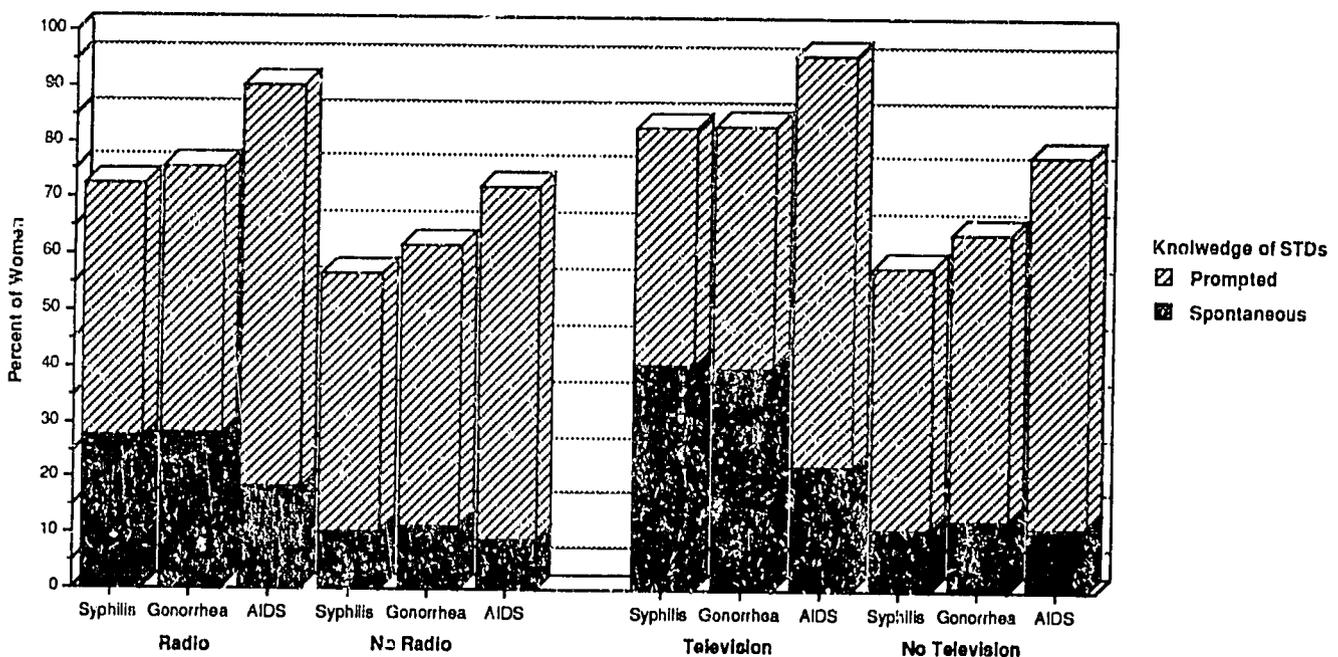
until the higher educational levels. Finally, the proportion of women who have never heard of syphilis, gonorrhoea or AIDS varies inversely with educational status. This effect is most striking in reference to AIDS awareness.

Awareness of syphilis and gonorrhoea increases with age among younger women, but plateaus after age 25 (Table VII A3). Spontaneous knowledge of these two STDs increases from less than one fifth of teenage to one quarter of 20-24 year old women. Similarly, almost half of the teenage women, compared with less than one third of the women in their early twenties, have never heard of either of the two STDs. In comparison, knowledge of AIDS, spontaneous or prompted, varies little with age. It appears that women of all ages, and younger women in particular, have more access to information on AIDS than other STDs.

Knowledge of STDs and AIDS appears further associated with the presence of a radio or television (TV) in the home. Women with radios are twice as likely as those without to name syphilis, gonorrhoea or AIDS spontaneously (Table VII A4 and Figure VII A2). In relation to AIDS knowledge, this effect is evident only after prompting from the interviewer. In fact, nearly all women with radios (90.3%) have some awareness of AIDS (spontaneous or prompted), compared with 72.2 percent of those without. Controlling for residence, this effect persists, albeit less significantly in urban areas. In fact, the impact of a radio at home is most obvious regarding AIDS knowledge in rural areas, where 84.4 percent of the women with radios and only 66.3 percent of those without have ever heard of AIDS. This may indeed represent an effect of AIDS radio spots on this relatively isolated population.

Figure VII A2

Distribution of all women according to knowledge of major sexually transmitted diseases, by radio and television in house



The presence of a TV at home is also associated with increased knowledge of STDs and AIDS, with the strongest differences in rural areas and in relation to AIDS awareness (Table VII A5). Furthermore, only in rural areas is the impact of TV on general AIDS awareness greater than that of radio: 94.1 percent of the rural women with TVs compared with 84.4 percent of those with radios know about AIDS. This difference might reflect a greater impact of TV as a means of mass communication; or, television might be a more accurate indicator of higher socioeconomic status (SES) than radio.

Table VII A1

Distribution of women according to knowledge of major sexually
transmitted diseases, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Knowledge of STDs	Total	Residence	
		Urban	Rural
<u>Syphilis</u>			
Spontaneous	22.4	39.2	10.1
Prompted	45.3	43.3	46.7
Don't know	32.4	17.6	43.1
Total	100.0	100.0	100.0
<u>Gonorrhea</u>			
Spontaneous	23.1	39.1	11.5
Prompted	48.2	43.6	51.6
Don't know	28.7	17.3	36.9
Total	100.0	100.0	100.0
<u>AIDS</u>			
Spontaneous	15.6	22.0	10.9
Prompted	69.2	73.5	66.0
Don't know	15.3	4.5	23.1
Total	100.0	100.0	100.0
<u>Other*</u>			
Spontaneous	3.7	5.4	2.5
Prompted	0.3	0.3	0.3
Don't know	96.0	94.3	97.2
Total	100.0	100.0	100.0
No. of Women	(10141)	(4268)	(5873)

*Women most commonly mentioned Herpes, vaginal infections and Flower of Vietnam as other STDs.

Table VII A2

Distribution of all women according to knowledge of major sexually transmitted diseases, by education

Epidemiology and Family Health Survey, Honduras, 1987

Knowledge of STDs	Total	Education			
		None	Primary 1-3	Primary 4-6	≥ 7 Years
<u>Syphilis</u>					
Spontaneous	22.4	5.0	7.4	16.2	58.0
Prompted	45.3	48.0	51.4	48.0	33.3
Don't know	32.4	47.0	41.2	35.8	8.7
Total	100.0	100.0	100.0	100.0	100.0
<u>Gonorrhoea</u>					
Spontaneous	23.1	6.9	9.8	17.5	55.6
Prompted	48.2	54.2	53.3	50.4	36.0
Don't know	28.7	38.9	36.9	32.2	8.5
Total	100.0	100.0	100.0	100.0	100.0
<u>AIDS</u>					
Spontaneous	15.6	6.4	9.1	15.2	29.0
Prompted	69.2	59.8	69.0	74.1	69.1
Don't know	15.3	33.8	21.9	10.7	1.9
Total	100.0	100.0	100.0	100.0	100.0
No. of Women	(10137)	(1670)	(2652)	(3312)	(2503)

Table VII A3

Distribution of all women according to knowledge of major sexually transmitted diseases, by age

Epidemiology and Family Health Survey, Honduras, 1987

Knowledge of STDs	Total	Age					
		15-19	20-24	25-29	30-34	35-39	40-44
<u>Syphilis</u>							
Spontaneous	22.4	18.6	25.0	24.1	22.7	23.9	20.6
Prompted	45.3	33.1	42.1	48.6	52.3	53.8	55.1
Don't know	32.4	48.3	32.9	27.3	25.0	22.3	24.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<u>Gonorrhoea</u>							
Spontaneous	23.1	17.1	25.5	25.2	25.3	25.4	23.3
Prompted	48.2	36.8	45.2	50.5	55.4	56.2	58.4
Don't know	28.7	46.1	29.3	24.3	19.3	18.4	18.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<u>AIDS</u>							
Spontaneous	15.6	17.3	18.2	14.8	13.2	14.1	12.7
Prompted	69.2	64.4	67.7	71.7	72.8	71.8	70.6
Don't know	15.3	18.3	14.1	13.5	14.0	14.1	16.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(10141)	(2495)	(2080)	(1877)	(1443)	(1274)	(972)

Table VII A4

Distribution of all women according to knowledge of major sexually transmitted diseases, by radio in house and residence

Epidemiology and Family Health Survey, Honduras, 1987

Knowledge of STDs	Total		Urban		Rural	
	Radio	No Radio	Radio	No Radio	Radio	No Radio
<u>Syphilis</u>						
Spontaneous	27.5	10.5	41.4	27.3	13.2	5.8
Prompted	44.9	46.2	41.9	50.5	47.9	45.0
Don't know	27.6	43.3	16.7	22.2	38.9	49.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
<u>Gonorrhoea</u>						
Spontaneous	28.2	11.5	41.1	28.7	14.8	6.7
Prompted	47.4	50.1	42.6	48.6	52.3	50.5
Don't know	24.4	38.4	16.3	22.7	32.9	42.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
<u>AIDS</u>						
Spontaneous	18.5	8.9	23.3	14.9	13.5	7.2
Prompted	71.8	63.3	72.6	78.3	70.9	59.1
Don't know	9.7	27.8	4.0	6.8	15.7	33.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(7052)	(3088)	(3590)	(677)	(3462)	(2411)

Table VII A5

Distribution of all women according to knowledge of major sexually transmitted diseases, by television in house and residence

Epidemiology and Family Health Survey, Honduras, 1987

Knowledge of STDs	Total		Urban		Rural	
	TV	No TV	TV	No TV	TV	No TV
<u>Syphilis</u>						
Spontaneous	40.7	11.1	44.2	25.5	25.9	7.9
Prompted	42.3	47.1	40.1	51.6	51.2	46.1
Don't know	17.0	41.8	15.6	22.9	22.8	46.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
<u>Gonorrhoea</u>						
Spontaneous	40.1	12.8	43.1	28.7	27.7	9.1
Prompted	43.0	51.4	41.5	49.1	49.5	51.9
Don't know	16.9	35.8	15.4	22.1	22.8	39.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
<u>AIDS</u>						
Spontaneous	22.4	11.4	23.7	17.7	17.3	10.0
Prompted	73.6	66.5	72.8	75.3	76.7	64.5
Don't know	4.0	22.1	3.5	7.0	5.9	25.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
No. of Women	(3838)	(6299)	(3094)	(1170)	(744)	(5129)

B. Knowledge of STD Transmission

More than half (56.0%) of all women mention sexual relations as a means of STD transmission; one fifth (20.9%) note sex with a prostitute and 11.3 percent listed toilet seats (Table VII B1). One-fifth (19.3%) of all women spontaneously mention alternative means of transmitting STDs. These are discussed in detail below.

Knowledge of modes of disease transmission appears to increase with urbanization and education (Table VII B2). However, better educated women are most likely (22.7%) to believe that toilet seats are a potential source of infection. Accurate knowledge of STD transmission increases with age until 30 years of age when it plateaus (Table VII B3). Folk beliefs, on the other hand, appear to be more prevalent among women 40 or more years of age.

The presence of a radio or television at home appears to be associated with greater awareness of sexual relations as a way to transmit STDs (Tables VII B4 and B5). Again, this relationship appears stronger in rural areas. One half of the women in rural areas with radios, and two-thirds of those with TVs, cite sexual contact as a means of disease transmission. In comparison, about one third of the rural women without a radio or TV identify sexual relations as a means of STD transmission.

The apparent effect of a radio or TV is minimal among women who cite sexual relations with a prostitute as a means of disease transmission. This suggests that recognition of relations with a prostitute as a potential source of disease is independent of mass media communications.

One fifth of the women interviewed identify additional means of transmitting STDs (Table VII B6). Kissing, sharing underwear and sitting in a seat that has been used by someone with an STD are most commonly mentioned (by 22.7%, 13.9% and 11% respectively). Close proximity and casual contact with a person with an STD, improper personal care during menstruation, postpartum and post abortion, and exposure at public laundry areas (basins and rivers) are additional means of infection mentioned. Urban/rural differences are not dramatic.

Table VII B1

Percentage of women who spontaneously mention a mode of transmission of STDs, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Mode of Transmission	Total	Residence	
		Urban	Rural
Sexual relations	56.0	75.3	42.0
Sexual relations with prostitutes	20.9	25.0	17.9
Toilet seats	11.3	19.7	5.2
Hot baths*	1.4	1.5	1.4
Evil someone has caused	0.4	0.5	0.4
Other	19.3	24.3	15.7
Don't know of any STDs	11.6	3.7	17.2
No. of Women	(10143)	(4270)	(5873)

*"Mojada caliente," or bathing when one is too hot and tired is a folk belief and, possibly, an excuse for contracting a STD.

Table VII B2

Percentage of women who spontaneously mention a mode of transmission of STDs, by education

Epidemiology and Family Health Survey, Honduras, 1987

Mode of Transmission	Total	Education			
		None	Primary 1-3	Primary 4-6	≥ 7 Years
Sexual relations	56.0	31.6	41.9	55.0	88.5
Sexual relations with prostitutes	20.9	16.8	19.0	23.0	23.0
Toilet seats	11.3	3.7	6.3	10.5	22.7
Hot baths*	1.4	1.7	1.6	1.4	1.0
Evil someone has caused	0.4	0.5	0.4	0.5	0.5
Other	19.3	12.0	14.0	19.1	30.2
Don't know of any STDs	11.6	24.4	16.6	8.7	1.4
No. of Women	(10139)	(1670)	(2652)	(3312)	(2505)

*"Mojada caliente," or bathing when one is too hot and tired is a folk belief and, possibly, an excuse for contracting a STD.

Table VII B3

Percentage of women who spontaneously mention a mode of transmission of STDs, by age

Epidemiology and Family Health Survey, Honduras, 1987

Mode of Transmission	Total	Age					
		15-19	20-24	25-29	30-34	35-39	40-44
Sexual relations	56.0	46.1	57.1	59.2	60.7	60.8	59.4
Sexual relations with prostitutes	20.9	15.7	22.3	22.5	22.8	22.1	24.0
Toilet seats	11.3	7.0	10.7	13.5	13.7	13.0	13.8
Hot baths*	1.4	0.4	1.1	1.7	1.2	1.8	3.8
Evil someone has caused	0.4	0.4	0.4	0.5	0.4	0.3	0.6
Other	19.3	17.7	19.6	19.7	20.7	20.5	18.7
Don't know of any STDs	11.6	16.3	10.9	10.1	9.4	8.9	10.5
No. of Women	(10143)	(2497)	(2080)	(1877)	(1443)	(1274)	(972)

*"Mojada caliente," or bathing when one is too hot and tired is a folk belief and, possibly, an excuse for contracting a STD.

Table VII B4

Percentage of women who spontaneously mention a mode of transmission of STDs, by radio in house and residence

Epidemiology and Family Health Survey, Honduras, 1987

Mode of Transmission	Total		Urban		Rural	
	Radio	No Radio	Radio	No Radio	Radio	No Radio
Sexual relations	63.4	39.1	77.2	65.2	49.1	31.7
Sexual relations with prostitutes	22.3	17.8	24.7	26.7	19.8	15.3
Toilet seats	13.5	6.4	19.9	18.9	6.8	2.9
Hot baths*	1.3	1.7	1.3	2.4	1.3	1.5
Evil someone has caused	0.4	0.5	0.4	0.7	0.4	0.4
Other	21.3	14.9	25.1	20.2	17.3	13.4
Don't know of any STDs	8.0	19.7	3.3	6.0	12.9	23.5
No. of Women	(7053)	(3089)	(3591)	(678)	(3462)	(2411)

*"Mojada caliente," or bathing when one is too hot and tired is a folk belief and, possibly, an excuse for contracting a STD.

Table VII B5

Percentage of women who spontaneously mention a mode of transmission of STDs, by television in house and residence

Epidemiology and Family Health Survey, Honduras, 1987

Mode of Transmission	Total		Urban		Rural	
	TV	No TV	TV	No TV	TV	No TV
Sexual relations	77.3	43.0	79.6	63.8	67.6	38.2
Sexual relations with prostitutes	24.4	18.8	24.5	26.3	23.9	17.1
Toilet seats	19.4	6.4	20.7	17.3	14.1	3.9
Hot baths*	1.2	1.6	1.2	2.2	1.2	1.4
Evil someone has caused	0.5	0.4	0.5	0.3	0.5	0.4
Other	24.7	16.1	24.7	23.2	24.3	14.4
Don't know of any STDs	3.4	16.6	3.0	5.8	5.0	19.0
No. of Women	(3840)	(6299)	(3096)	(1170)	(744)	(5129)

*"Mojada caliente," or bathing when one is too hot and tired is a folk belief and, possibly, an excuse for contracting a STD.

Table VII B6

Distribution of women who spontaneously mention other modes
of STD transmission, by residence

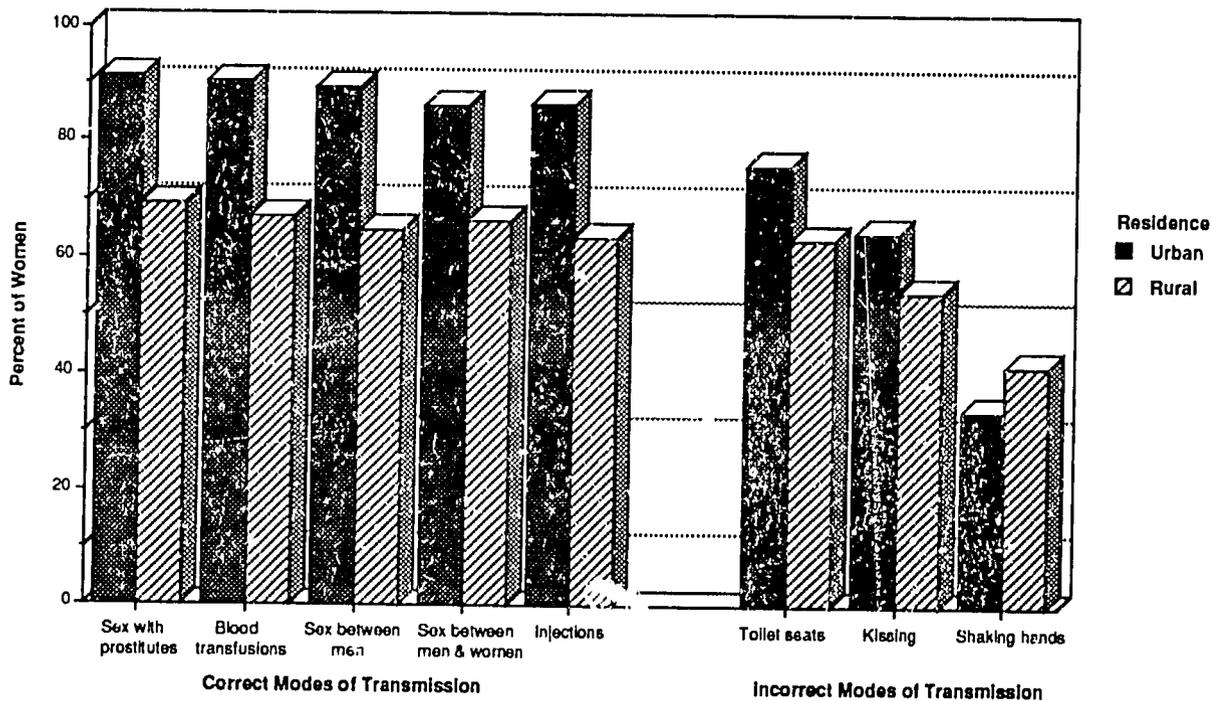
Epidemiology and Family Health Survey, Honduras, 1987

Other Modes of Transmission	Total	Residence	
		Urban	Rural
Kissing	22.7	29.4	15.2
Using same clothes	13.9	13.7	14.0
Sitting in the same seat	11.0	7.4	15.0
Using same utensils	7.7	7.7	7.7
Being close to an infected person	7.5	6.4	8.7
From blood	7.3	9.9	4.4
Homosexuals	5.1	5.1	5.1
Lack of hygiene	4.7	5.4	3.8
Injections	4.4	3.6	5.2
Woman not taking care of self during menstruation	2.7	0.6	5.1
Living with an infected person	2.2	1.7	2.8
Laundromats	1.6	1.6	1.6
Insects/animals	1.5	1.1	2.0
Shaking hands	1.2	1.3	1.0
Taking unknown medicines	0.9	0.3	1.6
Other (ie., drug addicts, virus, etc.)	5.7	4.7	6.9
No. of Women	(1862)	(991)	(871)

C. Knowledge of modes of AIDS Transmission

Women were read a list of eight possible modes of transmission and they answered whether or not each mode was valid. The accuracy of women's knowledge of modes of AIDS transmission is presented by residence in Table and Figure VII C1. Sex with prostitutes is the most widely recognized means, although three quarters of all women correctly identify the five modes of transmitting AIDS presented by the interviewer. Roughly two thirds of rural women, and more than four fifths of urban women recognize each mode of infection. On the other hand, more urban than rural women incorrectly classify toilets and kissing as means of disease spread. The least prevalent misconception about AIDS transmission, shaking hands, is most commonly identified as a means of infection by women in rural areas. This may reflect rural women's awareness of unclean hands as a means of spreading enteric, parasitic infections.

Figure VII C1
Percentage of women who believe in various correct and incorrect modes of transmission of AIDS, by residence



Accurate identification of modes of AIDS transmission appears positively associated with education (Table VII C2). Awareness of each of the means of spreading AIDS increases from approximately half of the women with no education to nine tenths of the women with at least some secondary school education. However, incorrect identification of ways of transmitting AIDS does not appear to vary consistently with lack of education. Greater proportions of well-educated women misclassify toilet seats and kissing as a means of disease transmission. Identification of shaking hands as a mode of transmission is less frequent among the most educated women.

As with STD transmission in general, the presence of a radio or television at home appears to be related to knowledge of modes of AIDS transmission (Table VII C3). Women with TVs are most likely to correctly identify means of disease transmission, followed closely by women with radios, while those without radios are the least knowledgeable. As with education, and perhaps as an indicator of SES, women with a TV or radio more commonly misclassify toilets and kissing as modes of AIDS transmission. Such a misconception about hand-shaking is not only less prevalent, but appears unrelated to the presence of these media at home.

Table VII C1
Distribution of women according to knowledge of mode of
transmission of AIDS, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Mode of AIDS Transmission	Total	Residence	
		Urban	Rural
Never heard of AIDS	15.3	4.5	23.1
Correct			
<u>Sex with prostitutes</u>			
Can transmit	78.8	91.3	69.8
Cannot transmit	0.8	0.9	0.8
Don't know	5.0	3.3	6.3
<u>Blood transfusion</u>			
Can transmit	76.9	90.4	67.1
Cannot transmit	1.6	1.4	1.7
Don't know	6.2	3.7	8.1
<u>Sex between men</u>			
Can transmit	75.1	89.3	64.8
Cannot transmit	1.5	1.2	1.7
Don't know	8.1	4.9	10.4
<u>Sex between men & women</u>			
Can transmit	74.6	86.2	66.2
Cannot transmit	3.0	3.7	2.4
Don't know	7.1	5.5	8.2
<u>Injections</u>			
Can transmit	73.2	86.5	63.6
Cannot transmit	3.3	3.3	3.3
Don't know	8.2	5.6	10.1
Incorrect			
<u>Toilet seats</u>			
Can transmit	68.5	76.1	63.0
Cannot transmit	7.2	11.5	4.1
Don't know	9.0	7.9	9.8
<u>Kissing</u>			
Can transmit	58.6	64.5	54.3
Cannot transmit	11.7	17.3	7.6
Don't know	14.4	13.7	14.9
<u>Shaking hands</u>			
Can transmit	38.4	34.0	41.6
Cannot transmit	28.8	44.6	17.4
Don't know	17.4	16.9	17.9
<u>Other</u>			
Can transmit	19.5	21.5	18.1
Cannot transmit	11.8	14.3	10.0
Don't know	53.3	59.5	48.7
No. of Women	(10143)	(4270)	(5873)

NOTE: Each possible mode of transmission was a direct question.

Distribution of women according to knowledge of mode of transmission of AIDS, by education

Epidemiology and Family Health Survey, Honduras, 1987

Mode of Transmission	Education			
	None	Primary 1-3	Primary 4-6	≥ 7 years
Never heard of AIDS	33.8	21.9	10.8	2.0
Correct				
<u>Sex with prostitutes</u>				
Can transmit	57.8	70.6	83.8	95.0
Cannot transmit	0.8	0.7	1.0	0.8
Don't know	7.7	6.7	4.5	2.2
<u>Blood transfusion</u>				
Can transmit	55.0	67.7	81.4	95.2
Cannot transmit	1.7	1.6	1.8	1.2
Don't know	9.5	8.7	6.0	1.7
<u>Sex between men</u>				
Can transmit	52.6	65.5	79.7	94.3
Cannot transmit	1.8	1.7	1.7	0.8
Don't know	11.8	10.8	7.9	2.9
<u>Sex between men & women</u>				
Can transmit	54.9	66.1	79.2	90.8
Cannot transmit	1.7	2.6	3.5	3.6
Don't know	9.6	9.4	6.6	3.7
<u>Injections</u>				
Can transmit	51.4	64.0	77.4	91.9
Cannot transmit	3.3	3.3	3.7	2.8
Don't know	11.4	10.7	8.2	3.4
Incorrect				
<u>Toilet seats</u>				
Can transmit	54.4	64.7	75.6	72.6
Cannot transmit	2.6	3.5	5.4	16.5
Don't know	9.2	9.8	8.3	8.9
<u>Kissing</u>				
Can transmit	48.6	55.2	62.9	63.2
Cannot transmit	4.4	7.1	11.2	22.2
Don't know	13.2	15.8	15.2	12.7
<u>Shaking hands</u>				
Can transmit	38.4	41.8	42.5	29.6
Cannot transmit	11.3	17.3	28.2	53.6
Don't know	16.5	19.0	18.6	14.9
<u>Other</u>				
Can transmit	15.1	17.2	20.8	23.4
Cannot transmit	7.4	9.6	12.5	16.3
Don't know	43.7	51.2	55.9	58.2
No. of Women	(1670)	(2652)	(3312)	(2505)

NOTE: Each possible mode of transmission was a direct question.

Table VII C3
Distribution of women according to knowledge of mode of transmission
of AIDS, by radio or television in house

Epidemiology and Family Health Survey, Honduras, 1987

Mode of AIDS Transmission	Total		Total	
	Radio	No Radio	TV	No TV
Never heard of AIDS	9.8	27.9	4.0	22.1
Correct				
<u>Sex with prostitutes</u>				
Can transmit	85.0	64.7	91.9	70.9
Cannot transmit	0.9	0.8	1.0	0.7
Don't know	4.4	6.6	3.1	6.3
<u>Blood transfusion</u>				
Can transmit	83.6	61.5	91.8	67.8
Cannot transmit	1.4	2.0	1.3	1.8
Don't know	5.2	8.6	2.9	8.3
<u>Sex between men</u>				
Can transmit	81.8	60.0	90.2	66.0
Cannot transmit	1.3	1.9	1.2	1.7
Don't know	7.1	10.2	4.6	10.2
<u>Sex between men & women</u>				
Can transmit	80.7	60.7	86.9	67.1
Cannot transmit	3.1	2.6	3.8	2.5
Don't know	6.4	8.8	5.3	8.2
<u>Injections</u>				
Can transmit	80.2	57.3	88.1	64.1
Cannot transmit	3.0	4.0	2.7	3.7
Don't know	7.1	10.8	5.2	10.0
Incorrect				
<u>Toilet seats</u>				
Can transmit	72.7	58.9	75.8	64.0
Cannot transmit	8.5	4.1	12.1	4.2
Don't know	9.0	9.1	8.1	9.6
<u>Kissing</u>				
Can transmit	61.9	51.0	64.7	54.9
Cannot transmit	13.5	7.6	17.6	8.1
Don't know	14.8	13.5	13.7	14.9
<u>Shaking hands</u>				
Can transmit	38.6	38.2	33.3	41.6
Cannot transmit	34.0	17.0	46.4	18.1
Don't know	17.7	16.9	16.4	18.1
<u>Other</u>				
Can transmit	20.7	16.7	21.4	18.4
Cannot transmit	13.1	9.0	15.3	9.7
Don't know	56.3	46.4	59.2	49.7
No. of Women	(7053)	(3089)	(3840)	(6299)

NOTE: Each possible mode of transmission was a direct question.

D. Knowledge of Risk Reducing Measures

Given that AIDS is transmitted most commonly by sexual relations, women were asked how to reduce the risk of infection without forfeiting sexual activity. Their spontaneous responses are presented by residence in Table VII D1. Monogamy, condom use and avoiding prostitutes are most commonly mentioned, although an average of only one woman in ten notes these protective measures. Generally, urban women are at least twice as likely to name preventive measures, and more than three times as likely to note condom usage as a means of risk reduction.

Knowledge of sexual practices that reduce the risk of AIDS also increases with education (Table VII D2). Condom usage is noted by as few as 2.1 percent of the uneducated women to as many as 22.3 percent of the women with at least some secondary education.

Table VII D3 presents knowledge of means of reducing the risk of AIDS by women's contraceptive use. Condom users are by far the most aware of protective sexual practices. More than one third (36.8%) of the women who use condoms recognize their protective benefit, compared with 7.1 percent of women who use no contraceptive method. While users of other modern methods are the second most knowledgeable group, women who use traditional methods are almost equally as aware of safer sexual behaviors. Furthermore, compared with urban women as a whole (Table VII D1), condom users are markedly more cognizant of risk reducing behaviors, while users of other modern methods demonstrate a similar degree of awareness of AIDS prevention as urban women.

As with previously discussed aspects of STD and AIDS awareness, the presence of a radio or TV in the home is positively associated with knowledge of measures of risk reduction. (Data not shown)

Table VII D1

Percentage of women who spontaneously mention measures to reduce the risk of AIDS without giving up sexual relations, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Preventive Measures Mentioned	Total	Residence	
		Urban	Rural
Monogamy	11.6	16.3	8.2
Use condoms	9.8	16.9	4.7
Don't go to prostitutes	7.8	10.9	5.5
Reduce number of sex partners	4.9	7.4	3.1
Don't have sex with bisexuals	2.7	4.5	1.5
Don't have anal intercourse	1.0	1.6	0.5
Use spermicides	0.5	0.8	0.3
Other	8.5	10.8	6.9
No. of Women	(10143)	(4270)	(5873)

Table VII D2

Percentage of women who spontaneously mention measures to reduce the risk of AIDS without giving up sexual relations, by education

Epidemiology and Family Health Survey, Honduras, 1987

Preventive Measures Mentioned	Total	Education			
		None	Primary 1-3	Primary 4-6	≥ 7 Years
Monogamy	11.6	5.3	7.1	11.8	20.4
Use condoms	9.8	2.1	4.5	8.5	22.3
Don't go to prostitutes	7.8	4.1	5.4	7.6	13.0
Reduce number of sex partners	4.9	1.7	3.0	4.4	9.9
Don't have sex with bisexuals	2.7	0.8	1.1	2.6	5.9
Don't have anal intercourse	1.0	0.2	0.5	0.8	2.1
Use spermicides	0.5	0.1	0.1	0.5	1.2
Other	8.5	3.7	6.5	7.9	14.9
No. of Women	(10139)	(1670)	(2652)	(3312)	(2505)

Table VII D3

Percentage of women who spontaneously mention measures to reduce the risk of AIDS without giving up sexual relations, by contraceptive use

Epidemiology and Family Health Survey, Honduras, 1987

Preventive Measures Mentioned and Residence	Contraceptive Use			
	Modern Methods	Condoms	Traditional Methods	Non- Users
Monogamy	16.6	28.1	15.1	9.7
Use condoms	16.7	36.8	15.1	7.1
Don't go to prostitutes	11.4	17.5	9.4	6.5
Reduce number of sex partners	7.0	13.2	6.5	4.1
Don't have sex with bisexuals	3.9	6.1	1.9	2.4
Don't have anal intercourse	1.4	0.9	0.8	0.8
Use spermicides	0.9	0.0	0.2	0.4
Other	10.5	3.5	10.5	7.9
No. of Women	(2083)	(114)	(478)	(7425)

NOTE: Modern methods include hormonals, sterilization, IUD; traditional methods include rhythm and withdrawal; 16 users of other barrier methods (ie., vaginal spermicides and the diaphragm) are not included in the table.

E. Attitudes About AIDS and Sex Education

Women's understanding of the outcome of AIDS is presented by residence in Table VII E1. Given current technology, most if not all those becoming infected with HIV will become immunologically compromised and will die of opportunistic infections. Yet fewer than one in ten women in our sample - urban and rural - believe that AIDS is always fatal. Roughly half believe that some people with AIDS die, with women living in cities twice as likely to believe this. More than half the women in rural areas compared with one quarter of urban women are not aware of the fatality of this disease.

Given the increasing incidence of AIDS in Honduras, and the lack of educational efforts addressing STDs and AIDS, women's willingness to learn more about these diseases was assessed. Community acceptance of STD education via radio, TV or in school is shown by residence in Table VII E2. Urbanization is associated with a greater acceptance of STD education through radio and TV, and for school children at least 10 years old. However, the differences are not profound. In fact, uniform acceptance is most surprising, particularly the overwhelming acceptance of sex education in the public schools. Similarly, virtually all women are in favor of sex education in the community targeted specifically for adults, as shown in Table VII E3. These results indicate the potential receptivity for such educational efforts.

Table VII E1

Distribution of women by knowledge on outcome of AIDS, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Knowledge on Outcome of AIDS	Total	Residence	
		Urban	Rural
All die	8.2	8.8	7.7
Some die	47.9	63.0	36.9
All recover	3.6	3.7	3.5
Some recover	0.1	0.1	0.1
Other	15.7	5.0	23.1
Don't know	24.5	19.3	28.7
No. of Women	(10143)	(4270)	(5873)

Table VII E2

Distribution of women according to their acceptance of the provision of information about STDs on radio, television or school, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Media Providing Information	Total	Residence	
		Urban	Rural
<u>Radio</u>			
Acceptable	91.4	94.9	88.8
Not acceptable	3.6	3.7	3.5
Don't know	5.0	1.4	7.7
<u>Television</u>			
Acceptable	89.1	93.9	85.5
Not acceptable	4.3	4.5	4.1
Don't know	6.7	1.7	10.4
<u>School for those > 10 years of age</u>			
Acceptable	85.0	90.1	81.3
Not acceptable	8.0	7.3	8.4
Don't know	7.0	2.6	10.3
No. of Women	(10136)	(4265)	(5871)

Table VII E3

Distribution of women by whether they agree to sex education
for adults, by residence

Epidemiology and Family Health Survey, Honduras, 1987

Agree to Adult Sex Education	Total	Residence	
		Urban	Rural
Yes	93.6	95.0	92.6
No	3.6	3.6	3.6
Don't know	2.8	1.5	3.8
No. of Women	(10137)	(4268)	(5869)

CHAPTER VII

RECOMMENDATIONS

Vague familiarity with STDs and AIDS is widespread, yet knowledge of the means of disease transmission and prevention is limited. Given the need for increased understanding, and public interest in STD/sex education via public media and schools, the following strategies are recommended:

To develop and implement an STD/AIDS education campaign utilizing media such as radio and television, school programs for students entering adolescence and older, and community programs for adults, with the following objectives:

- to increase public awareness of STDs and AIDS, including their modes of transmission and consequences;
- to increase knowledge of the means of reducing the risk of STD/AIDS infection including safer sex practices;
- to increase awareness, availability and acceptance of condoms as "protective wear."

APPENDIX

A. Standard Errors and Design Effect Estimates for Selected Variables

Like all sample surveys, the values reported in this final report are affected by both nonsampling error and sampling error. Percentages and distributions in all tables represent an estimate of the population at large; the true values will never be known for sure. Very briefly, nonsampling errors occur during the data collection and data entry phase of the study. Interviewing the incorrect household, phrasing a question incorrectly which unknowingly answers a different question, misunderstanding on the part of interviewers or respondents, and coding errors in data entry are examples of this type of error. Efforts to minimize these problems are an important aspect of any sample survey, yet some degree of nonsampling error is unavoidable. The magnitude of this type of error and how it affects the statistics (e.g. percentages and means) in this report is unknown.

Surveys of the same design and size, if administered once again, would yield different values from those shown in this report; sampling errors reflect the variability associated with repeated applications of the same design. By taking into account the survey design, the magnitude of this type of error can be estimated from the results, and the reported statistics for particular subgroups of people can be "bracketed" with high and low possible values (confidence intervals).

The sampling design for the EFHS 1987 was described in the second chapter. The computer program SESUDAAN¹ incorporates this information to produce estimates of the variability of a given statistic and then calculates the efficiency of the sample design (on that particular statistic) in comparison to the most efficient design, a simple random sample. The efficiency of the design is measured as the "design effect"; the closer the value is to 1, the more the survey sample design resembles a simple random sample. A large design effect indicates that the variable of concern is strongly affected by the heterogeneity among clusters and the homogeneity within clusters.

For these purposes, two key variables in the multi-stage design were identified to enable the calculation of this information. The first variable known as VCELDA, represents map availability and approximates the geographic stratum in which the household is located, and was the first level of selection in the survey design. Within the stratum variable, primary sampling units (PSUs) were identified and came to represent the variable VSECTOR. With numerous formulas and reasonable assumptions, SESUDAAN computes the level of variation for a given statistic using this information.

1. SESUDAAN (Standard Errors Program for Computing of Standardized Rates from Sample Survey Data) was developed by B.V. Shah, Research Triangle Institute, Research Triangle Park, North Carolina.

In the first table below, a sample of important variables, their description, and the population they describe is listed. Table 2 lists the variables and shows the estimated value, standard error (variance), design effect, and 95% confidence interval for the total population. Tables 3 through 8 stratify these variables on place of residence and age. The 95% confidence interval can be interpreted to mean, for example, that we are 95% sure that the value for EDUC2, the proportion of women who have achieved some secondary education, lies somewhere between .229 and .265 for the total population of women aged 15 to 44. In Table 2, the small design effect of BFEED (1.16), the proportion of women with an infant of six months or younger who was breastfeeding at the time of the interview, suggests that there is little effect from the use of clusters. Regardless of where the sample cluster was located, the proportion of breastfeeding women with six month old infants or less, was about the same. On the other hand, such variables as WATER, piped water in the household or on the property, or ELECT, availability of electricity in the home, tend to be large because of the homogeneity within clusters and the variability among clusters.

Table 1

List of variables for sampling errors

Epidemiology and Family Health Survey, Honduras, 1987

Variable	Description	Indicator	Base Group
EDUC2	> 7 years of education	Proportion	All women 15-44
IDEAL126	Ideal number of children	Mean	All women 15-44
TOTNV209	Total number of live births	Mean	All women 15-44
XIOTLIV	Total number of surviving children	Mean	All women 15-44
WATER	Water piped to property	Proportion	All women 15-44
TOILET	Indoor flush toilet	Proportion	All women 15-44
ELECT7	Electricity	Proportion	All women 15-44
CURRUSE	Currently using any method	Proportion	Women in union 15-44
USEPILL	Currently using the pill	Proportion	Women in union 15-44
USESTER	Sterilized women	Proportion	Women in union 15-44
PLANLAST	Planned last pregnancy	Proportion	Women in union 15-44
ININT2	Desire no more children	Proportion	Women in union 15-44
PRENATAL	Institutional pre-natal care	Proportion	Women w/LLBs since June 1982
VISIT	Infant health care	Proportion	Women w/LLBs since June 1982
BFEED	Currently breastfeeding	Proportion	Children < 6 months
DIAR15	Diarrhea in last two weeks	Proportion	Children < 5 years old
IRA15	Respiratory illness in last two weeks	Proportion	Children < 5 years old
IMORT85	Infant mortality	Proportion	Births in 1985
CONSIDA	Knowledge condoms protect against AIDS	Proportion	All women 15-44
ASFR1	Age specific fertility rate	Rate	All women 15-19
ASFR2	Age specific fertility rate	Rate	All women 20-24
ASFR3	Age specific fertility rate	Rate	All women 25-29
ASFR4	Age specific fertility rate	Rate	All women 30-34
ASFR5	Age specific fertility rate	Rate	All women 35-39
ASFR6	Age specific fertility rate	Rate	All women 40-44

Table 2
Sampling errors for the total population
Epidemiology and Family Health Survey, Honduras, 1987

Variable	Value	Standard Error	Design Effect	95% Confidence Interval
EDUC2	0.247	.009	4.65	0.229-0.265
IDEAL126	3.2	.03	1.41	3.1 -3.3
TOTNV209	2.82	.04	1.99	2.74 -2.90
XTOTLIV	2.53	.04	1.92	2.45 -2.61
WATER	0.592	.017	12.80	0.557-0.626
TOILET	0.315	.015	10.69	0.286-0.345
ELECT	0.458	.016	10.73	0.426-0.489
CURRUSE	0.406	.010	2.67	0.386-0.426
USEPILL	0.134	.006	1.71	0.122-0.146
USESTER	0.126	.005	1.65	0.116-0.136
PLANLAST	0.585	.008	1.42	0.569-0.601
INTENT2	0.493	.007	1.36	0.479-0.507
PRENATAL	0.649	.011	2.96	0.627-0.671
VISIT	0.820	.009	3.07	0.802-0.838
BFEED	0.932	.009	1.16	0.914-0.950
DIAR15	0.303	.007	1.84	0.289-0.317
IRA15	0.575	.008	2.12	0.559-0.591
IMORT85	0.047	.005	1.16	0.037-0.057
CONDSIDA	0.116	.004	1.64	0.108-0.124
ASFR1	0.135	.007	0.99	0.121-0.149
ASFR2	0.271	.011	1.21	0.249-0.293
ASFR3	0.240	.010	1.02	0.220-0.260
ASFR4	0.211	.012	1.12	0.187-0.235
ASFR5	0.161	.011	1.10	0.139-0.183
ASFR6*	0.107	.011	1.13	0.085-0.129

* The values for the age specific fertility rates are sometimes off for the third digit due to missing information when using SESUDAAN. The discrepancy between the ASFRs for 40-44 year olds (0.1002 vs 0.107) is the result of not doubling the number of births to women 44 years of age when using SESUDAAN.

Table 3

Sampling errors for Tegucigalpa/San Pedro Sula
Epidemiology and Family Health Survey, Honduras, 1987

Variable	Value	Standard Error	Design Effect	95% Confidence Interval
EDUC2	0.519	.019	3.85	0.482-0.556
IDEAL126	3.01	.03	1.18	2.95 -0.307
TOTNV209	1.91	.06	2.18	1.79 -2.03
XTOTLIV	1.79	.05	2.10	1.69 -1.89
WATER	0.847	.024	11.66	0.800-0.894
TOILET	0.759	.029	12.32	0.702-0.816
ELECT	0.936	.013	7.80	0.911-0.961
CURRUSE	0.633	.014	1.26	0.608-0.658
USEPILL	0.196	.011	1.01	0.174-0.218
USESTER	0.200	.012	1.24	0.177-0.224
PLANLAST	0.666	.014	1.18	0.639-0.693
INTENT2	0.511	.014	1.13	0.484-0.538
PRENATAL	0.790	.015	1.48	0.761-0.819
VISIT	0.904	.009	1.13	0.886-0.922
BFEED	0.818	.033	1.06	0.753-0.883
DIAR15	0.255	.014	1.57	0.228-0.282
IRA15	0.440	.014	1.17	0.413-0.467
IMORT85	0.034	.010	0.92	0.014-0.054
CONDSIDA	0.200	.010	1.56	0.180-0.220
ASFR1	0.080	.011	0.99	0.058-0.102
ASFR2	0.196	.019	1.24	0.159-0.233
ASFR3	0.162	.017	1.13	0.129-0.195
ASFR4	0.140	.017	0.96	0.107-0.173
ASFR5	0.076	.014	0.81	0.049-0.103
ASFR6	0.041	.015	0.97	0.012-0.070

Table 4

Sampling errors for other urban areas

Epidemiology of Family Health Survey, Honduras, 1987

Variable	Value	Standard Error	Design Effect	95% Confidence Interval
EDUC2	0.401	.022	3.06	0.358-0.444
IDEAL126	3.11	.05	1.17	3.01 -3.21
TOTNV209	2.34	.08	1.57	2.18 -2.50
XTOTLIV	2.12	.07	1.46	1.98 -2.26
WATER	0.785	.031	8.77	0.724-0.846
TOILET	0.428	.034	7.49	0.361-0.495
ELECT	0.739	.031	7.61	0.678-0.800
CURRUSE#	0.522	.019	1.22	0.485-0.559
USEPILL	0.174	.014	1.21	0.147-0.201
USESTER	0.183	.013	0.95	0.158-0.208
PLANLAST	0.647	.017	1.00	0.614-0.680
INTENT2	0.479	.017	0.91	0.446-0.512
PRENATAL	0.713	.019	1.27	0.676-0.750
VISIT	0.898	.011	1.03	0.861-0.935
BFEED	0.879	.032	1.02	0.816-0.942
DIAR15	0.284	.015	1.09	0.255-0.313
IRA15	0.574	.018	1.31	0.539-0.609
IMORT85	0.024	.010	0.99	0.004-0.044
CONDSIDA	0.136	.010	1.27	0.116-0.156
ASFR1	0.116	.016	1.01	0.085-0.147
ASFR2	0.242	.028	1.38	0.187-0.297
ASFR3	0.181	.023	0.95	0.136-0.226
ASFR4	0.153	.028	1.32	0.098-0.208
ASFR5	0.120	.025	1.08	0.071-0.169
ASFR6	0.088	.027	1.15	0.035-0.141

Table 5
Sampling errors for rural areas
Epidemiology and Family Health Survey, Honduras, 1987

Variable	Value	Standard Error	Design Effect	95% Confidence Interval
EDUC2	0.080	.007	4.40	0.067-0.094
IDEAL126	3.47	.05	1.55	3.37 -3.57
TOTNV209	3.37	.05	1.53	3.27 -3.47
XTOTLIV	2.98	.04	1.51	2.90 -3.06
WATER	0.422	.023	15.79	0.377-0.467
TOILET	0.080	.015	17.12	0.051-0.109
ELECT	0.162	.020	17.19	0.123-0.201
CORRUSE	0.300	.013	3.24	0.275-0.325
USEPILL	0.103	.007	2.20	0.089-0.117
USESTER	0.088	.006	2.01	0.076-0.100
PLANLAST	0.543	.010	1.52	0.469-0.509
INTENT2	0.489	.010	1.54	0.469-0.509
PRENATAL	0.593	.015	3.44	0.564-0.622
VISIT	0.778	.013	3.43	0.753-0.803
BFEED	0.968	.008	1.40	0.952-0.984
DIAR15	0.319	.009	1.99	0.301-0.337
IRA15	0.611	.010	2.47	0.591-0.631
IMORT85	0.054	.007	1.21	0.040-0.068
CONDSIDA	0.061	.005	1.62	0.051-0.071
ASFR1	0.165	.010	0.92	0.145-0.185
ASFR2	0.318	.015	1.11	0.289-0.347
ASFR3	0.295	.014	1.00	0.268-0.322
ASFR4	0.264	.017	1.10	0.231-0.297
ASFR5	0.205	.016	1.12	0.174-0.237
ASFR6	0.131	.015	1.15	0.102-0.160

Table 6
Sampling errors for women aged 15-24
Epidemiology and Family Health Survey, Honduras, 1987

Variable	Value	Standard Error	Design Effect	95% Confidence Interval
EDUC2	0.300	.011	2.88	0.278-0.322
IDEAL126	3.12	.04	1.23	3.04 -3.20
CURRUSE	0.302	.013	1.39	0.277-0.327
USEPILL	0.153	.010	1.26	0.133-0.173
USESTER	0.011	.003	1.16	0.005-0.017
PLANLAST	0.613	.013	1.12	0.588-0.638
INTENT2	0.249	.012	1.26	0.225-0.273
PRENATAL	0.644	.013	1.38	0.619-0.669
VISIT	0.829	.011	1.63	0.807-0.851
BFEED	0.923	.013	1.02	0.898-0.948
IMORT85	0.054	.009	1.06	0.036-0.072
CONSIDA	0.082	.005	1.17	0.072-0.092

Table 7
Sampling errors for women aged 25-34
Epidemiology and Family Health Survey, Honduras, 1987

Variable	Value	Standard Error	Design Effect	95% Confidence Interval
EDUC2	0.237	.011	2.22	0.215-0.259
IDEAL126	3.24	.04	1.13	3.16 -3.32
CURRUSE	0.442	.013	1.73	0.417-0.467
USEPILL	0.145	.008	1.36	0.141-0.173
USESTER	0.129	.007	1.27	0.115-0.143
PLANLAST	0.591	.011	1.20	0.569-0.613
INTENT2	0.519	.011	1.22	0.497-0.541
PRENATAL	0.674	.013	1.99	0.649-0.699
VISIT	0.826	.010	1.80	0.806-0.846
BFEED	0.930	.014	1.03	0.903-0.957
IMORT85	0.040	.007	1.03	0.026-0.054
CONDSIDA	0.146	.008	1.37	0.130-0.162

Table 8

Sampling errors for women aged 35-44

Epidemiology and Family Health Survey, Honduras, 1987

Variable	Value	Standard Error	Design Effect	95% Confidence Interval
EDUC2	0.156	.011	2.02	0.134-0.178
IDEAL126	3.46	.05	0.99	3.36 -3.56
CURRUSE	0.458	.016	1.71	0.427-0.489
USEPILL	0.081	.007	1.18	0.067-0.095
USESTER	0.239	.013	1.52	0.214-0.261
PLANLAST	0.550	.012	1.08	0.526-0.574
INTENT2	0.701	.012	1.23	0.677-0.725
PRENATAL	0.610	.017	1.51	0.577-0.643
VISIT	0.796	.014	1.65	0.769-0.823
BFEED	0.964	.016	1.00	0.933-0.995
IMORT85	0.050	.012	1.16	0.026-0.074
CONDSIDA	0.138	.009	1.21	0.120-0.156