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THE EVALUATION OF THE EFFECTIVENESS OF THE PERUVIAN MIDWIFE TRAINING PROGRAM

by

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## PREFACE

What are the social and practical effects of midwife training programs? Are the new skills learned through training courses being utilized by program recipients? Has there been an alteration in the standards of health in rural communities as a direct result of midwife training? Are the trained midwives sought after by rural patients? Have the costs involved in training these primary health care providers been equal to the benefits received? What can be done to improve the quality of care provided by indigenous human resources? While there have been several reports of the organization of primary and community based health care programs for rural and semi-urban areas, the evaluation of the on-the ground effects of these interventions is very scarce. In comparison to the volume of material available on the details of the organization and operation of primary health care programs the volume of information available on their direct effects is minimal.

In response to the need for qualitative and quantitative data on the effects of the midwife training program in Perú and in light of the continuing concern for the improvement of the quality of health care the Office of Health, Nutrition and Population, AID contracted this research. Reported here is an evaluation of the on-the ground performance of traditional midwives trained by Ministry of Health personnel during the years 1979-1981.

The first chapter of this report contains three sections. The first section briefly describes the development of community-based primary health care in Perú; the second section explains the objectives of evaluation research; while the third section describes the evaluation methods. The second chapter describes information collection techniques such as sampling methods, field activities, and data gathering instruments. Reports of the pertinent geographical, socio-cultural and economic features of the survey sites are discussed in the third chapter. Data analysis techniques and results are reported for each survey site as well as for the sample in general in the fourth chapter. The fifth chapter contains a summary of the problems noted in the organization, and implementation of midwife training programs with a set of recommendations for program improvement. Considering the difficulties associated with the execution of program recommendations, the sixth chapter presents a implementation model which incorporates the recommendations of this report into the existing TBA training procedures. This chapter is intended to be used as a guide to aid in the improvement of care delivered by trained primary health providers.

EXECUTIVE SUMMARY

Overview- Courses in the training of TBAs began in Peru in 1945. These courses were provided sporadically throughout the sixteen health regions in Peru from 1960-1979. TBA training was begun on a national scale in 1979 as a response to resolutions reached at Alma Ata. Throughout the history of this health program there has been no attempt to systematically evaluate its effectiveness.

Evaluation Objectives-

1. To test the effectiveness of the program using a community based methodology;
2. To test the degree of program coverage;
3. To measure the degree of performance and activity level of trained personnel;
4. To provide concrete methods of program improvement.

Evaluation Methodology- The research strategy consists of three phases- national, regional, and community:

- 1) National Phase- information was collected describing the development of TBA training in Peru, the norms and regulations of the program, and the ideals set by program planners for its execution.
- 2) Regional Phase- information was obtained using a semi-structured , open-ended questionnaire from a sample of 1,230 informants, who had used the services of trained TBAs; a control group of 277 informants who had used the services of untrained , and a sample of 250 trained TBAs. The survey of patients and TBAs took place in five regions- montaña ( upper jungle), south coast, north coast, southern and north-central highlands.
- 3) Community Phase- information was collected describing the practice of three trained TBAs.

Findings-

Problem areas identified as a result of the study were-

A. Programming

1. Inadequate input from local level on program design
2. Insufficient analysis of community needs by health personnel

3. Planning was "supply" rather than "demand "based
4. No attempt was made to prepare the community during the planning stage
5. Inadequate coordination of program planning with local health officers

B. Selection

1. Insufficient input from the community on the selection of program candidates
2. Lack of attention to the creation of incentives to insure the participation of qualified candidates

C. Training

1. Absence of previously trained TBAs on the training staff
2. Insufficient attention to linguistic regional variation
3. Faulty methods of instructing rural TBAs on the utilization of materials recommended for patient transfers

D. Program Operation

1. Inefficient system of patient transfer
2. Non-efficient utilization of the trained TBA as a community health resource
3. High rate of attrition or "drop-outs" of trained TBAs
4. Lack of means of transporting critically ill patients to local health facilities
5. Lack of incentives to motivate local mothers to utilize the trained TBA
6. The local community is generally not aware of the presence of the trained TBA

E. Supervision and Evaluation

1. Insufficient input from the local community on TBA supervision.
2. Lack of feed-back of TBA performance to the local community.
3. Evaluation is based on the number of TBAs trained and their performance on a written exam at the end of the training course. There has been no attempt to evaluate the performance of trained TBAs within the community.

Positive findings included-

1. A marked difference in the quality of care provided by trained versus untrained birth attendants, particularly in rural areas.
2. Trained TBAs retain the information provided to them during training sessions.
3. Trained TBAs expressed very few complaints about the program.
4. Trained TBAs were pleased with their new skills, and felt that they were in a better position to provide service to their community.
5. Patients treated by trained TBAs were satisfied with the services they received, and preferred to use the trained versus the untrained TBA.
6. Patients treated by trained TBAs tended to use more hygienic health practices than those treated by untrained TBAs.
7. Hygienic and nutritional counseling provided by trained TBAs was being utilized by their patients.

Recommendations

COMMUNITY LEVEL-

1. Incentives for program maintenance based in the community should be incorporated into the program.
2. Community based evaluations should be conducted regularly by MOH staff.
3. Communities should assume the responsibility for insuring the qualifications of candidates.
4. Program organizers should explore the possibility of using local private enterprise to provide incentives for the participation of local mothers and trained TBAs in mother's and TBA clubs.

LOCAL LEVEL HEALTH CENTER-(staff at postas sanitarias)

1. Community based evaluations of TBA performance should be carried out by this group.
2. Mother's Club, or the Revolving Credit Union, should be organized by local level health personnel.
3. TBA bi-monthly meetings should be organized at the postas sanitarias.
4. Program coverage should be assessed on an annual basis by local level health personnel

REGIONAL LEVEL ( staff in charge of TBA training at regional hospital)

1. Manpower assessments to determine needs for additional PHC workers should be conducted by regional level staff.
2. Area of poor TBA performance should be discussed with sanitarios who supervise TBA activities.
3. The present scope of work of qualified, trained TBAs should be increased.
4. Regional staff should organize meetings of community leaders before initiating a TBA training program.
5. Regional staff should supervise and monitor the effectiveness of local mothers and TBA clubs.
6. The present lines of communication should be expanded to give greater responsibility to the local community for program maintenance.
7. Regional staff should include trained TBAs on their teaching teams.
8. The formation of community health education systems for rural and semi-urban areas should be carried out by regional health staff.
9. Mass-media methods to publicize the identity and location of all trained PHC providers should be utilized by regional health teams.

NATIONAL LEVEL ( Ministerio de Salud , Escuela de Salud Publica program designers).

1. The participation of the private sector in the sponsorship of additional PHC staff should be investigated and incorporated where possible.
2. The limitations put on the scope of work of trained TBAs should be relaxed.
3. The provision of additional responsibilities to trained TBAs should take into consideration regional differences in the abilities of the trained TBA population.
4. A "demand" rather than a "supply" based orientation to planning, supervising, and maintaining the TBA program should be stressed.
5. National standards should be restructured to take into account local and regional differences.

LESSONS LEARNED

1. Community education campaigns should be included as part of the program.
2. Incentives for maintaining the program should be built into the design. These incentives should be self-sustaining and utilize rewards considered valuable by community members.
3. The community should assume responsibility for the success of the program and should actively participate in its implementation and planning. In this way TBA training will be rooted in the community structure rather than being introduced from the outside.
4. TBAs should be considered as a community based health resource to serve general health needs, not simply as performing only during the maternity cycle.
5. To increase the effectiveness of community based primary health care providers there must be a circulating flow of information from the community to local level health providers to regional level health providers and back.
6. Program effectiveness should be evaluated by assessing program coverage, the level of performance and activity of trained personnel.
7. The high level of performance of trained TBAs is concrete evidence of the success of current training methods. To further the success of the program modifications should be made in teaching methods to adapt to the socio-cultural characteristics of each area.

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CHAPTER I

INTRODUCTION

SECTION I: THE DEVELOPMENT OF COMMUNITY BASED HEALTH CARE IN PERU

A. Efforts at Improving the Quality of Urban and Rural Health Before 1976:

Evidence of the pre-hispanic and colonial foundations for community involvement in health care is drawn from ethnohistoric documents written by Spanish observers at the time of conquest (Lastres 1939), and during the colonial period (Lockhart 1968). The participation of members of the community in the elevation of their own standards of health proceeded into the 20th century. To illustrate the contemporary efforts at community-based health care, a few of the pioneer efforts in the southern highlands will be summarized (MS 1981e).

- In 1925 Dr. Manuel Núñez Butrón began the training of community-based primary health care providers in the southern highlands. He called these workers "Rijchary", a Quechua term meaning despertadores (awakeners). These health workers were taught to promote community sanitation and hygiene.

- In 1940 the Ministry of Health trained voluntary personnel called "Educadores de Higiene", in the southern highlands to perform similar functions as the "Rijchary".

- Afterwards, from 1950-1959, with the participation of the Ministries of Agriculture, Education, Health and Work, a new program was formulated with the assistance of international agencies such as UNICEF (United Nations

International Children's Education Fund ). The intent of this program was the integration of the aboriginal population in the development of the nation.

The Ministry of Health was given the responsibility of training "Promotores de Salud", in order to teach sanitary education, to detect illnesses, and to refer patients to health services, and also to follow-up cases of tuberculosis. The intent of the program was to provide the health promoters with regular supervision, equipment, and a bicycle.

- At the end of the international assistance programs the projects fell into decay. It was only since 1976 that new attempts were introduced into the area through the " Extensión de Coberturas de los Servicios de Salud " This project included training for health promoters and traditional birth attendants as well as the construction of health posts.

During the early 70's attempts at fostering community-based health care were developed sporadically in various provinces (MS 1982:XV). For example, in 1971 a program of semi-urban health care was initiated in the Pueblo Joven El Salvador, in the Región de Salud, Lima Metropolitana. In 1975 the Health Region of Sur Oriental began a program of rural health in the area of Quisicanchis, Region of Cuzco (MS 1978:11).

#### B. Efforts at Improving The Delivery of Community Based Health Care After 1975:

- The first attempts at creating national norms and methods of training primary health care workers, promoters and birth attendants, were made in 1976 (Instituto de Neonatología y Protección Materno-Infantil 1976).

- World-wide recognition of the need for united efforts at decreasing high levels of rural and semi-urban maternal-infant morbidity and mortality through the training of community based health providers was expressed in resolutions approved by the International Conference on Primary Health Care, 'sponsored by WHO in Alma Ata, USSR in 1978 (Simpson 1981: 117). This resolution was prompted by international awareness of the high rates of population growth, which have led private agencies, governments, and international agencies to try to use indigenous community resources as instruments to carry modern methods of health care, sanitation, and birth control, to areas in greatest need, such as remote rural regions and semi-urban communities.

- Among the effects of the Alma Ata resolution on Peruvian National Health policy was the national recognition of the potential of the role of the traditional birth attendant as an instrument of change in rural and semi-urban areas. In 1979 the training of traditional birth attendants was standardized throughout the country on a model formulated by norms created by the School of Public Health. As a result, norms, methods of supervision, evaluation, and instruction, used for the training of traditional midwives are exactly the same in all areas of the country even though there are wide differences in geography, culture, and economy throughout the Peruvian landscape. The only differences between courses taught in the various health regions (see map No.1 for the location the the Peruvian Health Regions), are the financial resources spent on the training of each midwife, the schedule of the courses, and the equipment given to each trainee.

#### C. The Training of Traditional Birth Attendants in Perú

##### I. Programming and Candidate Selection

a. Regional Health Staff (nurses, obstetricians, and primary health personnel)

1. The TBA program is initiated by regional level health professionals who select the communities to either begin a training program, or conduct a refresher course for already trained TBAs

2. Selection of the community is based on previous history of involvement with the training program. In other words, an attempt is made to provide adequate coverage of the TBA training program in all areas of the health region.

3. After selection of the community has been made the chief nurse and/or obstetriz communicates by telephone or radio to the local area hospital in order to advise them to begin the process of selecting candidates. At times only a few weeks notice is given to the local sanitarios to find enough qualified candidates to take the course.

4. Course size is optimally set at 15-18. However, due to lack of adequate time for candidate selection, courses are sometimes conducted with as few as ten participants.

b. The Local Level Health Staff

1. The sanitario either contacts local community leaders to find candidates for the course, or seeks out known traditional birth attendants.

2. Non-willingness of qualified candidates to participate in the course is due to :

\* lack of time because of involvement with subsistence activities or child care;

\* lack of interest;

\* lack of perceived benefits.

c. The Local Community

Local community leadership plays a very small role in the programming of TBA training . They are sometimes consulted about the selection of candidates.

II: Training

1. After a date has been set for the training program to begin the training staff visits the area, usually for the first time.

2. The composition of the training staff varies from region to region. The staff can consists of the head obstetriz, her assistant, or two nurses. At times a nurse will conduct the course with an obstetriz . At present there is no trained TBA that is included among the training staff members.

3. The course usually lasts two weeks. During this time the TBAs are taught nutritional, hygienic, and birth control counseling; proper techniques to use during birth to care for the mother and newborn; proper attention to the mother and infant during the post-partum period. They are also taught to instruct their patients on environmental hygiene, first aid, child nutrition, and to care for children with vomiting, respiratory problems, cough, hemorrhage, falls, animal bites, wounds, burns, and poisoning. TBAs are instructed in the proper management of basic medicines, however, the TBAs are not taught to use injections.

4. Teaching methods include oral drills, audio-visual aids, and observation.

5. Feed-back from the participants is encouraged by the teaching staff, however, due to cultural restraints it seldom occurs. The social distance between instructor and TBAs limit the free interchange of ideas between them.

6. The program is concluded by a ceremony during which the TBAs receive their certificates and equipment.

### III: Program Operation

1. The trained TBA is then free to treat patients in the community.

2. Statements from patients who had used the trained TBA before and after the course testify that the training course was responsible for the increase in hygienic techniques and additional counseling provided by the trained TBA.

3. The trained TBA keeps a record of all births attended and reports them to the sanitarios at the local health center. Ideally, this report should be made on a regular basis; however, the sanitarios do not uniformly check to see if the TBAs bring in their reports monthly.

4. After a birth the TBA instructs the patient to bring the newborn into the health center for registration. However, this sometimes does not occur.

5. In cases of difficult births the TBA either handles the situation, or refers the patient to the local health center. In rural areas where there is no transportation, the TBA fully assumes responsibility for patient care. In some cases, the TBA refuses to transfer the patient to the hospital or local health center.

6. Post-partum care by the TBA is dependent upon the demands of the patient. The TBA generally does not visit the patient routinely.

#### IV Supervision and Evaluation

1. Supervision is spotty and in-consistent.
2. The head obstetriz or one of her staff will occasionally visit the trained TBA, but these visits are infrequent.
3. The sanitario has the greatest contact with the trained TBA, but the supervision usually consists of a survey of the number of births attended, or the number of patients transferred to the local health facility.
4. Evaluation consists of a exam conducted by the teaching staff at the end of the course, or the number of TBAs trained in each health region.
5. Progress in the training of traditional birth attendants is evaluated in Ministerio de Salud reports by the numbers of candidates trained. For example, in 1978 115 traditional midwives received training in the Health Regions of Nor-Medio, Nor-Central, Sur Occidental, Ordeso, and Ordelloreto (MS 1978). A year later, 1102 candidates received training (MS 1978). See Map 1 for the location of the Peruvian health regions. It is estimated that at present there are 2,400 trained TBA practicing in the country.



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## SECTION II: THE OBJECTIVES OF EVALUATION RESEARCH

While there are many definitions of the purpose of evaluation research, the simplest is - evaluation can be defined as the process by which information relevant to decision-making can be obtained from a project, analyzed, and interpreted. The purpose of evaluation is to provide decision makers with useful information about how programs are functioning with respect to achieving their goals. The long range objective of this evaluation is to find methods of increasing the effectiveness of the midwife training program in Perú with the ultimate aim of decreasing the current high level of maternal-infant morbidity and mortality. The immediate aims are:

1. To develop and provide a better quality of training for primary health care personnel;
2. To decrease the "drop-out" rate of already trained personnel;
3. To increase the coverage of services provided by already trained personnel;
4. To provide greater opportunities for traditional birth attendants to increase their knowledge and their abilities to provide services to their communities;
5. To focus attention on areas of patient care that are sub-standard;
6. To provide flexibility in the program entrance requirements;
7. To adapt the character of the training course to the needs of the various socio-cultural groups that occupy the three major geographical zones of the Peruvian countryside.

The primary evaluation question is to find if the midwife training program is achieving its intended goal. Modifications made to adapt classic evaluation methods (see for example AID 1980, Fink and Kosecoff 1978, Rossi and Berk 1981) to solve this problem are drawn from maximization theory developed by Blau (1964), Cancian (1966) and Homans (1968) and later used as a research instrument by Johnson (1974) and others. This theory defines human interactions on a series of cost-benefit equations. For example, human behavioral sequences are thought of in terms of perceived costs and benefits. The value of this approach to solving the evaluation problem stated above is that the midwife and her patients are conceived as individuals whose actions respond to sets of perceived needs. For example, a midwife will utilize skills learned through training sessions only if she perceives these new skills as being beneficial to herself and/or her patient. The patient, on the other hand, will seek out the services of trained personnel only if the services

performed by this health provider are thought to be of higher quality than other available health resources. Of course, this theory is not presumed to fully take into account other considerations made by midwife and patient. The significant role of kinship relationships and other cultural constraints certainly contribute to the choice of birth attendant. Circumstantial issues, such as availability and transportation also contribute to this decision. The point raised above simply presents another aspect to the complex and economically significant issue of program compliance and non-utilization of available trained health personnel. Based on this perspective, the statements of trained midwives and their patients provide an index of program success.

From an economic standpoint, the objective is to determine a method of increasing the benefits derived from each available health dollar. Again, by directing attention to the program recipient, information is now available specifying methods to overcome economic waste such as "drop-outs", non-willing potential qualified candidates for training, limitations of the services provided by trained midwives, and overlap between services provided by midwives and health promoters.

SECTION III: EVALUATION METHODS:

Peruvian TBA training began in the Health Region of Ica in 1945 funded by the Rockefeller Foundation. These courses were provided sporadically throughout the sixteen health regions from 1960-1979. In 1979 the national TBA training program began. Throughout the history of this intervention program there has been no attempt to systematically evaluate its effectiveness. In light of the continuing problems of population pressure, lack of western trained health providers for rural and semi-urban areas, and the ever-increasing rates of maternal-infant morbidity and mortality, there is an urgent need for evaluations that lay heavy emphasis on concrete methods of program improvement. The approach to evaluation taken previously by Ministry of Health and International Agencies measured effectiveness solely on numbers of personnel trained, human and economic resources invested, and written results of an examination given to program recipients. No attempt was made to test the performance of trained personnel within the community setting. Due to the need for a problem-oriented approach, the evaluation methodology used for this study contains three sections:

1. The utilization of technical skills and hygienic behavior by program recipients;
2. Program coverage;
3. The socio-economic and socio-cultural characteristics of the target population. As discussed by Simpson (1981: 118-119)" it is necessary for modern health planners to take into account the personal characteristics of traditional midwives (sex, age, extent of literacy, level of activity), their status, traditional practices, and degree of influence over their clients in efforts to collaborate with them to improve maternal and child health and family planning accessibility. All of these characteristics and factors may vary and in some cases may operate against effective collaboration, unless the special needs of traditional midwives are considered."

TESTS OF PERFORMANCE

A. The following evaluation questions were used to assess the level of compliance of trained TBAs to program directives.

1: Reactions of the trained TBAs:

- a) Did the program work?
- b) Are the trained midwives performing according to program standards?
- c) Was the program worth it?
- d) Are there reliable indices that indicate that the services of trained personnel are favorably received by the patient population?

2: Coverage

What percentage of the patient populations in the target sample is being served by trained personnel?

3: Socio-Economic and Socio-Cultural Characteristics of the sample populations

- a) What are the socio-economic and socio-cultural differences between trained and untrained personnel?
- b) What are the differences in performances between trained versus untrained traditional birth attendants (TBA)?
- c) Is there a statistically significant difference between the performance of trained personnel between or among the five target areas?.

B. Limitations on the Evaluation Design

The evaluation is limited by the lack of baseline data. The optimal criteria of success is a significant increase in the health status of the population who received the services of trained personnel. However, in order to accurately describe changes in health status it is necessary to have available baseline mortality rates, incidence of low birth weight, incidence of communicable disease, life expectancy, and nutritional status (APHA 1982a: 79-80). Since this data is not available, research was directed at evaluating the performance of the trained midwives as perceived by a selected patient population. Therefore, the data base was drawn from people who had received services of trained TBAs. The assumption being that women who had received such services would provide reliable data on their experiences. Since this method of information collection is based on the perceptions of the client population, error could be introduced by the faulty memory of the informants. However, the elemental hygienic practices performed by trained TBAs, such as washing of the hands before the birth; washing of the vaginal area of the

woman ; the type of instrument used to cut the umbilical cord; and the quality of antenatal and post-natal care, are assumed to be within the capacity of the patient to recall. Also, the target time period is small. Only those birth attendants trained between 1979-1982 are included in the sample. It is from patients treated by midwives trained during these two years that information was obtained.

Other factors that might account for variation in the quality of services received by the client population include: 1) program design; 2) recruitment procedures; 3) training procedures; 4) responsibilities; 5) support and supervision; 6) supplies; 7) status and relationship to the rest of the system of health care.( Pillsbury 1981:5).

C. Evidence of Program Merit:

The determination of evidence of program merit is directly based on the quality of performance desired by program planners. These standards concern the function of the midwife in the following areas:

1. Providing proper care to the mother during the three stages of the maternity cycle pre-natal, during birth, and post-partum;
2. Providing proper care to the infant at birth and during the critical first weeks of life;
3. Providing first aid to the community as a whole and instructions on the improvement of sanitary conditions.

These standards are described in the Manual Para Las Parteras ( Ministerio de Salud, 1976-1982). The following table contains the critical areas of performance by trained midwives and the observations used as evidence of program merit:

GOALS	EVIDENCE OF PROGRAM MERIT
<u>Pregnancy:</u>	
1. Provides systematic care	1. The midwife visits patients even when there is no indication of a problem. Testimony from mothers indicates a regular pattern of visits by the midwife during pregnancy.
2. Provides guidance and advice about pre-natal nutrition, hygiene and environmental sanitation	2. Midwife discussed with patients proper types of foods that should be eaten during pregnancy, and stressed the importance of maintaining a healthy clean environment, as well as personal cleanliness.
3. Complications during pregnancy	3. Hospital records illustrate cases that have transferred to a local support system during pregnancy.

1. Refers patients to support facilities when danger signals indicate a life-threatening situation

2. Uses hygenic procedures and instruments

3. Midwife does not contribute to birth complications by the over-dosage of medications, forceful massage, manipulation the cord in order to hasten the delivery of the placenta

4. Uses a clean sterilized instrument to cut the umbilical cord

5. The placenta was examined for integrity

6. The newborn was properly cared for

Evidence obtained from midwife's records illustrate that transfers were made during difficult births.

2. Testimony from patients documents the midwife washing her hands before attending a birth and using clean, sterilized instruments.

3. Testimony from patients indicates that massages were not forcefully executed, that medications were not used to excess, or beyond those called for by program standards, and that no force was used to hasten the delivery of the placenta.

4. The patients or family members remembers seeing a clean sterilized instrument used to cut the cord.

5. The patient or family remembers seeing the midwife examine the placenta.

6. The patient remembers seeing drops placed in the infants eyes; the cord carefully cut; and the umbilicus safely cared for. The child was examined for evidence of trauma or birth-related disorders.

Post-Partum \_\_\_\_\_ :

1. Visits the mother and infant every day for the first week after birth

2. Checks for signs of infection, hemmorrhage, and onset of lactaction

3. Maintains care of the vaginal area; Washes the vaginal area at each visit

1-9. The patient testifies that care was provided according to program standards.

4. Mother is given counseling on lactation and proper care of nipples and breasts during breast feeding

5. Healing of the umbilicus is carefully monitored. The midwife examines the infant during each visit

6. Advice is provided suggesting proper nutrition of the mother and infant

7. No added stress is given to the mother that might cause complications in the healing process

8. Medications for infant and mother are provided according to program standards

9. Birth control information is provided to the mother.

---

D. Threats to Internal and External Validity:

1. Internal Validity-

The following steps were taken to assess the level of performance of trained personnel that was attributable to program instructions:

a. The review of pre-tests-

The Ministry of Health uses a pre-test instrument to determine the characteristics of the practice of traditional midwives before they receive training.

b. Interviews-

Interviews with trained midwives were conducted to reveal sources of information on western methods of obstetrical practices that did not come from the training course. For example, a trained birth attendant interviewed in the town of Huaylas, Province of Ancash, responded that she had learned the profession by living with an obstetriz in Lima. Another birth attendant interviewed in Chicney, Province of Ancash, responded that he had learned to attend births from a promotor (health care provider) living in the area.

Interviews with patients provided evidence indicating a change in the practice of birth attendants directly attributable to the training course came from interviews with patients. For example, a woman interviewed in the rural community of Pariapata, Province of Ancash, stated that the midwife had delivered all seven of her children. The last was delivered after the midwife had received the training course. The patient commented on the increase in hygienic practices used by the midwife after the course.

c. Other threats to internal validity arise from sources of information, other than the program that might account for the perceived effects. Community campaigns promoting nutrition, hygiene, and birth control might also have contributed to the change in the quality of care provided by local midwives.

External Validity:

To test whether the results of the evaluation can be generalized for a greater population efforts were made to obtain a sample that was representative of the diversity of cultural and social differences within Peru. For this reason, sample areas were selected from five 5 geographical areas- montaña( high jungle),north coast ,south coast, north and north-central highlands, and southern highlands.

## CHAPTER II

### INFORMATION GATHERING TECHNIQUES

#### I: FIELD ACTIVITIES

The research strategy consists of three phases: national, regional, and community. During these three phases a total of 1,883 informants were sampled.

##### -A. The National Phase:

Information was collected from a sample of 1,883 informants using open-ended questionnaires supplemented by informal interviews. Informants were drawn from five areas- montaña (upper jungle), southern highlands, north-central highlands, and north and south coast. The objective of this phase was to test whether the midwife training program was accomplishing its aims of modifying the quality of care provided by program recipients. The strategy consisted of the application of two questionnaires. The first, administered to trained midwives, tested the level of knowledge attained through program participation and the level of participant satisfaction; while the second, administered to patients who had received services from trainees, measured the quality of care received, and the level of patient satisfaction. In terms of cost-effectiveness, the national survey determined whether the trainees were using the ideas, techniques, and equipment provided by the training program.

##### Methodology-

The chief investigator was assisted in data collection by local and regional health professionals- The Chief of Nursing, Supervisor of Midwife Training Programs. The local level health providers ( sanitarios) administered the questionnaires . The project was initiated by a planning session during which the sanitarios were instructed on survey methods, informed of the scope of the project, and given the survey instruments. One of the methods of instruction for the sanitarios was a socio-drama enacted by Ministry of Health personnel that demonstrated problem areas in survey methods. Supervision of the administration of the questionnaires was performed by the chief investigator aided by regional level health personnel.

##### B. The Regional Phase:

In order to find exactly what percentage of the population was being served by program recipients, a random sample survey of 277 informants was performed in the Provinces of Ancash, San Martin, and Ica. In the target communities, random samples of informants were questioned concerning their

utilization of the trained birth attendant as a health resource. Results of this survey will enable program planners to determine whether the coverage provided by trained personnel is adequate in relation to the needs of the community.

#### Methodology-

A professional Peruvian anthropologist, a graduate student in the School of Public Health, University of California, Los Angeles, and a team of social workers administered the questionnaires to residents of the target communities.

#### C. The Community Phase:

Based on information gathered through observation and informal interviews conducted with three primary informants from the Provinces of Ancash and San Martin, individual reactions to the training program were gathered. The chief investigator's primary task was to conduct in-depth interviews and observe the manner in which trained personnel provided health care in upper jungle and north-central highland rural communities. Since program "drop-outs" represent a drain on financial resources, the objective of this phase was to find ways of decreasing potential non-compliant participants. In terms of cost-effectiveness, program participants should ideally continue to perform according to program standards after the termination of the program.

#### Methodology-

The chief investigator spent a total of six months personally observing and recording the practices of three trained birth attendants.

## II: SAMPLING METHODS

A. Pre-Test: The survey instrument was tested in the Provinces of Ica and Ancash before being used in the national survey.

### 1. Site selection criteria

#### a. Temporal criteria-

1. The presence of birth attendants trained between the years 1979-1982

#### b. Spatial criteria-

1. A population near hospital facilities
2. A control population far from hospital facilities
3. A coastal population
4. A highland population

## B. National Survey:

Objective- To test whether the midwife training program was accomplishing its aim of modifying the quality of care provided by trained TBA's

1. Site selection criteria: The two features that influenced site selection were- 1) high probability of future utilization of trained personnel and 2) geographical representativeness.

### a. Temporal criteria-

High degree of concentration of resources for TBA training through time.

### b. Spatial-

1. Contained a representative sample of the socio-cultural and socio-economic characteristics of the target province
2. Represented the 5 major Peruvian ecological zones
3. Highland sites contained a population structure that was predominately rural
4. High infant-mortality rates compared to the national average.
5. Low doctor/patient ratio
6. High potential for future population growth

## 2. Population sampling methods:

a. From each province a sample of between 10-15 communities was selected for survey.

b. Fifty trained birth attendants were surveyed in each province

c. The patient population was drawn from the records of the sanitarios, and interviews with townpeople who knew patients delivered by the trained TBA's. Five patients attended by each trained midwife were interviewed yielding a total patients sample of 250 in each Health Region.

d. See maps 2-6 for survey sites( pages -----)

## C. Regional Survey:

Objective- To find exactly what percentage of the population was being served by program recipients

1. Site selection criteria: Based on the results of the pre-tests that indicate a low utilization rate of trained birth attendants on the coast, two communities in the Province of Ancash were selected for the regional survey. These communities were Los Olivos and Nicrupampa.

2. Population sampling methods-

- a. Since the community of Los Olivos contains a total population of 1,300 inhabitants, it was not difficult to survey 82% of the adult female population
- b. In contrast, the community of Nicrupampa contained a population of 12,000 inhabitants. Because of population's large size, and mixed socio-economic and socio-cultural characteristics, the community was divided into three sectors. Equal numbers of informants were sampled in each sector. To form the random sample, interviewers surveyed every second and fifth house. In total 13% of the adult female population was surveyed.

III: SURVEY INSTRUMENT\*

Data from which to evaluate evidence of program merit was primarily drawn from three sources: 1) the survey instrument. 2) informal interviews. and 3) field observations. The survey instrument was designed to test the performance and reactions of trained personnel, the two questionnaires contain data gathering devices to find information on:

- A) The performance of the midwife during three crucial periods- pregnancy, birth, and the post-partum period;
- B) Socio-economic and socio-cultural characteristics of the midwife and client population;
- C) Maintenance of equipment;
- D) Customs and beliefs related to pregnancy, birth, and the post-partum period;
- E) Hierarchy of resort used by patients for specific health problems. IE/ What is the system of preference patients have for the provision of health care;
- F) How trained birth attendants operate as health resources for the community in general;
- G) The provision of birth control information;
- H) Migration history; and
- I) Test whether trained birth attendants understood the pictures used to transfer patients from rural areas to health centers.

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\* Survey instruments are located in the Appendix.

IV: CONTROLS

Interviews were also obtained from a sample of informants who had not used the services of trained birth attendants.

CHAPTER III

GEOGRAPHICAL, SOCIO CULTURAL, AND ECONOMIC FEATURES OF THE SURVEY SITES

Among the factors that influence the rate of delivery of primary health care to rural and semi-urban areas are: 1) The degree of socio-cultural homogeneity of the population, and 2) the accessibility of the population. In countries, such as Perú, that contain not only a highly linguistically and socio-culturally mixed population, but wide geographical diversity, the logistical problems of communication and delivery of materials complicate efforts at improving the quality of rural and semi-urban health.

To illustrate the extent of the diversity of Peruvian geography and culture, this chapter briefly summarizes pertinent ecological and socio-cultural features of the five health regions surveyed\*.

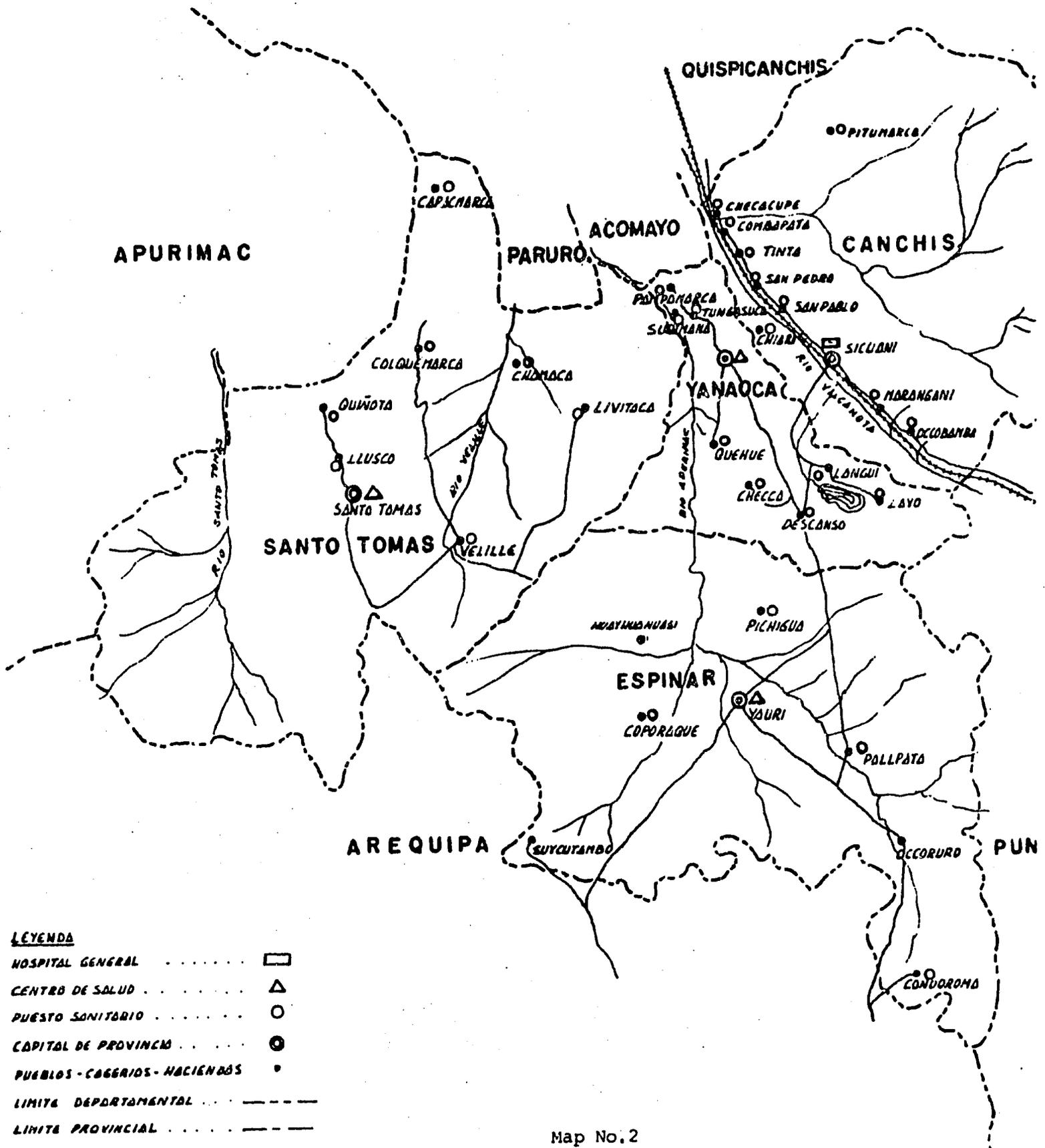
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\* Due to the non-availability of statistics for some area, the data base is of non-uniform quality for this section.

# AREA HOSPITALARIA N°3 - CANCHIS

## CUSCO

### JUNIO - 1982



#### LEYENDA

- HOSPITAL GENERAL . . . . . 
- CENTRO DE SALUD . . . . . 
- PUESTO SANITARIO . . . . . 
- CAPITAL DE PROVINCIA . . . . . 
- PUEBLOS - CABERIOS - HACIENDAS . . . . . 
- LIMITA DEPARTAMENTAL . . . . . 
- LIMITA PROVINCIAL . . . . . 

## I. DEPARTMENT OF CUSCO

### A. Geographical Location:

The Region of Cuzco is located in the Peruvian south east .The region is divided into three departments- Cusco, Apurímac, and Madre de Dios. The target survey sites are located in the department of Cusco\*. The superficial .extention of this department is 76,242.89 square kilometers.The altitude of the area ranges between a maximum of 6,384 m.s.n.m to a minimum of 202 m.s.n.m

### B. Population

The population is estimated at being 1,254,098 inhabitants (1982). The average population densisty if 7.1 inhabitans per square kilometer .

### C. Adult literacy

Educational Zone No. 54 Sicuani

<u>Province</u>	<u>Population</u>	<u>Illiteracy</u>	<u>Percentage</u>
1. Chumbivilcas	58,312	22,967	39.38%
2. Canchis	75,616	25,161	33.27%
3. Canas	31,546	13,114	41.57%
4. Espinar	<u>41,461</u>	<u>13,114</u>	<u>31.62%</u>
Total	206,935	74,356	35.93

### D. Language

According to the census of 1972 in the Health Region XI- Cuzco, Spanish, Quechua, Aymará and other languages are spoken. Quechua is the most widely used language. There is no irformation on the percentage of the population that is bilingual in Spanish- Quechua

### E. Socio-Economic Factors

The population of the Region of Cuzco is divided into two segments- 1) a dominant minority that controls the three main sources of capital- agriculture, industry, and tourism, and 2) a minority composed of rural people who are mainly agriculturalists. Since it is the later sector of the population that is in greatest risk, it is to these people that the major thrust of investment in health care should be directed.

### F. Socio-Culture Factors

In any analysis of the effectiveness of a health delivery system it is important to identify exactly who the recipients of these health services are. It is for this reason that a brief summary of the social and class divisions of highland rural society is provided. Class divisions in Perú are

described by Simmons (1965) Tschopik (1948), Bourricaud (1975), van den Berghe and Primov (1977). Although these authors disagree on the fine definitions of the four Peruvian social classes, the broad level of classification remains unchanged. Briefly, Peruvian social class is defined by a set of physical, linguistic, and social markers. The difference between the criollo, mestizo, cholo, and Indian in Perú is not a racial distinction. It is based on type of dress, behavior patterns, language use, food preference, and life style. For example, In the rural highlands of southern Perú the mestizo is distinguished from his cholo and Indian neighbors by his total non-utilization of Quechua, preference for western types of alcoholic beverages, western style clothing, and non-utilization of coca.

A characteristic of the rural population that plays an important role in the delivery of health services is their world-view. For many rural inhabitants their environment is dominated by magic. They live philosophically and morally different than city-dwellers. Illness, death, and contingencies of life in the rural areas are tied to religion, magical beliefs in god, earth and the forces of nature, in saints, and in pre-hispanic divinities. Individuals know when they are sick, but they do not recognize illness etiology in the same way as a western physician (Fabrega, (1972, 1974, 1975), Kleinman (1974, 1975). As is characteristic of strongly traditional rural societies, available health facilities are underutilized. In Sicuani (1971) Peifeder noted that 80% of the residents used folk healers instead of western doctors to treat their ailments, even though western health services were available in the immediate area. Another example of the reliance on folk health providers is the low rate of births that occur in hospitals. In the highly urban city of Sicuani 76 % of all births take place in the home, in comparison to 11% of births registered in hospitals. In this area most births are attended by traditional birth attendants.

The influence of these socio-cultural factors on the delivery of health care is of capital importance because there is a direct relationship between the rural character of this illiterate population, monolingual in Quechua, and their relatively low standard of health.

## G. Health Services

### 1. Public Sector-

Health services for the rural areas of the Dept. of Cuzco is provided by Regional Hospitals and health posts. During the time of the survey community-level health care was being provided for by a small group of health promoters and TBAs trained by UNICEF and PAHO. A total of 336 TBAs had been trained since 1980 (MS 1981:T.III:320-322). TBAs deliver 71% of all births in the urban area of Sicuani during the year 1981.

### 2. Private Sector-

The private sector contribution has not been thoroughly examined. Aside from services provided by traditional and western-trained health providers, haciendas, cooperativas, and large scale commercial enterprises operating in the area might be providing for the health care of employees.

H. Health Status:

INDICATORS	DEFINITION	PERU (1979)*	XI REGION
General mortality	X 1000 inhabitants	11.1	++14.0
Infant mortality	X1000 live births	95.0	+145.0
maternal mortality	X10000 live births	30.0	+ 38.0
life expectancy	years	58.2	-
birth rate	X 1000 inhabitants	38.7	-
population growth rate	X100 inhabitants	02.9	++1.71

+ rates estimated by Health Region (study carried out in cooperation with the government of Germany)++Office of Statistics Health Region XI

\* MS 1981:43

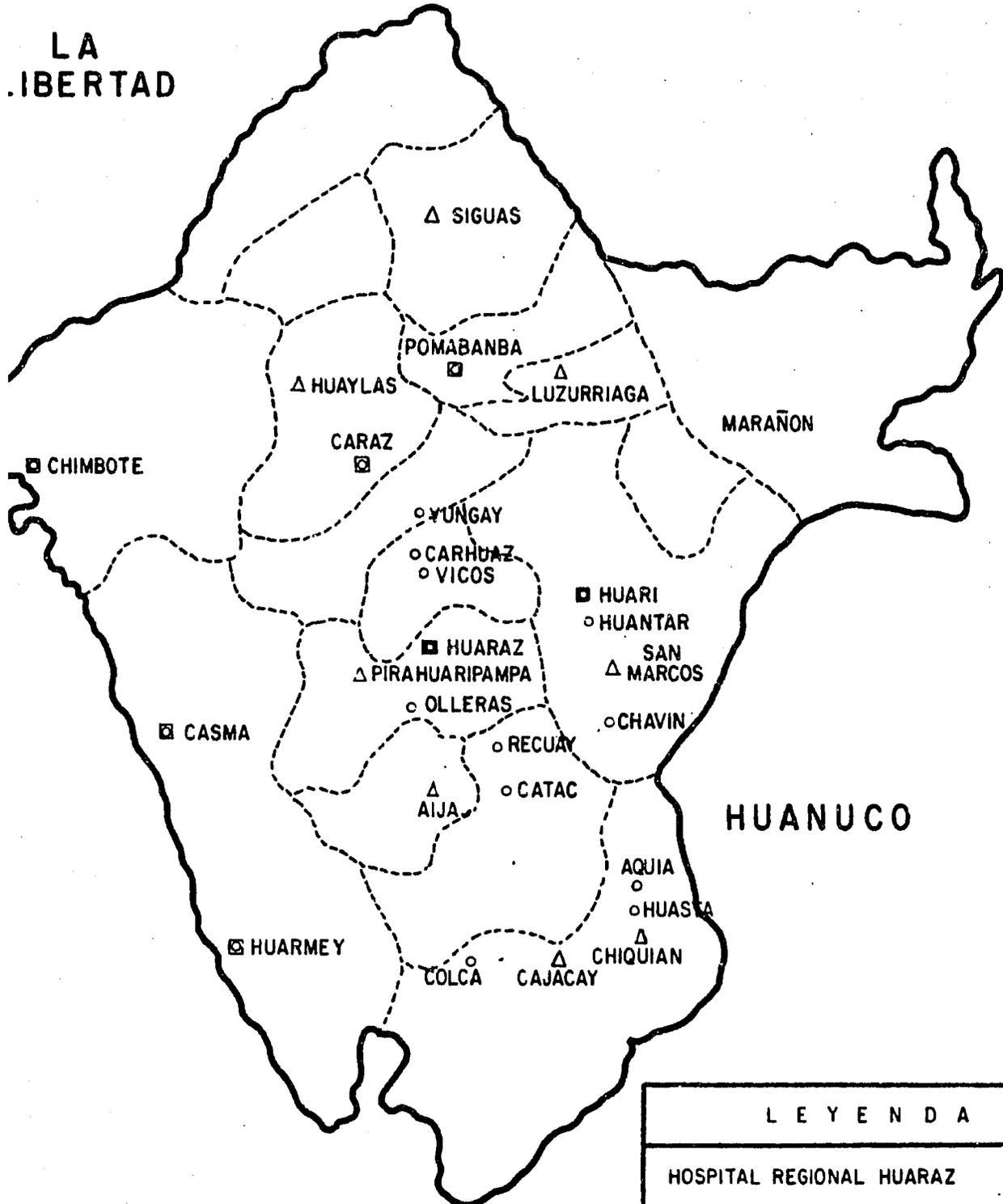
I. Analysis

Major problems are high rates of illiteracy, non-Spanish monolingualism, cultural isolation, and non-utilization of available health resources. Analysis of the impact of geographical, socio-cultural, and socio-economic factors indicates that the barriers to the utilization of western-trained health providers is primarily cultural, and secondarily economic and logistic.

\* The survey areas in the department of Cuzco were selected for the following reasons:

- 1) Geographical representativeness
- 2) Program coverage and longevity

# REGION DE SALUD ORDENOR - CENTRO



L E Y E N D A	
HOSPITAL REGIONAL HUARAZ	☒
CENTRO DE SALUD	△
CISEA	△
PUESTO SANITARIO	○

## II. DEPARTMENT OF ANCASH

### A. Geographical Location

Although the department of Ancash is composed of three ecological zones, coast, highlands, and jungle, the target area of this survey is the most densely populated, the highland section. This area is characterized by high, technologically unstable mountain ranges- the Cordillera Blanca and the Cordillera Negra. In these mountains are located the highest snow-covered mountain peaks in Perú, such as Huascarán at 6,768 meters above sea level, el Huandoy at 6,395 meters above sea level, and el Alpamayo at 6,100 meters above sea level. Another important geographical feature of the region is the Santa River that cuts through the mountain ranges and forms the narrow interandine valley of Callejón de Huaylas.

The survey areas were located in the Callejón de Huaylas, and the Callejón de Conchucos.

### B. Population

The population of this area was estimated at 390,300 inhabitants (1980), of which 31.26% were urban and 68.74% are rural.(PND 1980-1981: 5,183-184).

### C. Avenues of Communication

Because of the destruction caused by the major earthquake of 1970, there was a concentration of international efforts at rebuilding the systems of communication in the area. The result was a relatively good highway that connected that coast to the highlands as well as provided communication between the major areas. However, rural roads are predominately unpaved and in poor condition.

### D. Literacy

For the year 1978, the illiterate population was estimated at 72,804 inhabitants representing 38% of the total population.

### E. Language

Although there are no statistical surveys of language use in the area, the majority of the rural population appear to be Quechua speaking. Language use in northcentral and southern highlands is sex-linked. Bilingualism in Spanish and Quechua is found primarily among the males. Females tend to remain monolingual in Quechua. This difference is derived from the preference for educating male rather than female children.(Stein 1975). In the Department of Ancash this difference is particularly striking in the most isolated regions such as Huari.

#### F. Socio-Economic Factors

Since the Agrarian Reform (1968), the rural sector has been organized in agricultural societies, such as the Agrarian Cooperative of Production, Campasino Communities, and Campasino groups. However, the majority of rural inhabitants live on small farms. These subsistence agriculturalists continue to utilize primitive technologies in their production activities. The average per capita income of the rural agriculturalist is 14,000 soles. This figure is considerably lower than the average for the industrialized sector, 13,500,000 soles. (1979) The main agricultural products of the area are wheat, potatoes, corn and tarwá (a grain). Animal husbandry is also an important activity in rural areas.

Economically, the area resembles the picture presented for the Health Region of Cuzco with the exception of the opportunities for employment afforded by the multinational mining companies that operate in this area. The mining industry extracts copper, silver, lead, zinc, quartz, gypsum, clay, and marble (Ibid; 217).

#### G. Socio-Cultural Factors

The socio-cultural picture of the inhabitants of the northern central highlands resemble the southern highlands in many ways, such as language, clothing style, and socio-cultural definitions. However, certain traits are not as prevalent in the northern-central area. For example, coca is not used as widely, rarely are women observed chewing coca in public places. Regionalisations in dress are not as marked in the northern-central highlands as in the southern highlands. There also seems to be more acceptance and utilization of western-health care providers.

#### H. Health Services

##### 1) Public Sector-

The provision of health care through public agencies reaches the rural population through regional hospitals, CISEAS, and health posts. Community level health providers such as health promoters, and TBAs have been trained since 1979. At present there are 211 trained TBAs operating in the region.

##### 2) Private Sector-

Provision of broad based health care by private enterprise is predominately seen in the mining industry. Other involvement of the private sector is the western and non-western private health providers.

I. Health Status

INDICATORS	DEFINITION	PERU (1979*)	ANCASH+
General Mortality	X1000 inhabitants	11.1	16.5
Infant Mortality	X1000 live births	95	+124.5%
Maternal Mortality	X10000 live births	30	47.2 -
Life Expectancy		59.6	53 years
Birth rate	X 1000 inhabitants	38.7	47.8
Population growth rate	X100 inhabitants	02.9	02.2

\* MS 1981:43

+Figures were taken from 1980 statistics for Ancash(MS 1980/1981)

J. Analysis

Major problems are high rates of female illiteracy and non-Spanish monolingualism, lack of transportation to available health centers, and lack of information about the availability of health services.

This area shows a much higher system of dual usage of available health services with utilization of western care predicated on logistic and economic issues, and not as strong cultural barriers as in the more highly traditional areas of the southern sierra.



### III. DEPARTMENT OF SAN MARTIN

#### A. Geographical Location

The North-East Health Region is composed of three provinces- San Martin-Lamas, Moyobamba-Rioja, and Mariscal Caceras-Huallaga. The total geographical space of the region is 51,563 square kilometers. The ecological term for the area is high jungle. This term is used to distinguish the area from the lower jungle. The high jungle is formed by the eastern slopes and foothills of the Andes. This mountainous area , where altitudes range from 1,500-8,000 feet above sea level is also known as the montaña. Rainfall in the area is high. The rate of precipitation measured over a ten year period (1969-1979) , in the area of Naranjillo,(province of Rioja) ranged from a low of 75.8mm in the month of September to a high of 195.7mm in November ( Soto 1981 table 4). The dense tropical forest is cut by fast-moving rivers and small streams that obstruct communications in the rural areas. Rainstorms are frequent during the months of October to March, complicating the flow of goods and materials from population centers into the hinterlands.

#### B. Avenues of Communication

The Marginal Highway crosses the entire area of the Region of San Martin (see map 4), however, this highway only reaches the population that occupies its borders. The rural population is served only by dirt roads that during the rainy season are unusable. In fact, since its construction the Marginal Highway has suffered from over-use by trucks carrying heavy weights. This has caused large pot-holes in the Highway which slow traffic and create hazardous driving conditions. Projects developed by the World Bank, in the Alto Mayo area, and by AID, in the upper Huallaga area, contain plans to greatly improve the quality of roads in these two areas.

#### C. Population

The total population of the department is estimated at 288,448 in 1980, this figure represented 1.8% of the national population. Population density is 6.2/km<sup>2</sup> .The annual growth rate for this region was estimated in 1981 at 3.32% . The rate of population growth for individual areas, such as Upper Huallaga is even greater,5.2% annually (Plan de Ejecución del Proyecto de Desarrollo rural integral del Alto Huallaga 1981:15). The regional population is predominately young (26.6% are between 5-14 years of age); and it is predominately masculine (116 males for each 100 females). There are approximately 6.6 members per family with a high proportion of heads of households who are migrants ( 89.6% of the heads of households are migrants, and 69% are from the sierra (Plan de ejecucion del Proyecto de Desarrollo Rural Integral del Alto Huallaga 1981:15).

The increase in population density is mainly seen in the area of Alto-Mayo. Migration is mainly from northern highland areas such as Cajamarca. The reasons for this migration are :1)the long dry spell that has diminished the agricultural productivity in the northern highlands, and 2)the typical pattern of land inheritance in the high Andes that leaves the offspring of a large family virtually landless (Isbell 1978 ; Dobyns 1976, and others).Another explanation for the increase in population in this area is government campaigns starting in the late 1950s that have urged landless highland peasants to try their luck in the fertile lands of the high jungle (Shoemaker 1981).

#### D. Literacy

Illiteracy rates for the region are estimated at being 65.9% for the rural areas, and 33.5% for the urban sections. These rates refer to the entire department, with ethnic minorities having an even greater level of illiteracy.

#### E. Language

The majority of the population of San Martin is Spanish speaking. Variation in language within the area is derived from three sources-

- 1) migrants who speak highland dialects, such as Quechua,
- 2) indigenous Indian groups that are predominately monolingual in Aguaruna, and
- 3) indigenous Indian groups that are bilingual. For example, the indigenous population of Lamas speaks Spanish as well as a modified form of Quechua.

#### F. Socio-Economic Factors

The structure of the population of San Martin is composed of two socio-economic sectors- 1) large scale industrialists, professionals, and businessmen, and 2) small scale farmers and shop-keepers. Due to the fertility of the soil, the availability of water, and the presence of a well-developed system of transportation, large scale extractive industry has become very profitable in the area. Products that find their way to the Lima market are- rice, peanuts, bananas, manioc, cotton, coffee, tobacco, sorghum, sugar cane, cacao, palm oil, and wood. Industrial activities in the area include tourism, manufacturing, and the preparation of agricultural products such as rice and tobacco (INP 1982).

Small farmers not only form the bulk of the population, but they are also the primary population at health risk. These people are most exposed to the debilitating effects of malnutrition, parasitism, malaria, yellow fever, and other ailments associated with poor working conditions. Why in such an obviously fertile and productive area should the people be so unhealthy? In contrast to the situation that gives rise to poverty in the sierra, discussed above, the mountain poverty is a result of a series of historical events that have their origins in world-wide market trends and national Peruvian agrarian policy (Shoemaker 1981). At present farmers are caught in a cycle of poverty that continues due to the following series of conditions:

- 1) debt-peonage;
- 2) limitations on the size of farms during the agrarian reform;
- 3) unscrupulous middle men that take advantage of the helpless position of the small farmer and pay minimal prices for agricultural products;
- 4) the decrease in profits to be made in agriculture; (As stated by a farmer in the area, "Since the coffee bust, and the agrarian reform, farming has become a poor man's occupation" (Shoemaker 1981: 149); and
- 5) the difficulty of obtaining capital for expansion from local banks.

#### G. Socio-Cultural Factors

In San Martin the typical urban-rural, socio-cultural split is present with one exception. Whereas in other areas, the urban and rural sectors are three-tiered (social elites, middle, and poor), the rural poor in San Martin are further subdivided into highland and lowland Indian.

The class categories in the department approximate the picture presented for the southern and north-central highlands. The upper elite is composed of a crillo -mestizo class, the middle group is formed of mestizo-cholos, and the low class contains pure highland Indians. However, in the montaña the lowland Indian occupies a lower level in the social hierarchy. The difference is that while there is built-in social mobility between the highland Indian and the cholo class, the lowland Indian's obvious racial features prevent upward class mobility.

The majority of the rural population use a dual system of health care. If they have the money, they will consult a traditional practitioner as well as present their problems at a health center or seek the services of a private doctor. Very often, both systems of medication are used simultaneously. Cultural restraints on the utilization of western-health providers seems to be less restrictive than in highland areas.

#### H. Health Services

##### 1) Public Sector-

The Ministry of Health and the Social Security system service the population of San Martin. The Ministry of Health provides acute medical care hospitalization and medical consultations, preventative care (MCH programs, immunization), and emergency care. These services are provided by personnel located in regional hospitals, health centers, and rural health posts. There have been 145 TBAs trained in the area from 1959-1982. The social security system provides for its beneficiaries medications and hospitalization. Services at MOH facilities are, for the most part, delivered at a minimal cost to uninsured patients.

##### 2) Private Sector-

Private western and non-western practitioners supply the residents of San Martin with health services through private clinics, private offices, or at the homes of the practitioners. Private industry contributions to health care is not known at this time for this area.

I. Health Status

INDICATORS	DEFINITION	PERU (1979*)	San Martin (1982+)
General mortality	X 1000 inhabitants	11.1	16.17
Infant mortality	X 1000 live births	95	114.3
Maternal mortality	X 10,000 live births	30	-
Life expectancy	years	58.2	-
Birth rate	X 1000 inhabitants	38.7	29.39
Population growth rate	X 100 inhabitants	2.9	3.32

\* MS 1981:43, + Region de Salud Nor-Oriente 1982

J. Analysis

Results of the socio-cultural, socio-economic, and geographical conditions on the provision of health care are indicate that:

- 1) the rural population does not possess cash on a year-around basis to pay for medical services;
- 2) lowland Indians are even more unable to pay for medical services, since they do not operate on a cash economy;
- 3) utilization of western medicine is predicated by the supply of money and not predominately by cultural obstacles, as in highly traditional area of the southern sierra; and
- 4) transportation of critically ill patients to health facilities is non-existent. Residents of the rural areas have very limited access to transportation.



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LORETO

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○ JUMBILLA

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#### IV. THE HEALTH REGION OF LAMBAYEQUE- AMAZONAS

##### A. Geographical Location

The Health regions of Lambayeque-Amazonas is composed of three ecological zones- north coastal desert, highlands, and high jungle (montaña). The survey covered all sections of the health region that contained trained TBAs- the coast, northern highlands, and the urban areas surrounding the capital city of Chachapoyas, Amazonas. The most prominent characteristic of the northern coast and highlands was the scarcity of rain. Along the Peruvian coast, irrigation is dependent not upon rainfall, but rather the rivers that originate in the northern highlands. The result is that irrigated areas along the coast produce crops such as sugar cane, cotton, vegetables, and flowers; while the non-irrigated areas are totally barren, and devoid of even the slightest form of vegetation. The northern highlands formed by the Cordillera Oriental are low in comparison to the north-central and southern highlands. The high jungle area of Amazonas bears much resemblance to San Martin. The difference between the two areas is that the climate of Amazonas tends to be cooler, because it is located at a higher altitude than San Martin.

##### B. Population

The population of Lambayeque was estimated at 717,576 (1980), with 74.7 % urban and 25.3% rural. The province of Amazonas contained a population estimated in 1980 at 225,468 .

##### C. Avenues of Communication

The population of the north coast relies primarily on the Panamerican Highway as the major link between the north and south . Transportation to the east is more difficult due to the lack of well-maintained roads. However, there are transportation facilities and roads connecting the montaña area of Amazonas with the northern highlands and coast.

##### D. Language

Along the coast the northern highlands it is rare to find individuals who are monolingual Quechua speakers. Due to the pressure of Spanish missionaries and military, native speakers of indigenous languages are very difficult to find.

##### E. Socio-Economic Factors

The typical tripartite division between socio-economic groups are also present in this area. However, in the northern coast and highlands, the lower socio-economic group , rural agriculturalists, are exposed to three conditions that obstruct their ambitions of reaching economic success by farming: 1) the land has been over-used and not allowed to fallow; 2) due to Spanish re-organization and population management policies during the conquest, each

farmer has access to very small plots;and 3) rainfall is unpredictable . Due to these factors many highland farmers migrate to the coast in order to find temporary employment during severe dry spells. This leads to over-population and the enlargement of squatter settlements or pueblos juvenes located at the outskirts of major coastal cities , such as Chiclayo. Another option open to the north highland farmers is migration to the montaña area.

#### F. Socio- Cultural Factors

Class divisions in northern coastal and northern highland areas are somewhat different than those found in the southern and north-central highlands. The rural population uses coca less frequently, and there is a total lack of regionalizations in dress patterns. However, the Indian is distinguished from the cholo or mestizo by a set of markers that includes: 1) the use of coca, 2) the poncho, 3) braided hair for women, and 4) a set of behavioral features such as the drinking of chicha (a fermented corn beverage).

The acceptance of western medicine is quite strong in the north coastal and highland areas (Davidson nd.). However, the northern coastal area is famous for its traditional healers. The population seems to follow a dual utilization system to satisfy health needs.

#### G. Health Services

##### 1) Public Sector

As was presented for other areas, the public sector is composed of MOH service personnel supplemented by Social Security and Police manpower and economic resources. However, the Regional Hospital and community health centers are in poor physical condition. During the years of 1973-1980 92 TBAs were trained.

##### 2) Private Sector

There is no information available that describes the contribution of the private sector. However, there are a number of cooperatives and industries operating in the area, and further research is necessary to find the provisions made by these private sector enterprises for the satisfaction of the health needs of their employees.

#### H. Health Status

<u>INDICATORS</u>	<u>DEFINITION</u>	<u>PERU (1979)*</u>	<u>Lambt.</u>	<u>Amazonas+ (1978)</u>
General mortality	X1000 inhabitants	11.1	13.2	11.5
Infant mortality	X1000 live births	95	80.0	108.7
Birth rate	X1000 inhabitants	38.7	50.0	42.1

\* MS 1981: 43, + Escuela de Salud Publica

I. Analysis

The major problem is the lack of services to the large population of the pueblo joven.ue to the severe climatic conditions that have effected this area for the last 10 years, the population of pueblos jovenes have exceeded the capacity of the region to provide services to them. Barriers to the utilization of health providers seems so be dependent on economics and logistics. The community health education systems of these areas are in need of expansion.

**MAPA JURISDICCIONAL DE LA REGION DE SALUD VII - ICA**



## V. THE HEALTH REGION OF ICA

### A. Geographical Location

The Health region of Ica is composed of two ecological zones- coast and highlands(see map 6). River systems in this regions are found in the vallyew of Chicha, Pisco, Ica, Palpa, and Nazca. The vallys of Pisco and Ica contain soils of the lowest fertility grade. Pisco, Chinchá, and Ica contain soils considered to be of medium to good quality (CORDEICA 1981:5). The superficial extension of the region is 2,125,139 hectáreas.

### B. Population

The population was estimated at being 431,442 inhabitants (1981). The average population density was 13.9 inhabitants per square kilometer(Ibid;6). The annual rate of population growth for the region was estimated at 2.1 compared to the national average of 2.6(Ibid:12). The population of the department is predominately urban. Seventy-six percent of the population lives in communities of greater than 2,000 inhabitants.

### C. Socio-Economic Factors

The population is supported by activities that center around agriculture, small businesses, tourism, and mining. Soils in the valleys of Ica are ideal for the cultivation of grapes. This area produces high quality grapes for consumption and for the manufacture of wines and piscos (a type of grape brandy). There is very little private land ownership in the region. The majority of land is controled by large cooperatives .

### D. Socio-Cultural Factors

The great majority of the population could be considered mestizo by the definitions commonly used for Peruvian social structure. Indigenous costume is almost entirely absent in large cities. Indigenous costumes and the utilization of Quéchua is found predominately among migrants from highland areas who enter coastal communities in search of temporary employment.

### E. Health Services

#### 1. Public Sector-

Health services consist of Ministry of Health hospitals, and local health care centers. Hospital services are also provided by Social Security and civil police. Between the years 1979-1981,181 TBAs have been trained. Considering that there are 257,156 females of reproductive age in the region, .00069% of the population is being served by these TBAS.

#### 2 Private Sector-

Private hospitals and clinics also offer health care to the population of the region. The percentage of the population that uses these services is not known at this time.

F. Health Status

INDICATORS	DEFINITION	PERU (1979*)	ICA +
General Mortality	X1000 inhabitants	11.1	9.5
Infant Mortality	X1000 live births	95	77.2
Maternal Mortality	X10000 live births	30	--
Birth Rate	X1000 inhabitants	38.7	41.0

\* MS 1981:43

+ Figures obtained from Escuela de Salud Publica

G. Analysis

There is less reluctance to use available western medical care than was observed in the other survey areas. The rate of urbanization is higher, and there is less difficulty in obtaining transportation to health services.

#### CHAPTER IV: DATA ANALYSIS

This chapter describes and interprets data obtained from surveys conducted with 1,230 recipients of services provided by trained TBAs, a control group of 277 informants who had received services from non-trained TBAs, and 386 trained TBAs. The aim of the analysis was to find:

##### A. THE LEVEL OF TBA PERFORMANCE AND ACTIVITY.

1. Test whether the performance of trained TBAs was superior to untrained ones;
2. Test whether the activity and performance levels of TBAs differed between five health regions.

##### B. THE REACTION OF PATIENTS TO THE SERVICES OF TRAINED TBAs

1. Test whether trained TBAs have altered the pattern of health care of their patients;
2. Find the extent to which the trained TBA operates as a health resource within the community.

##### C. PROGRAM OPERATIONAL CONSTRAINTS

Test the influence of socio-cultural or socio-economic variables of the TBA and patient population on the selection of candidates training, and operation of the program.

A. THE DIFFERENCE IN THE PERFORMANCE AND ACTIVITY LEVEL OF TRAINED VERSUS UNTRAINED TBAs DURING THE MATERNITY CYCLE

I: Performance of trained versus untrained TBA

Evidence indicating the success or the program is based on the difference in the quality of care provided by trained versus untrained TBAs during three critical phases of the maternity cycle- pregnancy, birth, and the post-partum period. It is during these periods that simple interventions can increase the chances of maternal and infant survival. In order to indicate evidence of program merit ten key variables were selected for analysis. The test variables were selected on the basis of their relationship to the key objective of the midwife training program- the decrease in maternal and infant mortality. These variables fall into four categories: 1) nutrition during pregnancy; 2) interventions taken by the TBA during birth; 3) interventions taken by the TBA during the post-partum period; and 4) the level of patient satisfaction.

Nutrition During Pregnancy

One of the the trained midwives contributions toward the increased survival of mother and infant during birth and pregnancy is based on the counseling given to patients during pregnancy. According to program standards birth attendants are expected to teach their patients to select as good of a diet as possible during pregnancy and to discourage patients from consuming substances harmful to mother and infant, such as alcoholic beverages. If the advice of the trained TBA is followed by her patients the increased nutritional state of the mother will most likely result in an infant more able to tolerate the stress of childbirth and the first few weeks of life. It will also contribute to the resistance of the mother to post-partum infection, and enable her to better withstand the stress associated with childbirth

As illustrated on the first table of each series, trained birth attendants provided more advice than their untrained counterparts in all of the regions surveyed. For example, sixty-nine percent of the population surveyed in the Department of Cuzco responded that the trained midwife has provided them with instructions concerning foods that should be eaten during pregnancy compared to twenty-one percent of the population of untrained birth attendants that provided nutritional counseling during pregnancy. Also illustrated on table 1 is the percentage of the population who received instructions concerning foods that might be harmful to consume during pregnancy. As illustrated ninety-five percent of the trained TBAs from Cuzco provided this information compared to fifty-three percent of the untrained TBAs.

### Birth

Three variables were selected to represent the care provided by the TBAs during birth: 1) the cleaning of the hands of the TBA; 2) the attention given to the placenta; and 3) the cleaning of the vaginal area during labor. These three variables represent simple methods of preventing infection that could produce maternal death and complications during the post-partum period. The clean hands of the birth attendant can prevent post-partum maternal infection; careful survey of the placenta can prevent post-partum maternal mortality due to a retained piece of the placenta; and the cleaning of the vaginal area decreases the probability of maternal morbidity. As shown on table 7, ninety two percent of the trained TBAs washed their hands before attending a birth in Ancash compared to eighty-two percent of the untrained TBAs; forty-eight percent of the trained TBAs checked to see if the placenta was complete compared with twenty-six of the untrained TBAs; and sixty percent of the trained TBAs cleaned the vaginal area of the patient before birth, compared to thirty-four percent of the untrained TBAs. These figures represent program success. There is clearly a two to one difference in the quality of care provided by trained TBAs versus non-trained TBAs that is directly related to the instructions received during training sessions.

However, in order to correctly interpret the meaning of the low percentage of trained TBAs who cleaned the vaginal area of their patients before birth, it is necessary to appreciate the cultural clash represented by this practice. The figure forty-five percent does not indicate program failure, but rather the unwillingness of rural women to comply. For example, a thirty-year old mother from Occabamba (Dept. of Cuzco) states that "because of el frio (the cold) I didn't allow the partera to wash my vaginal area". There is a wide-spread Latin-American belief that exposure to cold causes illness. The key finding is that in spite of this highly prevalent medical belief twice as many trained TBAs were successful in executing this practice compared to the success rate of non-trained TBAs.

### Care During the Post-Partum Period

The variables selected to test the success of the training program in teaching TBAs to provide regular care to mother and infant during the post-partum period were: 1) the delivery of information about birth control; 2) care of the infant's umbilical area; and 3) the frequency of visits made by the trained TBAs to patients after birth. Birth control information is thought to play a significant role in the future health of the mother by decreasing her exposure to continuous pregnancies thereby increasing resistance to illness and ability to withstand the stress of rural life in Perú. Proper care of the umbilical area has been shown to reduce the frequency of neo-natal tetanus. The provision of regular care to patients after birth increases the likelihood that early symptoms of infant and/or maternal failure will be detected. As illustrated on table 10, eighty-seven percent of the trained TBAs from San Martín provided care of the umbilical area of the infant after birth compared to seventy-six percent of the untrained TBAs. The

closeness of these two figures indicate the high degree of westernization of the rural inhabitants of San Martín. On the other hand, in the Department of Cuzco, sixty-two percent of the trained TBAs provided care of the umbilicus to the newborns, compared to fifteen percent of the untrained TBAs. These figures indicate the greater success of the training program in isolated rural areas. In these areas it is clear that the program has produced TBAs who are contributing to achieving higher levels of health than would have been available to the population without the program.

#### Patient Satisfaction

A key concept in the success of the TBA training program is patient choice. The program cannot be considered a success if the patient population fails to utilize the resource provided. During the survey rural mothers who had experienced the services of trained versus untrained TBAs were asked to compare the services they received. The following quotes indicate a sample of the answers received in the Department of Cuzco:

A thirty-two year old mother from Tinta-

"The partero (TBA) who has training attends my births with me lying in my bed, he washes my vaginal area, not like the untrained partero WHO DOES NOT WASH ME, HE PUSHED ME WITH HIS KNEE TO HASTEN THE BIRTH".

A eighteen year old mother from Tinta-

"The trained partero puts medicine in the eyes of my babies and takes care of their umbilical cord area, in contrast to the untrained partero who used the EXCREMENT OF A GUINEA PIG to cure the umbilical area".

A thirty-two year old mother from Marangani

"The trained partero works very well; he puts sheets on my bed in such a way that the bed is kept clean; in contrast, the untrained partero gets everything dirty."

A thirty-six year old mother from Tinta

"The trained partero cuts the umbilical cord with a scissors, not like the untrained partero WHO USES A ROOF TILE or a piece of ceramic to cut it.

A thirty year old mother from San Pablo

"The trained partero bringd string already prepared to tie the umbilical cord, but the untrained partero used a DIRTY RAG to tie the umbilical cord."

Of the 123 mothers from Cuzco who replied to the question of their satisfaction with the services delivered by trained TBAs, 115 expressed satisfaction compared to eight who expressed dissatisfaction. The dissatisfied mothers complaints about the trained TBAs were based on personality and kinship relationships. For example, one mother stated that she did not like the personality of the trained TBA.

An illustrative comparison is the difference between the care provided by the trained versus the untrained TBA in the region of Cuzco versus Ica. In Cuzco there was a considerable difference in the care provided by the trained versus the untrained TBA. For example, 62% of the trained TBAs provided care of the umbilical area of the newborn compared to 15% of the untrained TBAs. In Ica the difference between the care provided by trained versus untrained TBAs was much less significant. For example, 80% provided care of the umbilical of the newborn compared to 67% of the untrained TBAs.

Another interesting comparison is the difference in the level of nutrition counseling provided by trained TBAs versus untrained TBAs between the sample populations drawn from Cuzco versus Ica. As illustrated in table 1 (Cuzco), 69% of the patient population received nutritional counseling from trained TBAs, while only 21% of the patient populations received nutritional counseling from untrained TBAs. Yet in Ica 61% of the patient population received nutritional counseling from trained TBAs, and surprisingly 74% of the patients of non-trained TBAs received this information.

The methodology used to test the difference between the care delivered by the trained versus the untrained TBA was:

(a) Tests of the performance of the TBA sample were taken from interviews conducted with a selected sample of 1,320 mothers who had received services of TBAs trained in MOH courses between the years 1979-1982.

(b) A series of random samples were conducted with patients who had received services from untrained TBAs.

(c) 10 key variables were used to ascertain the difference in care provided during critical stages of the maternity cycle--prenatal, birth, and post-partum. Key issues were whether the TBA provided counseling concerning nutrition and hygiene during pregnancy, the quality of care given during delivery, and the degree of attention received by the mother and infant after birth.

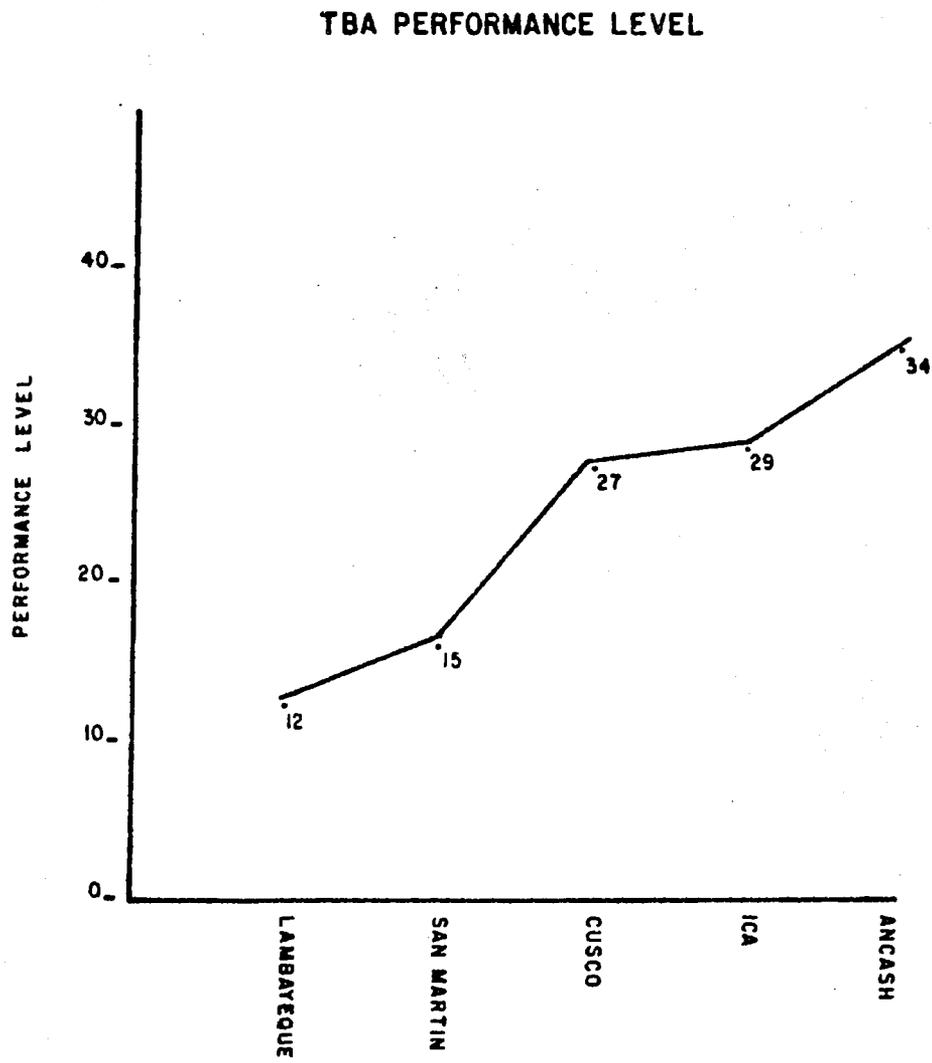
(d) Tests of significance ( chi-square ) were run between the responses of the recipients of care by the TBAs to these 10 key variables

(e) figure 1 (located on page 72) illustrates the difference in the levels of performance of the trained TBAs from the five survey areas.

### Conclusions

1. The data illustrated on tables 1-20 provides proof of the success of the TBA training program. It is clear that the general level of performance of trained TBAs is higher than their untrained counterparts.

Figure 1 The difference in the level of performance between the trained versus the untrained TBA from the five survey areas.



EXPLANATION OF THE SCORING SYSTEM USED FOR FIGURE 1

1. The scoring system was obtained by taking the sum of the number of statistically significant variables for each survey region. For example, the difference between the care provided by trained versus untrained TBAs during the three critical stages of the maternity cycle were either statistically significant or insignificant. If it was significant the value was given a score according to the following scale-

.005 - is the highest level of significance; it was given a score of 4

.01 - the next level of significance was given a score of 3

.025 - the next level of significance was given a score of 2

.05 - the lowest level of significance was given a score of 1.

2. The scores for all test regions were then added up and plotted on the graph represented below.

3. The higher the score, the greater the level of performance of the TBAs.

4. As illustrated the highest score was obtained from Ancash. This means that at the time of the survey the TBAs from Ancash level of compliance to program standards was the highest. It also means that the highest level of difference between the performance of trained versus untrained TBAs was found in Ancash.

2. Whereas it is clear that there is a consistent higher quality of provision of preventative services and therapeutic care provided by the trained TBA, the data indicates that there are regional differences. For example, the data listed on the tables from Ica illustrates that the practices of trained versus untrained TBAs are closer than in other areas. This is due to the high levels of education and westernization that is characteristic of coastal communities. The evidence suggests that TBA training will be more successful in highland and jungle than in highly urbanized coastal areas.

3. In terms of TBA performance, the data illustrated on figure one indicates that the program was most successful in Ancash and Ica. This could be expected considering that the TBA program in Ica has been functioning longer than in any other region. And the TBA program in Ancash has been rigorously executed since its inception in 1979. However, what is the measure of success? Is success measured by whether the trained TBAs can perform tasks assigned to them? Or does success also depend on the activity level of the TBA? It is equally important to test to what extent trained TBAs are operating in their own community and what percentage of the community receives their services.

## II: Activity Level and Coverage Provided by Trained TBAs

### A: Activity Level

To illustrate the difference in the levels of utilization of trained TBAs in the five survey areas, the numbers of births attended by the trained TBAs was plotted against the percentage of the TBA population. For example, on figure 2 (located on page 73), in Ancash only 3% of the population of trained TBAs was not practicing at the time of the interview in contrast to 12% of the TBA population in San Martin and 9% of the TBA population in Ica. When presented schematically, as in figure 3 (located on page 74), it is apparent that the program is most effective in Ancash, and Cuzco. In San Martin, Ica and Lambayeque, the activity level of trained TBAs is relatively lower.

### B: Coverage

To assess the program coverage random sample surveys were conducted with 215 adult female informants in the province of Ancash. The results of these surveys indicate that only 4-5% of the target population is aware that there is a trained TBA in the community. This figure means that in small communities, such as Los Olivos, in the province of Ancash, the total population of women of reproductive age is approximately 200. Of these 200 potential patients, only 8 women received services from the two trained TBAs operating in the community.

FIGURE 2

ACTIVITY LEVEL OF TBA'S

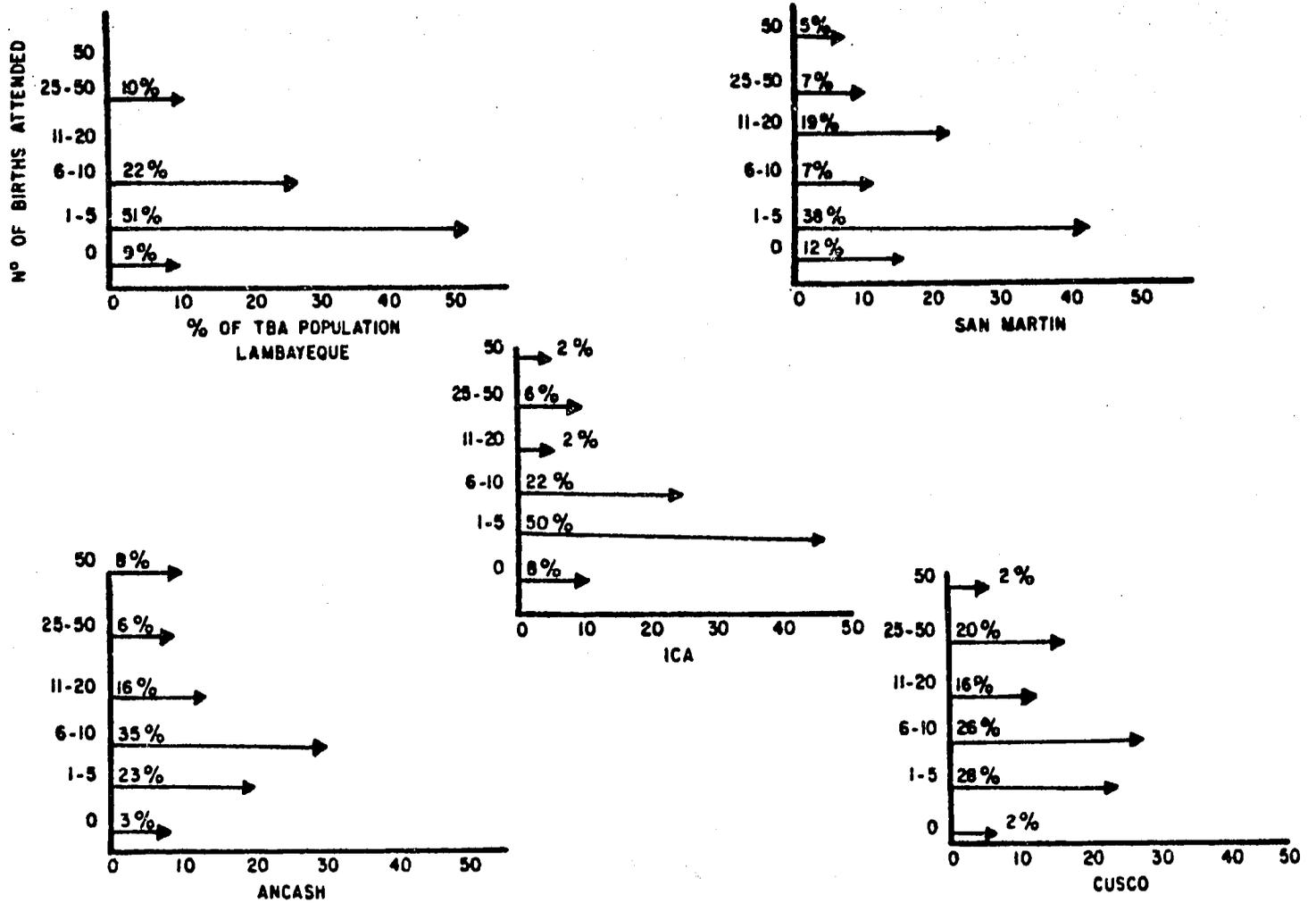
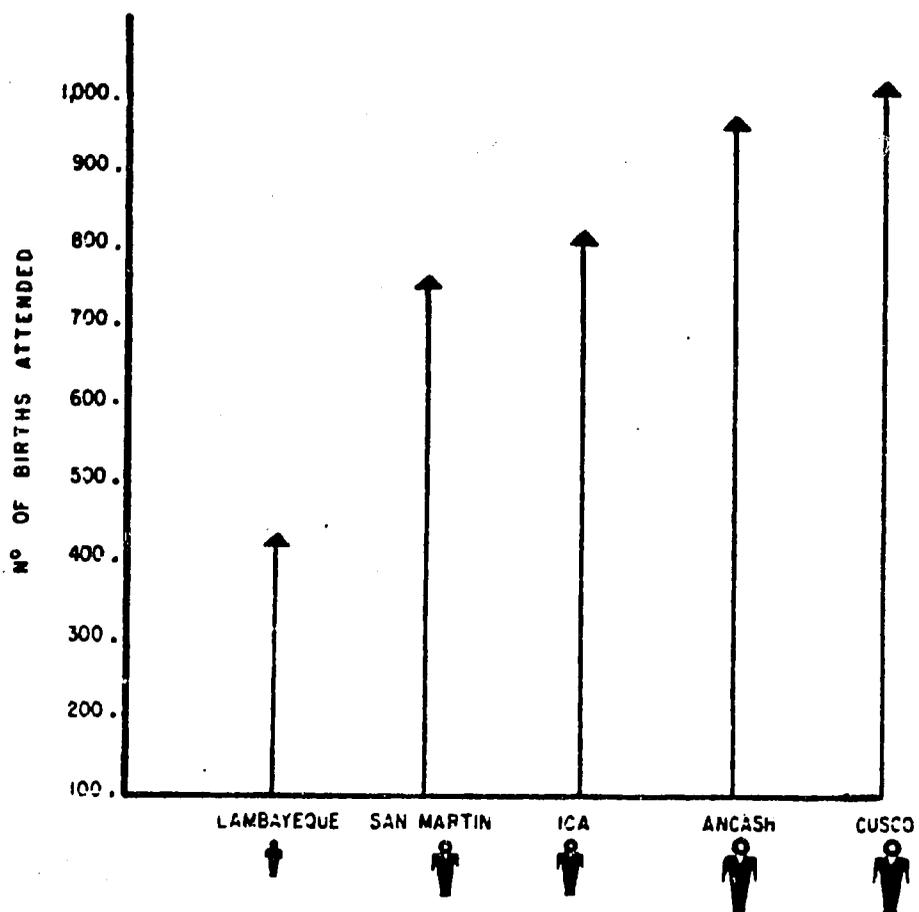


FIGURE 3

COMPARISON BETWEEN THE LEVEL OF ACTIVITY OF TBA'S



## Conclusions

The implications of these findings for future TBA training are:

1) Efforts at TBA training should be intensified in areas where they will be of greatest use. For example, areas which show the highest levels of TBA activity and performance should continue to conduct intensive TBA training; whereas areas in which TBA activity is lessened by the availability of western health services, the TBA training program should be modified. Previously trained TBAs should be recruited for additional health care services such as the provision of birth control information and services.

2) To fully utilize existing manpower it is recommended that TBAs trained in areas where there is less demand, such as Ica, Lambayeque, and San Martin, be provided with the option of entering classes for health promoters. For future evaluations it is important to not limit measurement of the program success to performance alone. As shown in survey results in Ica, Lambayeque, and San Martin, extraneous influences can obstruct comparisons of the performance of trained versus untrained TBAs. Westernizing influences have been so great in these three areas that there is considerable doubt whether the program itself is responsible for the outcome. In other words, in these three areas threats to internal validity are strong. Therefore, future measures of program success should-

(a) use community based evaluations;

(b) test for levels of activity as well as levels of performance;

(c) and test program coverage.

3) Community awareness of the presence of trained PHC personnel should be increased through the provision of community education campaigns, and greater community participation in initiation of the program and selection of TBAs.

## B. THE REACTION OF PATIENTS TO THE SERVICES OF TRAINED TBAs

1. This section describes patients reaction to services received by the trained TBA. The objective of this section is to illustrate how advice from the trained TBA is changing the patterns of health care. The data (illustrated on table 21, located on page 67), indicates that in comparison to patients treated by untrained TBAs, all patients treated by trained TBAs show significantly greater:

- \* Utilization of health centers;
- \* Care of the nipples before breast feeding;
- \* Quality of maternal/infant post-natal care.

However, traditionally based practices remain the same between the patients treated by trained and untrained TBAs. For example, there was no difference between the responses of both samples to questions about the burial of the placenta or the wearing of the traditional faja (supporting girdle).

## 2. Perceptions of the patient population on the ability of trained versus untrained TBAs to provide general health services

\* It is apparent that the training course has not interfered with the perceptions of the patient population on the ability of the trained TBAs to provide health services for the general population.

\* According to interviews conducted with patients of trained and untrained TBAs, trained TBAs are more likely to be used to provide all types of services than their untrained counterparts. As illustrated on table 22, the trained TBA is considered to be more able to cure health problems of males and of children than her untrained counterpart.

\* These findings illustrate that TBAs are already providing more than maternity care in all communities. The implications of these findings for the expansion of the responsibilities of trained TBAs will be discussed in the following chapter. In addition, there does not seem to be a change in the perception of the patients to the trained TBA's role as a traditional healer.

\* Another factor in the determination of the success of the TBA training program is the degree to which the trained TBAs were able to maintain their status as traditional healers while at the same time administer to the needs of their patients. The percentage differences between the patients estimation of the ability of the trained TBA to serve the community as a traditional healer in the five survey areas is listed on table 22 (located on page 96).

\* It is clear that the role of the trained TBA has been expanded without losing its traditional base.

## C. PROGRAM OPERATIONAL CONSTRAINTS

### 1. Selection of candidates

\* As illustrated on table 23, 24, and 25 (located on pages 97,99, and 100) there is a wide difference between the socio-economic and socio-cultural characteristics of the TBA and patient population between the five health regions surveyed.

\* This range of difference in literacy, language, occupation, and economic status is evidence of the need to fashion the candidate qualifications according to the distinct needs of each region.

\* For example, as illustrated on table 23, in Cuzco 73% of the patients were agriculturalists; whereas in Ica only 48% of the patient population were agriculturalists. This difference in the patient population is also indicated in the pattern of land ownership between the survey areas. For example, in Ancash 70% of the patient population owns their own land compared to only 33% of the patient informants from Ica.

\* Another highly important difference between the TBA and patient population from the survey areas is literacy and language use. As shown on tables 23-25, only 33% of the patient population in Cuzco speaks only Quechua; whereas only 1% of the patient population speaks Quechua in Ica. In Cuzco 55% of the patient population was literate compared to 80% of the patient population in Ica. The implication of these findings for the selection of candidates for midwife training is discussed in the following chapter on page \_\_\_\_

\* Another difference in the socio-characteristics of the TBA population from the five survey regions is literacy. As shown on table 25 the trained TBAs from Ica are more literate than from any other of the survey areas.

\* However, it is apparent that there is no relationship between literacy and performance. As shown in figures 1-3 (located on pages \_\_\_\_-\_\_\_\_), the highest levels of performance and activity are from Ancash and Cuzco. Yet it is these areas that show lesser rates of literacy than Ica.

## 2. Training

\* It is apparent that the language spoken by the various ethnic groups living within the health regions should be taken into consideration when planning a training program. While there are courses offered in Quechua in the southern and north-central highlands, there has been no attempt to provide for the language needs of other ethnic groups, such as lowland Indians living in Loreto, San Martín, Huanuco, and Cuzco.

## 3. Program Operation

\* It is commonly assumed that older women, above the age of 40, are not capable of changing their patterns of patient care. As indicated on figures 1-3, located in the appendix, the highest level of activity and performance of trained TBAs is in Ancash. Yet, the average age of trained TBAs in this area is between 45-55.

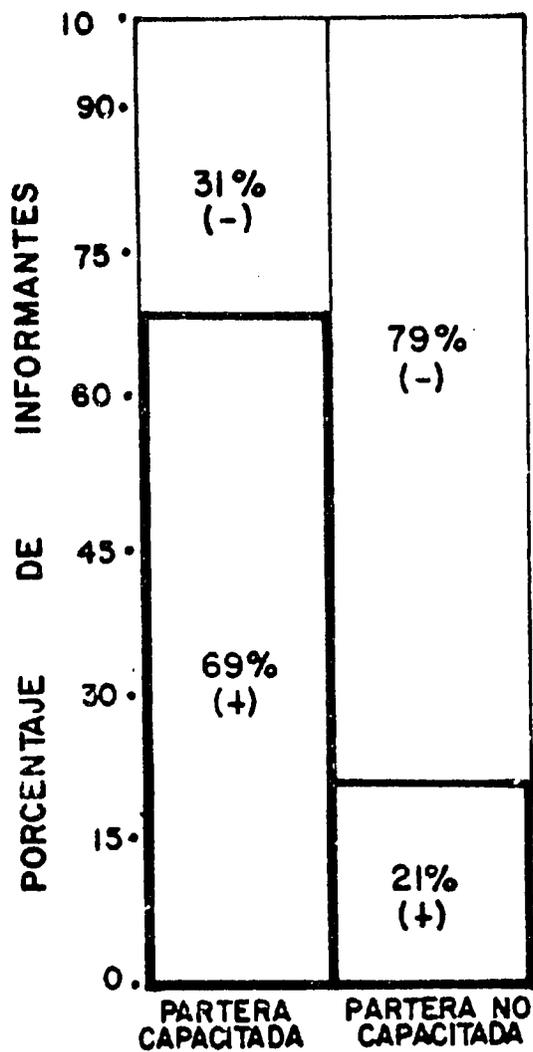
\* Statements from patients indicate that older monolingual Quechua speaking TBAs have radically changed their methods of treating patients since participating in the training program.

\* Another common assumption about TBAs is that they are female. As shown on table 25, 18% of all trained TBAs included within the survey population were males. In fact this figure is even higher in specific areas. For example, 49% of the trained TBAs surveyed in Cuzco were males.

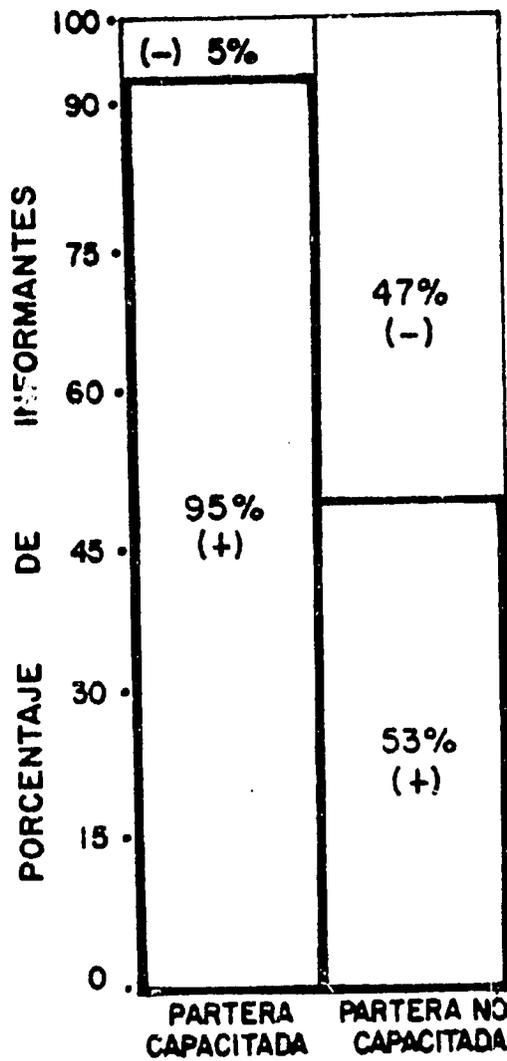
\* It is apparent that the plans for the expansion of the program to include additional activities for trained TBAs should take into consideration the socio-cultural characteristics of the TBA population in each area. Factors such as literacy operate to either enhance or detract from the abilities of TBAs to increase their performance levels to include the provision of additional medical care, such as the use of injections, or the provision of birth control services.

Table 1 - Nutrition During Pregnancy ( dept. of Cuzco)

# NUTRICION DURANTE EL EMBARAZO

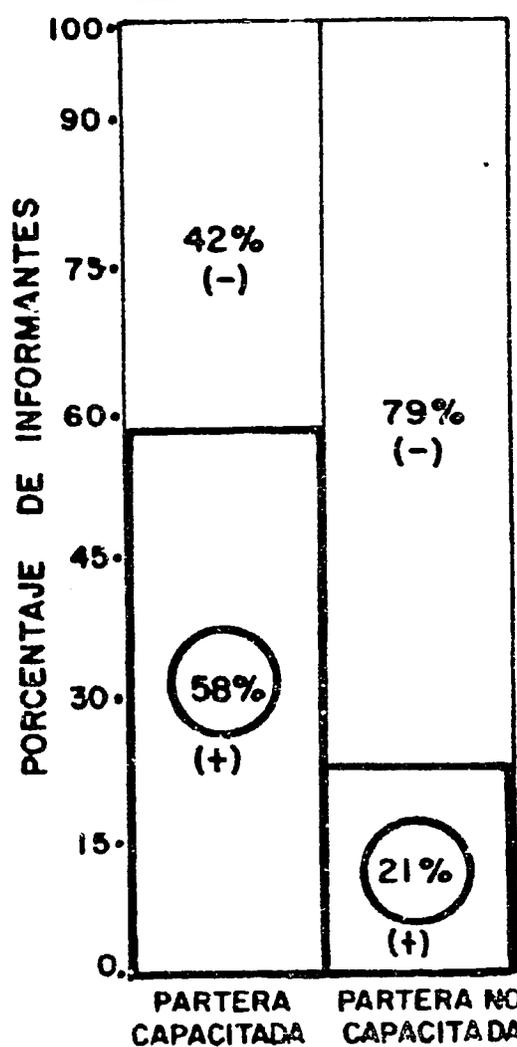


**CONSEJOS PARA LA BUENA ALIMENTACION**

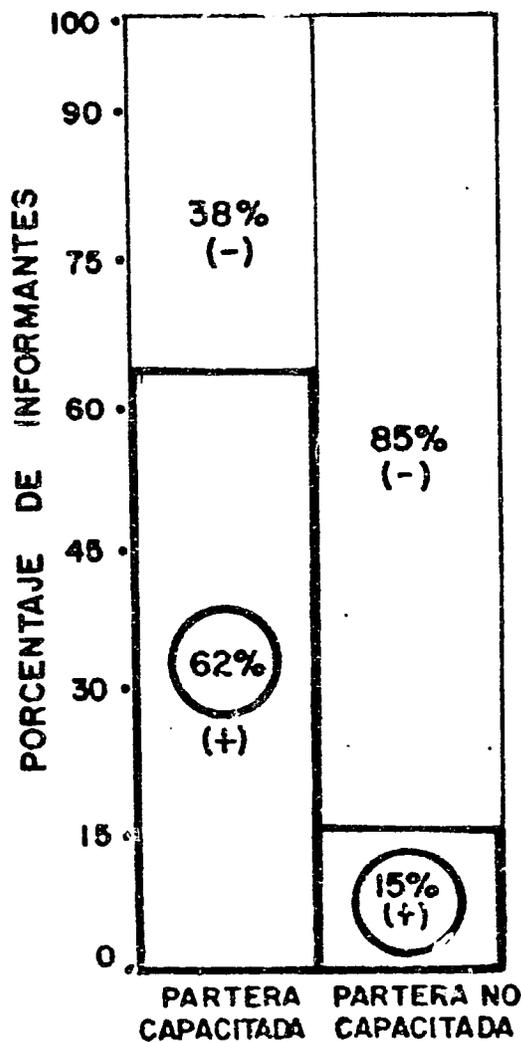


**PROHIBICIONES EN LA ALIMENTACION**

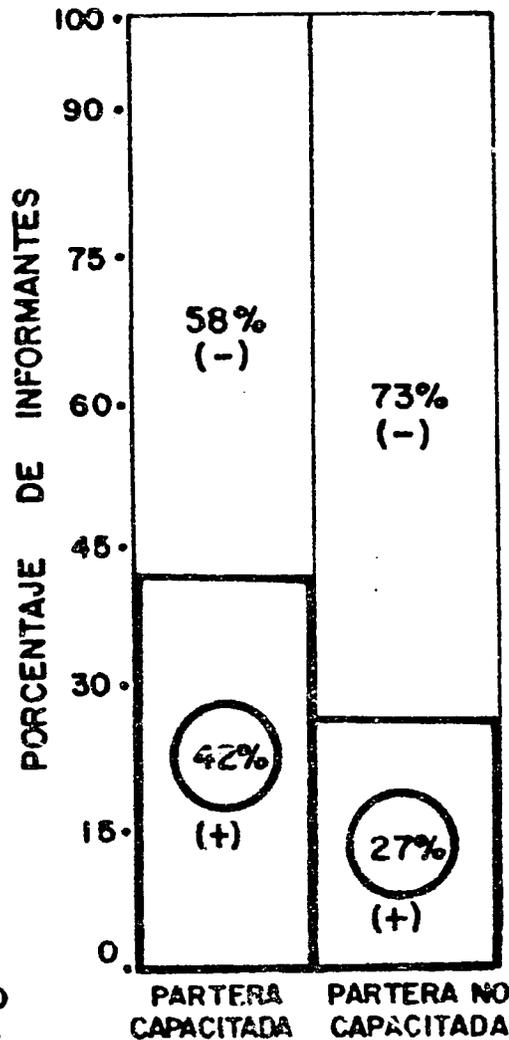
# CALIDAD DE CUIDADO DEL POST PARTO



**CHARLAS SOBRE CONTROL DE NATALIDAD**



**CUIDADO DEL OMBLIGO**



**ATENCIÓN REGULAR DESPUÉS DEL PARTO**

Table 2 - Quality of care provided during the post-partum period (dept. of Cuzco)

# CALIDAD DEL CUIDADO DURANTE EL PARTO

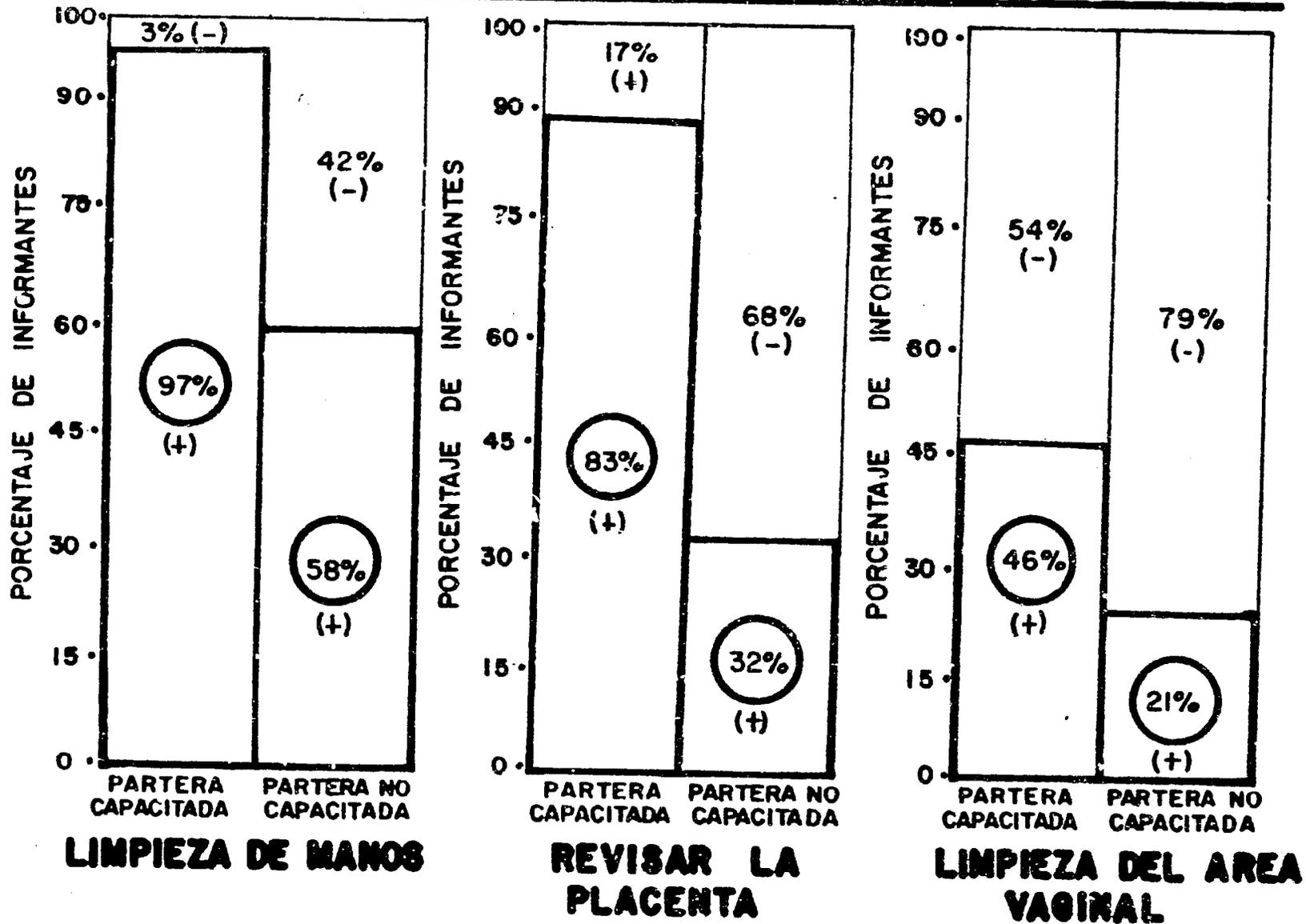


Table 3 Quality of care provided during birth (dept. of Cuzco)

Table 4 Level of patient satisfaction (Dept. of Cuzco)

# GRADO DE SATISFACCION DEL PACIENTE

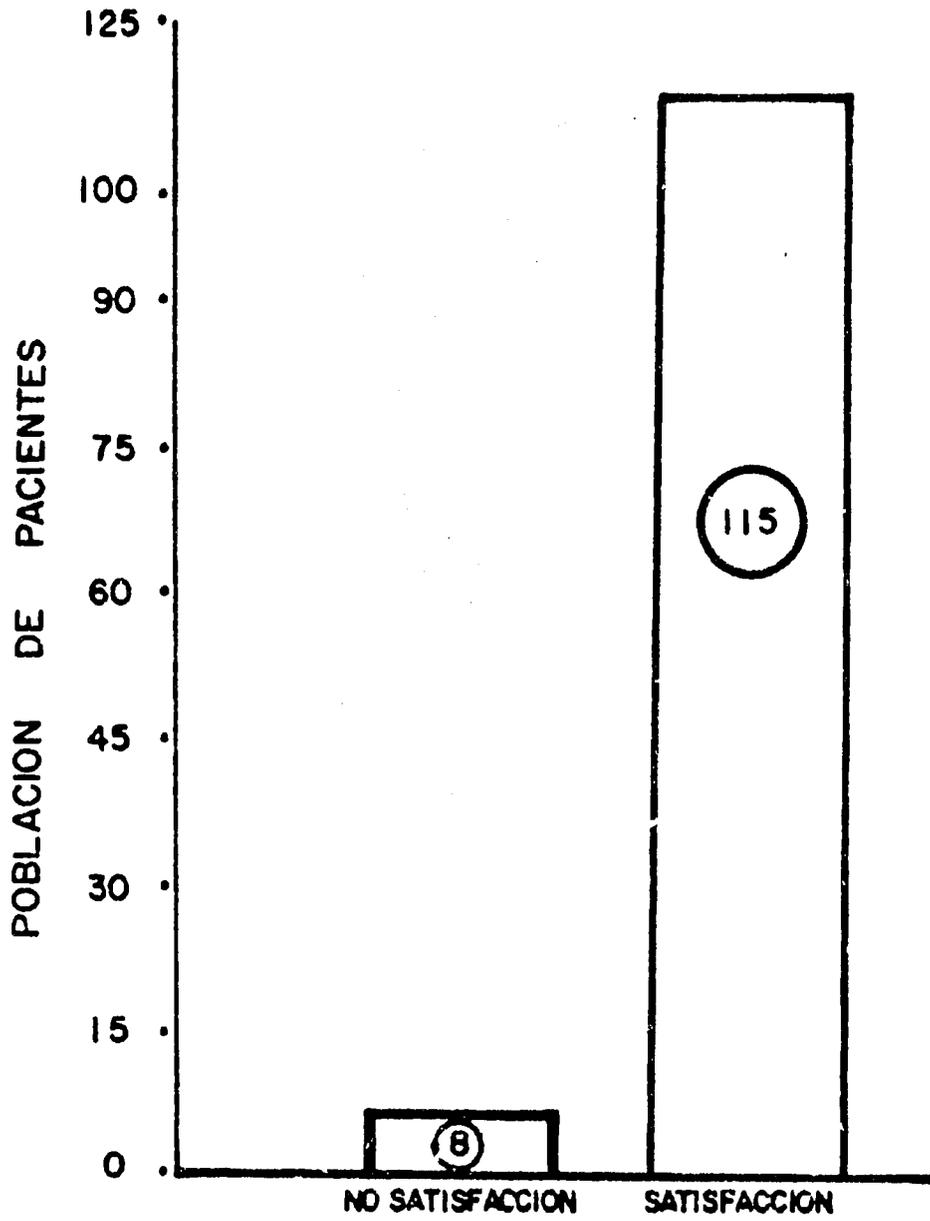
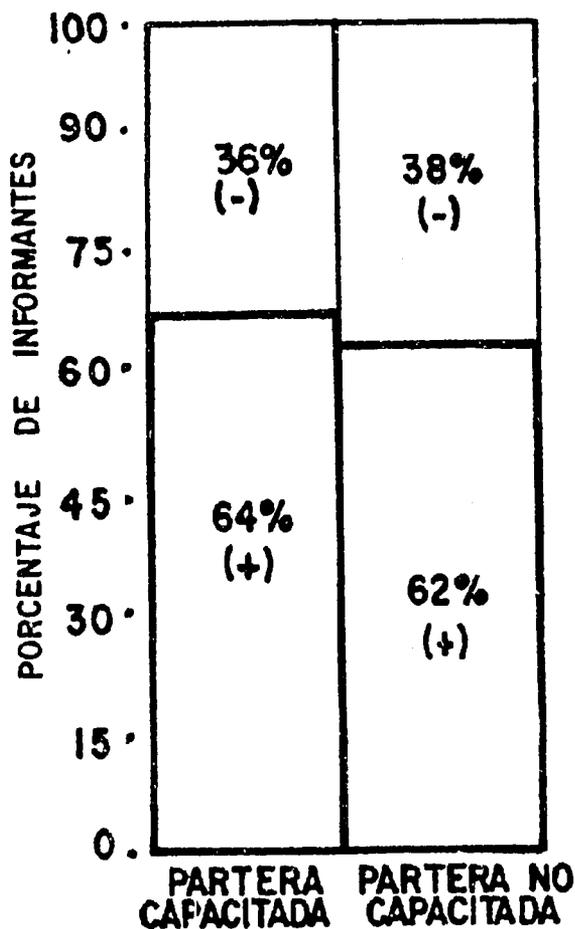


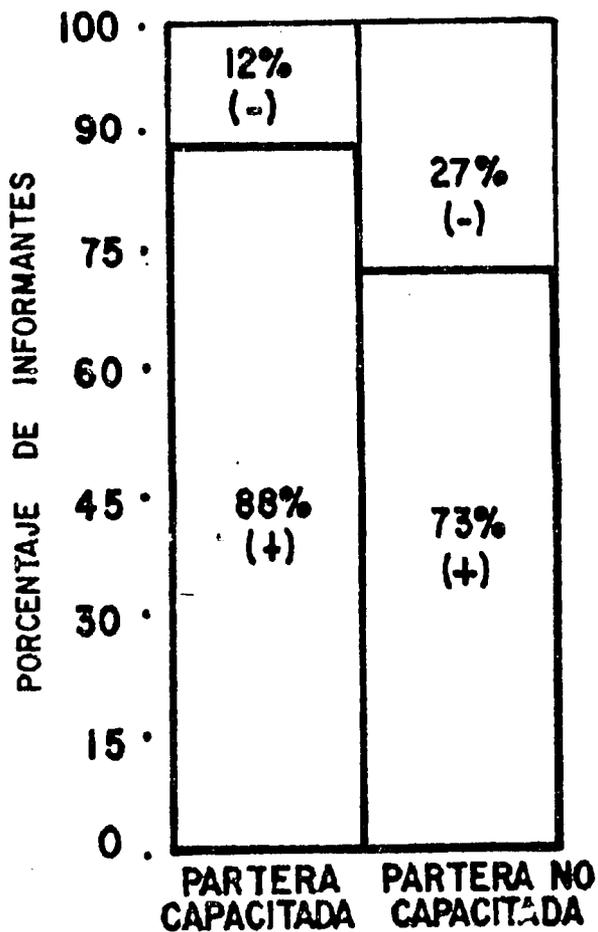
Table 5 Nutrition during pregnancy ( Dept. of Ancash)

## NUTRICION DURANTE EL EMBARAZO



CONSEJO PARA LA BUENA ALIMENTACION

DPTO. DE ANCASH



PROHIBICIONES EN LA ALIMENTACION

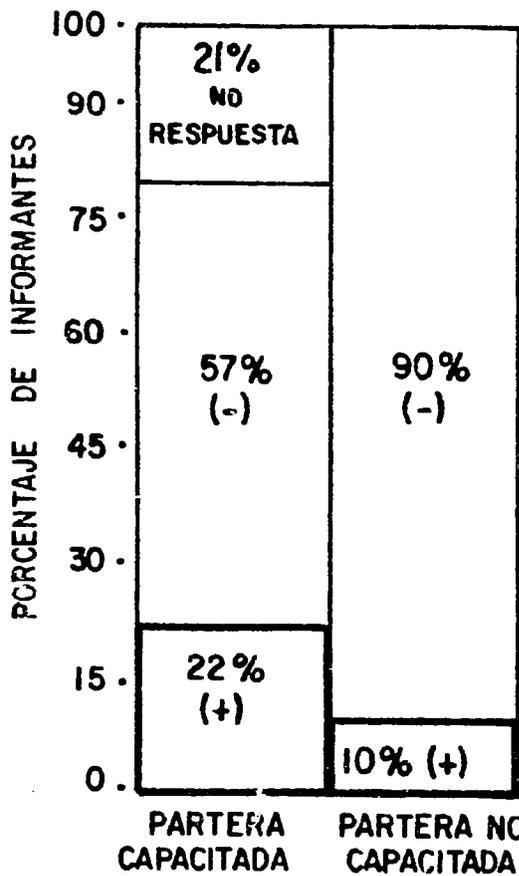
TABLA I

DPTO DE ANCASH

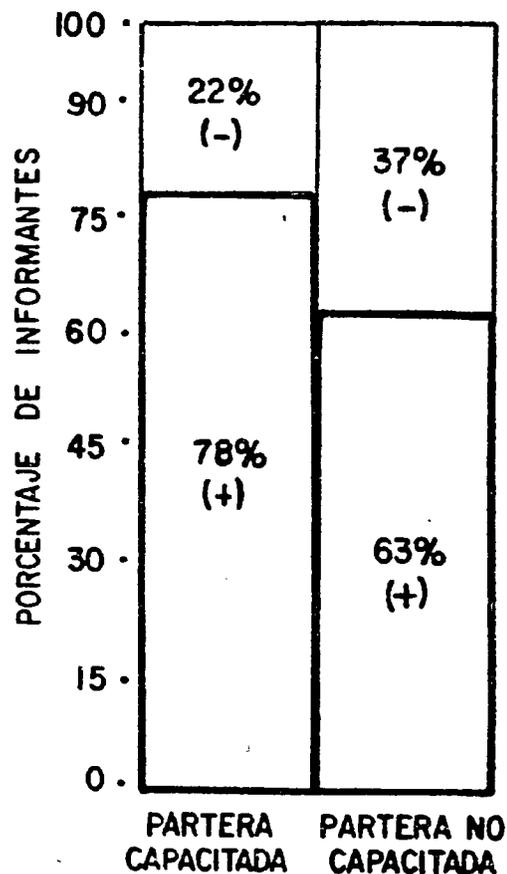
TABLA II

CALIDAD DE CUIDADO DEL POST PARTO

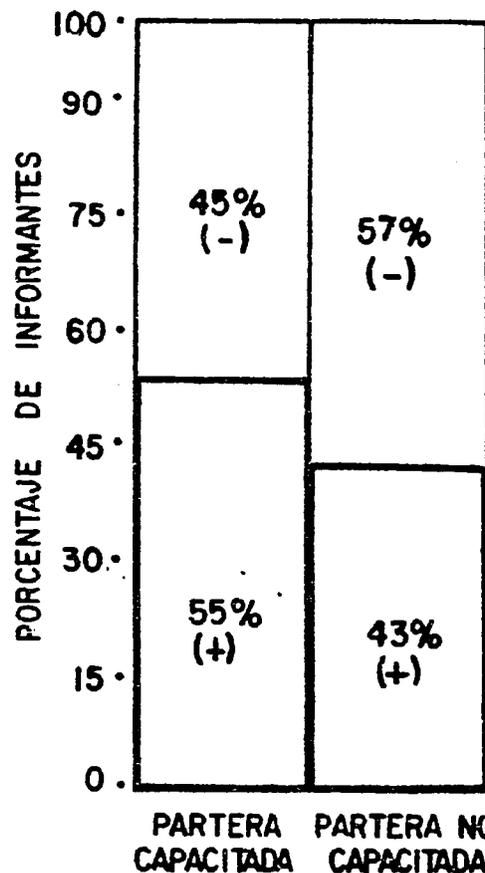
Table 6  
Quality of care provided  
during the post-partum  
period (dept. of Ancash)



CHARLAS SOBRE CONTROL DE NATALIDAD



CUIDADO DEL OMBLIGO



ATENCION REGULAR DESPUES DEL PARTO

POBLACION TOTAL = 307  
PARTERA CAPACITADA = 205  
PARTERA NO CAPACITADA = 107

DPTO. DE ANCASH

TABLA III

CALIDAD DEL CUIDADO DURANTE EL PARTO

Table 7  
Quality of care provided  
during birth (Dept. of Ancash)

POBLACION TOTAL = 307  
PARTERA CAPACITADA = 205  
PARTERA NO CAPACITADA = 107

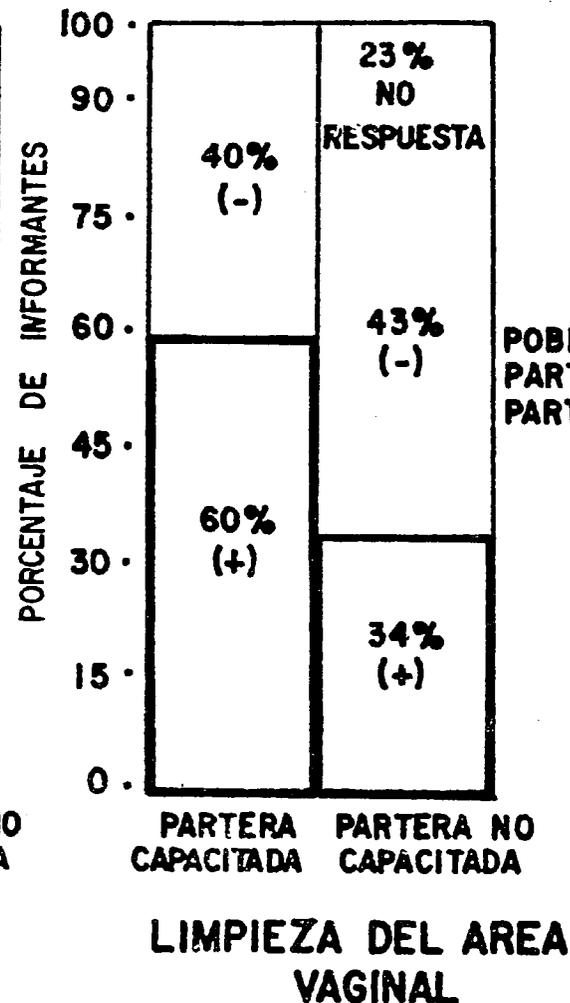
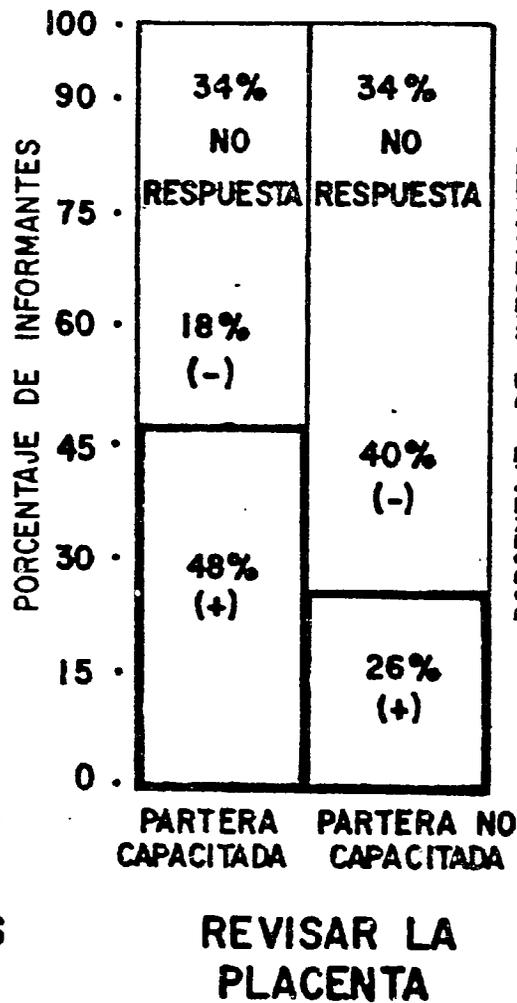
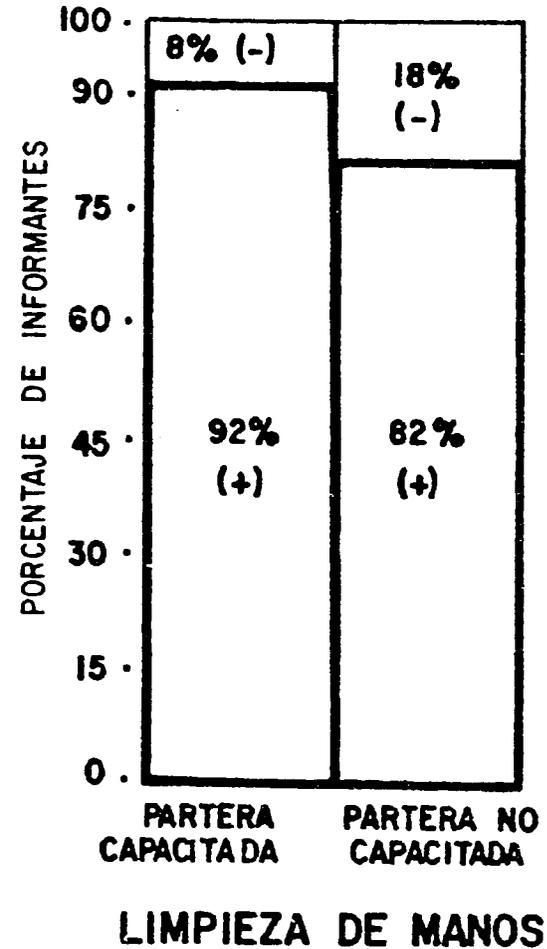
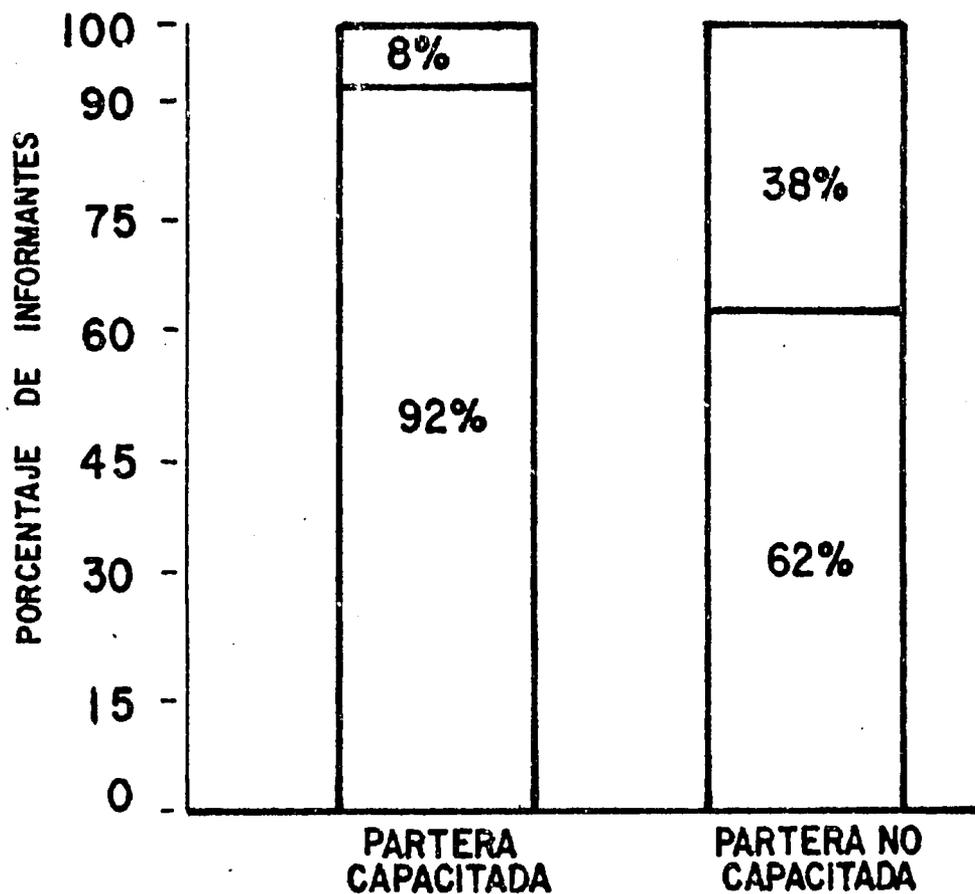


Table 8 Level of patient satisfaction (Dept. of Ancash)

## GRADO DE SATISFACCION DEL PACIENTE



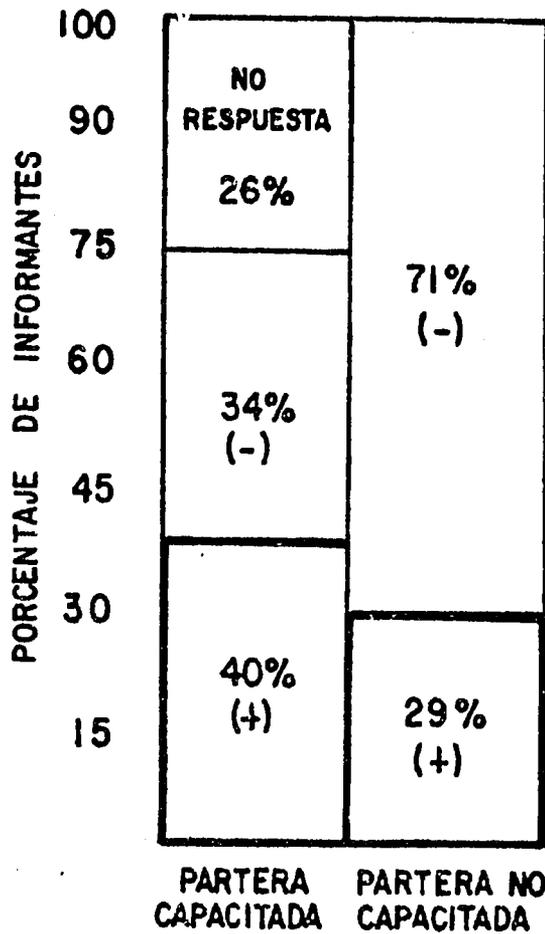
POBLACION TOTAL = 307  
PARTERA CAPACITADA = 205  
PARTERA NO CAPACITADA = 107

DPTO. DE ANCASH

TABLA IV

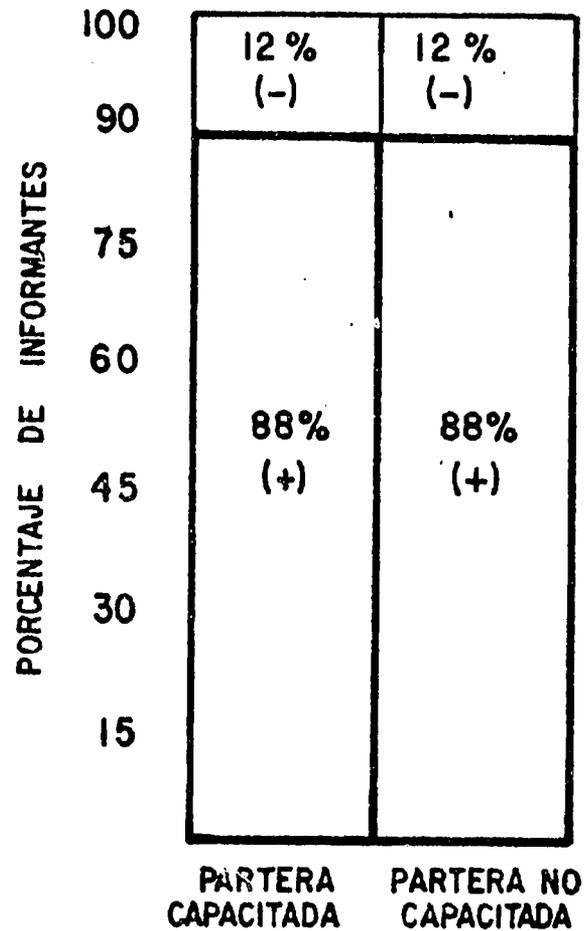
Table 9 Nutrition during pregnancy (Dept. of San Martín)

## NUTRICION DURANTE EL EMBARAZO



CONSEJOS PARA LA BUENA ALIMENTACION

DPTO. DE SAN MARTIN



PROHIBICIONES EN LA ALIMENTACION

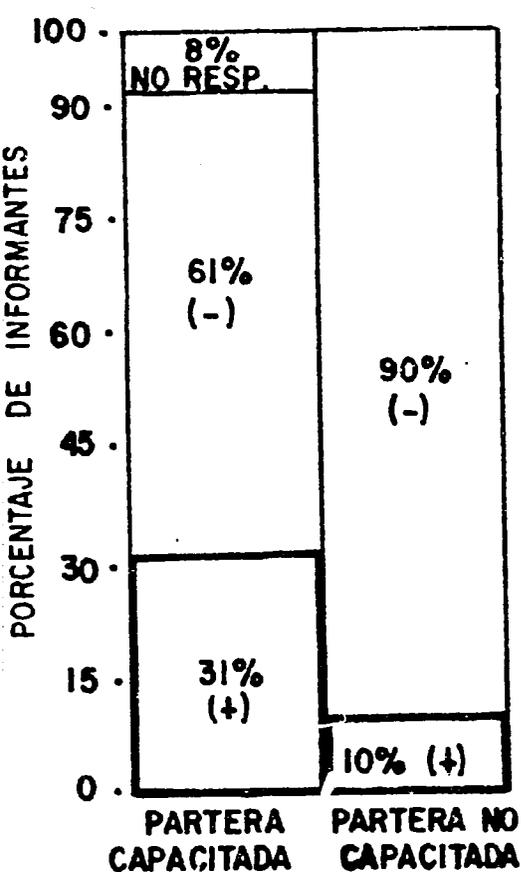
TABLA I

DPTO. DE SAN MARTIN

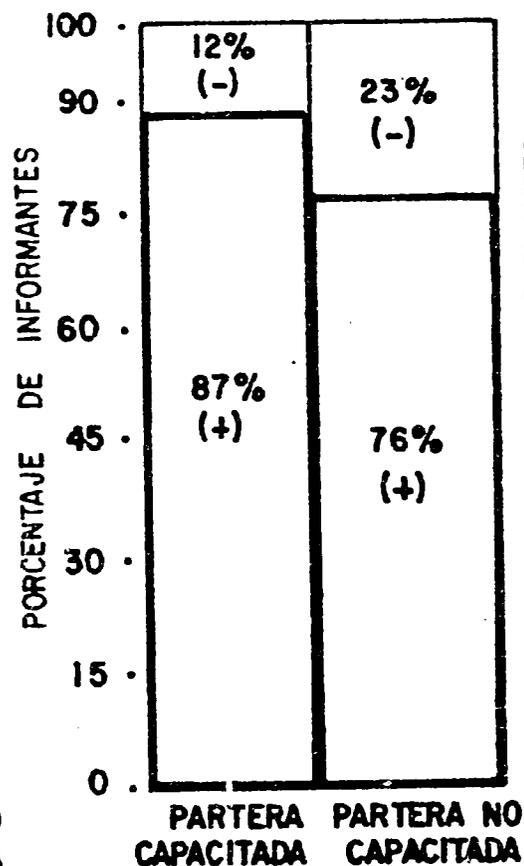
TABLA II

CALIDAD DE CUIDADO DEL POST PARTO

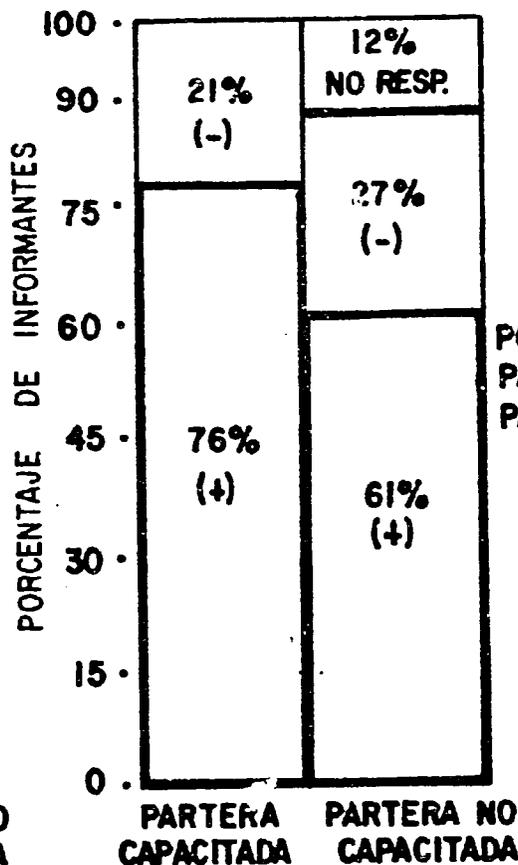
Table 10  
Quality of care provided  
during the post-partum period  
(Dept. of San Martín)



CHARLAS SOBRE CONTROL DE NATALIDAD



CUIDADO DEL OMBLIGO



ATENCION REGULAR DESPUES DEL PARTO

POBLACION TOTAL = 159  
PARTERA CAPACITADA = 103  
PARTERA NO CAPACITADA = 56

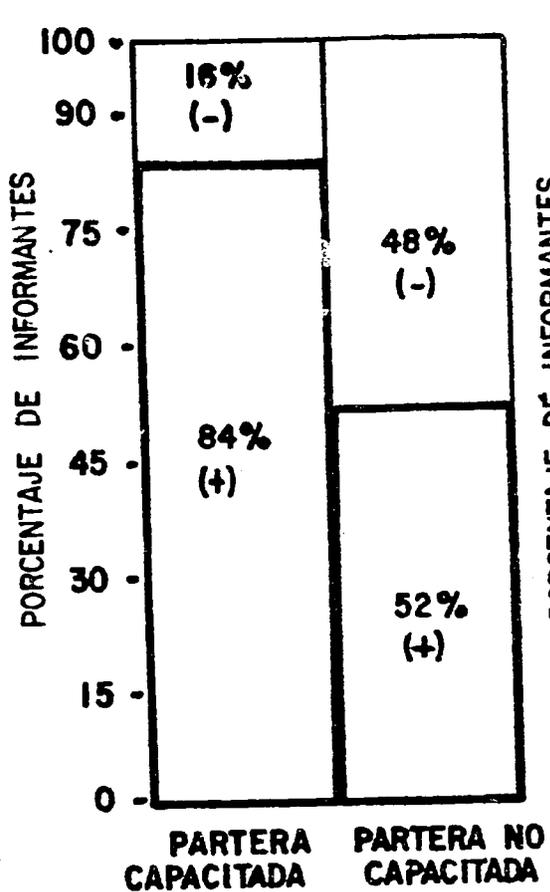
DPTO. DE SAN MARTIN

CALIDAD DEL CUIDADO DURANTE EL PARTO

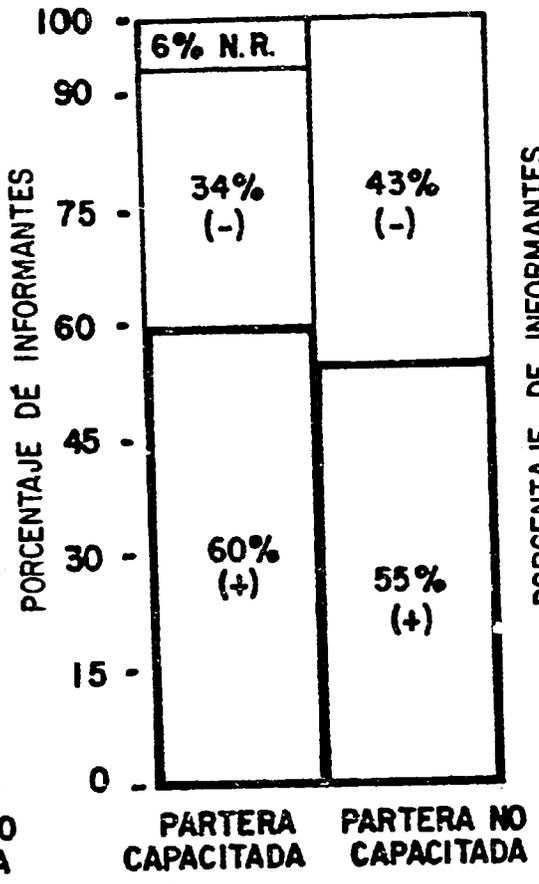
TABLE III  
Quality of care provided during birth (Dept. of San Martin)

Table II

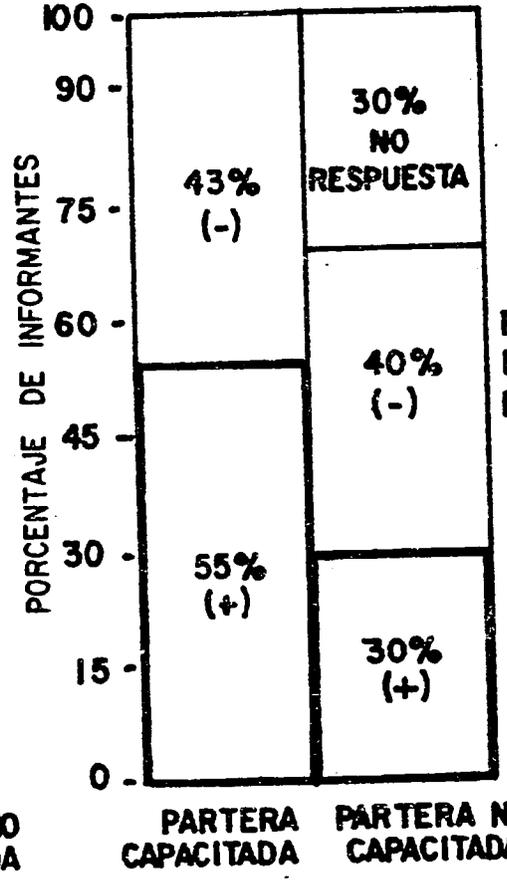
Quality of care provided during birth (Dept. of San Martin)



LIMPIEZA DE MANOS



REVISAR LA PLACENTA

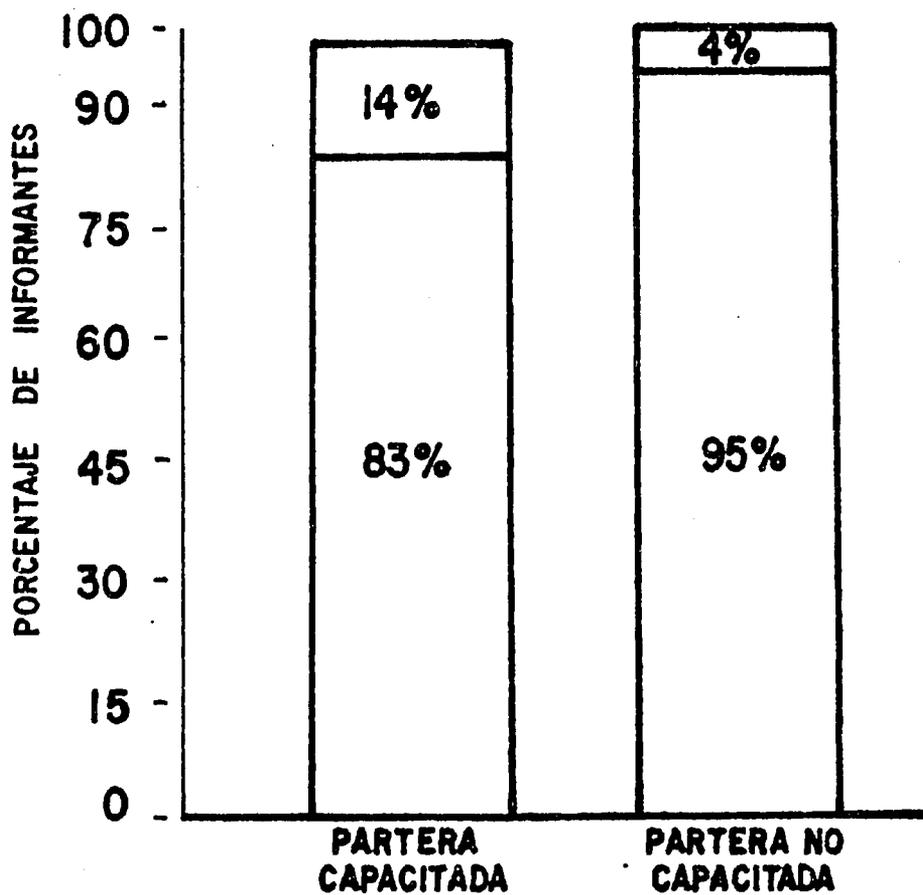


LIMPIEZA DEL AREA VAGINAL

POBLACION TOTAL = 159  
PARTERA CAPACITADA = 103  
PARTERA NO CAPACITADA = 56

Table 12 Nutrition during pregnancy (Dept. of San Martín)

## GRADO DE SATISFACCION DEL PACIENTE



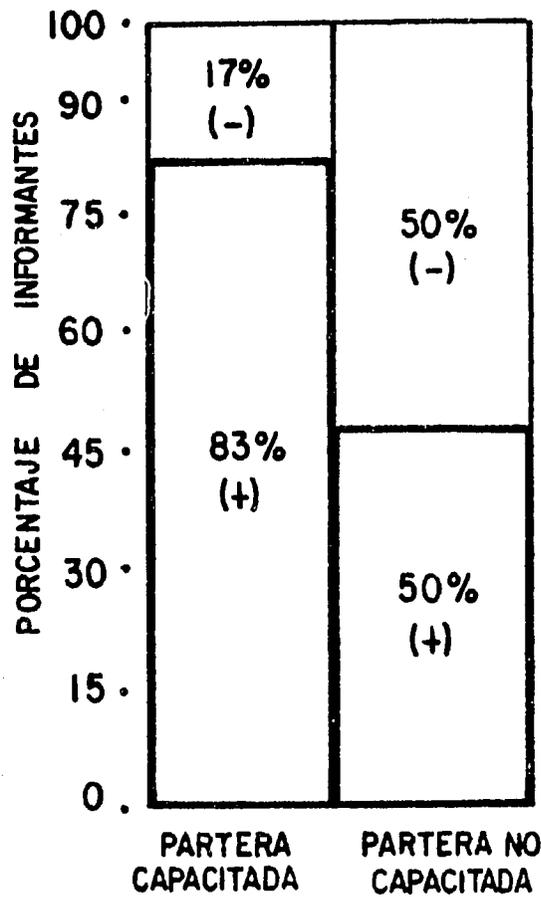
POBLACION TOTAL = 159  
PARTERA CAPACITADA = 103  
PARTERA NO CAPACITADA = 56

DPTO. DE SAN MARTIN

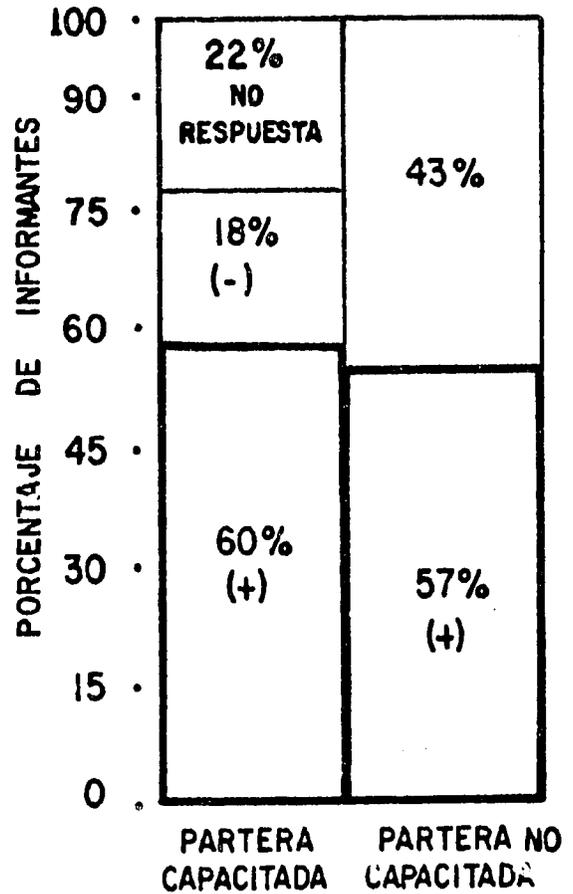
TABLA IV

Table 13 Nutrition during pregnancy (Dept. of Lambayeque- Amazonas)

## NUTRICION DURANTE EL EMBARAZO



CONSEJOS PARA LA BUENA ALIMENTACION



PROHIBICIONES EN LA ALIMENTACION

DPTO. DE LAMBAYEQUE

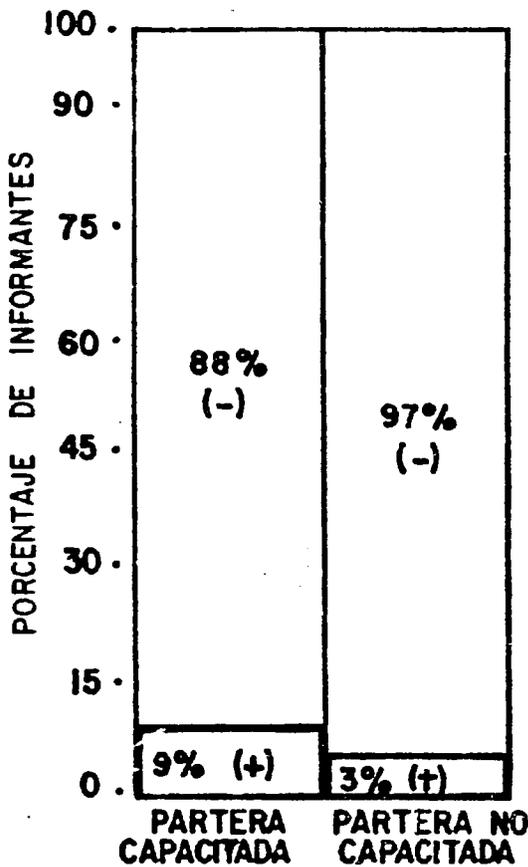
TABLA I

DPTO. DE LAMBAYEQUE

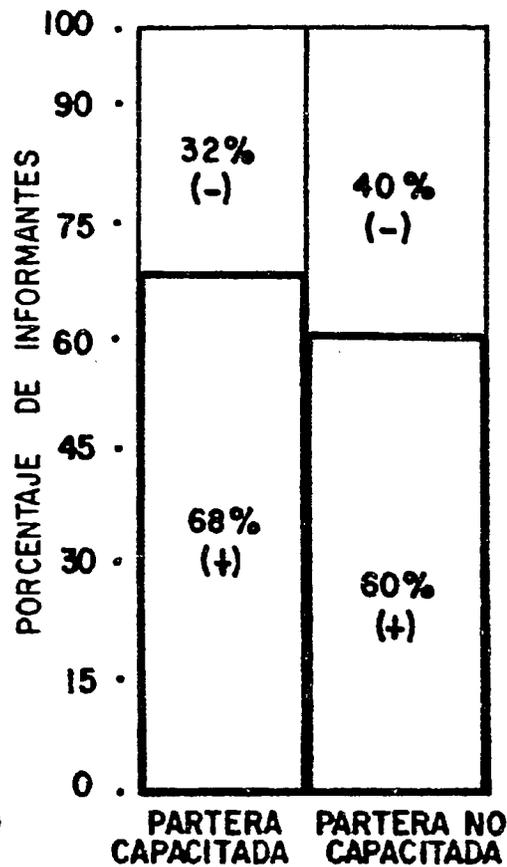
TABLA II

Table 14 Quality of care provided during the post-partum period ( Dept. of Lambayeque-Amazonas)

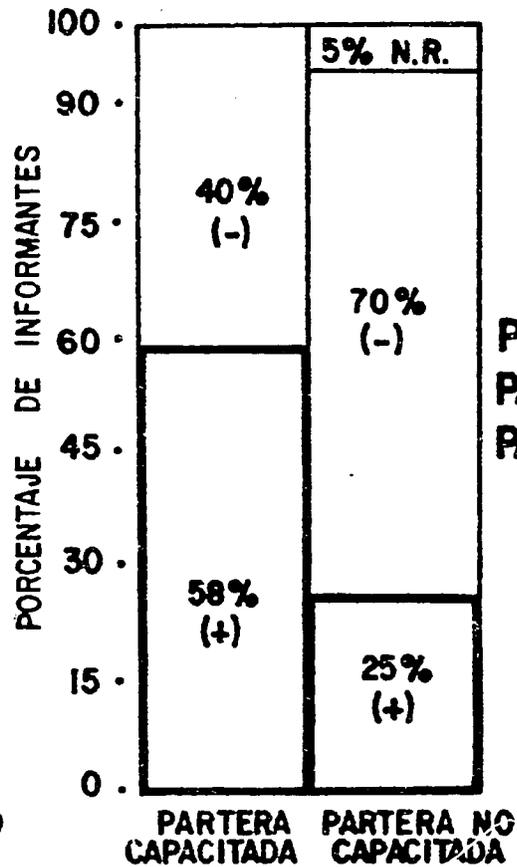
CALIDAD DE CUIDADO DEL POST PARTO



CHARLAS SOBRE CONTROL DE NATALIDAD



CUIDADO DEL OMBLIGO



ATENCION REGULAR DESPUES DEL PARTO

POBLACION TOTAL = 150  
 PARTERA CAPACITADA = 119  
 PARTERA NO CAPACITADA = 31

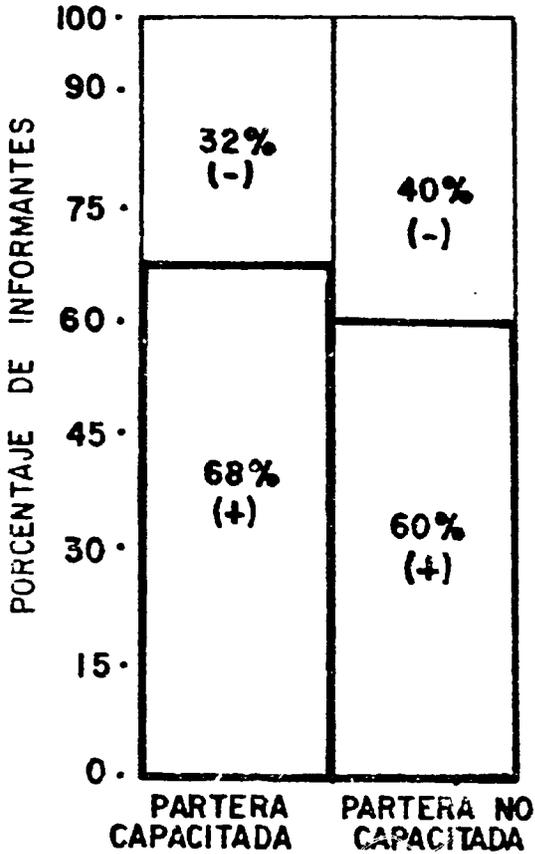
DPTO. DE LAMBAYEQUE

TABLA III

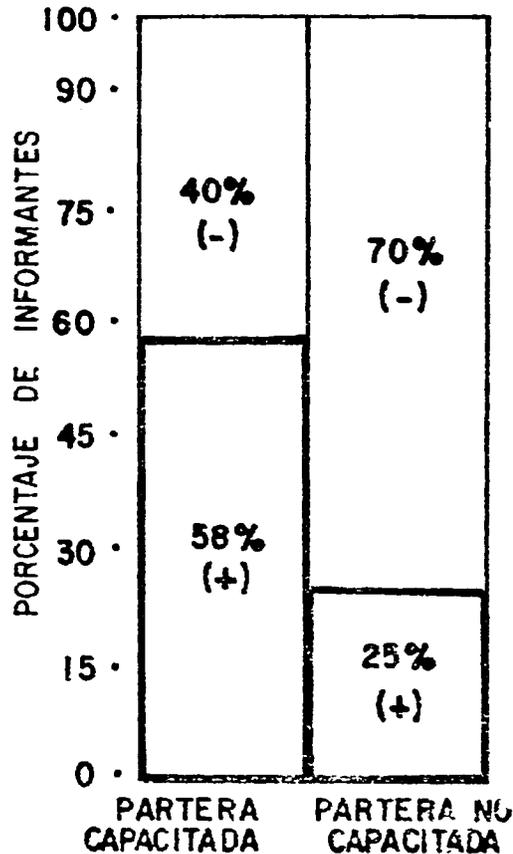
CALIDAD DEL CUIDADO DURANTE EL PARTO

Table 15 Quality of care provided during birth (Dept. of Lambayeque - Amazonas)

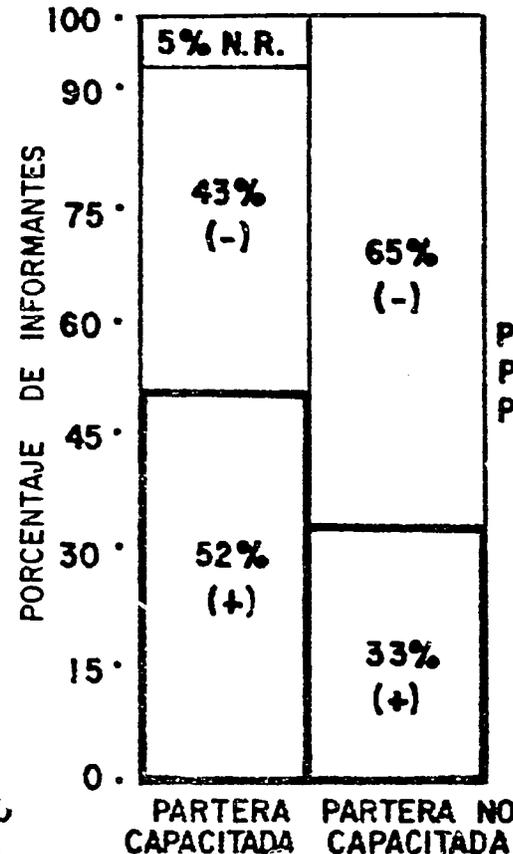
POBLACION TOTAL = 150  
 PARTERA CAPACITADA = 119  
 PARTERA NO CAPACITADA = 31



LIMPIEZA DE MANOS



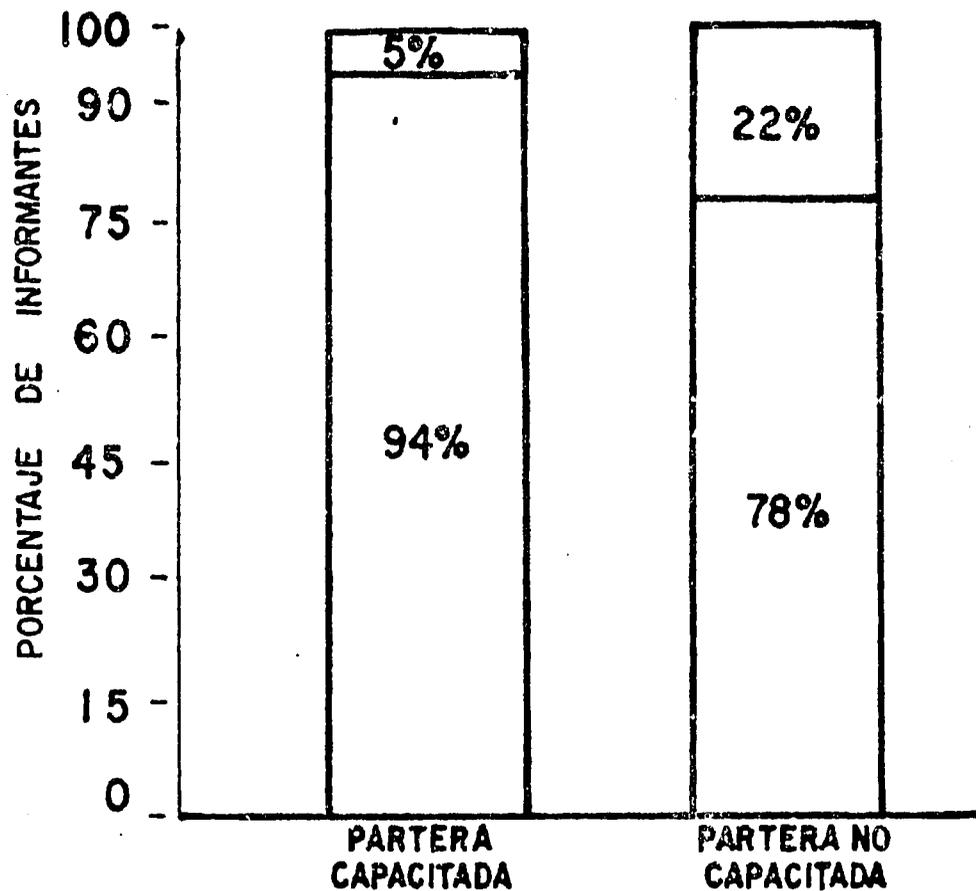
REVISAR LA PLACENTA



LIMPIEZA DEL AREA VAGINAL

Table 16 Level of patient satisfaction (Dept. of Lambayeque-Amazonas)

## GRADO DE SATISFACCION DEL PACIENTE



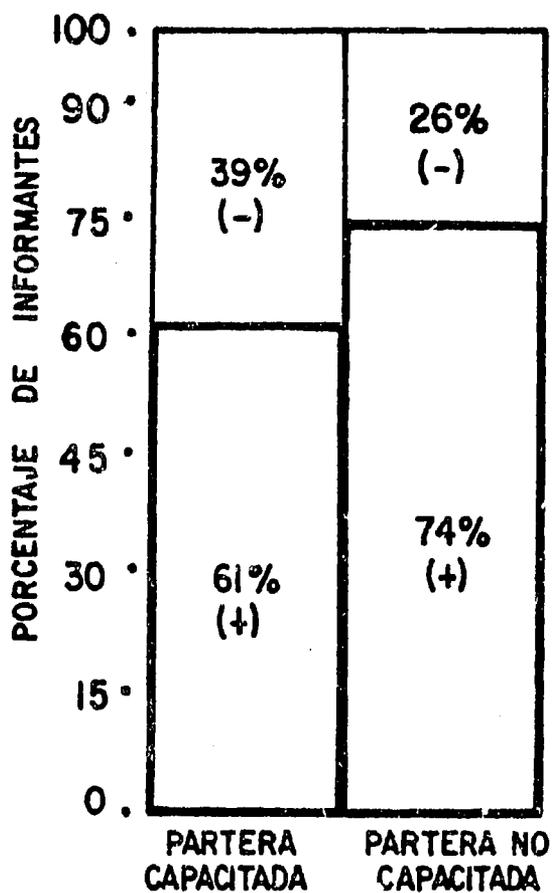
POBLACION TOTAL = 150  
PARTERA CAPACITADA = 119  
PARTERA NO CAPACITADA = 31

DPTO. DE LAMBAYEQUE

TABLA IV

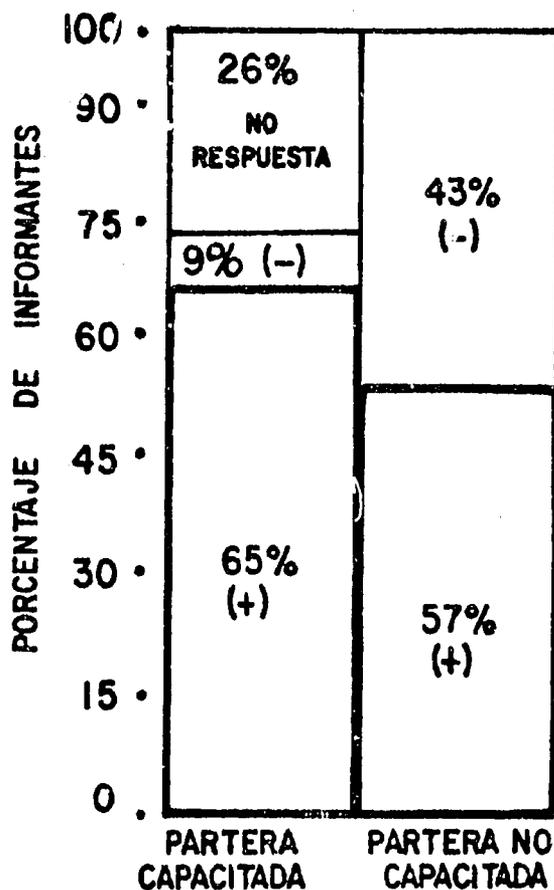
Table 17. Nutrition during pregnancy ( Dept. of Ica)

## NUTRICION DURANTE EL EMBARAZO



CONSEJOS PARA LA BUENA ALIMENTACION

DPTO. DE ICA



PROHIBICIONES EN LA ALIMENTACION

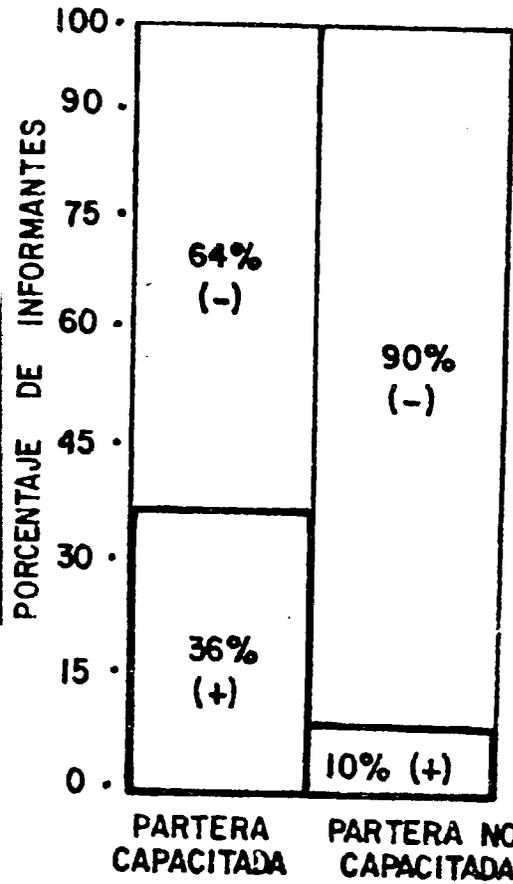
TABLA I

DPTO. DE ICA

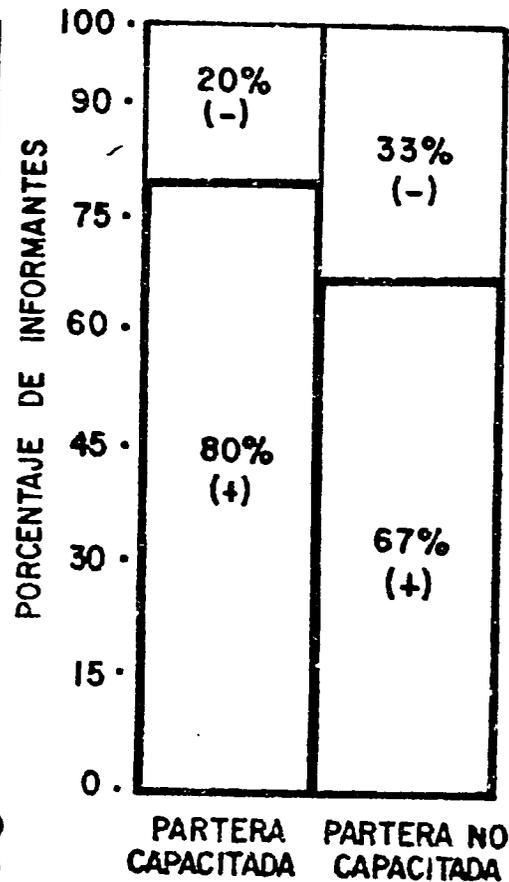
TABLA II

CALIDAD DE CUIDADO DEL POST PARTO

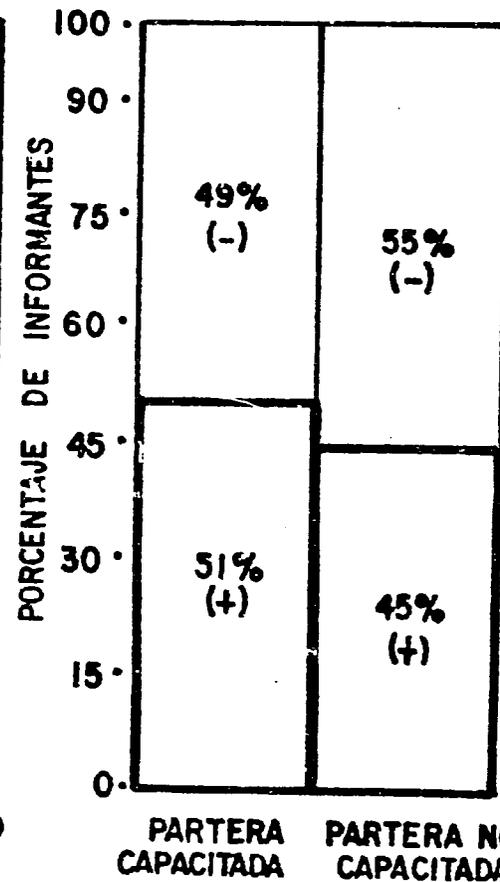
Table 18 Care provided during the post-partum period (Dept. of Ica)



CHARLAS SOBRE CONTROL DE NATALIDAD



CUIDADO DEL OMBLIGO



ATENCIÓN REGULAR DESPUES DEL PARTO

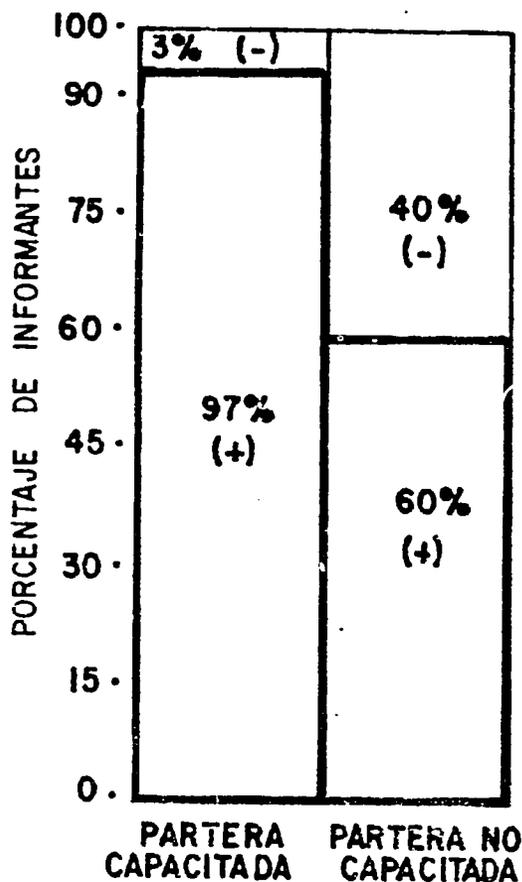
POBLACION TOTAL = 171  
 PARTERA CAPACITADA = 117  
 PARTERA NO CAPACITADA = 54

DPTO. DE ICA

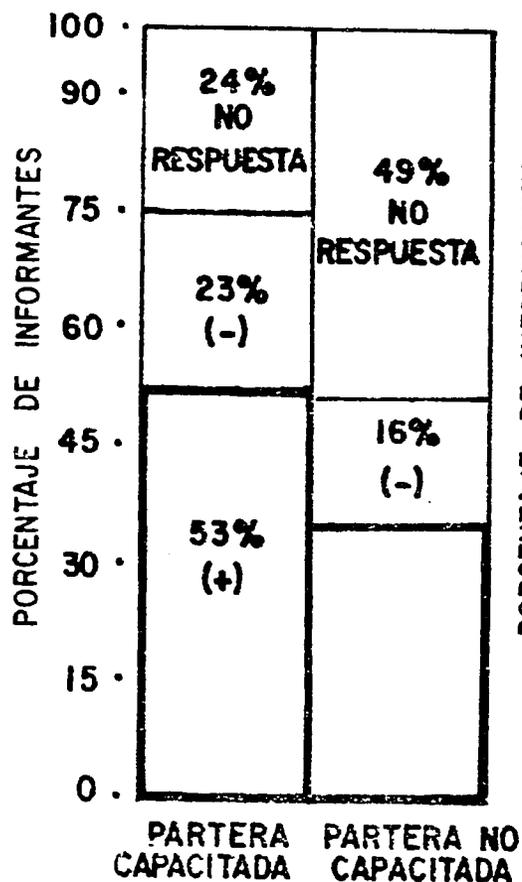
TABLA III

CALIDAD DEL CUIDADO DURANTE EL PARTO

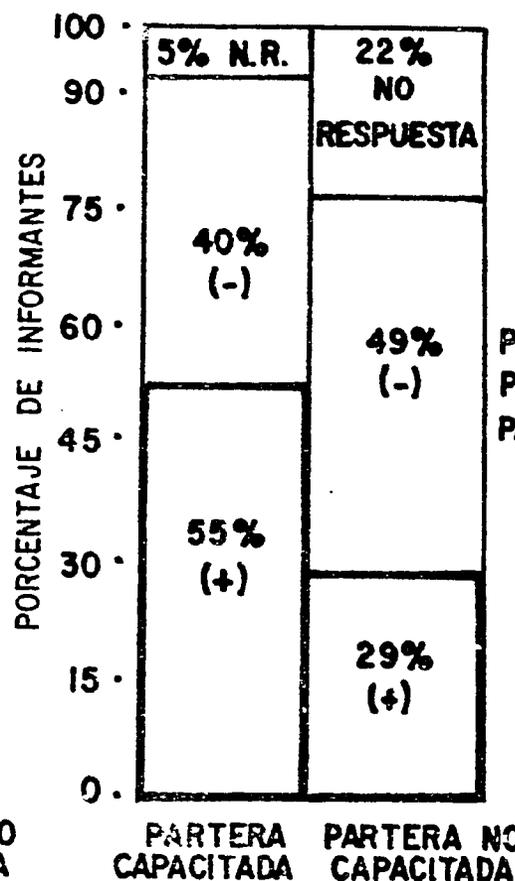
Table 19 Quality of care provided during birth (Dept. of Ica)



LIMPIEZA DE MANOS



REVISAR LA PLACENTA

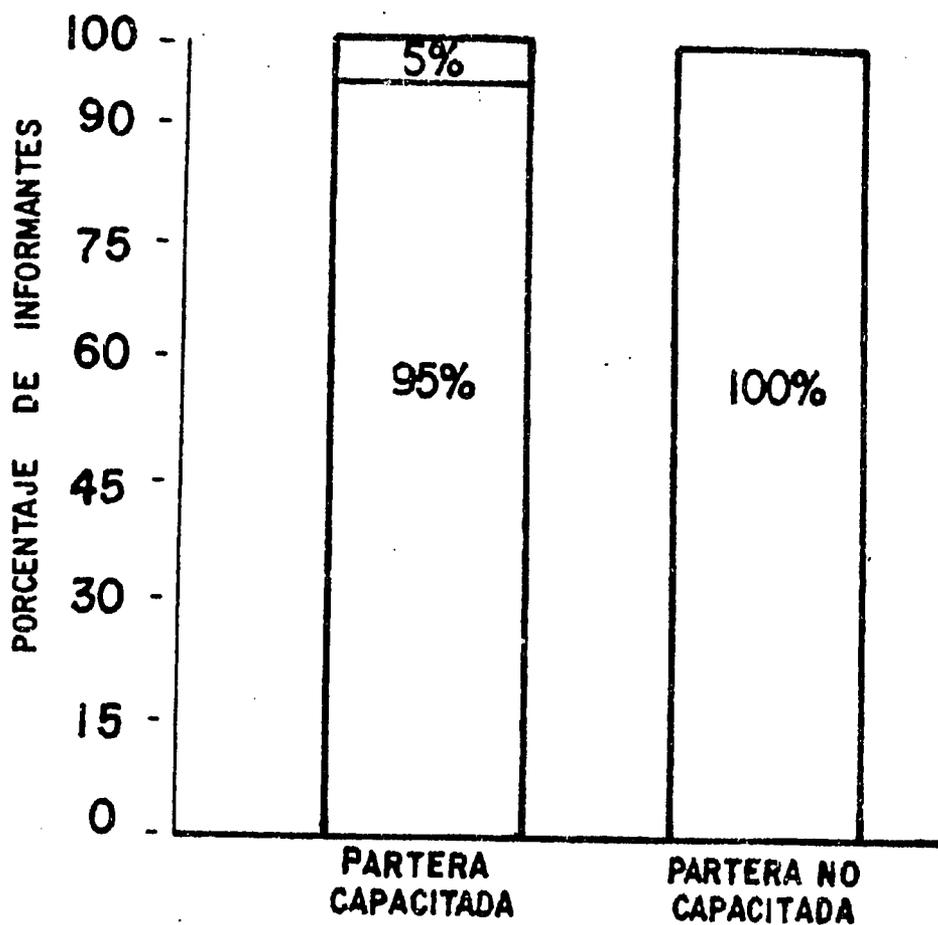


LIMPIEZA DEL AREA VAGINAL

POBLACION TOTAL = 171  
 PARTERA CAPACITADA = 117  
 PARTERA NO CAPACITADA = 54

Table 20 Level of patient satisfaction (Dept. of Ica)

## GRADO DE SATISFACCION DEL PACIENTE



POBLACION TOTAL = 171  
PARTERA CAPACITADA = 117  
PARTERA NO CAPACITADA = 54

DPTO. DE ICA

TABLA IV

Reaction of the Patient to the Services of the Trained TBA

TABLE 21

1. Goes to health center for pre-natal exams  
In Cuzco , Ica and Lambayeque there was no statistically significant difference between the responses of patients treated by trained versus untrained TBAs. On the other hand, there was a statistically significant difference between the responses in Ancash and San Martin.
2. Breast feeds immediately after birth  
Only area of significant difference is Cuzco.
3. Takes a bath immediately after birth  
No statistical difference between patients of trained versus untrained TBAS.
4. Washes nipples before breast feeding  
In Cuzco there was no statistically significant difference between the two samples; however, there was a statisitally significant difference between the samples in Ancash, San Martin, and Ica.
5. Visits TBA after the post-partum period  
Only area of significant difference between the patients of trained versus untrained TBAs are Cuzco and Ica.
6. Wears a supporting girdle  
No statistical difference between patients of trained versus untrained TBAs
7. Burys the placenta  
No statistical difference between patients of trained versus untrained TBAs
8. Bathes the newborn immediately after birth  
No statistical difference between patients of trained versus untrained TBAs

TABLE 22

Perceptions of the Patient population on the ability of trained versus untrained TEAs to provide general health services.

<u>General</u>	<u>Cuzco</u>	<u>Ancash</u>	<u>San Mar.</u>	<u>Lambayeque</u>	<u>Ica.</u>
1. The Trained TBA is also a curandera. 38%-	46%	45%	35%	24%	6%
2. The Untrained TBA is also a curandera. 34%					
3. The Trained TBA uses coca in her practice. 11%	19%	13%	11%	01%	05%
4. The Untrained TBA uses coca in her practice 13%					
5. The Trained TBA uses a guinea pig in her practice. 15%	07%	26%	11%	15%	01%
6. The Untrained TBA uses a guinea pig in her practice. 17%					
7. The Trained TBA also can cure male health problems 30%	46%	34%	17%	16%	10%
8. The Untrained TBA also can cure male health problems 27%					
9. The Trained TBA also can cure childhood ailments .50%		72%	49%	36%	28%
10. The Untrained TBA also can cure childhood ailments 41%					

TABLE 23

Socio-Economic and Socio-Cultural Characteristics of the Patient Population.

This table describes a few characteristics of the patient population. These variables are selected to illustrate the differences and similarities between the patient populations of the five survey areas.

<u>General</u>	<u>Cuzco</u>	<u>Ancash</u>	<u>San Mar.</u>	<u>Lambayeque</u>	<u>Ica.</u>
1. <u>Literacy*</u> 60%	55%	53%	62%	60%	80%
2. <u>Occupational Profile</u> agriculturalists 57%	73%	51%	68%	64%	48%
3. <u>Marital Status</u> Married 63%	69%	63%	-	58%	57%
4. <u>Land Ownership.</u>	74%	70%	48%	40%	33%
5. <u>Language Use</u> Quechua Speaking 19%	45%	26%	2%	7%	1%
Spanish Speaking 43%	2%	33%	69%	87%	47%
Quechua & Spanish Speaking 32%	36%	38%	25%	3%	41%

\* Determination of literacy is drawn from the responses given by the informants not by tests of literacy.

TABLE 24

Statistical Analysis of the Difference between the Socio-Cultural and Socio-Economic Characteristics of the Patient Population

This table illustrates differences between features of the patient population. The indication of a plus sign signifies a statistically significant difference between the two samples; the numbers following the plus sign signify the degree of significance. The lesser the number, the greater the significance. A minus sign indicates that the two populations are equal.

<u>General</u>	<u>Cuzco</u>	<u>Ancash</u>	<u>San Martin</u>	<u>Ica</u>	<u>Lambayeque</u>
<u>Traditional Dress</u> +	+(.01)	+ (.005)	-	-	-
<u>Language</u> +	-	+ (.005)	+ (.005)	+ (.05)	-
<u>Occupation</u> +	-	+--	-	+	-
<u>Earnings</u> +	-	+	-	-	+--

TABLE 25

Socio-Economic and Socio-Cultural Characteristics of the TBA Population

This table describes the similarities and differences between the characteristics of the trained TBA population from the five survey sites.

<u>General</u>	<u>Cuzco</u>	<u>Ancash</u>	<u>San Martin</u>	<u>Lambayeque</u>	<u>Ica</u>
<u>Average Age</u> 44-55	-	45-55	33-44	55-65	
<u>Literacy</u> 61%	68%	55%	62%	41%	74%
<u>Occupation</u> Only TBAs 21%	12%	23%	12%	27%	31%
<u>Income</u> agriculture 26%	34%	65%	15%	19%	05%
500-2,000s/week 13%	30%	07%	07%	13%	02%
s2,500-10,000 .week 34%	12%	23%	40%	52%	59%
<u>Family History</u> no other TBAs 32%	46%	23%	20%	39%	20%
<u>Language</u> Quechua only 09%	17%	23%	00%	00%	02%
Spanish only 53%	04%	02%	72%	86%	71%
Spanish & Quechua 88%	44%	71%	15%	14%	22%
<u>Sex</u> Female 72%	51%	81%	82%	86%	85%
Male 18%	49%	15%	17%	13%	11%

## CHAPTER V RECOMMENDATIONS

Analysis of data obtained through national, regional, and community surveys indicates that in order to increase the performance level of TBAs trained in Peru, modifications should be made in programming, selection of candidates, training, operation, supervision, and maintenance.

### I: PROGRAMMING AND SELECTION OF CANDIDATES

The following problems with the TBA training program were caused by faulty programming and candidate selection:

1. Training courses that were scheduled during the height of the harvest season resulted in poor attendance.
2. Insufficient notification given to local health providers (sanitarios) resulted in inadequate time for the selection of program participants.
3. Lack of community involvement in the selection of candidates led to the selection of candidates who were not accepted by the local community.
4. Unwillingness of qualified candidates to participate in TBA training resulted in the selection of candidates who did not attend the greatest number of births in the community.
5. Community rejection of the services provided by the trained TBA led to the eventual "drop-out" of TBAs from the program. TBAs who are not utilized by the community discontinue attendance at meetings held at the posta sanitaria and refuse to turn in reports.

Steps should be taken in order to avoid faulty program planning and candidate selection such as:

1. Training should not be scheduled during seasons known to require the outlay of a great deal of time and energy for the performance of agricultural activities. Optimal times for training sessions should be arranged between local and regional health personnel and coordinated through community leadership.
2. Ample notification should be given to local health providers (sanitarios) to allow enough time for the adequate selection of program participants.
3. A major problem with candidate selection is the unwillingness of qualified candidates to participate in the program. Often the TBA who attends most births in the community declines the offer to participate in the training course. Methods to increase the motivation of candidates to

enter the course could include the opportunity to organize mother's clubs and to receive local discounts provided by merchants to trained TBAs.

4. Community studies found that program drop-outs were due to the following factors:

- \* a lack of communication between the TBA and the sanitario in charge of supervision;
- \* the decreasing ability of older TBAs to continue to perform;
- \* community rejection of trained TBAs.

Recommendations for the decrease in the drop-out rate are specifically directed at increasing the communications between sanitarios and trained TBAs and placing a system of double-checks on the qualifications of candidates. A survey of responses made to questions of the personal history of trained TBAs indicates that 20 percent were not experienced TBAs before taking the training course. This is a major prerequisite of program entrance. It is difficult to state why it was that these persons were allowed to take part in the training course, but it is clear that in the future extra efforts should be exerted by the instructors to check the qualifications of each candidate. A meeting of the training team and the community leaders would quickly establish the personal reputation and experience levels of each applicant.

5. Program planning should include studies of manpower needs. In this way problems of under or over coverage can be avoided. Two of the key questions in managing a successful manpower assessment are:

- a) What is the saturation level?
- b) What are the needs?

The determination of these two factors is dependent upon information gathered within the local community, with community involvement, by the sanitario and passed onto regional health planners. To answer these questions the sanitario must find out whether the present level of trained PHC workers is sufficient to cover the needs of the community. To do this requires community sampling.

The next level of action takes place in regional health centers where optimal numbers of candidates are calculated based on needs surveys turned in at the local level. The second step in regional planning is the mapping of human resources in relationship to the presence of health care centers. Survey results (see p. for details) indicate that in some regions trained TBAs are not utilized in urban areas where hospital services are easily obtained. Thus, each area should plan their manpower

needs assessment to correspond to regional ecological, economic, social, and cultural characteristics.

## II: TRAINING

Whereas there were very few voiced objections raised by trained TBAs to training methods, survey results drawn from the patient and trained TBA population indicate that:

- A) Equipment currently provided to trained TBAs is not being used.
- B) Instruction is not being made available to non-Quechua speaking ethnic groups.
- C) The pictures used to transfer patients to local health centers are not understood by the trained TBAs from the southern and north-central sierra.

It is recommended that the following modifications be implemented to increase the effectiveness of TBA performance.

### A) Equipment

1. Equipment should be locally obtained and it should meet the needs of each eco-zone.
2. Decisions concerning the type of equipment to be used by TBAs in each health region should be made in coordination with local community representatives. (See specific recommendations for implementation in the following chapter).

### B) Course content

In ethnically diverse high risk areas, such as isolated highlands and jungles, courses should be taught in native languages. Training teams should include one native speaker, preferably a previously trained TBA.

### C) Transfers

Further instructions should be provided to insure that trained TBAs are able to correctly interpret the pictures used for patient transfer. These pictures (located in the appendix on page        and        illustrate patients experiencing a hemorrhage, fever, and edema. The most difficult picture for the TBAs to understand was the one depicting a hemorrhage. Thirty-five percent of the informants identified this picture as representing a normal birth. The pictures illustrating fever and edema were also misinterpreted.

### III: PROGRAM OPERATION

#### A. Delivering the services:

1. In areas of highly dispersed settlements where no transportation facilities are available to the residents, local health centers should be provided with a means of transferring critically ill patients to regional hospitals.
2. This transportation could also be used by trained TBAs when visiting patients that live in inaccessible areas.

#### B. Expanding the scope of work of trained TBAs:

A general reluctance to increase the scope of work of trained TBAs has been noted among regional health providers. This view is based on the two erroneous assumptions:

1. TBAs are not capable of providing more than maternity care.
2. The community does not expect the TBA to provide more than maternity care.

There has been considerable success in the expansion of TBA skills in other countries. For example, in twenty AID PHC projects TBAs skills have been upgraded. Many TBAs are being trained to perform new duties and to function as part of a community-level health teams. American Public Health Association reports that these attempts have been most successful where it is clear that the new duties do not conflict with community understanding of the TBA role.

This study found that in Peruvian communities the role of the TBA extends beyond maternity care ( For exact statistics see table 22 ). It is also clear that contrary to popular belief, the TBA is not always an illiterate woman. Statistical information provides firm evidence indicating that these health care providers are not always illiterate. They are capable, and at times, anxious to increase their level of competence and provide additional services to their community. On the basis of three key factors, this study recommends that TBAs be provided with the opportunity to become health promoters. These factors are:

- \*1) The acceptance of the community of TBAs as general health care providers.
- \*2) The ability of some TBAs to perform health promoter activities that include the provision of emergency care, prescription and application of some pharmaceuticals, the treatment of patients of all sexes and age categories.
- \*3) The TBAs competence in terms of intelligence and functionality.

#### IV: SUPERVISION

Inadequate supervision of trained TBAs results in the following problems:

A. TBAs who do not receive regular supervision are:

- \* not motivated to keep records of services provided;
- \* more likely to revert to prior methods of patient care;
- \* more likely to "drop-out" of the program;
- \* and more likely not to transfer patients to local health centers.

B. Inadequate knowledge of the on-the-ground operation of the TBA program on the part of the supervisory personnel:

- \* since regional and local health planners are not aware of areas of program success or failure, inappropriate selection of program candidates, faulty teaching methods, programming, and program operation are perpetuated.
- \* trained TBAs are never informed of faulty performance, therefore, errors in TBA performance are never corrected.

Current methods of supervision of trained TBAs include infrequent visits of regional and local health planners to the homes of trained TBAs; inspection of the written records of services performed by trained TBAs; and infrequent meetings held in local health centers (postas médicas). There has been no attempt at routine evaluation of the on-the-ground performance of trained TBAs.

The methods recommended for increasing the effectiveness of current methods of supervision are:

- \* performance testing and
- \* increase in program coverage.

##### A. METHODS OF PERFORMANCE TESTING

The ultimate evidence of the success of TBA training lies in the improvement of performance of trained personnel. Evaluations should investigate the quality and quantity of care provided to the community by trained TBAs. The key issue is to incorporate community based evaluations into the normal functioning of the TBA program.

1. Community-based evaluation methods

The performance of trained TBAs can be assessed in terms of the quality of their work and the amount of services they provide. With respect to quality, the primary objective is to determine the extent to which the trained TBAs are following program directives. For example, are they applying the safe methods of practice taught them during the training program? With respect to quantity, the primary objective is to test the extent of the increase in the numbers of mother and children receiving services from the trained TBAs.

a) Assessment of quality of services:

Evaluations of the quality of services delivered by trained TBAs in Peru are presently determined by written tests given immediately after the training program has been completed. However, high scores on tests of individual performance administered during the training program do not necessarily mean that the TBA will apply what she has been taught once she completes the program. This may be so for several reasons, one of which might be that the training program failed to persuade the TBA that certain practices are really worth applying. She may even believe that some of them are hazardous. For example, when answering test questions or when practicing under supervision, she may behave in a way that indicates that she has understood the importance of using a clean instrument to cut the cord or of referring to the health center persons whose health problems she cannot handle. Privately, she may think that the importance of cleanliness is exaggerated by professionals and that the appropriate response to complications is prayer rather than referral (WHO 1979: 29-30). The immediate supervisor (or other person doing the assessment) should periodically accompany the TBA on her rounds to see how she cares for women at various stages of the maternity cycle. Moreover, evaluation of the quality of practice provided by trained TBAs can be enhanced if the supervisor interviews several of the TBAs clients in order to obtain information on the type of advice the TBA has given them with respect to, for example, nutrition, infant feeding, and family planning, and the manner in which she has treated the newborn baby's umbilical cord.

The evaluation methods used to ascertain the quality of services provided by trained TBA on a regional level would be based on determination of on-the-ground performance rather than by written examinations as is now the procedure in all health regions surveyed.

b. Assessment of quantity of services

One of the objectives of TBA training is to expand the percentage of the population that receives services from trained TBAs. This study found that only a small percentage of the population is aware of the presence of the trained TBA. To increase the level of utilization of trained TBAs community studies should be implemented that provide answers to the following questions:

- (1) Are proportionately more women receiving prenatal and postnatal care than was the case before the training program for TBAs was started?
- 2) Are more deliveries being attended by trained than by untrained TBAs?
- (3) Are more people in the village accepting or continuing modern family planning methods?
- (4) Is more frequent use being made of the services provided by the centrally organized health agencies?
- (5) What percentage of the community is aware that a trained TBA is present in the community? And furthermore, what percentage of the community is aware of the types of services that the trained TBA is prepared to deliver?

Methods for implementing this type of evaluation are presented in the following chapter.

B. PROGRAM COVERAGE

Random samples conducted in the Departments of Ancash and San Martin indicate that only a very small percentage of the population was aware of the presence of the trained TBA. It is evident that program coverage must be improved.

THE KEY ISSUE IS THAT THE PREPARATION OF THE COMMUNITY TO ACCEPT, OR EVEN TO DEMAND THE SERVICES OF TRAINED TBAs IS AS IMPORTANT AS THE PROGRAM ITSELF.

Experiences derived from the success or failure of methods used for TBA training in other countries are extremely good general indicators of directions to be taken for program modifications. A conceptual problem noted by Mani (1980:399) that accounted for the failure of TBA training in India is that the "program was supply-based rather than demand-based". In other words, through these training programs TBAs are simply supplied to the community

without creating a felt need for such improved services. In the communities surveyed by Mani (1980) no effort was made to educate the rural community about the value of the TBA training program. In fact, Mani found that some residents of a few villages in which the trained TBA were already working were not even aware that their midwives had undergone necessary training.

It is apparent that community education must be a vital part of the TBA training program. However noble this concept sounds on paper, the reality of coordinating a community education program in symphony with TBA training depends on the achievement of the following series of steps:

1. Community involvement is solicited in advance of the TBA training program. Sets of decisions that effect the training program are made in coordination with community leadership, such as: the selection of candidates, the equipment to be provided to the TBA, scheduling of the TBA training sessions, and input from the community about the methods they would recommend for program maintenance.

2. Community action is continued after the completion of the TBA training. Community action is solicited to provide means of transmitting information to the community all throughout the year. For example, in coordination with radio broadcasts publicizing the identity and location of all primary health care providers, the community spokesmen announce the names and location of primary health care providers during the weekly market day. The use of radio as a instrument in primary health care programs is described by the American Public Health Association (1982c).

3. Monitoring program coverage

The local level health care provider, usually the sanitario, is responsible for conducting quarterly random samples of the community to determine whether the communication system has reached its goal of informing the public.

4. The continuation of community involvement over time

It is felt that by coordinating each step of TBA training with local leadership, a sense of responsibility for the success of the program can be instilled into community leadership.

On a smaller scale, to maintain a nucleus of involved patients TBAs should offer practical incentives . The method recommended is the formation of revolving credit unions. This method was found to have achieved success in Nigeria (Okonojo 1979). While it might not be a universal solution to the problems of client-maintenance in all areas of Peru, it is recommended for specific areas. Details of the revolving credit union and their recommended locations are provided in the following chapter.

## 5. Factors inhibiting community participation

Strategies designed to coordinate community education programs with TBA training must take into account obstacles that have been found to decrease or inhibit community participation.

The American Public Health Association (1982b) report of 52 AID assisted PHC projects found that the general low level of community participation is the result of both pre-existing community and government attitudes and of shortcomings in project design and implementation.

In Peru, governmental attitudes do not present a problem. However, the pre-existing community attitudes do exert considerable pressure in the formation of community action in Peruvian communities.

## V: PROGRAM MAINTENANCE

While it is true that program maintenance is dependent upon the coordinations of actions taken on the levels of regional and local health professionals and the local community, to keep the trained TBA optimally functioning in the community it is imperative to bear in mind that the lead actors in the theatre of TBA performance are totally voluntary. The community, the TBA and the patient participate due, not only to pressure exerted by regional health personnel, but because of perceived benefits. It is therefore, of utmost importance to continually re-inforce community participation. Incentives to contribute must always remain at a high level. Methods found to be successful in maintaining a high level of community participation are.

### A. TBA INCENTIVES

1) At present the TBA receives a certificate at the termination of the training course that states her qualifications to serve as a trained birth attendant in her community. There is no time limit set on the validity of the certificate.

2) It is recommended that this certificate be valid for only one year. Thus, maintenance of the status of trained TBA must be continually renewed. To maintain status as a trained TBA, the TBA must attend monthly or bimonthly meetings in order to receive the coupons or stamps that will be used at the end of the year to entitle her to receive a new certificate.

3) Therefore, attendance at bi-monthly meetings held at the local health center results to two benefits for the trained TBA:

a. She receives stamps entitling her to receive discounts from local merchants; and

b. She receives stamps that can be used at the end of the year to receive a new certificate .

4) During these meetings sanitarios keep tabs on the activities of the trained TBAs, such as review records of services performed; re-inforce critical areas of TBA performance; re-supply materials such as iodine; and listen to complaints or difficulties encountered by the TBAs.

#### B. COMMUNITY INCENTIVES

i) A relationship is established between local merchants and health services whereby these private enterprises provide discounts to trained TBAs.

2) Bimonthly attendance by TBAs is then rewarded by colored tickets that entitle TBAs to obtain the discounts from local merchants.

3) The community also contributes to support the trained PHC worker by exempting them from community labor groups.

#### C. PATIENT INCENTIVES

The study found that patients prefer to use the services of trained TBAs once they have had experience with them. Patients state that trained TBAs provide greater pre-natal care, use more hygienic techniques during the birth, and visit them more frequently during the post-partum period. The problem is that relatively few of the female population is aware of the superior services provided by the trained TBA. To increase the patient population treated by the trained TBA it is recommended that a medium to be used to insure greater patient-TBA contact. This medium is the rotating-credit union that takes place during monthly or bimonthly mother's club organized by the trained TBA.

This strategy benefits local women by providing them with small amounts of cash, and it benefits the program by providing for more contact between the trained TBA and the female population. Participation of local women is assured by their opportunity to receive cash. The operation of this strategy is based on the rotating credit system used in Nigeria (Okonojo 1979); exact methods for its utilization are described in the following chapter.

The objective of this recommendation is to provide an incentive to increase the contact between the trained TBA and local females. The benefits achieved from these meetings are: increasing contact between potential patients and the trained TBA, thereby increasing opportunity for the TBA to teach local mothers lessons in hygiene, sanitation, and family planning.

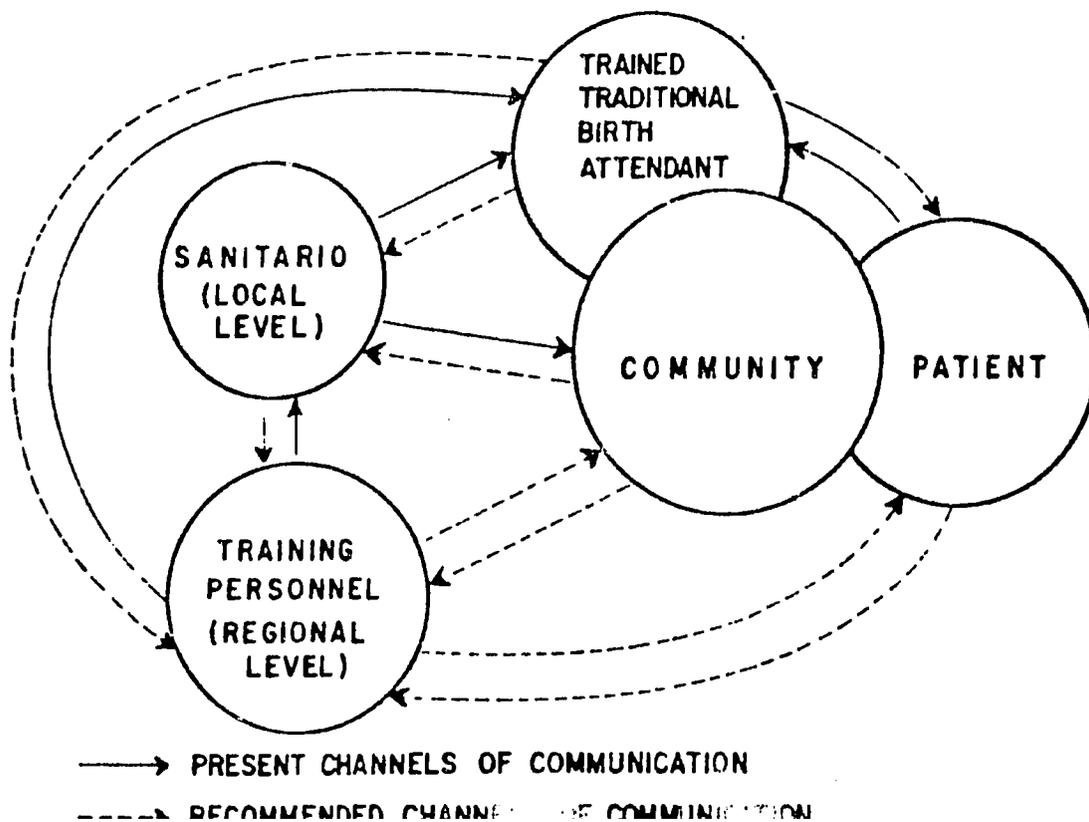
D. REGIONAL AND NATIONAL INCENTIVES

- 1) In order to optimally carry out some of the recommendations discussed above, it is necessary to increase the regional health work force.
- 2) Since the schedules of present managerial level personnel working in PHC on the regional level are already over-burdened, it is necessary to bring in additional personnel. This manpower is available. There is currently a surplus of nurses and obstetricians in large urban centers. The problem is re-locating available human resources to areas in need and providing them with a salary. Since the Ministry of Health budget cannot provide for additional salaries, it is recommended that private sector funding be sought to strengthen the delivery of PHC in rural and semi-urban areas by providing individual grants to qualified public health, nursing, and obstetric students for services of 6 months to a year in a rural area.

VI: CHANNELS OF COMMUNICATION

To increase the effectiveness of current TBA programs and to insure success in the future it is imperative to increase the role of the community in program planning, selection of candidates, program operation, supervision, and maintenance. As shown below there is a lack of contact between regional health professionals and the community leadership. The following model illustrates the current levels of communication in solid black lines and suggests the implementation of additional lines of communication in broken lines.

CHANNELS OF COMMUNICATION



## CHAPTER VI: IMPLEMENTATION MODEL

The aim of this chapter is to incorporate recommendations from the evaluation into the existing norms and regulations for the TBA training program as designed by the School of Public Health Lima, Peru, and the Dirección General de Programas de Salud, Ministerio de Salud (1980), Lima, Peru. The following presents a model program for the planning, execution, supervision, and evaluation of future TBA training. Recommendations will also be described for recruitment and program maintenance. To indicate where changes have been introduced an asterisk will be placed in the left margin.

### I: General Functions of the Trained TBA

- \*(a) The trained TBA's sphere of activity focuses on the mother during all stages of the maternity cycle, and the infant, but it does not exclude the provision of attention to all members of the community. The provision of care depends upon the qualifications of each trained TBA. There will be some trained TEAs who will be able to provide a wider range of services and some who will only be able to service the mother-infant -young child.
- (b) The TBA operates in coordination with the other local community health providers such as the promotor and the sanitario.
- \*(c) She is obligated to attend bimonthly meetings held in the local health center in order to maintain her status as a trained TBA.
- (d) During these bimonthly meetings reports of all activities are brought into the local health center.
- (e) The trained TBA participates in the training of new TBAs whenever possible.
- (f) She helps to promote basic sanitation in the community by instructing mothers during meetings of the mothers clubs.
- \*(g) She organizes and directs the local revolving credit union held during the mother's club meetings.

#### The Community Mother's Club-

One of the major problems in the program maintenance is the decline in interest in the program through time. Previously, it was assumed that the community's continuing interest would be self-generating. However, recent studies by the American Public Health Association ( 1982 a,b) illustrate that if there are no fixed plans at stimulating the community in maintaining PHC programs, the community loses interest.

The method advocated here for the continual involvement of trained TBA and patient is the formation of mother's clubs. These have been shown in Nigeria (Okonjo 1979: 326-331), as being highly effective methods of:

1. Providing small amounts of capital to rural and semi-rural women.
2. Establishing a forum for the enhancement of the trained TBA-patient relationship.
3. Increasing the role of the TBA in providing health care to women on a regular basis.
4. Increasing the status of the trained TBA in the community.

#### Methods of Establishing A Community Mother's Club

1. The trained TBA contacts all women of reproductive age in the community.
2. She invites them to a general meeting in her home, in which they are explained that by contributing a small amount each month. They can expect to have access to the sum of all of the money collected at each month on a rotating basis.
3. The trained TBAs assures that the collection of money is fair, and that each member has an equal opportunity to profit.

#### 4. PROGRAM PLANNING

##### A. Regional Level

- \*1. Regional health planners visit target area to discuss potential dates for course with local level sanitarios and community leaders.
- \*2. Regional health planners visit target area to discuss potential candidates with community leaders.
- \*3. Regional health planners appraise the needs of the community based on survey conducted by sanitarios which provide details of the numbers of women of reproductive age. For planning refresher courses the sanitarios surveys numbers of patients currently being treated by trained personnel.

\*4. If the target community is a small town, regional health personnel visit the nearest large city to discuss with merchants the possibility of contributing to the program by offering discounts to the newly trained TBAs.

\*5. Regional health planners insure that equipment provided to the trained TBAs is locally available and easily replacable.

KEY ISSUE- BUILD INDEPENDENCE, NOT DEPENDENCE.

\*6. Regional health planners prepare a manpower needs assessment. This is presented in the form of a map indicating the location of present human health resources in the area in which future training courses are planned.

#### B.\*Local Level

1. Sanitarios discusses with community leaders potential candidates.
2. If it is not a new course, the sanitario surveys the community to find what percentage of the women of reproductive age are currently being served by trained TBAs.
3. The sanitario visits the houses of women of reproductive age to inform them about the course and present to them their opportunity to join the future mother's club.
4. The sanitario discusses with potential candidates the opportunities that they will have for organizing the revolving credit union and other advantages of being a trained TBA, such as having access to discounts with local merchants.

#### C.\*Community Participation

1. One of the major recommendation of this report is to increase the role and function of the local community in all stages of the TBA program. However, not all communities are alike. These recommendations will operate most efficiently in well-structured communities in which there already exists strong community participation in other activities. For example, highland indigenous communities are known to have highly structured organizations. In fact, the community structure is at times impervious to the destructive effects of westernization ( see Isbell 1978). Strong internal structure is also characteristic of lowland indigenous Peruvian communities ( Shoemaker 1981:).

2. In areas where there is poor or non-existent community organization, such as the montaña, or the coast, the sanitario and regional level health personnel can facilitate interactions between community members by providing them with goals to work toward. Since in coastal and montaña communities local elite businessmen function in the capacity of local leaders, it is this group that regional and local health officials should contact for coordination and planning of new training programs.

3. In areas where there is no culturally recognized role of traditional birth attendant, the local sanitario organizes the mother's clubs. For example, in many indigenous Peruvian lowland Indian communities the role of traditional birth attendant does not exist. Neighboring women and family members attend births. In these areas local sanitarios can provide minimal birthing equipment to mothers on an annual basis.

## II: EXECUTION OF THE TBA TRAINING PROGRAM

### A. Selection of Candidates

#### 1. Selection Criteria and Prerequisites

- Role as a functioning birth attendant
- Community acceptance and respect
- Frequency of prior birth attendance
- Residence in the area
- \*Age is of less importance than physical capabilities
- Good health
- Willingness to learn

### B. Obligations of the trained TBA

- Maintain personal cleanliness
- Keep the nails on the hands clean and short
- Use a clean apron
- Keep the hair covered or held back from the face
- Maintain the equipment used for a birth clean and ready to use at all times
- \*Medications and injections can be given by qualified TBAs

### C. Mechanism of Selection and Admission to the Course

-\*Decisions as to candidates qualifications are made during the planning stage when regional health personnel are visiting the community.

-\*Decisions are made jointly between local indigenous or elite leadership and local and regional health planners.

D. Training Staff

- \*Regional nursing and obstetriz staff aided by at least one locally trained TBA
- \*Training staff have functional ability at indigenous languages and if this is not possible, have indigenous bilingual trained TBA teach the course with the instructions of health professionals.

E. Activities of the Trained TBA As A Health Provider Pre-Natal:

- \* 1. Encourages pregnant women to join the mother's club.
- \* 2. Visits each pregnant woman who does not participate in the mother's club at her house each month.
- \* 3. During meetings of the mother's club inquiries as to the health of pregnant members and arranges to visit them at their homes if there is a problem.
- 4. During meetings teaches the women about hygiene, nutrition, and care of the new-born, also introduces the idea of birth control, encourages them to use the services of the health center for immunizations against tetanus, and for other services.
- 5. Is aware of symptoms of alarm during pregnancy, such as fever, bleeding, persistent vomiting, edema, headache, absence of fetal movements, convulsions, and weight loss.
- 6. Treats only the cases that are within the range of services of the TBA. Refers high risk cases to the health center.
- \* 7. Coordinates a system of transportation of high risk patients with sanitarios.
- \* 8. Is honest in the handling of revolving credit union funds. Assures that all participants have a chance at winning.

Birth-

- 1. Does a simple exam to assess the stage of labor.
- 2. Prepares the birth area by making sure that there is a clean surface upon which the woman can support herself.
- \* 3. Does not discourage local customs and practices that are harmless.

4. Disinfects and cleans all equipment to be used during the birth.
5. Cleans the patient in the manner that she will accept. Encourages the patient to accept vaginal cleaning.
6. Gives her emotional support.
7. Is aware of signs of alarm such as:
  - fever
  - edema
  - loss of meconial liquid.
  - prolonged labor.
- \* 8. Has transportation available in case of an emergency.
9. Makes sure that hands are clean and brushed.

#### The Care of the Newborn-

1. Observes the crying and skin color of the newborn.
2. Cleans all secretions.
3. Cuts and ties the umbilical cord with clean instruments, applies an antiseptic and covers the area with a clean cloth.
4. Applies an antiseptic substance to the eyes.
5. Checks the infant for malformations.
6. Keeps him warm.

#### Expulsion of the Placenta

1. Checks the placenta and make sure it is complete.
2. Does not forcefully massage the patient to accelerate the expulsion of the placenta.
3. If there seems to be an unusual delay in the expulsion of the placenta, contacts the health center.
- \* 4. Only those TBAs who are trained to use injections are allowed to use injections in emergency situations.

Care of the Mother -

1. Is aware of signs of danger after the birth such as-

- headache
- hemmorage
- convulsions
- chills

Care of the Newborn-

1. Is aware of signs of danger such as-

- low birth weight
- malformations
- ictericia
- cicnosis
- paleness

Post-Partum

- \* 1. Visits the new mother in her home on a regular schedule. even if she does not request the visit.
  - \* 2. Reminds her of lessons learned in the mother's club about breast feeding, her own nutrition, and hygiene.
  - \* 3. Encourages her to breast feed immediately after birth, even if this conflicts with local values.
4. Teaches her to care for the newborn's umbilicus.
5. Is aware of danger signs-
- fever
  - abdominal pain
  - hemorrhage
  - urinary retention
  - foul smelling vaginal secretions.
6. Discusses with her a birth control technique that she finds suitable.

### III. EVALUATION

Community based evaluations are executed to find-

#### 1. The level of performance of trained TBAs.

- Sanitarios perform a simple survey of patients that had used the services of trained TBAs.

- Survey results are brought to the bimonthly TBA meetings so that TBAs are aware of their own deficiencies.

#### 2. The level of activity of each trained TBAs.

- Sanitarios survey the community to ask how many of the women of reproductive age are using the services of the trained TBAs.

- This result is fed back to the regional health personnel who can then ascertain whether it is necessary to train additional TBAs.

### IV: SUPERVISION

1. Supervision is handled at the local level through the constant monitoring of TBA activity by population surveys and at bimonthly meetings where problems and misunderstandings can be resolved.

2. This information is passed to regional health personnel.

3. Each trained TBA 's status is not automatically renewed from one year to the next. The status of trained TBA is renewed annually by the possession of stamps passed out at the bimonthly meetings of the trained TBAs and the sanitario. The certificate is replaced each year by a new one.

### V: PROGRAM MAINTENANCE

#### 1. Community Education-

- To assure that the community is aware of the identity and location of trained TBAs messages are broadcast on radio and are delivered during weekly market days by either local leaders or the sanitarios.

- To obtain radio time either a request can be made at local radio stations for free promotion or private voluntary organizations that sponsor public promotion of health can be approached, such as Bahai ( American Public Health Association 1982, c).

2. Mother and TBA clubs function in order to maintain high levels of incentives to keep the program active.

3. TBA- Sanitario bi-monthly meetings. The trained TBAs are obliged to attend bi-monthly meetings at the local health care center.

During these meetings the TBAs receive-

- a. guidance from the sanitario in handling difficulties.
- b. encouragement to continue the mother's clubs.
- c. stamps which they keep to put on their training certificates.
- d. stamps which they can use to receive discounts from local merchants.

During these meetings the sanitarios receive the reports of the TBAs containing their work record for the last two months.

4. THE KEY ISSUE IS - TO MAINTAIN INCENTIVES, MAINTAIN PARTICIPATION AND COMMITMENT AT EACH LEVEL.

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