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PRICOR

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COUNTRY REPORT SERIES

PAKISTAN

SYSTEMS ANALYSIS OF THE REGI
MODEL BHU

SYSTEMS ANALYSIS OF THE REGI MODEL BHU

SUBMITTED BY PRICOR/PAKISTAN
PRIMARY HEALTH CARE PROJECT
FUNDED BY USAID

15 August 1989

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PREFACE

Over the past decade, national and international commitment to extending basic health services to underserved urban and rural populations in developing countries has led to major investment in primary health care (PHC) and child survival program strategies. However, these programs continue to face persistent problems with underutilization of services, lack of knowledge and acceptance of home-based interventions, and at times, inadequate quality of services provided. Typically, program managers lack specific information about how service delivery activities and support functions such as supervision, are routinely carried out.

While surveys and evaluations have tended to focus on measuring program inputs (such as training and supplies), outputs (such as number of services delivered) and impacts (such as changes in morbidity rates), relatively little attention has been devoted to analyzing the performance of the activities that produce a given outcome. Yet, opportunities to improve the effectiveness of PHC and child survival programs at the operational level clearly depend on strengthening these service delivery and support processes.

Responding to the need for better information on the process of service delivery, the Agency for International Development has launched, through the Primary Health Care Operations Research Project (PRICOR) Project, a major international effort to document and analyze the activities of PHC programs in developing countries. PRICOR was established in 1981 under a cooperative agreement with the AID Office of Health to help developing countries improve their PHC and child survival programs through practical, decision-oriented management studies and operations research. In its second phase, a major PRICOR objective is to develop new and innovative ways of identifying and diagnosing discrete problems in the process of service delivery that will lead to measurable improvements in program performance.

PRICOR staff now are refining and applying a systems analysis approach that allows program managers to accurately describe how key components of the PHC program actually operate and to identify the specific weak points and bottlenecks that impede effective delivery of PHC services at the peripheral level. The systems analysis relies on direct observations, key informant interviews, limited surveys, and other rapid assessment methods to provide decisionmakers with a comprehensive picture of program strengths and failures. By shifting the focus from input and outcome measures to process indicators, systems analysis provides concrete data that lead to tangible improvements, through immediate corrective action or short, problem-solving studies.

The PRICOR Country Report series presents the efforts of PRICOR staff and investigators from collaborating institutions to apply in some dozen countries practical methodologies for observing and measuring how PHC service delivery activities are being carried out. This volume presents PRICOR country study activities conducted at the Regi model Basic Health Unit in Northwest Frontier Province (NWFP) of Pakistan, at the request of provincial and local health authorities. The purpose of this study was to document the current operations of the model BHU as a first step in finding ways to improve the effectiveness and acceptability of that model, and eventually of other BHUs in the province.

David D. Nicholas, M.D., M.P.H.
Director
PRICOR Project

ACKNOWLEDGEMENTS

The initiative for a Systems Analysis of the Regi Model Basic Health Unit (BHU) came from the responsible local and provincial health authorities who had established the model unit and were eager to improve its operations and to transfer its lessons throughout the district, division, and province. Their consistent participation and encouragement in designing and implementing the Systems Analysis was invaluable, and their readiness to consider the findings, both weaknesses and strengths, have been an example to all who seriously seek to improve the delivery of Primary Health Care. We gratefully acknowledge the assistance and support of these dedicated health professionals:

Dr. Ali Sher Khan, Ex-Secretary of Health, NWFP
Dr. Sardar Ali, Director of Health Services, NWFP
Dr. Hakin Khan, Division Director of Health, Peshawar Division, NWFP
Dr. Irfan Mir, District Health Officer, Peshawar District, NWFP
Dr. Abdul Karin, Medical Officer In-Charge, Regi BHU

We are also grateful to the following individuals and institutions who assisted at one stage or another throughout PRICOR activities in Pakistan:

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Mr. Gahffar Ali, Stenotypist

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Ms. Anne Arnes, Chief HPN, USAID/Islamabad
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Dr. Tara Upreti, Training Advisor, PHC, USAID/Islamabad
Mr. Kenneth Davis, Liaison Officer, USAID/Peshawar

Finally, we are grateful to the staff of the Regi Model BHU, to PRICOR and NWFP Health Department staff, to PRICOR consultant Dr. Michael Bernhart, to those who served as observers and interviewers, and all those who directly or indirectly helped us in this task.

Dr. Jeanne S. Newman
Director PRICOR Pakistan

Dr. Anwar Aqil
Technical Representative
Pricor Pakistan

Islamabad, 15 August 1989

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ACRONYMS

ARI	Acute Respiratory Infection
BHU	Basic Health Unit
FHT	Female Health Technician
LHV	Lady Health Visitor
MCH	Maternal Child Health
MT	Medical Technician
NWFP	Northwest Frontier Province
ORS	Oral Rehydration Salts
PRICOR	Primary Health Care Operations Research
RHC	Rural Health Center

EXECUTIVE SUMMARY

Background

The model BHU at Regi, Northwest Frontier Province (NWFP) Pakistan was first conceived in 1986 by local and Provincial health authorities. It had as its objectives an ambitious list of targets for improving community health. Those objectives have undergone slight modification over the years but have remained true to the original premise:

> *that a primary care health facility will succeed in meeting its broader purposes of raising the health status of the members of the community only if it addresses community health directly.*

The Regi model BHU is representative of other BHUs in all major respects; no additional resources were placed in the BHU (however, care was taken to ensure that authorized resources were available in the surrounding area). The BHU is located in a small community fifteen minutes outside of the provincial capital. It is believed that the community is not atypical for the province, although the province is heterogeneous and the lessons learned in this model BHU may not transmit well to facilities in all other areas of the province.

Beginning in January 1989, the Regi BHU was the site of a modest operations research study which sought to find ways to improve the effectiveness and acceptability of the BHU. As the first step in OR, a systems analysis of the BHU was undertaken with the assistance of the Primary Health Care Project and PRICOR (Primary Health Care Operations Research), a USAID-funded organization.

The immediate purpose of the systems analysis was to document the current operations of the model BHU, detailing strengths and weaknesses. The longer term purpose was to improve service delivery through systematically testing proposed corrective measures for weaknesses, and to identify successful strategies for possible implementation elsewhere in the province.

Methodology

Using protocols developed by PRICOR and adapted locally, the data were collected during the last week of March and the first week of April 1989 from the following sources:

> Interviews with community members. Interviews were conducted in 487 households which contained 3622 family members; of that number, 529 were married women of reproductive age, 192 were infants of less than one year age and 661 were children of less than five years of age.
>
> Observation of the provision of health services. Researchers directly observed the provision of health care to 169 patients within the BHU and 24 patients in the community.

Interviews with patients. As patients exited the BHU they were interviewed on the treatment and instructions that they had received; 168 were interviewed.

Interviews with supervisors. Ten supervisors were interviewed on the supervisory process in general and the provision of supervision in specific service areas.

Interviews with key informants. Four individuals were interviewed regarding logistics.

BHU records were examined for five health services.

Findings

Strengths The Systems Analysis of the Regi BHU has demonstrated some areas of real strength.

- Although utilization is low, the community generally has a reasonably high opinion of the BHU; the major concern expressed was the perception of drug shortages
- Community coverage by outreach workers is surprising high; LHVs have been particularly active in home visiting, but the community reports visits also by Vaccinators and Female Health Technicians. Nearly three fourths of the families know about and use ORS and know something about ARI. Progress is reported in community's acceptance of the importance of improved water and sanitation.
- MCH services within the clinic show no major areas of weakness: adequate histories are obtained from nearly all antenatal cases; examination and treatment are well covered; patients are generally given appropriate counseling, except in the area of child spacing.
- Technical aspects of vaccination in both clinic and community are performed nearly flawlessly.
- Adequate histories are taken on diarrhea cases; most children have been given ORS, usually along with medication, however; and reasonably complete advice is given to the mother on case management at home.
- Supervisors are providing active supervision, although primarily for administrative rather than technical matters. EPI supervision is particularly strong, and includes technical as well as administrative aspects.

Areas for Improvement The Systems Analysis has documented several areas for improvement:

- Not quite 50% of the women who delivered in the past year report receiving antenatal care, and 80% of the deliveries were attended by untrained helpers (mothers, relatives, untrained dais). Few are aware of child spacing measures.
- The target of 100% immunization coverage has not yet been met, and certain aspects of patient counseling are weak. Mothers are generally not advised not to worry if the child has fever, and many mothers do not understand when they are to bring the child back for the next vaccination.

- Clinical examination of children with diarrhea is sometimes cursory, and few mothers are advised on the danger signs of dehydration.

- Probably because ARI is a recent focus area and protocols are not yet well developed and disseminated, clinical history-taking, examination, treatment, and counseling are uneven. Counseling in particular is the weakest area.

- Treatment of malaria, particularly in the community, is disappointing. Deficiencies were observed in both history-taking and examination; blood slides were made for only half the patients; and patient counseling was usually perfunctory.

Next Steps

A workshop was conducted in July 1989 to review these findings. The findings listed above were presented to the participants; suggestions for improving services were made during the workshop and those suggestions were prioritized at the conclusion of the meeting (multiple criteria utility assessment was employed in the ranking process). Each idea was evaluated on the basis of its contribution to four objectives:

- its impact on the health of the individual patient

- its impact on community health

- the feasibility of implementing the idea

- the contribution the proposal would make to increasing community confidence in the BHU

The proposals were considered in four groups: supervision, clinical examination and treatment, patient counseling and training.

The Directorate intends to follow-up on several of the suggested areas for improvement. Already feedback of the Systems Analysis findings to the relevant health officers and staff has resulted in increased attention to technical supervision and to patient counseling.

In addition, a small study is currently underway to assist staff in improving both case management and patient counseling at the BHU.

1.0 BACKGROUND

The model BHU at Regi, Northwest Frontier Province (NWFP), Pakistan, was first conceived in 1986 by local and provincial health authorities. It had as its objectives an ambitious list of targets for improving community health. Those objectives have undergone slight modification over the years but have remained true to the original premise -

- *that a primary care health facility will succeed in meeting its broader purposes of raising the health status of the members of the community only if it addresses community health directly.*

Implicit in such an objective is the requirement for the health facility to abandon a passive role of treating only the ill that come to the clinic for care. The clinic will have to take health services to the community and will have to provide services that will exert the most pervasive and long-lasting effect on the health of the members of the community.

This model BHU has been the setting for experiments on several fronts, experiments which address the following questions:

- Can a curative facility be an effective vehicle for promoting preventive and community health?
- Which interventions will be most effective in raising community health?
- What mix of resources, logistical, personnel, administrative, etc., are needed to support such a facility?

The subject of this report is a systems analysis of the model BHU which addresses each of these questions in part. The systems analysis is the first step in a process designed to improve the operations of the model BHU, and subsequently of all BHUs in the province.

1.1 Site

The Basic Health Unit (BHU) is what its name suggests, the lowest point in the health system where comprehensive outpatient medical care may be obtained. Staffed with a physician, medical or health technician, lady health volunteer, dispenser, and servants, BHUs are being constructed in every union council in the country. Operating in the area around the BHU, but not under its supervision, are a vaccinator and communicable disease control supervisor.

The Regi model BHU is representative of other BHUs in all major respects; no additional resources have been placed in the BHU (however, care has been taken to ensure that authorized resources are available in the surrounding area). The BHU is located in a small community fifteen minutes outside of the provincial capital. It is believed that the community is not atypical for the province, although the

province is heterogeneous and the lessons learned in this model BHU may not transmit well to facilities in all other areas of the province.

2.0 METHODOLOGY

Data were collected during the last week of March and the first week of April, 1989 from the following sources (see Attachment A for further details):

Interviews with community members. Interviews were conducted in 487 households which contained 3622 family members; of that number, 529 were married women of reproductive age, 192 were infants of less than one year age and 661 were children of less than five years of age.

Observation of the provision of health services. Researchers directly observed the provision of health care to 169 patients within the BHU and 24 patients in the community.

Interviews with patients. As patients exited the BHU they were interviewed on the treatment and instructions that they had received; 168 were interviewed.

Interviews with supervisors. Ten supervisors were interviewed on the supervisory process in general and the provision of supervision in specific service areas.

Interviews with key informants. Four individuals were interviewed regarding logistics.

BHU records were examined for five health services.

3.0 FINDINGS

First, a note on method of presentation: The charts are generally self-explanatory. More detailed information than is on the charts is deliberately not provided because the methodology will not support it. For example, the number of observations of clinical services is often small -- 30 to 40 patients seen -- and these were taken only during a two week period. As a result, it is not appropriate to state precise percentages. It is appropriate, however, to note orders of magnitude. For example, if a health provider rarely takes the temperature or checks the ears or throat of a patient presenting with fever, it may be concluded with some certainty that greater attention needs to be directed to the clinical examination of these patients. As is the case in any research undertaking, the results are best considered in groups so that consistency of results may be checked and patterns -- if any exist -- may be detected.

3.1 Community Health

The following group of charts depict some of the main features of community health. The key findings include:

- During the preceding 30 days, a total of 223 people out of the total 3622 were reported as ill. This would represent a 6% rate for the thirty day period. This figure is higher than the benchmark figure of 4% used by the Ministry of health and lower than the rates reported in PMRC studies conducted in other localities.

- The three diseases that accounted for the bulk of the reported cases were diarrhea (26%), malaria (24%) and respiratory infections (23%).

- Fifty-one people were reported to have died in the preceding twelve months. Diarrhea was the principal cause reported (14%) but in almost half of the reported deaths the respondent was unable to specify the cause of death or provided a non-clinical reason (e.g., "old", "stopped breathing")

- Nearly 80% of the respondents that had not been treated within the home claimed that they had been treated by a "doctor" during their most recent illness. It was not possible to determine what qualifications the "doctor" held.

When questioned on sanitation and environmental issues the respondents provided the following answers:

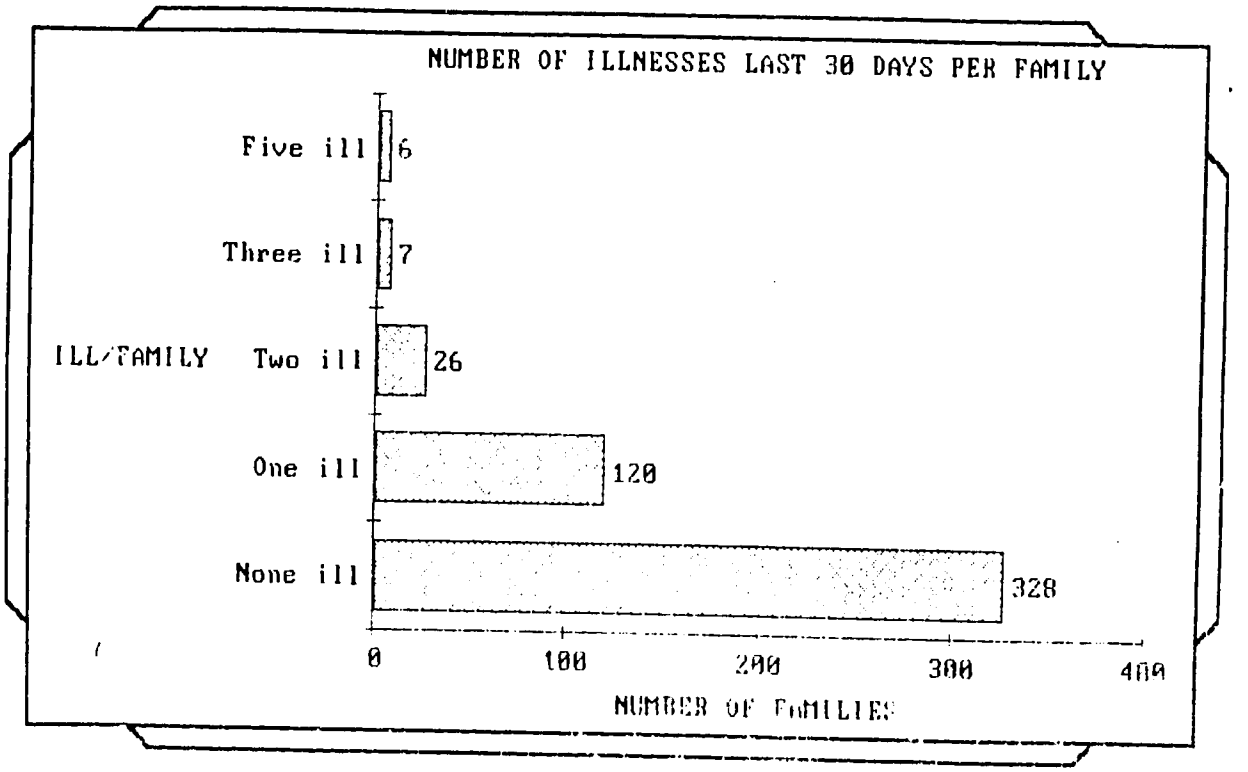
- Nine percent now obtain their water from the municipal water supply. An earlier survey reported that virtually none of the villagers had been willing to pay for the connection. Senior health officials view the nine percent figure as an encouraging one.

- One-third of the respondents have access to and use latrines. The BHU is actively promoting latrine use and has a "model" latrine in the health facility; the BHU staff will assist villagers in obtaining building supplies for a latrine.

- Two-thirds of the households visited have some provision for channeling waste water out of the house.

- Almost all of the houses visited have access to electricity.

FIGURE 1



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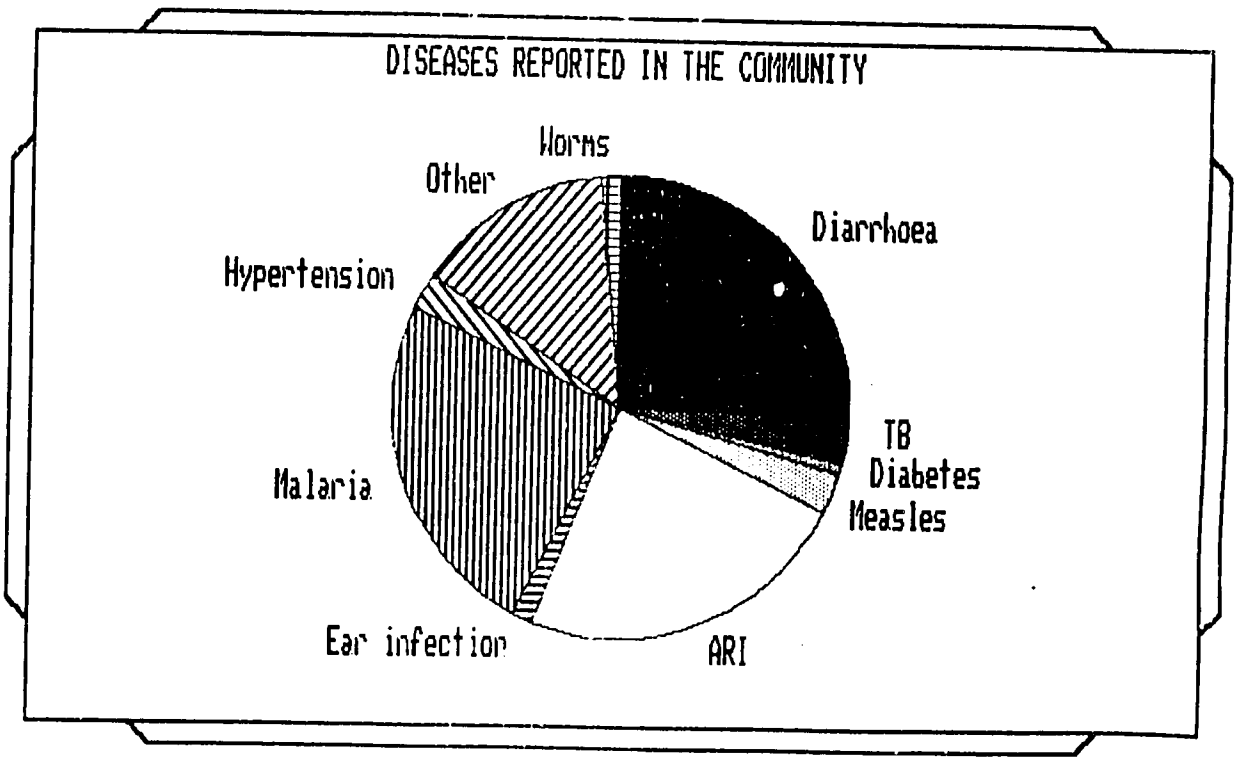

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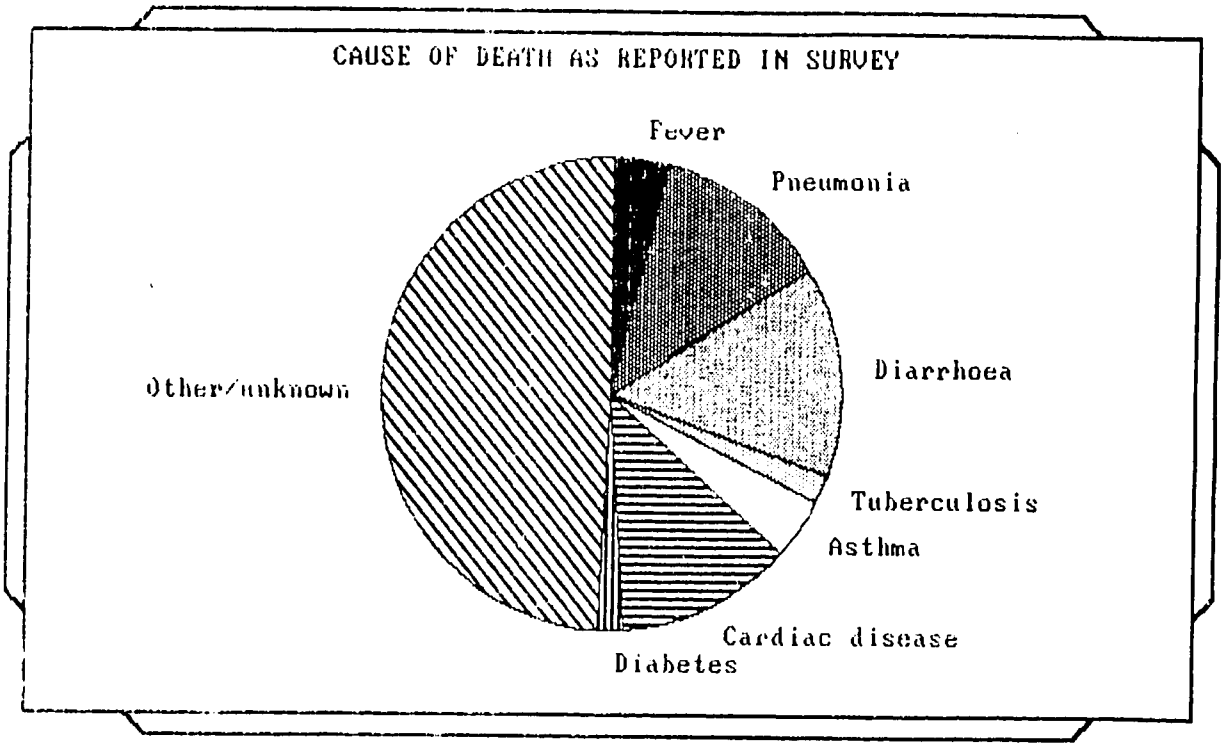

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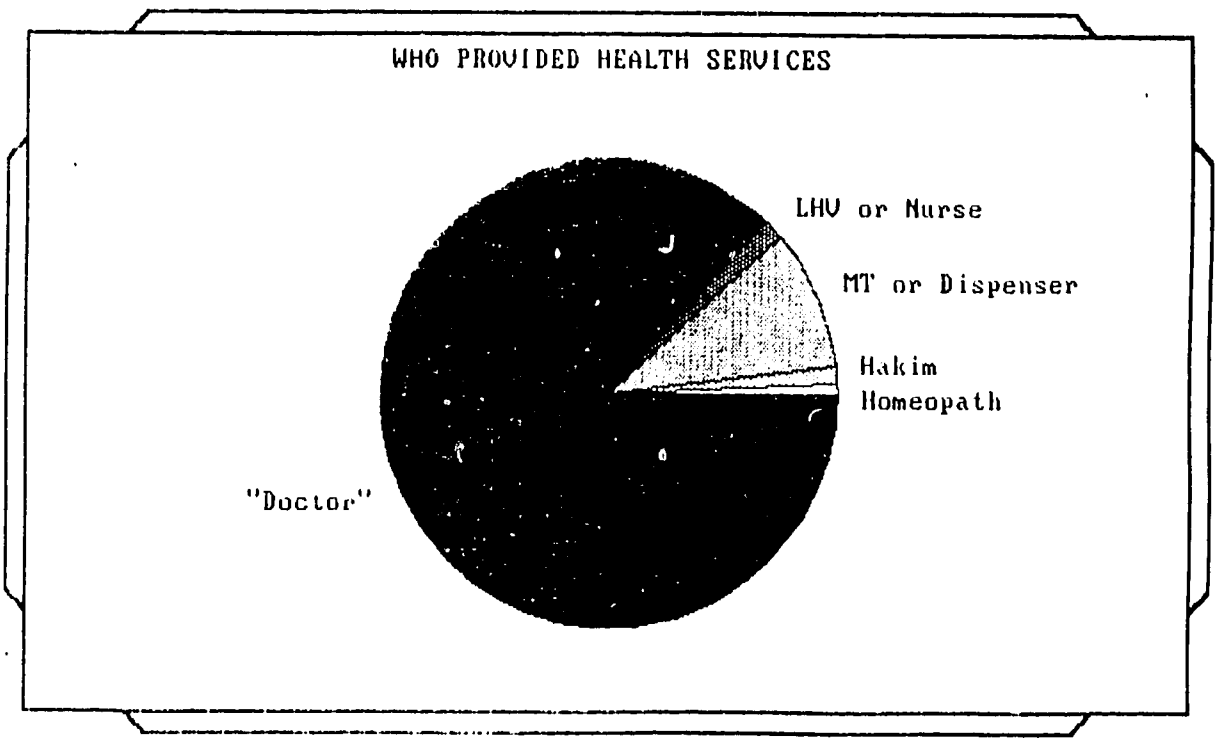

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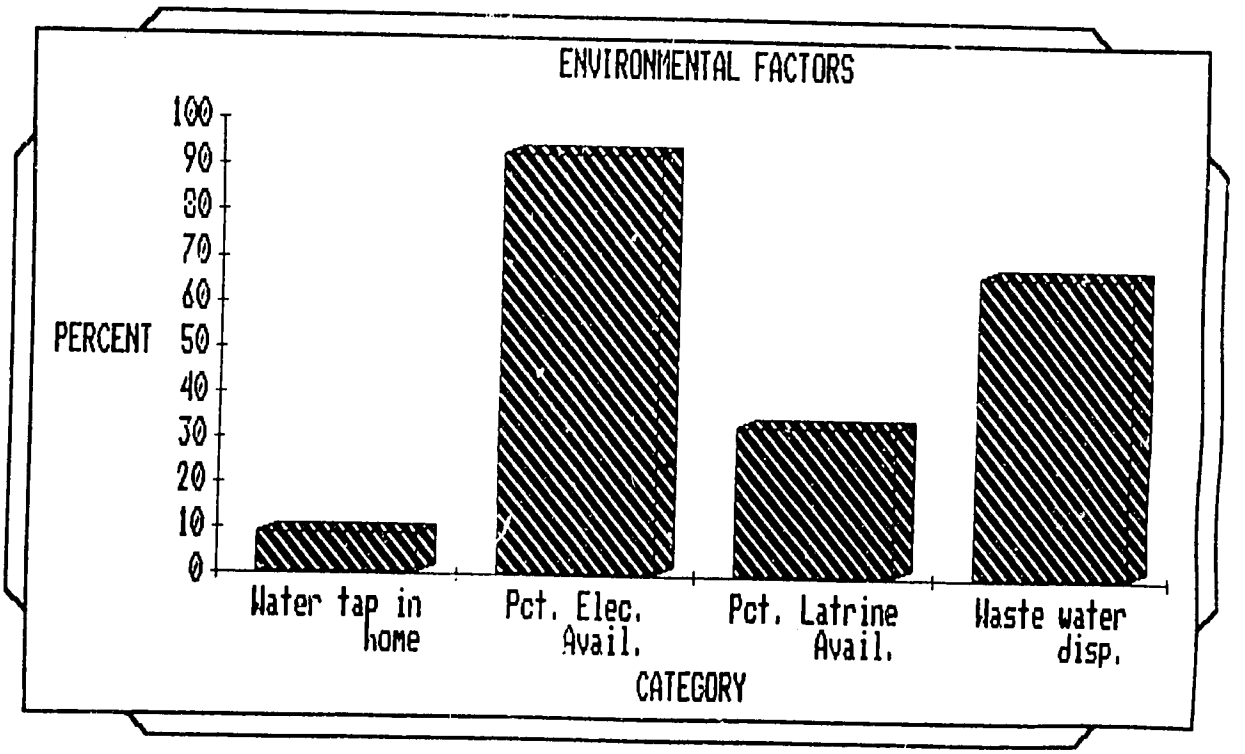

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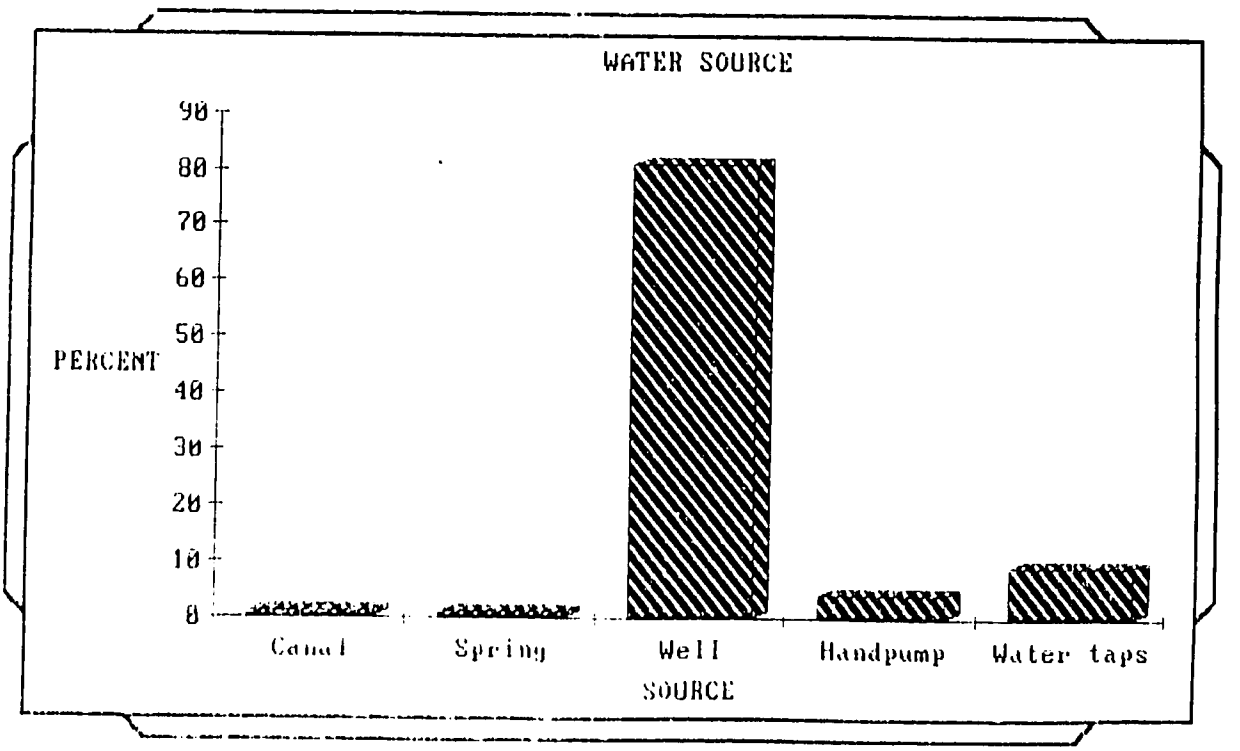
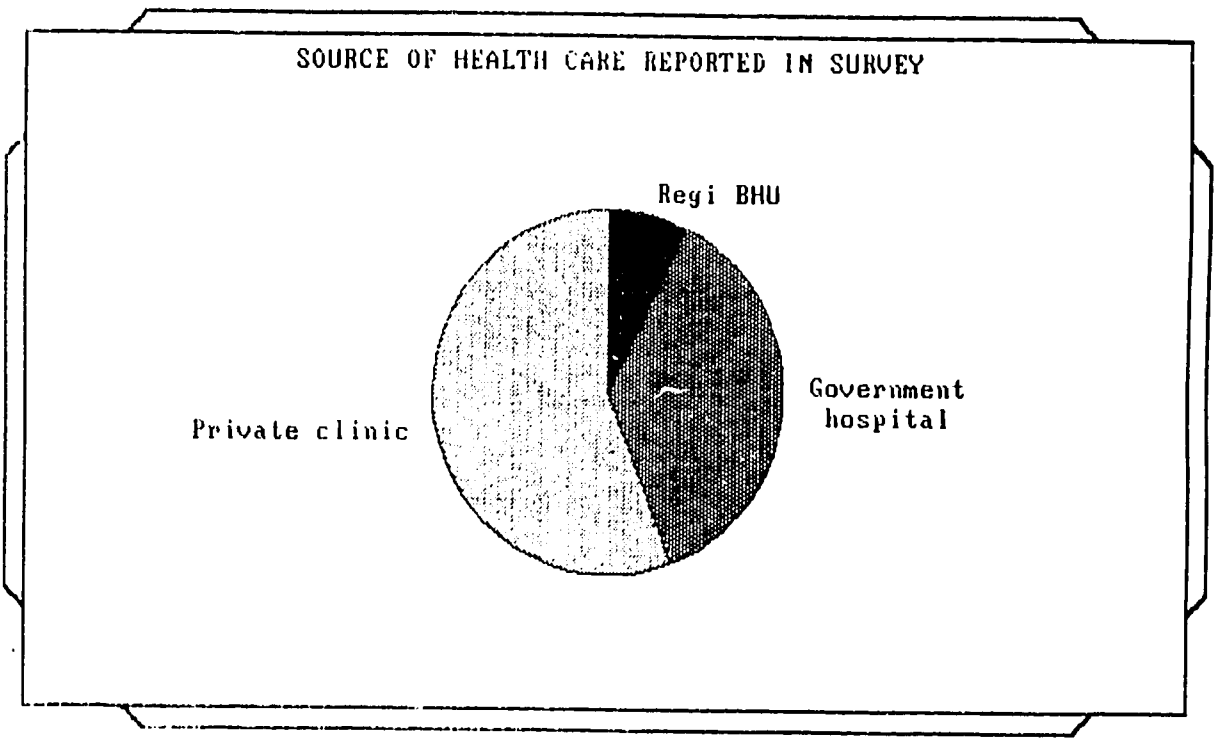


3.2 Utilization and Satisfaction

When asked where they had gone for health care recently, the majority answered that they had gone to a private doctor or clinic. Another sizable group went to a teaching hospital in the provincial capital (where many of the residents of the community work), and a small percentage (14 of those reporting an illness in the last 30 days) had gone to the BHU. This low figure for the BHU reflects a general problem of under-utilization of primary care public facilities throughout the country. In the case of the model BHU, proximity to the teaching hospital compounds problems of utilization.

The utilization of the clinic and the extent of its outreach activities were subjects of the household interviews. While only 2% of the total sample had gone to the BHU recently, 7% said they would use the BHU and 20% of the sample said they were generally satisfied with the BHU. It is difficult to specify the proportion dissatisfied with the BHU because a high but indeterminate percentage -- between 30 and 50% -- of the respondents seemed either unaware of the presence of the BHU or ambivalent about its utility; however, of those with specific complaints, lack of medicines topped the list, accounting for almost two-thirds of the reasons for dissatisfaction with the BHU. At the time of the study, the BHU was in the middle of its stock cycle and most medicines were not yet in short supply; the perception of non-availability is apparently owed to past or chronic shortages and not to current shortages.

FIGURE 7



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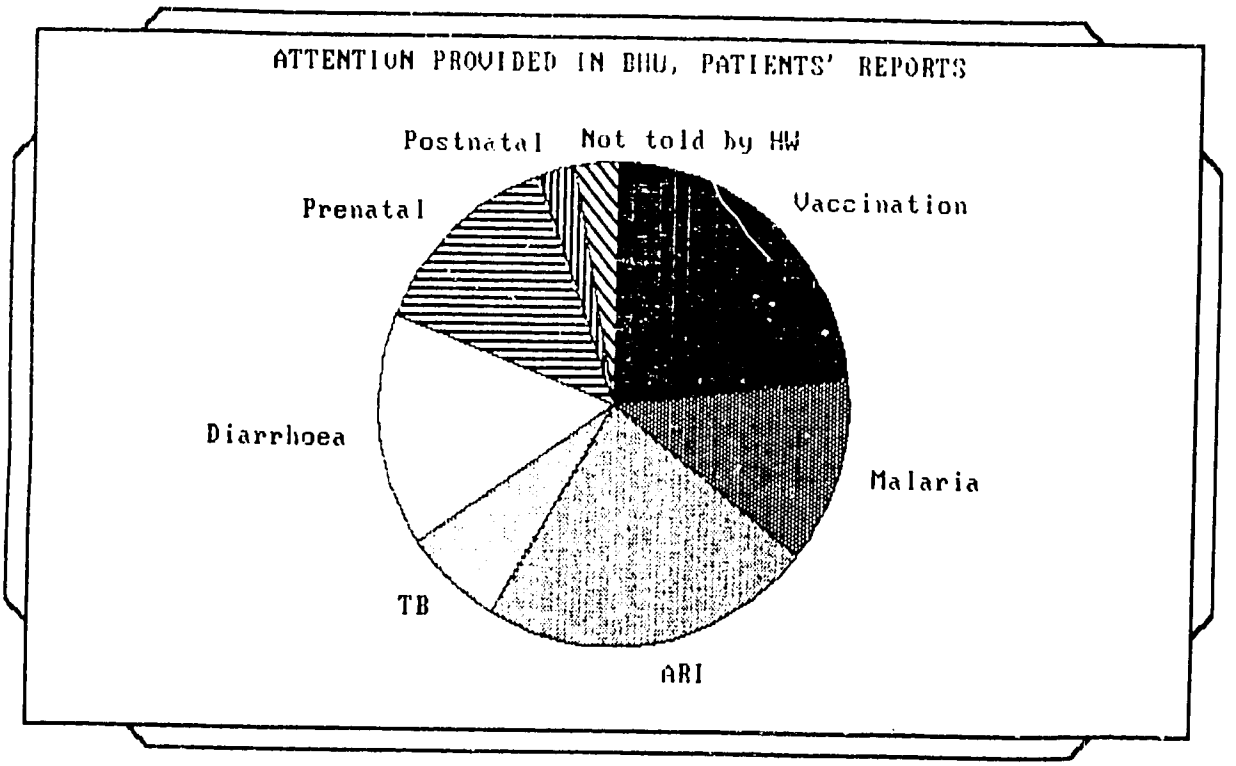

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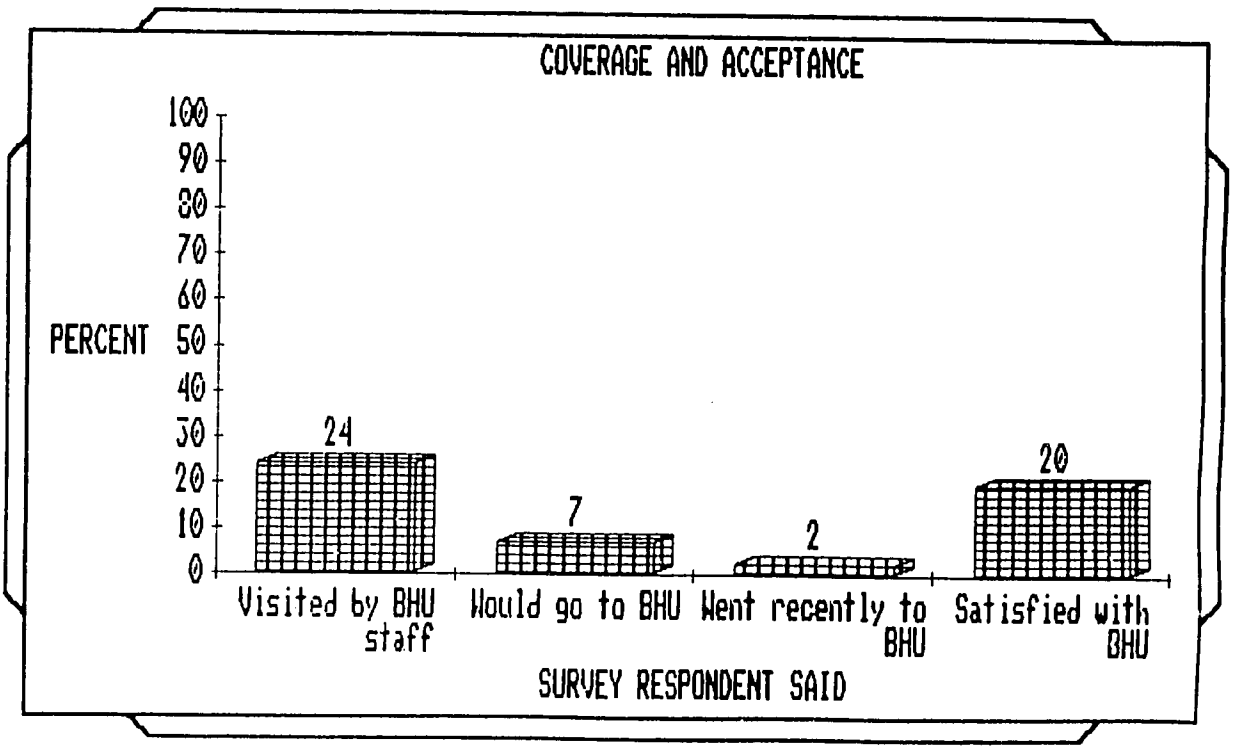

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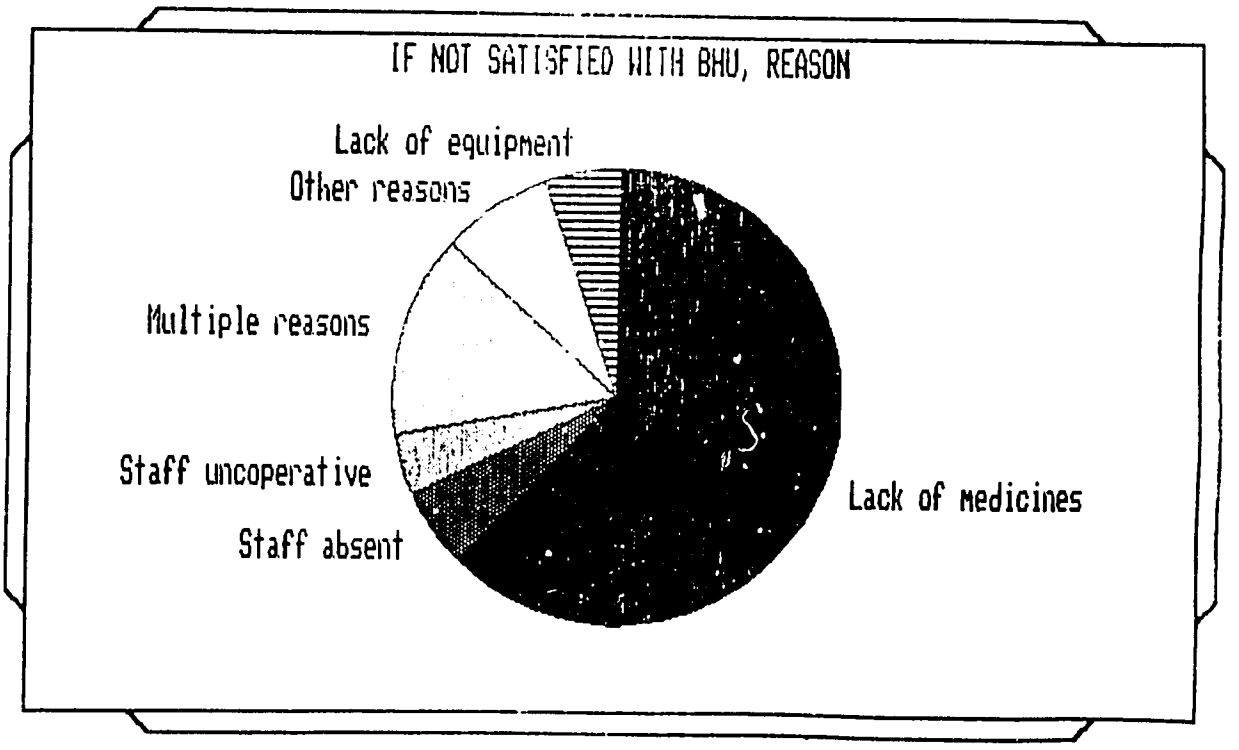


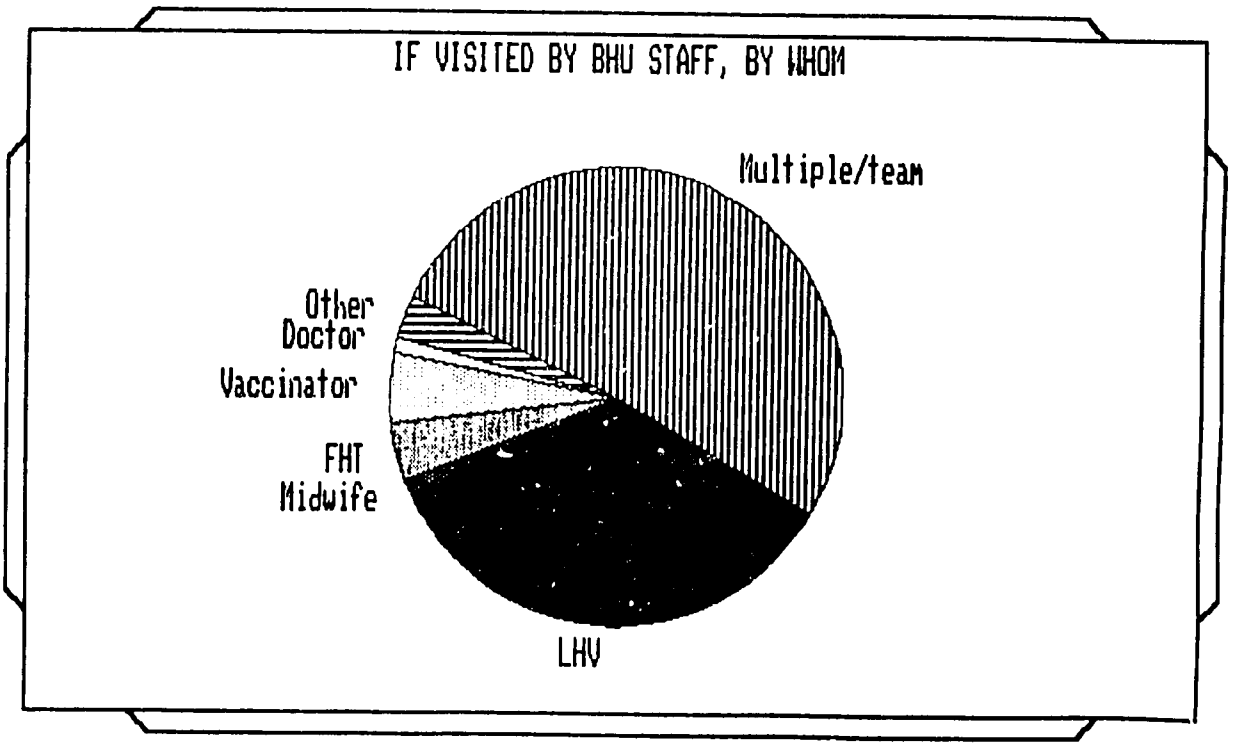
3.3 Outreach and Health Education

Outreach workers from the BHU had visited 24% of the households interviewed within the preceding 30 days; even discounting the possibility that respondents were generous in counting back the 30 day period, this is an unexpectedly high percentage. The Lady Health Volunteer (LHV), the Vaccinator, and the Female Health Technician (FHT) were the most active in visiting homes in the community.

One of the negative findings was that respondents could not recall the topic of discussion during the home visit by BHU staff. Over two-thirds of the respondents could not specify the message although the interviewers provided prompts and the health worker's visit had occurred within the preceding 30 days.

Despite that, the level of health education appeared to be high in three of the four tested areas. Almost three-fourths of the respondents knew how to use ORS -- and did use ORS -- and could list two of five symptoms of ARI. However, less than one-fifth of the respondents were aware of means to regulate fertility.

FIGURE 11



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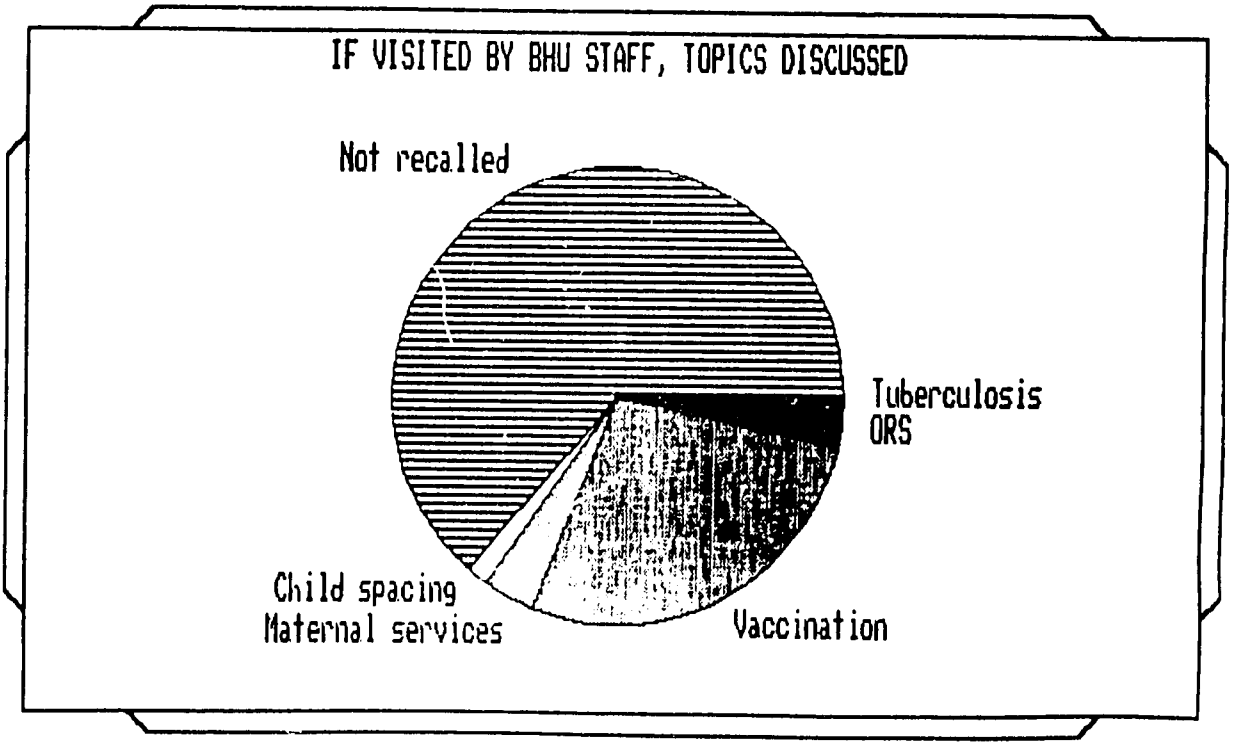

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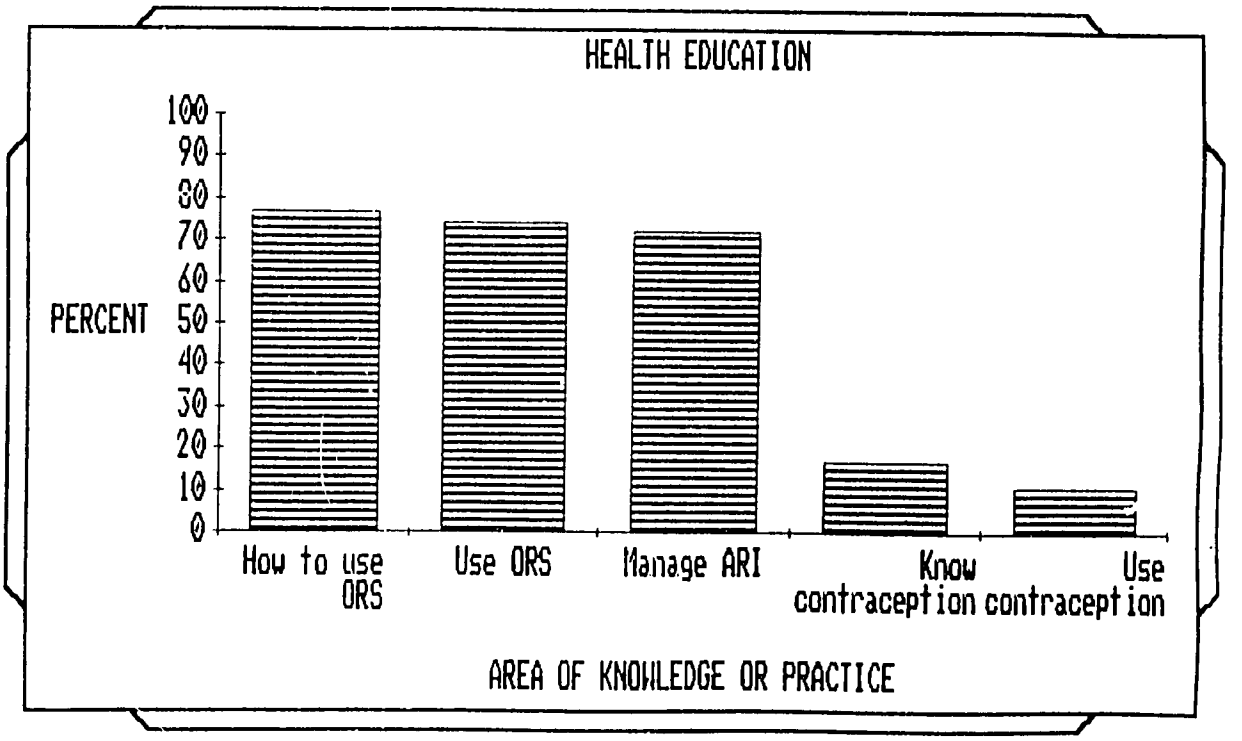


3.4 Maternal Services

Other studies have shown that women of child-bearing age in Pakistan tend to suffer from poorer health than any other group. The BHU has attempted to focus special attention on the provision of services to mothers and pregnant women.

- Eighty percent of the births in the preceding year had been attended by untrained helpers (mothers, relatives, untrained birth dais). This reflects the relative absence of trained birth attendants in the community and perhaps an undeveloped appreciation of the wisdom of using a trained dai or midwife.

- Nearly one-half of the women who delivered in the preceding year had received some form of prenatal attention. Most of this group had made three or fewer visits for prenatal care.

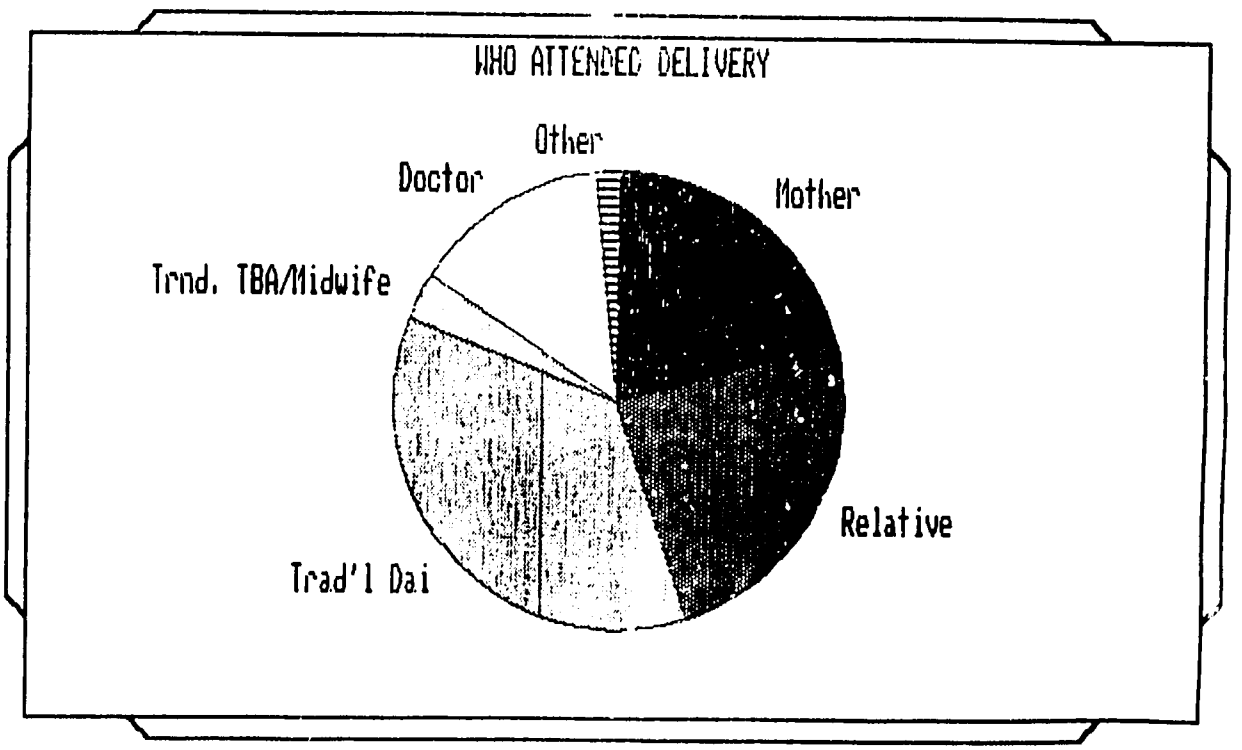
- Fertility is high. Over one-third of the women in the sample had delivered a child in the preceding year (again, this figure may be slightly exaggerated by a generous definition of one year) and one-sixth were pregnant at the time of interview (plus additional undetected pregnancies).

- Almost the same proportion as were pregnant were aware of fertility control measures -- one-sixth. Eleven percent were practicing contraception. Only one interviewee in the sample recalled that child spacing had been a topic of discussion by health promoters.

- Within the clinic, antenatal visit history taking was complete in almost all areas. The only exception was asking the woman if they had any complaints; clinic staff opined that there was rarely any need to ask as the clients were quick to state their problems.

- Examination and treatment during antenatal visits were also well covered as was client counseling.

FIGURE 14



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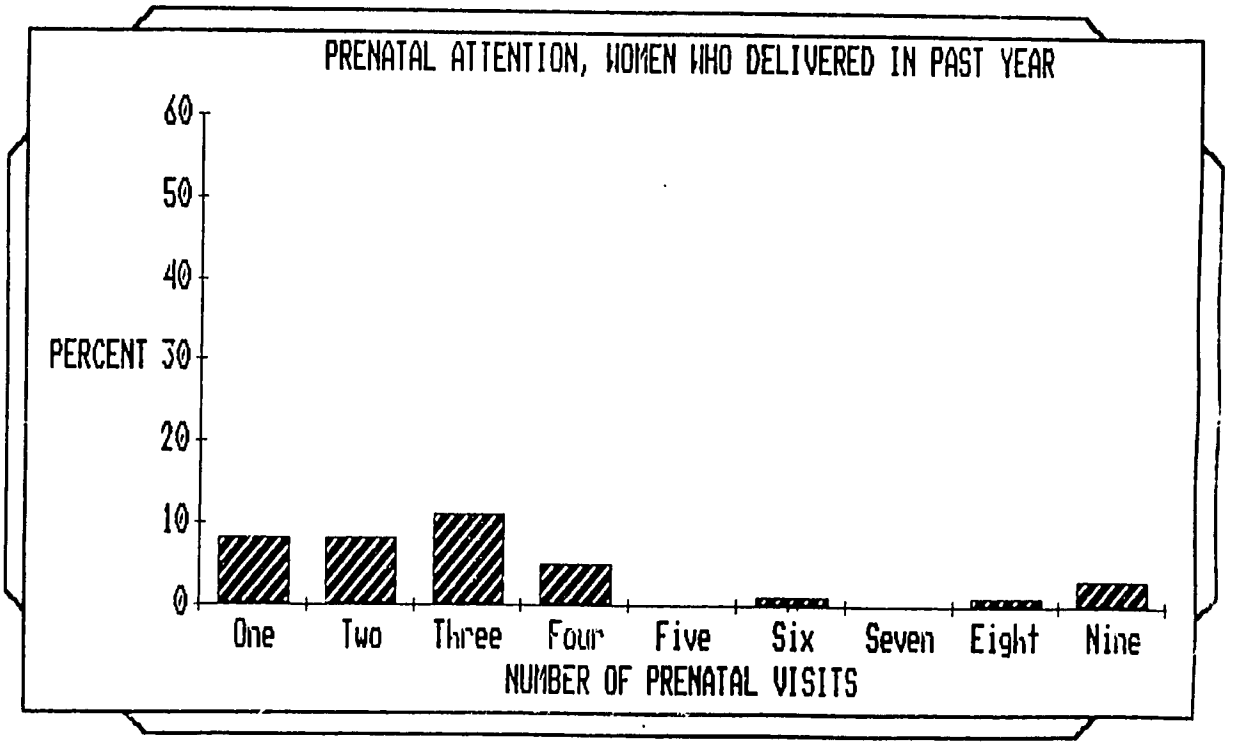

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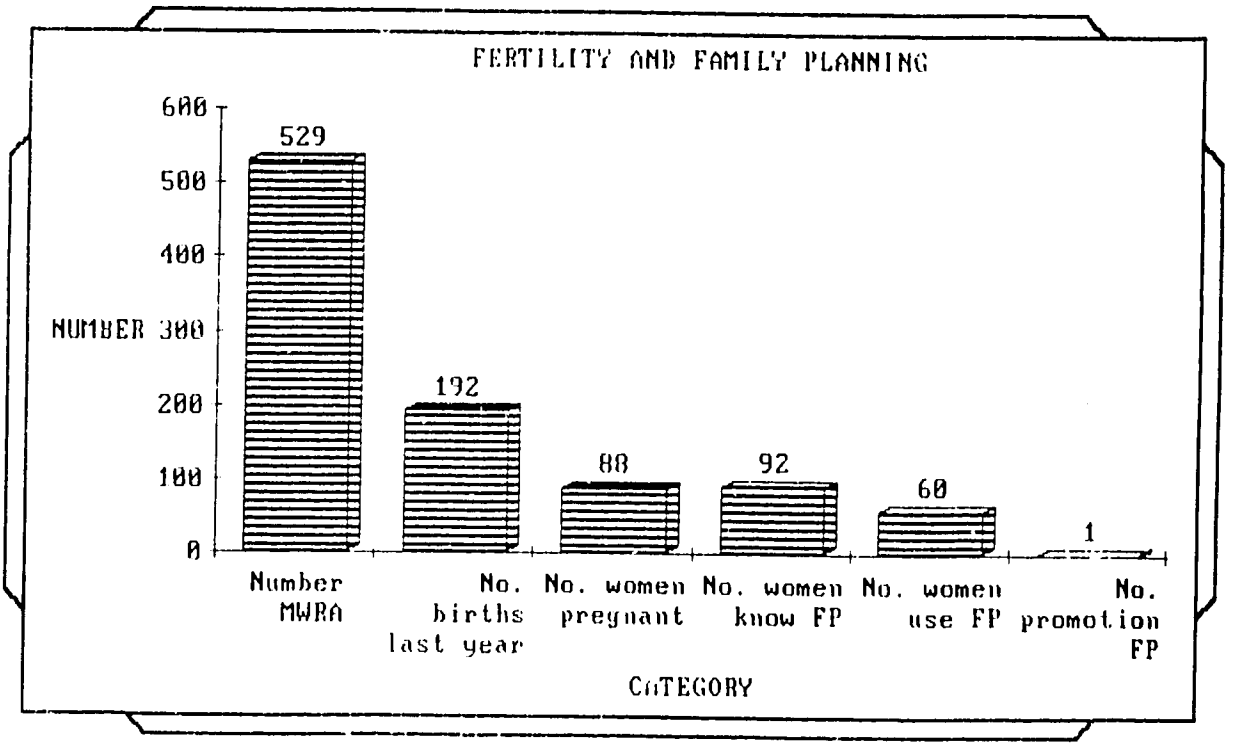

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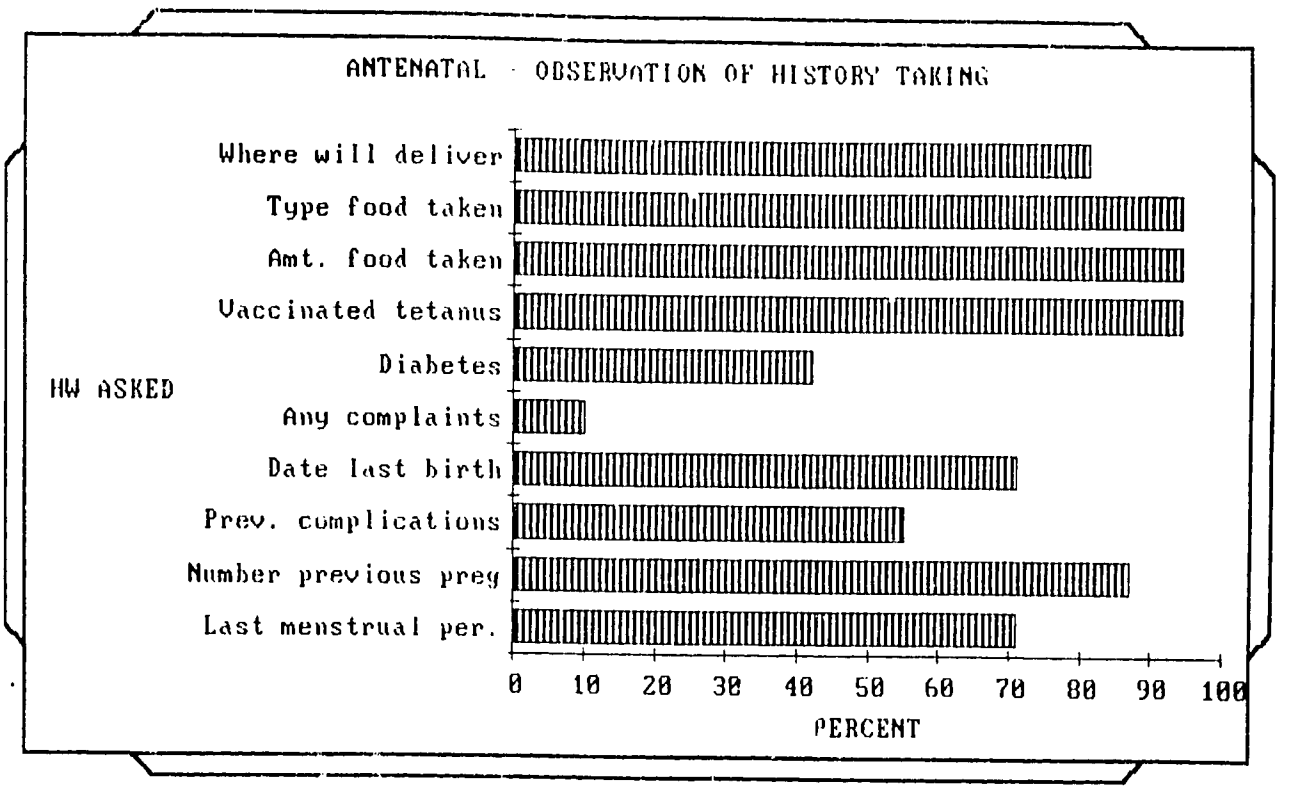

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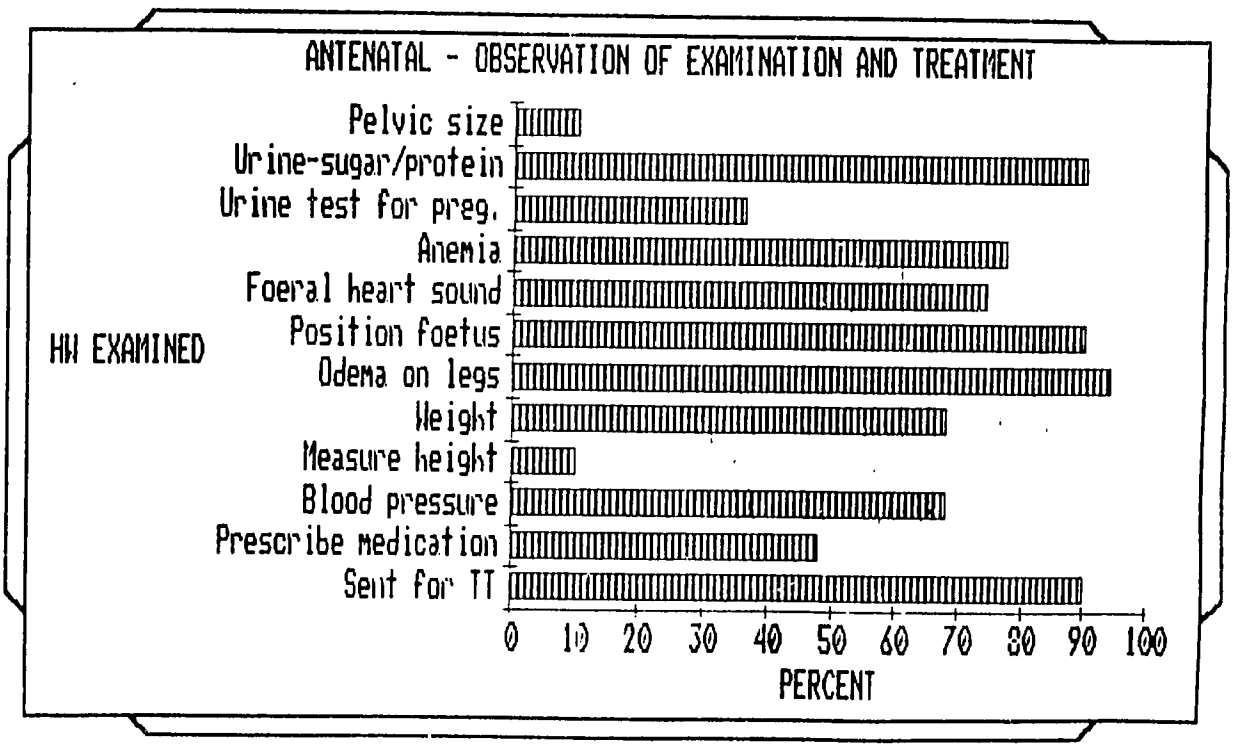

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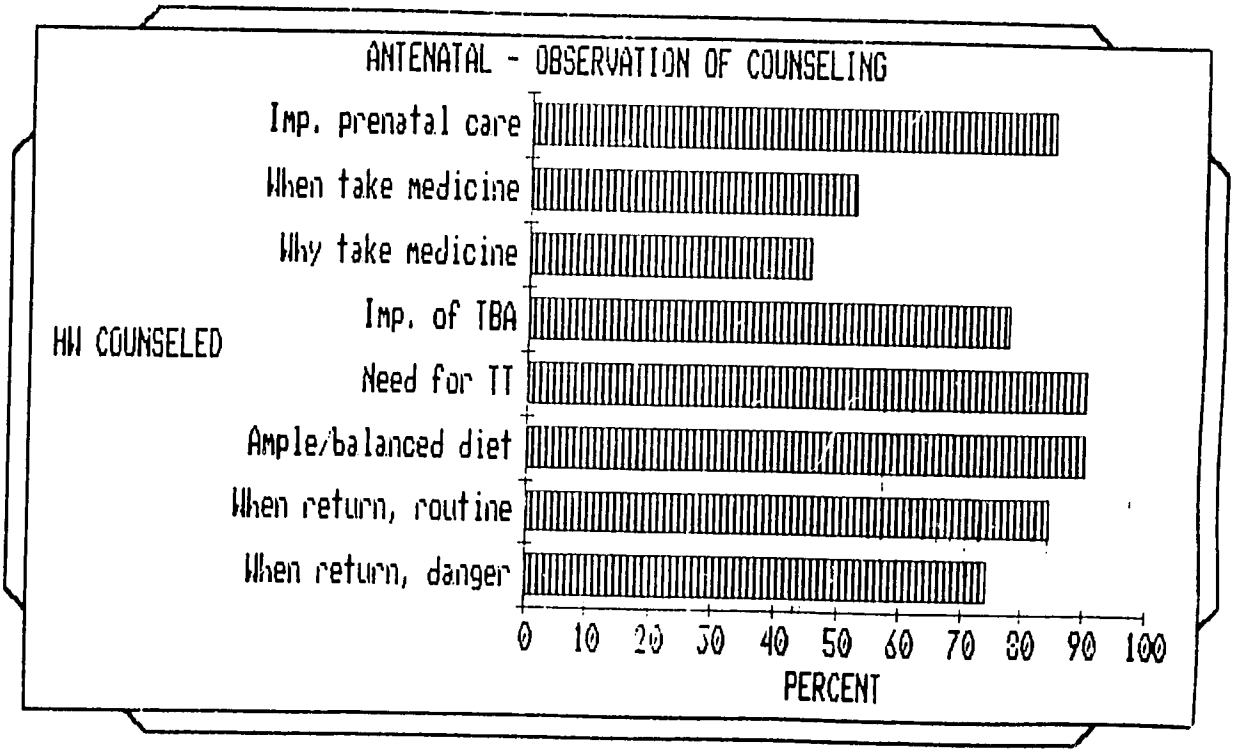


3.5 Vaccination

The Expanded Program of Immunization has been a priority area in the Province and it was expected that this would be a strong area.

- Roughly two-thirds of the children under five years had received any DPT, polio, or BCG vaccination. These figures probably under-report actual coverage as the interviewers recorded a vaccination only if verified on a card (and many households did not have cards) or by a BCG scar; however it appears likely that coverage is not the 100% targeted. Measles coverage was reported as less than 50%; cases of measles were also reported within the preceding 30 days in some of the households interviewed.

- Observation of vaccination sessions within the clinic and in the community showed that the technical aspects of vaccination were being performed nearly flawlessly. Counseling of clients was a weaker area; most significantly, mothers were warned in one-third of the cases observed of the possibility of fever as a consequence of the vaccination.

- An arresting set of numbers comes from the efforts of clinic staff to inform clients to return for the next injection in the series. A very high percentage (over 90%) of the clients were given oral or written instructions when to return; yet an equally high percentage got the message wrong -- fewer than 10% of the mothers knew when to return for the next vaccination when interviewed leaving the clinic. Perhaps linked to this was the failure of clinic personnel to ask clients (and patients of all services) to repeat important instructions.

FIGURE 20

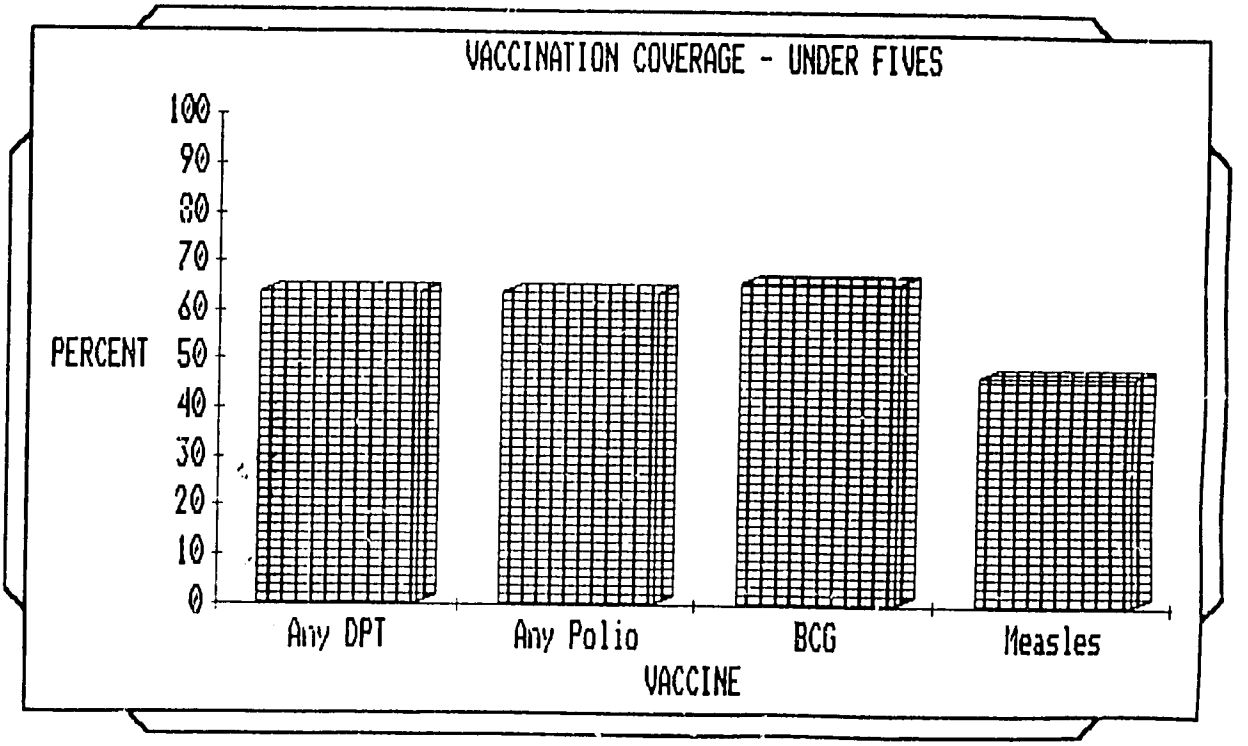


FIGURE 21

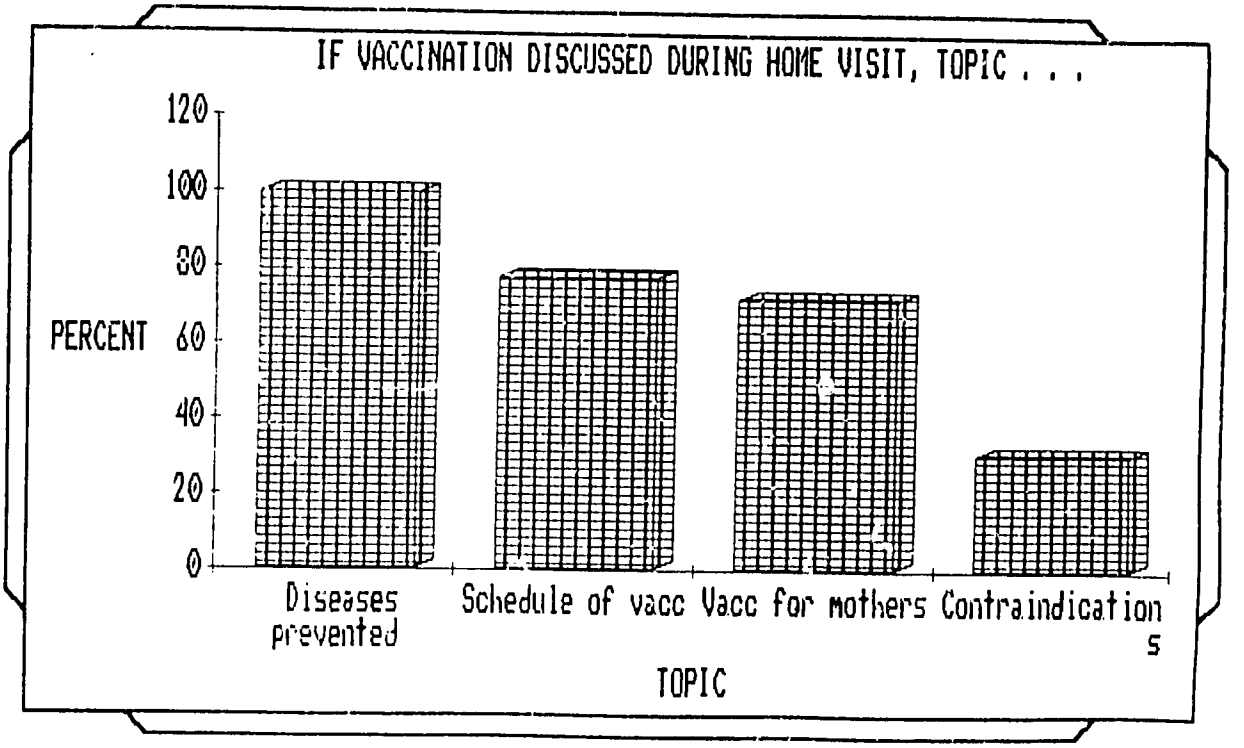
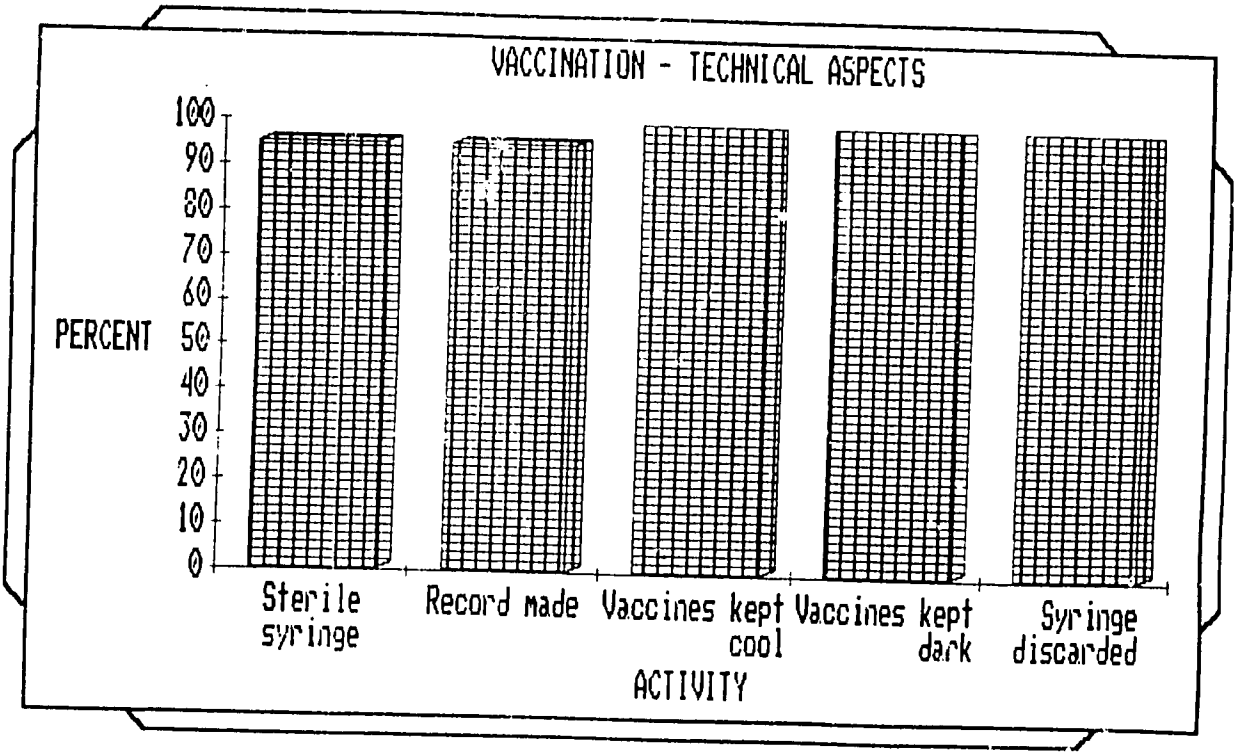


FIGURE 22



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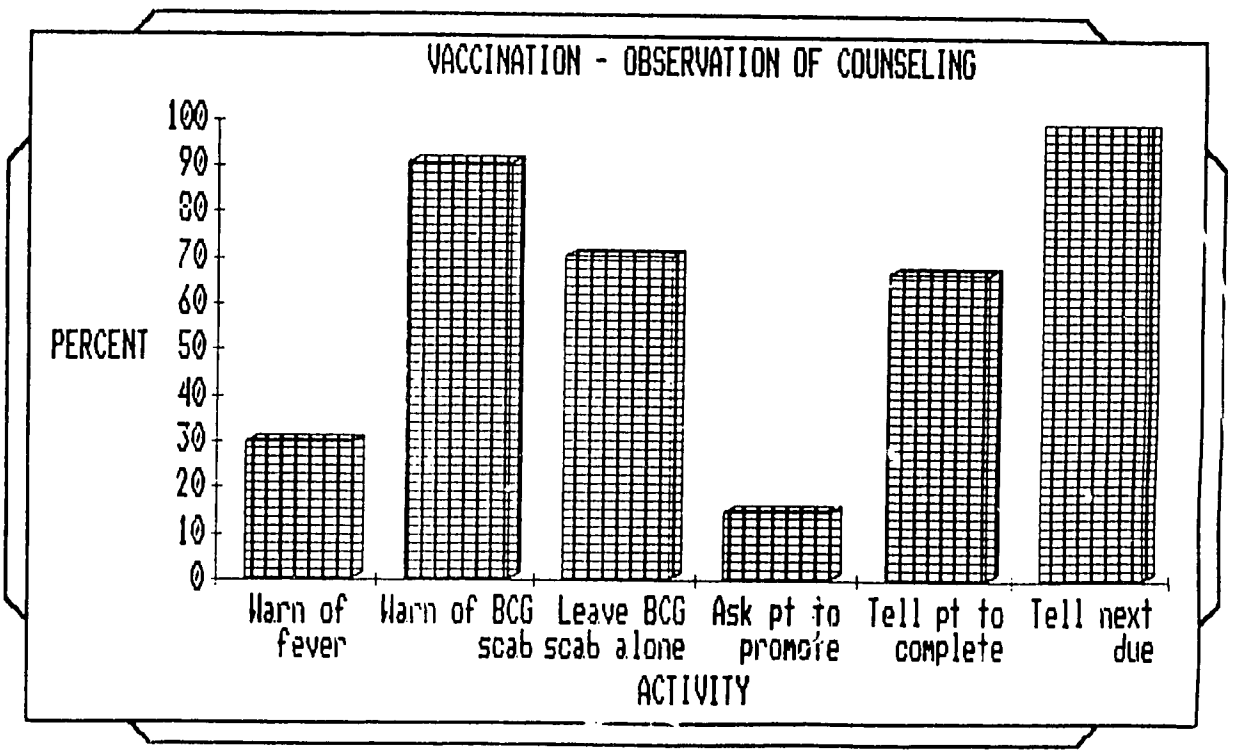

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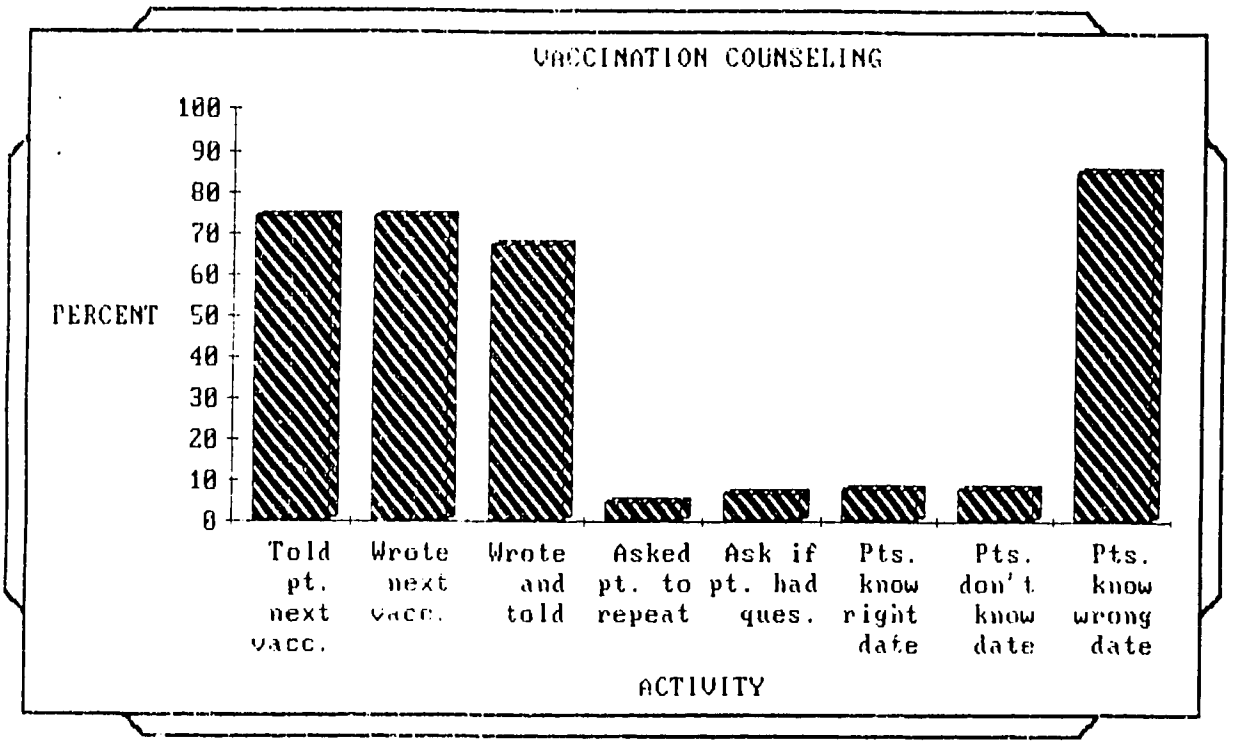

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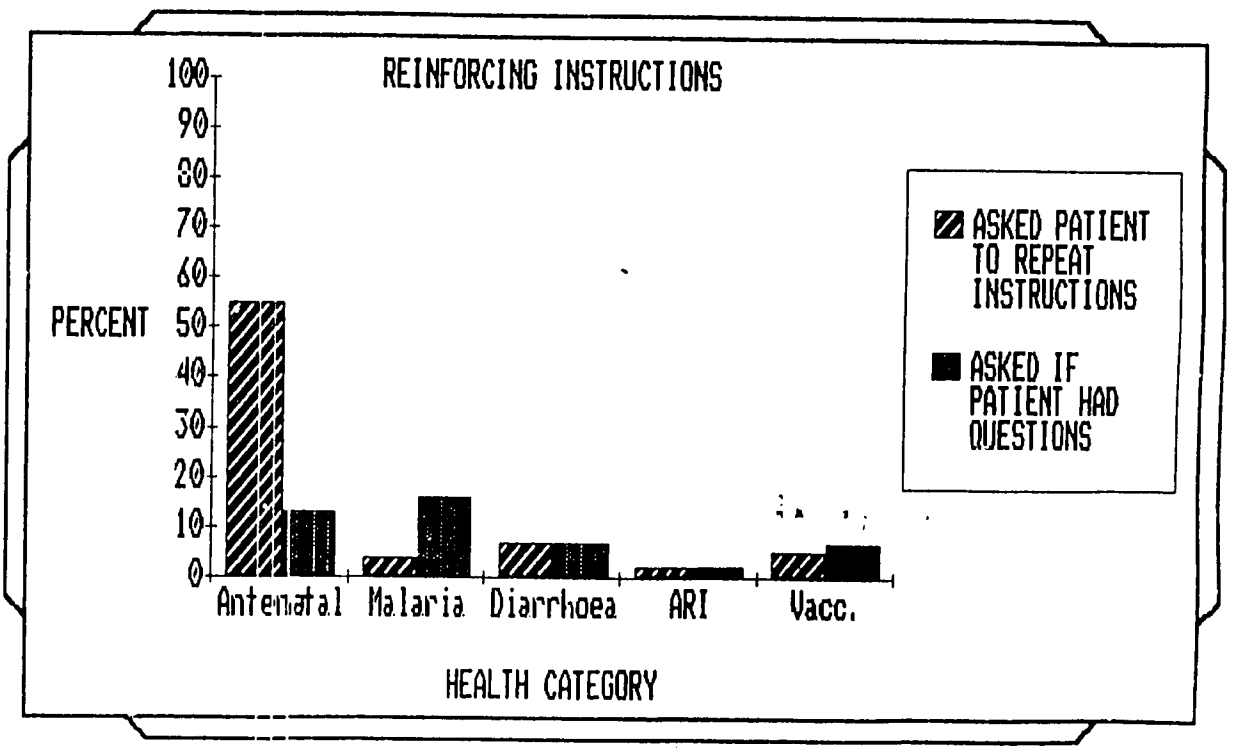


3.6 Diarrhea Management

Provision of oralyte and promotion of replacement therapy are primary objectives of the BHU.

- Most of the history taking activities were performed with the exceptions of asking about home treatment provided prior to coming to the BHU, whether urine output was reduced, and whether the child had been thirsty.
- The clinical examination was often cursory. The mother was usually given ORS packets and frequently a medication to administer to the child.
- Counseling was strong in all areas save education on the signs of dehydration.

FIGURE 26

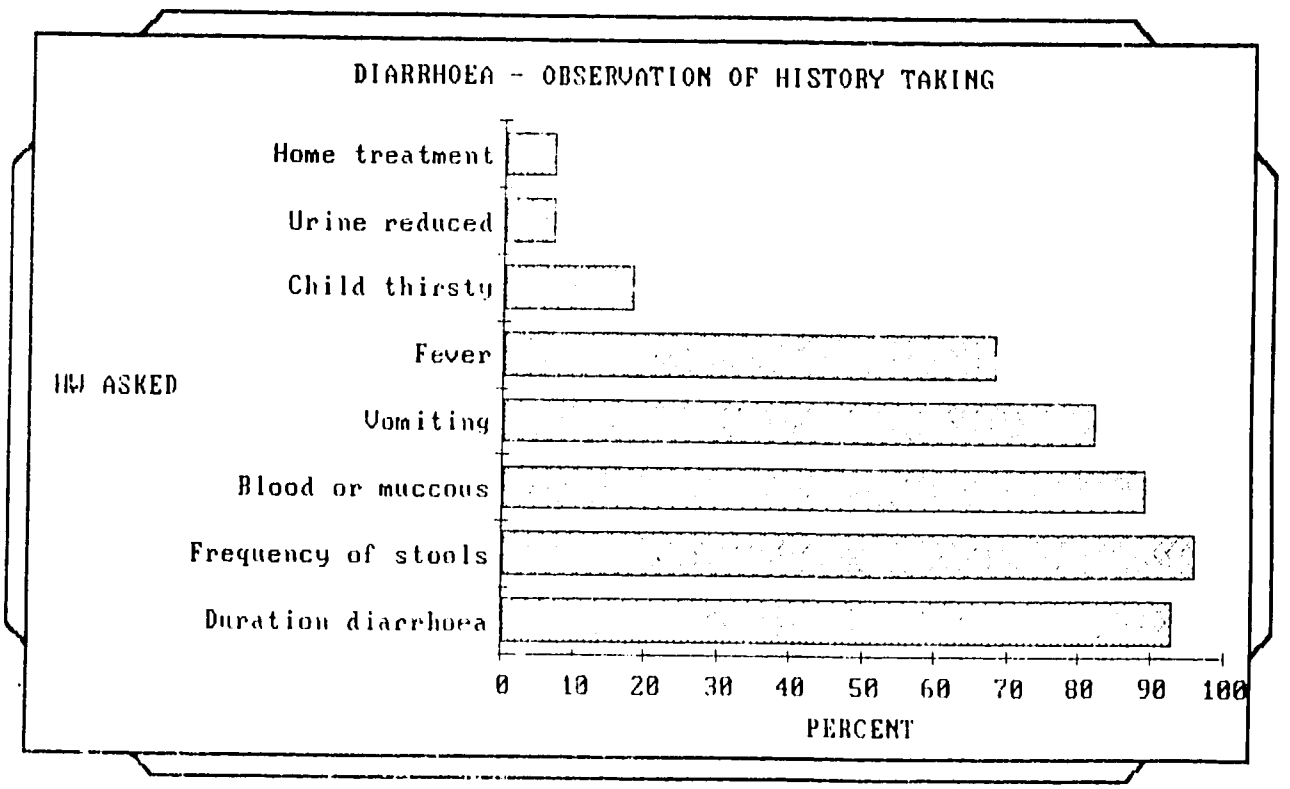


FIGURE 27

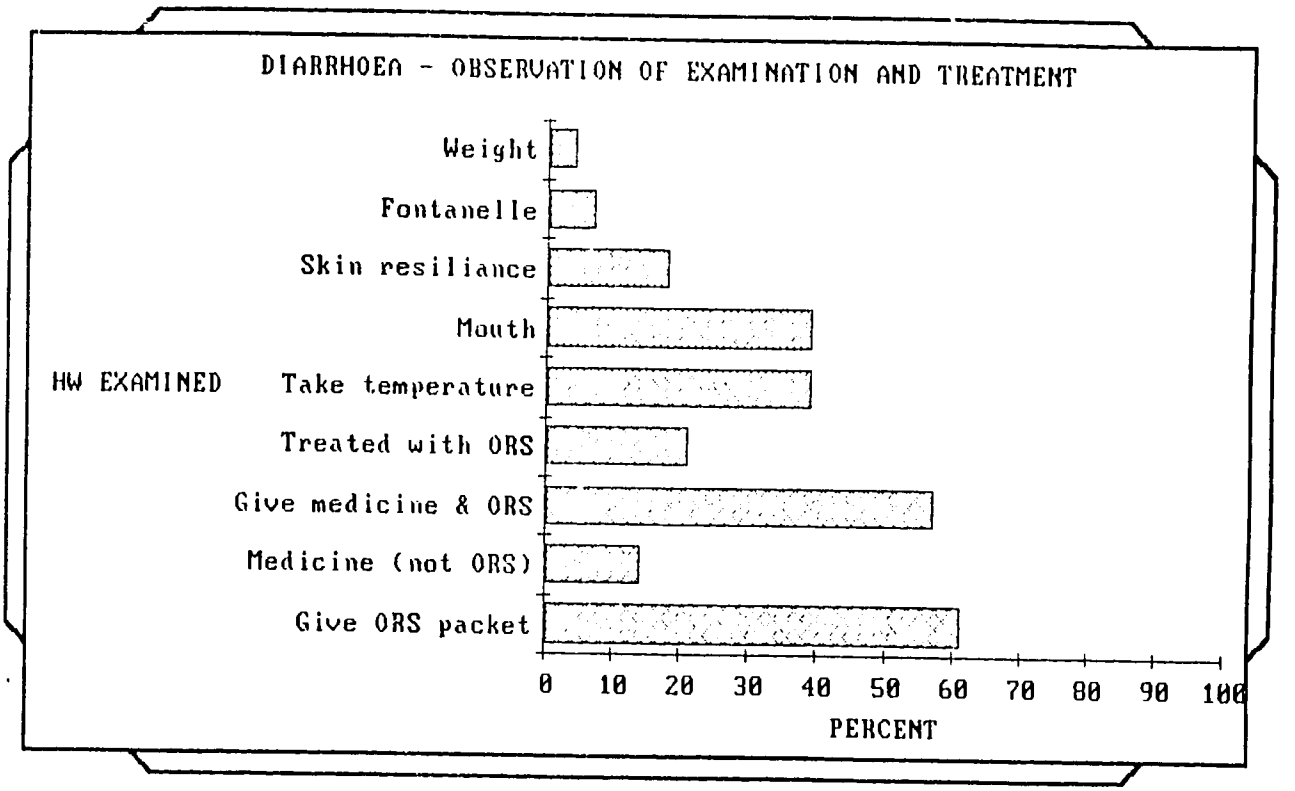
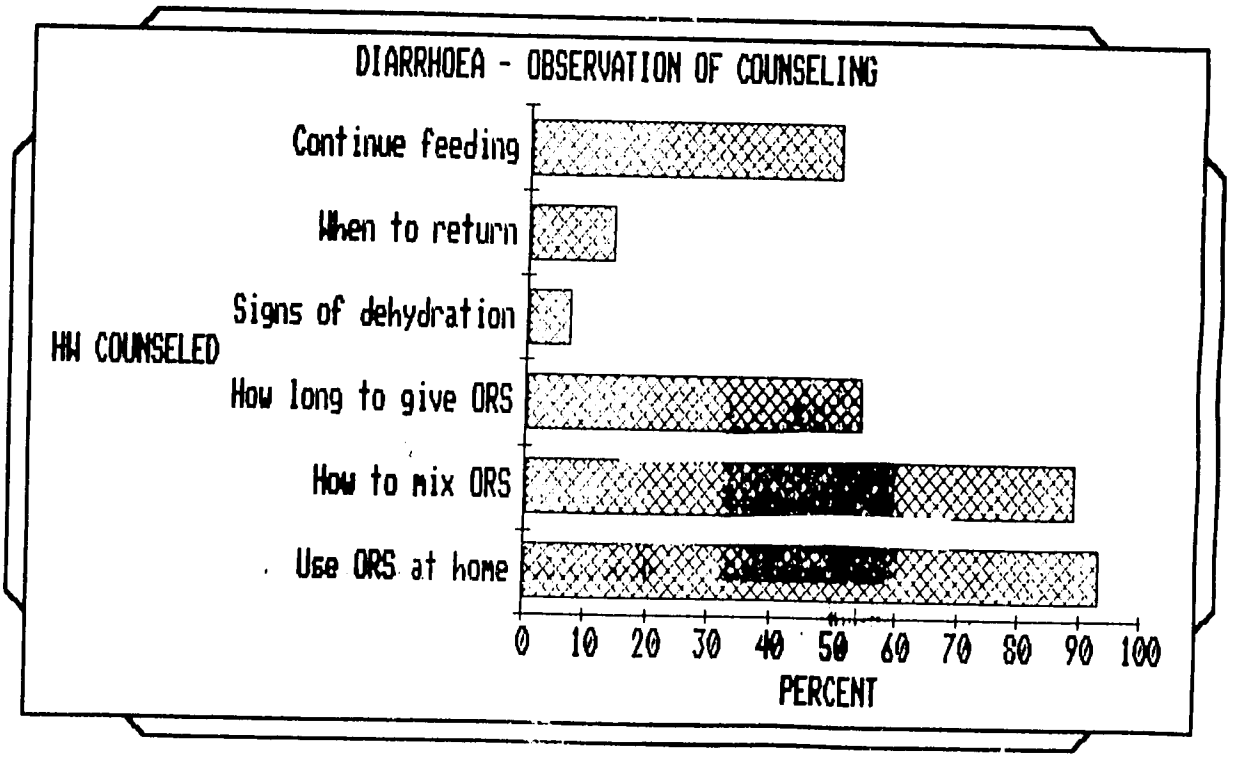


FIGURE 28



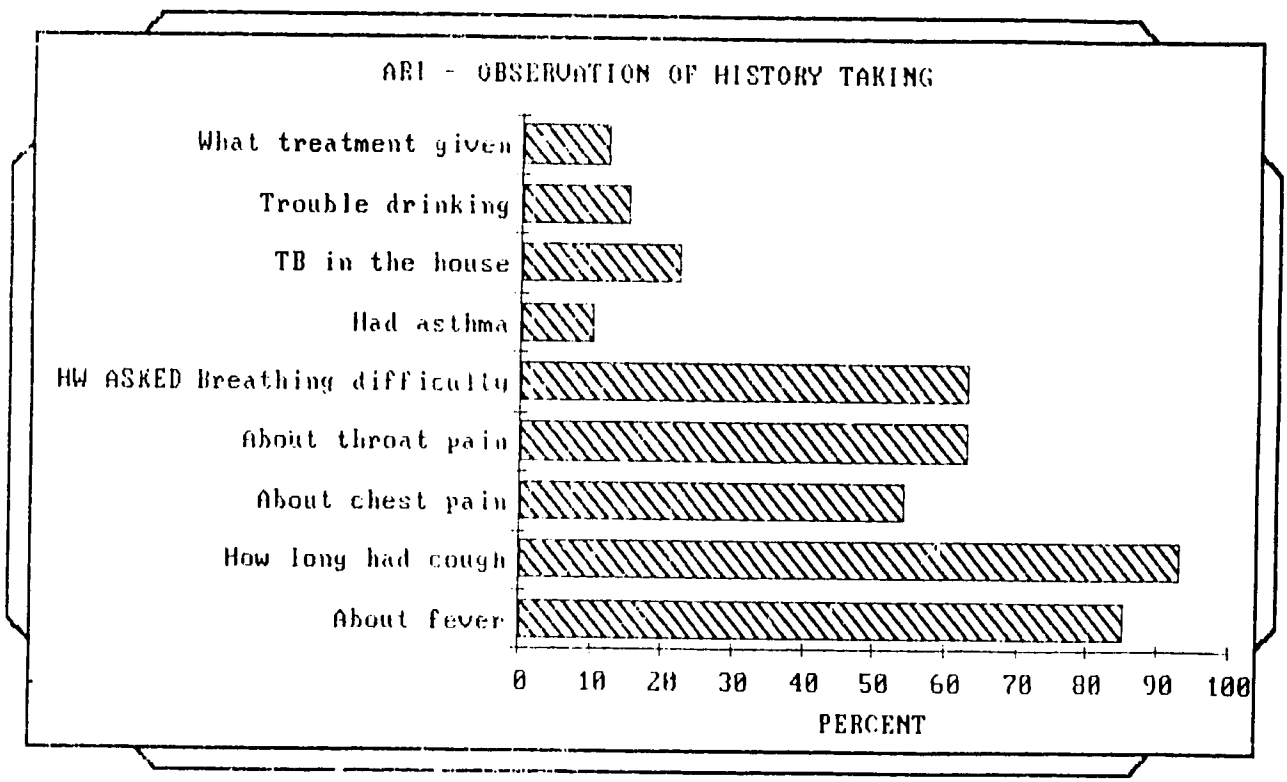
3.7 Respiratory Infection

Respiratory infection (ARI) appears to be the major disease category that will not respond to community health or preventive measures. As such, clinical attention takes on extra importance. Management of ARI patients has only recently become a focus of program attention and treatment protocols are not yet well developed and disseminated.

- The weakest area in the management of the observed patients was in counseling. Health workers consistently informed patients how to take prescribed medication and to complete the course of medication.; however, relatively little information was provided on danger signs and management of the patient.

- The activity least often conducted during the physical examination was a count of the respiratory rate. A medication was almost universally prescribed.

FIGURE 29



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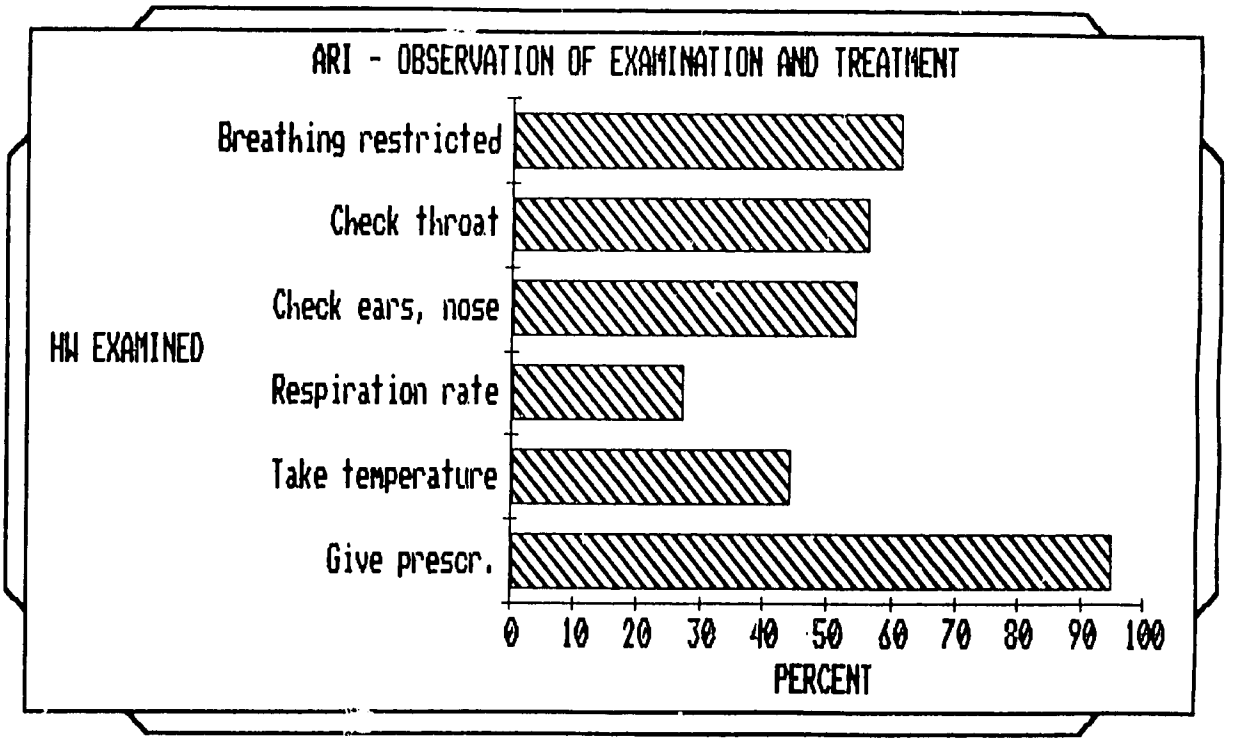
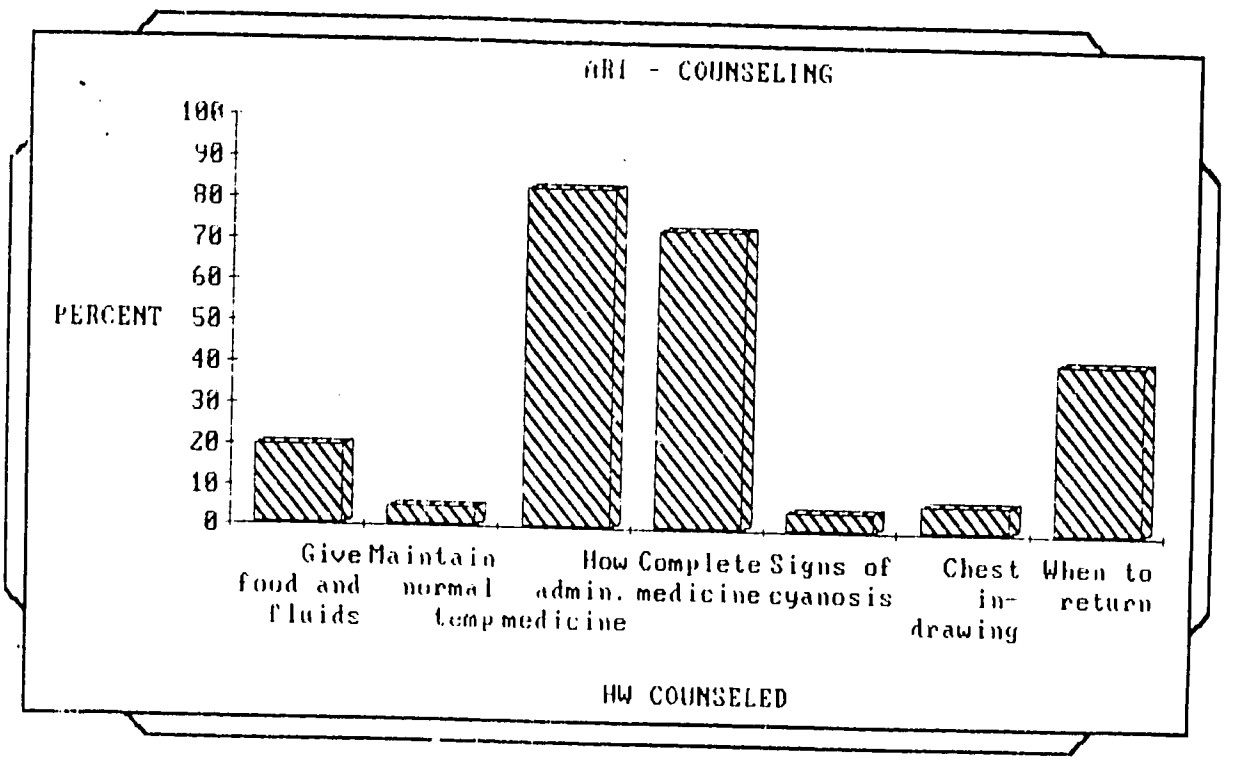


FIGURE 31



3.8 Malaria

Of the health services studied, the most disappointing results were obtained in the treatment of malaria cases.

- At most, half of the patients presenting with fever were asked about the duration or pattern of the fever.
- In fewer than half of the observed cases was the temperature of the patient taken, and in only a small percentage were the ears, nose, or throat examined. Blood slides were made for half of the patients.
- Nearly all of the patients presenting with fever were given a prescription.
- Patient counseling was perfunctory.

FIGURE 32

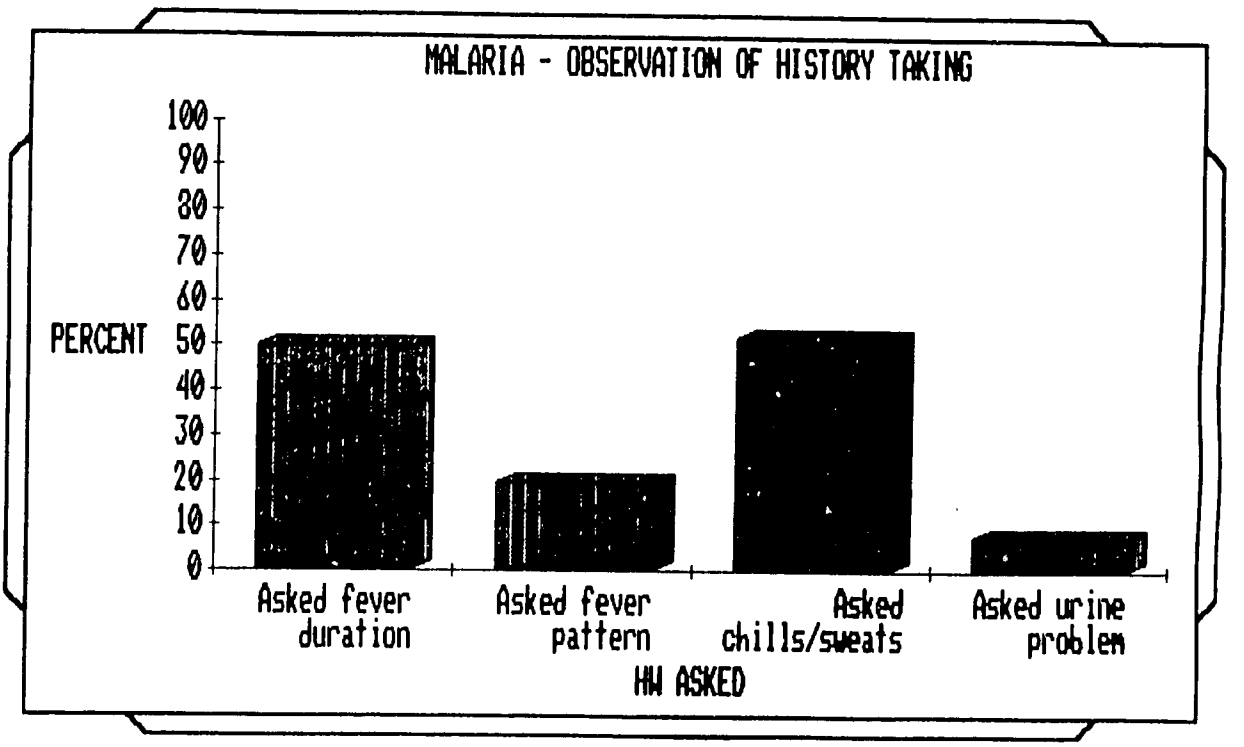


FIGURE 33

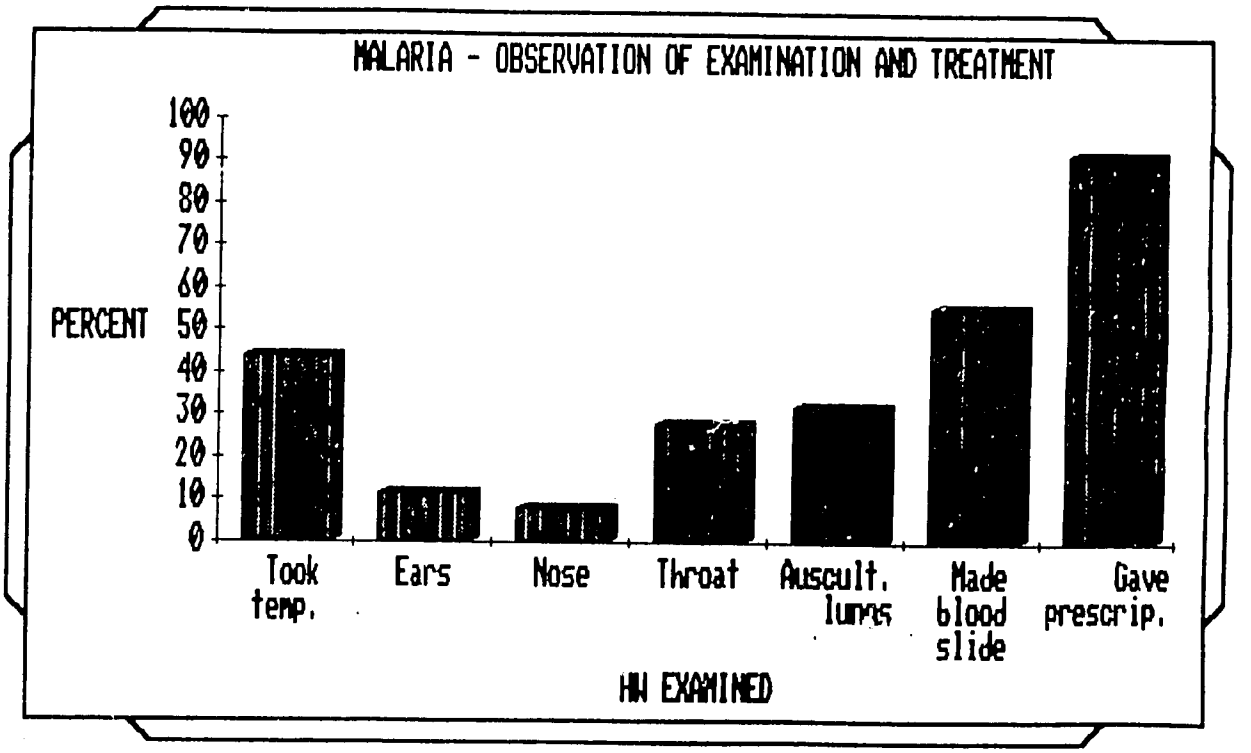
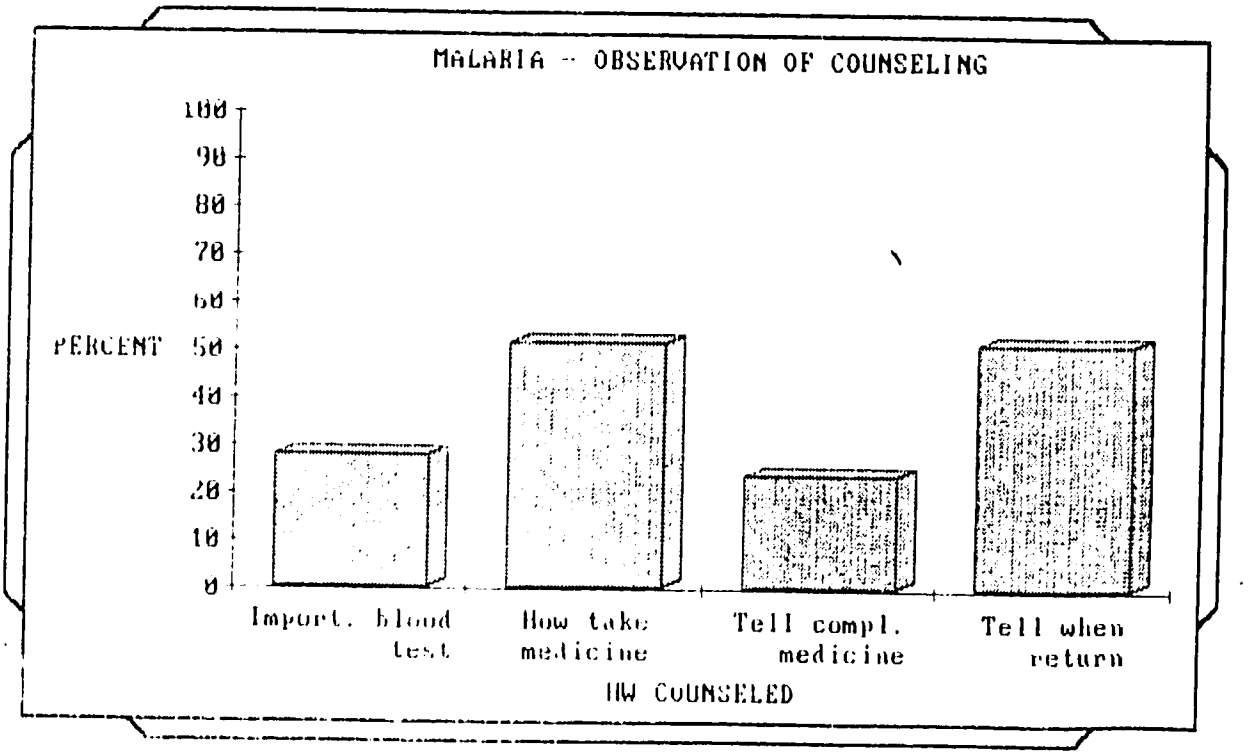


FIGURE 34



3.9 Supervision

A systematic analysis of how primary health care (PHC) services are currently being delivered at the model BHU was undertaken. In addition to observation of essential PHC services and support activities at the BHU and in the community, interviews were conducted with each of the health workers working at or from the BHU, and with their supervisors. Activities of six specific PHC services were considered: immunization, ORT, ARI, MCH (prenatal and postnatal care), malaria, and TB. Ten supervisors and the six Regi staff members, representing 18 supervisor/supervisee pairs in all, were interviewed. The Medical Officer in Charge at the BHU was interviewed both as a supervisor and a supervisee. The interviews were designed to describe important aspects of the supervision process as it is currently operating at the BHU level.

The responsibilities of the 10 supervisors, though broadly similar, differ in scope and detail, depending upon their position in the Provincial health system and the specific PHC service being supervised. Accordingly, this report makes little attempt at quantitative analysis; rather, it summarizes what the respondents have reported about the process of supervision, organized around a series of key management questions.

3.9.1 Summary of Findings from Supervisor and Supervisee Interviews

In general, supervisors meet with supervisees on a monthly basis and devote a reasonable amount of time to each supervisee, particularly at the first supervisory level. EPI supervisors at the first supervisory level spend more time than the others in direct supervision of staff.

Supervision is primarily administrative; technical supervision on a routine basis is rare, although supervisors report giving ad hoc technical advice, in-service training, and assistance from time to time. There is some evidence that supervisees would welcome more technical assistance and in-service training from their supervisors.

Except for the EPI program, supervisory checklists are not used. Systematic observation of technical service delivery activities is rare. Feedback in the form of in-service training is limited. Records are consulted and used primarily to make reports to higher authorities rather than to provide feedback to supervisees for praise and/or corrective action.

Supervisors do seek to motivate their supervisees and to help resolve their problems. Although many of the problems reported by supervisors are systemic and probably beyond their control, a number of those reported by the supervisees themselves might be addressed through administrative action. Supervision of client counseling and health education appears to be particularly weak. As data from the exit interviews confirmed, inadequate counseling and health education limited client understanding and reduced potential health impact of the PHC services. It may also limit the confidence of the community in services provided at the BHU.

3.9.2 Management of Supervision: Specific Findings

1. Who provides first line supervision for activities at or outreach from the Regi BHU?

PHC:	Medical Officer in Charge (MO)
EPI:	Field Supervisor, Vaccination (FSV)
Malaria:	Malaria Inspector (MI)

Who provides second line or senior level supervision?

PHC:	Assistant District Health Officer (ADHO), District Health Officer (DHO)
EPI	Tehsil Supervisor, Vaccination (TSV) District Supervisor, Vaccination (DSV) Field Supervisor Medical Officer (FSMO)
Malaria:	Malaria Supervisor (MS), Entomologist

2. How often do supervisors usually meet with their supervisees?

Supervisors The frequency of supervisory encounters reported by supervisors varies with position and level of responsibility of the supervisor - from "daily" on the part of the Medical Officer at the BHU to quarterly (DHO, DSV, FSMO).

Supervisees Of the 18 supervisor/supervisee pairs, only 3 supervisees report having regular meetings with supervisors. Reported intervals between meetings vary from 2-4 weeks to 6 months; in several cases, the elapsed time was too long for easy recollection.

3. What is the usual duration of a supervisory encounter?

Supervisors This too varies with the supervisor's position and level of responsibility -- from 10-15 minutes to 6 hours.

Supervisees Responses varied from 15 to 60 minutes, with 30 minutes the most common.

4. Combining duration and frequency, about how much time does the first level supervisor spend with a supervisee each month?

PHC:	MO	15 min/day -- c. 6 hrs/mo
EPI:	FSV	6 hrs/2-3 weeks -- c.15 hrs/mo
Malaria:	MI	2 hrs/week -- c. 8 hrs/mo

5. What are the main objectives of a supervisory visit?

Supervisors Nearly all supervisors indicated that they gave priority to administrative supervision; almost none reported providing technical supervision on a routine basis, although they gave ad hoc technical advice, training and assistance from time to time.

Supervisees Also reported that supervision was primarily administrative. At least one volunteered a need for more technical assistance from the supervisor in diagnosing ARI.

6. Do supervisors use a checklist in making supervisory visits? Do supervisors keep a record of their supervisory visits?

PHC:	No check list; ADHO and DHO keep a diary
EPI:	Checklist
Malaria:	No checklist; no diary

7. What records do supervisors usually examine when they make a supervisory visit?

Supervisors

PHC:	staff attendance, supplies/drugs, equipment, patient registers
EPI:	staff attendance, vaccine supply and condition, cold chain, comparison of registers with household records
Malaria:	staff attendance, supplies, slides, ACD, PCD registers

Supervisees Indicated that supervisors examined records during supervisory visits. Whatever the service being supervised, all supervisors looked at stock registers and patient registers; other records examined depend upon the specific services being supervised.

8. What use is made of the information from these records, and from the supervisors' records?

Supervisors For all but the most senior level supervisors, these records were used primarily or exclusively in reporting to other authorities. The Medical Officer also reported using them to order drugs and supplies. Only senior level supervisors reported using these records to plan, evaluate, provide feedback, and/or institute changes in the way services are being delivered.

Supervisees Also reported using records primarily to report to higher authorities, secondarily to order drugs and supplies. Few reported using the records to help them plan or evaluate their work themselves.

9. How often do supervisors observe the technical work of their supervisees?[1]

Supervisors were asked how often they were able to observe specific named service delivery activities of their supervisees, on a 4-point scale: "seldom", "occasionally", "often", "almost always". Despite a nearly universal acknowledgment that priority was not given to such observation, the majority of supervisors reported observing such activities at least occasionally.

As expected, first line supervisors tended to report making observations more often:

PHC:	varies depending upon the specific activities and workers, from "seldom" to "almost always"
EPI:	"almost always"
Malaria:	"often"

Supervisees think that supervisors rarely observe their service delivery activities. Thirteen of the 18 supervisor/supervisee pairs reported that they were "seldom" or "never" observed delivering services. Only five reported being observed "occasionally" or "often"; no one reported that the supervisor observed him/her "almost always".

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[1]These data show a difference in perception between supervisors and supervisees on the extent to which supervisors observe health workers delivering services. These perceptions are not necessarily inconsistent. Given the number of individuals a particular supervisor must supervise, he/she may observe activities fairly often, yet observe a specific supervisee only a few times. Nevertheless, supervisors tend to agree with the supervisees that they do not in fact do much observing of service delivery.

10. How much time do supervisors usually devote to in-service training of their supervisees during a supervisory visit?[2]

Supervisors This varied again with position and level of responsibility of the supervisor.

PHC: The most extensive amount of PHC in-service training was reported by the first line supervisor: an average of 5 min/day or about 2 hrs/mo, with an additional 30 min/mo reported by more senior supervisors.

EPI: The most extensive amount of EPI in-service training was reported by the TSV, averaging about 1 hr/mo, with an additional 10 min/quarter reported by more senior supervisors.

Malaria: The most extensive malaria in-service training was reported by the MS, averaging about 30 min/mo.

Supervisees Only four of the supervisees reported having received special in-service training from their supervisors: one for immunization, two for MCH and 1 for malaria. One indicated that training and assistance from the supervisor in diagnosing ARI would be helpful.

11. What do supervisors do to motivate their supervisees?

Supervisors reported various ways of motivating supervisees: providing feedback at each encounter, encouraging questions, praising good work, appealing to their commitment to community and country, helping to solve their problems, referring difficult problems to a higher authority, occasionally providing direct technical assistance (helping in spraying, assisting in health education, etc.).

2The difference in perception between supervisors and supervisees on the extent of in-service training provided by supervisors may reflect ambiguity in the definition of in-service training. It may be difficult for the supervisee to distinguish informal in-service training from feedback, advice, and/or technical assistance rendered the supervisee during a supervisory visit.

12. What problems do the supervisors report that their supervisees are experiencing?

PHC: Immunization - vaccine shortages, power outages, lack of transport
ORT - shortages of ORS packets
ARI - shortages of drugs
MCH - heavy work loads, lack of transport, equipment shortages, patient disinterest/negligence
Malaria - shortages of drugs, lack of transport, few labs, shortage of microscopes
TB - shortages of drugs, few labs, shortage of microscopes, patient disinterest/negligence

EPI: Vaccine shortages, patient disinterest, geographic areas too extensive

Malaria: Shortage of insecticides, shortage of kits (none new since 1968), shortage of microscopes, lack of transport, difficulty in reaching females in purdah.

13. What problems do the supervisees report?

Management problems:

- Shortages: drugs (TB, malaria, ARI), ORS, vaccines, spray, equipment, transport
- Geographic areas that are too large
- No notice when vaccination location is changed

Technical problems:

- AFB slide quality/training of lab technician doubtful
- Difficulties in making diagnosis (ARI)

Health education/counseling problems:

- Immunization - reaching defaulters, obtaining access to women in purdah
- ORT - patients demand medicine, ORT doesn't stop diarrhea, ORT tastes bad, it is difficult for mothers to remember how to mix ORS
- ARI - patients demand medicine when not needed
- MCH - women do not have faith in the BHU staff
- Malaria - difficult to take slides from fearful people, no health education program to make malaria worker's tasks easier
- TB - none mentioned.

14 What do supervisors do to follow up on supervisee problems?

No systematic strategy reported for follow-up, but supervisors report a variety of follow-up activities: order needed drugs, supplies; plan, evaluate, institute changes (e.g. reassign areas for EPI Technicians to equalize workload, provide motorcycles for those in difficult areas).

3.10 Logistical Support

Information on logistical support was obtained from examination of records at the BHU, and from interviews with supervisors, supervisees, and key informants. They present a consistent picture of familiar problems.

- Drugs and supplies are normally issued on a fixed schedule, and there is no routine provision for obtaining them elsewhere if they are not available from the regular source, or if supplies have been exhausted. Therefore the inventory management system at the BHU does not include a provision for monitoring and re-ordering as supplies are drawn down to a pre-determined level, e.g. 6-8 weeks supply.

- Information from all sources shows occasional or persistent shortages in nearly all areas:

EPI:	Vaccines, especially BCG, DT
ARI:	Antibiotics
ORT:	ORS
MCH:	Equipment, especially baby scales
Malaria:	Insecticides, antimalarials, kits
TB:	No tablets during the past 14 months

- Lack of transport is a continuing problem for outreach workers, i.e. LHVs, malaria workers.

- Frequent power outages represent a hazard to the cold chain.

- Inadequate laboratory facilities and too few microscopes constrain work in TB and malaria case detection and monitoring.

3.11 Staff Training

The BHU staff were interviewed on the professional training that they had received which was relevant to their duties. Again, because of the small numbers involved, a statistical breakdown has little meaning; the numbers are provided only to communicate a sense of relative magnitude and importance.

	ARI	ORT	Mal	MCH	EPI
1. Last formal training received:					
< 1 year		1			1
1-3 years	2	2	1	1	1
4-6 years	1	1	1	1	2
> 6 years				1	
2. Duration of the training:					
Half day or less				1	
About one day	1	1		1	2
> 1 day	2	2		1	2
Don't recall		1	3		
3. Proportion of time devoted to:					
More lecture than practice		3			2
Same lecture as practice	2	1	2	3	2
More practice than lecture	1		1		
Don't recall	1				
4. Was there a test:					
No		1	2		1
Yes, written	1	2			3
Yes, oral	1		1	2	
Yes, written and oral				2	
Yes, demonstration	1	1		2	1
5. Given materials to keep:					
Yes	2	3	2	2	2
No	1	1	1	1	2
6. Still use those materials:					
Yes	2	2	2	2	2
No	1	2	1	1	2

Questions were asked about specific content of the courses. Very few items were recalled spontaneously; the interviewees agreed that every prompted item had been covered.

If any conclusions may be drawn from these data they are that the staff had received limited recent technical training, the training approach was "telling them" rather than allowing the trainees to practice skills, and the evaluation was consistent with that philosophy--trainees usually did not have to demonstrate competence in practice.

4.0 SOLUTION DEVELOPMENT

A solution development workshop was conducted in the provincial capital. The findings listed above were presented to the participants; suggestions for improving services were made throughout the workshop and those suggestions were prioritized at the conclusion of the meeting (multiple criteria utility assessment was employed in the ranking process). Each idea was evaluated on the basis of its contribution to four objectives:

- its impact on the health of the individual patient;
- its impact on community health;
- the feasibility of implementing the idea; and
- the contribution the proposal would make to increasing community confidence in the BHU.

The proposals were considered in four groups: supervision, clinical examination and treatment, patient counseling, and training. Perhaps reflecting the importance of all of the proposals, the prioritizing process left many of the ideas tightly grouped and none of them received a truly low rating. The proposals are listed below, within each group, in descending order of priority for implementation.

4.1 Counseling

Highest priority:

1. Warn mothers about possibility of fever following vaccination.
2. Educate mothers on purpose of vaccination.
3. Stress nutrition counseling by all health workers for all health services.
4. Promote use of trained birth attendants for delivery.
5. Emphasize the course of a disease, danger signs, and diet during recovery as part of patient counseling.
6. Educate mothers to recognize signs of dehydration, danger signs for ARI and diarrhea, and how to mix home solution of electrolyte.
7. Educate patients that ORS prevents dehydration and aids the body's own mechanisms to cure diarrhea.
8. Educate mothers to the importance of the complete series of vaccination.

Middle priority:

9. The Medical Officer (MO) provides counseling and motivation to men regarding child spacing.

10. All health personnel promote child spacing in their contacts with patients.

11. The LHV and FHT promote child spacing within the community.

12. The FMT and MT provide re-counseling to patients to reinforce messages given by MO.

13. Reinforce diarrhea management messages in ORT corner.

14. Ask patients to repeat important messages.

Low priority:

15. Use a chart depicting dehydration sequence in counseling of diarrhea cases.

16. Reduce the number of messages vaccinator gives to a few essential ones.

4.2 Examination and Treatment

Highest priority:

1. Register all pregnant women for TT injection and antenatal care and follow-up.

2. Do not give a prescription for chloroquine to a presumed malaria patient unless a blood slide has been made.

3. Immediate follow-up of all antenatal cases.

4. In ARI history taking emphasize that practitioners should ask patients if they have pain on swallowing rather than simple throat pain.

5. During home visits add any pregnant woman found to the antenatal register.

6. Use a checklist in taking the history for malaria, diarrhea, and ARI.

Middle priority:

7. Provide mothers with an analgesic to control fever of children receiving vaccinations.

8. Provide mothers with a prescription for an analgesic to control the fever of children receiving vaccinations.

9. In ARI examination, emphasize the importance of taking a respiratory rate count.

Low priority:

10. Have contraceptives available in the clinic.

11. For diarrhea cases, weigh the patient before examination.

4.3 Training

Highest priority:

1. Recruit only practicing birth attendants for training courses.
2. Train DHOs in the importance of distinguishing between "pain on swallowing" and "pain in the throat" in ARI history taking.
3. Train staff in the technical aspects of ARI diagnosis and management.
4. Send FHTs and LHVs to PWP courses on child spacing.

Low Priority:

5. Provide dehydration charts to Health Technician Schools.
6. Offer a 15 day training course for newly appointed MOs.
7. In diarrhea history taking, train MOs to ask about home treatment.

4.4 Supervision

Highest priority:

1. Ensure that supervisors check that chloroquine is not given to presumed malaria cases without a blood slide having been made.
2. Motivate female staff members to promote child spacing more vigorously.
3. Use the draft PHC checklists for supervision of ARI, diarrhea, and malaria.
4. Add to the EPI checklist: "warns mothers about fever".
5. MO will provide in-service-training to other BHU staff.

Middle priority:

6. Disseminate job descriptions for BHU staff.
7. Supervises follow up on training content given in workshops.

Low priority:

8. Perform in-service-training every six months.
9. Conduct a two day workshop for senior supervisors on technical supervision.
10. Create a master trainer in each district for each major health category.

5.0 NEXT STEPS

Follow on activities may proceed along two major avenues:

5.1 Implementation of proposals

Final selection of the changes to be implemented must be made as well as a schedule and assignment of responsibility for implementation. PRICOR will be available to perform a repeat assessment of activities within the BHU through the end of September 1989. PRICOR involvement beyond that date or research outside of the clinic would have to be negotiated with the PHC project.

Following are five problems and change proposals that came out of the workshop. For each the implementation and research methodologies are specified. This is not a recommendation that these five be pursued first; rather this presentation is to provide specific examples of how operations research projects can proceed.

5.1.1

Problem	Insufficient technical content of supervision.
Change	Provide PHC draft checklists to supervisors and half day instruction in their utilization.
Assessment	PRICOR researchers conduct interviews with supervisees 6 weeks after introduction of this change and ask about content of most recent supervisory visit. The results of these interviews would be compared with the earlier interviews to determine whether the supervisee reported increased technical content.
Implementation Resources Needed	PHC checklists, half day instruction in their use.
Research Resources Needed	One interviewer for one week, hand tabulation of results, half day workshop to report results.

5.1.2

Problem	Low awareness of child spacing methods.
Change	More active promotion of child spacing in the BHU by all HWs.
Assessment	Interviews of exiting female patients on content of health education received in BHU. Their responses would be analyzed to determine if a) they had been counseled on child spacing, b) they could list one or more methods of regulating fertility, and c) their attitude toward child spacing. It is granted that a more comprehensive approach to assessing this issue would be to return to the community and interview broadly to see if the percentage of women aware of child spacing had increased; however, PRICOR does not presently have the resources to conduct such interviewing.
Implementation Resources Needed	Training of LHV and FMT in PWP courses, half day training of other clinic staff, provision of contraceptive supplies by PWP.
Research Resources Needed	Three days of interviewing, hand tabulation of results (two days), half day meeting to present results.

5.1.3

Problem	Failure of mothers to understand when next vaccination due.
Change	All health workers insist that clients/patients repeat important instructions, especially date of next vaccination.
Assessment	Interviews of departing mothers of vaccination clients to determine if they can correctly state next scheduled vaccination date. The percentage of correct responses would be compared with the percentage obtained in the first survey.
Implementation Resources Needed	Directive to all health workers to ask all clients/patients to repeat important instructions, half day training in non-offensive ways to ask clients/patients to repeat instructions.
Research Resources Needed	Interviews with exiting clients for one week, hand tabulation of results, one hour meeting to present results.

5.1.4

Problem	Over prescription of chloroquine without taking blood slide.
Change	Health workers will not prescribe chloroquine without first having a blood slide made.
Assessment	Over a two week period compare the number of patients given presumptive treatment for malaria with the number of blood slides made. Dispenser records and microscopist records can be compared.
Implementation Resources Needed	Instructions to all health workers not to prescribe chloroquine in the absence of a blood test.
Research Resources Needed	One hour supervision of microscopist and dispenser in record maintenance for period of study (two weeks), provision of special forms for recording information if currently used forms not adequate.

5.1.5

Problem	Failure of mothers to bring children for complete vaccination series (possible cause, mothers do not expect child to have fever after vaccination).
Change	Counseling of mothers about possibility of fever following vaccination.
Assessment	Direct observation of vaccinator to record whether this warning was issued or not. Comparison of the results with the results from the first survey.
Implementation Resources Needed	Instructions to vaccinator to provide this counseling. Supervision by MO and EPI supervisor in this regard.
Research Resources Needed	One observer for three days in the clinic, hand tabulation of the results, one hour meeting to present results.

If there is a consistent theme in these examples it is the following:

- The vast majority of the changes proposed in the workshop require no additional physical resources; therefore, implementation of the changes requires only directives, supervision to support the changes, and a clear explanation of the changes to the health personnel involved. It is likely that some of the changes discussed are already being instituted by the BHU Medical Officer.

- The research methodology is very simple and straightforward. Modification would be required if it were feared that health workers will only perform the changed behavior while under evaluation. For example, PRICOR could send in researchers claiming to be patients to see if the change had been effectively introduced.

5.2 Use of the Model BHU as an Operations Research Site

The second area of follow-up to consider is the role that this model BHU might play in the provincial health system. The model BHU is engaged in a wide variety of experiments of consequence to the provincial and national program. This experimentation merits systematic evaluation in order to draw lessons that may be disseminated to other units.

Provincial health authorities may wish to negotiate with federal programs and/or donors for support in designing and implementing a permanent research program around the model BHU or other model BHUs.

Attachment A

Sources of Data

1. Observation of service delivery activities	
- at BHU	169
- outreach in community (catchment area)	24
2. Exit interviews, BHU clients	168
3. Household interviews (catchment area)	487
4. Interviews with BHU staff (7 staff)	
- Supervision in delivery of specific service (6 services, 10 supervisors)	18
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