HEALTHCOM IN LESOTHO

FINAL EVALUATION REPORT

Prepared by

P. Stanley Yoder

Zhong Zheng

Center for International, Health & Development Communication

University of Pennsylvania

Philadelphia, PA USA

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ABBREVIATIONS AND ACRONYMS

AED	Academy for Educational Development: Washington, DC
BOS	Bureau of Statistics: Maseru
CCCD	Combatting Childhood Communicable Diseases: the CDC
CDC	Centers for Disease Control: Atlanta, GA
CDD	Control of Diarrhoeal Diseases: WHO, Geneva
CIHDC	Center for International, Health, and Development Communication, Annenberg School for Communication, University of Pennsylvania
EA	Enumeration Area
EPI	Expanded Programme on Immunisations
FH	Family Health
HEALTHCOM	Communication for Child Survival
HED	Health Education Division: the MOH, Maseru
HSA	Health Service Area
LDTC	Lesotho Distance Teaching Centre: Maseru
MCH	Maternal and Child Health
MOH	Ministry of Health
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PATH	Program for Appropriate Technology for Health
PHAL	Private Health Association of Lesotho
PIL	Project Implementation Letter: USAID
SSS	Water/Sugar/Salt/Solution
USAID	United States Agency for International Development
VHW	Village Health Worker
WHO	World Health Organization

1. EXECUTIVE SUMMARY

1.1 HEALTHCOM Activities

The HEALTHCOM Project was operational in Lesotho from November 1986 through September 1990. Project activities were closely linked to the CCCD Project (Combatting Childhood Communicable Diseases) which began in May 1984 and which focused largely on diarrhoeal disease and immunisations. The overall goal of HEALTHCOM was to assist the Ministry of Health (MOH) in applying a communication strategy using mass media and face-to-face interaction for the diffusion of health messages. Specifically, the Project sought to increase the use of oral rehydration therapy (ORT) for diarrhoea and to increase immunisation coverage through support of the Expanded Programme on Immunisations (EPI) as well as improve the capacity of the MOH to conduct effective health education in general.

Project activities were planned and implemented in collaboration with personnel from the Health Education Division (HED), which served as the institutional base for the HEALTHCOM project, and other MOH officials. The Project pursued its objectives by engaging in five main types of activities:

1) training the HED staff in the HEALTHCOM methodology, in planning and reporting of activities, and in the use of new equipment;

2) material support for the physical expansion of the offices of the HED and the purchase of equipment;

3) provision of technical assistance for the development and diffusion of health education messages through mass media based on the HEALTHCOM methodology;

4) collaboration with other members of the MOH in development of official MOH policies on ORT and EPI promotion;

5) assistance of the CCCD Project in its development of print materials for training of health care workers in the promotion of ORT and EPI and in the proper ways to treat diarrhoea and conduct immunisations.

1.2 Evaluation Plan

The Center for International, Health, and Development Communication (CIHDC) at the University of Pennsylvania, under a contract with the Academy for Educational Development (AED), conducted the evaluation of the HEALTHCOM project in Lesotho. This final evaluation report describes the main activities of the project in Lesotho, it identifies changes in knowledge and practice concerning ORT and immunisations that occurred during the life of the project, and it provides a reading on how well the project succeeded in passing on skills and a methodology for doing health education. The series of research activities conducted by the CIHDC to obtain data for the evaluation included two national household surveys, one village health worker (VHW) survey, interviews with MOH and HED personnel, and an extensive review of project and MOH documents.

The questionnaire used for the two household surveys asked mothers of children under five years of age what they knew and did about diarrhoea and immunisation. Changes in behavior related to ORT and immunisation were identified by comparing the results of the two surveys. The village health worker survey interviewed more than 100 VHWs in March 1990 from six Health Service Areas (HSA) to ask them about their knowledge and use of the water/sugar/salt solution (SSS) and ORS packets for diarrhoea. Interviews with MOH and HED personnel were conducted to obtain descriptions of their interaction with the HEALTHCOM project over the previous four years as well as their current activities. This information was used in the estimation of the degree of institutionalization achieved by the project.

1.3 Knowledge and Use of ORT

A comparison of the results from the two data sets shows that knowledge about mixing SSS and of why it should be used changed slightly from 1987 to 1990. The percentage of those who gave the correct recipe increased from 13% to 16%, and the proportion of those who knew why SSS should be used increased from 51% to 56%.

The proportion of diarrhoeal episodes that received treatment increased substantially In 1987 only 58% of all cases received treatment, while 75% received some sort of treatment in 1990. This suggests that women became more aware of the necessity to treat diarrhoea.

Similarly, the use of SSS and ORS packets in the home for diarrhoea increased from 36% to 49% of all recent cases. When both SSS and ORS treatment in the home were combined, 37% of all recent cases were given SSS or ORS in 1987 and 56% in 1990. That constitutes a substantial and significant increase in the use of ORT during the life of the project. Part of the increase in giving ORT stems from the increase in treating at home at all.

The use of ORS packets by health centres also increased from 5% of all recent cases to 12%. More clearly stated, while 32% of cases brought to health centres in 1987 were given ORS or SSS, in 1990 that figure increased to 64%. Health care workers greatly increased their use of SSS and ORS for diarrhoea.

The overall figures for the percentage of cases of diarrhoea given ORT (SSS or ORS) at home or at health centres are as follows. Considering only current and recent cases, in 1987, 39% of all cases received SSS or ORS, while in 1990 the figure was 60%. That increase (21%) constitutes a significant difference and a major achievement for the MOH and its collaborating projects, the CCCD and HEALTHCOM.

Although it would not be possible to precisely identify the extent to which HEALTHCOM activities, as opposed to other interventions, affected the results on ORT, the Project contributed directly to the promotion of ORT in a number of different ways. The resident advisor participated actively in MOH discussions that set government policy on ORT for the first time, he actively participated in numerous discussions within the MOH about improving communication strategies, and he assisted in the production of radio broadcasts about diarrhoea and ORT. The Project provided training and equipment to produce higher quality educational materials for training of health care personnel by the CCCD and for distribution to the public.

1.4 Immunisation Coverage

The overall immunisation rates in 1990 were essentially the same as those in November 1987, which means the MOH kept up with the annual increase (2.5%) in population. Using the verbal report of mothers and caretakers as the source of information, in 1987 the coverage rates for children 12 to 23 months old by vaccines varied from 94% for BCG and 84% for DPT3 to 78% for measles. The rate of

complete coverage (all eight immunisations) for this group was 74% according to mothers and caretakers verbal reports. The figures for 1990 are virtually identical and the differences are not statistically significant. The percentages found in 1990 varied from 93% for BCG to 79% for measles with an overall completion rate of 76%.

The actual coverage rates change somewhat if one considers only data recorded on vaccination cards as valid, yet that does not change the nature of the results. In 1987, 66% of the women interviewed were able to show vaccination cards, and in 1990 the figure was about the same, namely, 65%. Accepting only card data, in 1987 the coverage rates for children 12 to 23 months old by vaccine varied from 68% for BCG and 62% for DPT3 to 57% for measles, with an overall completion rate of 53%. Completion rates for the same age group in 1990 ranged from 63% for BCG and 58% for DPT3 to 53% for measles, with an overall completion rate of 48%.

A significant difference was found in coverage rates of children with their own mothers caring for them versus a caretaker other than the mother. The latter had somewhat lower coverage rates consistently. In addition, fewer caretakers were able to show vaccination cards than were mothers.

The relationship between knowledge of immunisations and coverage rates proved to be a statistically significant relationship. Although the causal direction is uncertain, higher levels of knowledge are associated with higher coverage rates. There was also a significant relationship between exposure and knowledge of immunisations. Exposure to messages came from two sources: the radio and contact with health centres. Analysis showed that both sources of messages had an impact on knowledge.

The timing of immunisations showed the clearest improvement in the EPI programme from 1987 to 1990. Both BCG and DPT1 were consistently given to children at an earlier age in 1990 than in 1987. There was also less of a drop off in the rates from DPT1 to DPT3 in 1990 than in 1987.

1.5 Exposure to Health Messages

From 70 to 75% of women in Lesotho had access to a radio in 1990 and 55% of those interviewed said they listened to the radio every day. However, listeners were not evenly distributed across the country, for radio ownership was higher in urban areas (83%) than in rural areas (66%). The urban/rural

difference in radio listening is statistically significant. Radio listening rates were also significantly higher in the lowlands than in the mountains.

Since 1980 and all during the HEALTHCOM project, the HED produced a fifteen minute radio programme on health that was broadcast daily. The programmes generally consisted of discussions with persons associated with health services in some way and covered a wide range of subjects. However, only a small proportion of women listened to those health programmes frequently. About 39% of the women had ever listened to a radio programme about health of children, and 30% had listened to such a programme in the past two months. People living in urban areas were much more likely to hear a health programme than were those living in the mountains.

It was not possible to determine exactly what messages about diarrhoea and immunisations had been broadcast with what frequency, for records about the content of broadcasts or about specific messages were not available.

With regard to vaccination knowledge, women had two main sources of knowledge about vaccinations: radio programmes about health, and the health services. Those persons who listened to the radio or who used health services knew more about vaccination than those that did not, provided they had not had their child vaccinated. If their child had been vaccinated, the mother most likely had been told about immunisations when the immunisations were given. In that way the mother could have learned about immunisations.

1.6 Issues of Institutionalization

Institutionalization refers to both the acquisition of the capacity to conduct effective health education along the lines of the HEALTHCOM methodology and the estimation of the impact of the project on the overall functioning of an institution. The agency in question in this case is the Health Education Division, which is responsible for health education for the MOH.

The HEALTHCOM methodology as presented in Lesotho featured five specific elements: identifying problems through situational analysis (using research to determine what people know and do about

specific problems), developing educational materials, pretesting those materials, revising the materials, and producing and diffusing the materials. In addition, the importance of planning was emphasized, including short and long term work plans as well as overall implementation strategies.

Each of the HED staff members were interviewed with a set of open-ended questions in order to get a sense of their work activities and what they had gained from the presence of the HEALTHCOM project. Only one person was able to articulate the main principles of the HEALTHCOM methodology as such. Three other persons explained that it was important to carefully pretest all materials before they were printed and distributed. Four other persons stated that they really did not know what the HEALTHCOM methodology might be.

Though very few persons were able to explain the HEALTHCOM methodology in terms of principles of operation, some were clearly aware of the importance of understanding the target audience in message development. In discussing their message development procedures several people described the importance of learning what people know and do about health care, and the importance of pretesting. In order to apply those skills gained, the director of the HED needs to organize planning and reporting practices for his staff as well as to supervise the tasks undertaken.

1.7 Conclusion

During the period from 1987 to 1990 the Health Education Division of the MOH improved both the quantity and quality of its output of print materials. The persons interviewed who have worked with the HED over the past few years expressed appreciation for the improved quality of materials now being produced, while also noting that the pace of production was slow. HEALTHCOM was actively involved in making certain improvements that contributed to this change, including the addition of three new staff positions, the purchase of a new computer, a new printer, radio production equipment, and an increase of more than 20% in office space. The project also provided training to the HED staff on the use of graphics with computers, on the preparation of educational materials and pretesting, and on materials development in general.

During the same period the immunisation rates remained essentially the same, which means the MOH increased immunisations at the rate of natural increase. However, BCG and DPT1 were given at an

earlier age. There was a marked increase in the use of ORT for childhood diarrhoea both at home and in health centres. This increase in use rate can be attributed to the joint efforts of the CCCD, HEALTHCOM, the HED, and the Control of Diarrhoeal Disease (CDD) programmes in retraining health care personnel in ORT and in producing and distributing materials on ORT.

The HED has greatly expanded its staff, its capacity for production, and its overall potential during the past four years. In order to be able to follow elements of the HEALTHCOM methodology, the HED should emphasize the following. First, be sure that the education of the public regarding health be its first and primary concern. This may involve some difficult choices, for other divisions of the MOH continue to consider the HED as primarily the MOH printing house. It is not clear to what extent the HED should continue to play that role. Certainly those activities take staff away from the primary business of health education. Second, that individuals be given assistance to develop work plans in collaboration with their colleagues within the HED. The importance of a team spirit and collaboration cannot be over emphasized. At the moment some persons still choose their own tasks with little regard to what others within the HED are doing. Third, that individuals receive regular supervision and material support for their activities. Fourth, that regular reporting on activities be a normal part of everyone's assignment. And fifth, that staff members receive feedback from others about their performance.

2. BACKGROUND INFORMATION

2.1 Introduction

The Kingdom of Lesotho is a landlocked country surrounded on all sides by the Republic of South Africa. With a terrain that is largely mountainous and an elevation of more than 1,500 meters, less than 10% of its territory is arable land. For the past 25 years, from one-half to two-thirds of the men from 20 to 40 years old worked in South Africa, which meant they were absent from their homes most of that time. The lack of cultivable land and the tradition of migrant labor has made the country highly dependent socially and economically on South Africa and has placed great social and economic demands on women who are left alone as heads of households while their husbands work in South Africa.

The population in 1990 was about 1,750,000 with an annual increase of 2.6% and an infant mortality rate of around 75 per 1000. Sixteen percent of the population is made up of children less than five years of age. The principal cause of morbidity for children under five is respiratory infections, while the three main causes of death for this age group are diarrhoea, pneumonia, and malnutrition. Because of the high altitude, the country has fewer tropical diseases than other African countries.

The country has been divided administratively into ten districts and 18 Health Service Areas (HSA). Each HSA has a main reference hospital and from five to ten health centres which depend on that hospital. In most parts of the country village health workers (VHW) have been trained by HSA trainers to provide first aid and referrals to health centres. One-half of the hospitals are administered by the Ministry of Health (MOH) and one-halt by the Private Health Association of Lesotho (PHAL) which is made up largely of religious and charitable organizations.

In 1986 the MOH of Lesotho asked the United States Agency for International Development (USAID) Mission and other donor agencies for assistance in improving its ability to communicate health messages to the public. The USAID Mission proposed a Communication for Child Survival Project known as HEALTHCOM for Lesotho. A PIL (Project Implementation Letter) was signed in August 1986. The Academy for Educational Development (AED), the executing agency of HEALTHCOM for USAID, assigned Dr. Edward Douglass to be the resident advisor in Lesotho. He began work there in November, 1986. AED contracted with the Center for International, Health, and Development Communication (CIHDC) at the University of Pennsylvania to carry out the evaluation of the HEALTHCOM project.

According to the PIL, the purpose of the project was to assist the MOH in applying a communication strategy combining mass media and face-to-face contacts that would lead to improved health status among children. Since it had a mandate for health education, the project was placed within the Health Education Division which was part of the Primary Health Care Department of the MOH. The resident advisor was to serve as the principal advisor to the MOH for health communication, to assist the Health Education Division (HED) personnel in planning and implementing health education interventions, and to coordinate a programme of in-service training for HED personnel.

2.2 Health Concerns of the MOH

The CCCD Project (Combatting Childhood Communicable Diseases) sponsored by USAID and administered by the Centers for Disease Control (CDC) in Atlanta began a five year programme in Lesotho in 1984. This project sought to reduce childhood morbidity and mortality by combatting two types of infectious diseases: those preventable by immunisations, and diarrhoeal diseases treatable with oral rehydration therapy (ORT). HEALTHCOM was expected to work closely with the CCCD in many ways, particularly with regard to using the media for message diffusion. More specifically, HEALTHCOM was asked to assist the CCCD in the development of materials for training health workers and for the public concerning immunisations and ORT.

In early 1986 the MOH adopted a five-year plan for a Control of Diarrhoeal Diseases Programme (CDD). The CDD programme operates within the Primary Health Care (PHC) Department with a Director named by the MOH. The MOH was unsure how many cases of diarrhoea occurred each year or how well women knew how to mix SSS. The CCCD programme estimated in 1986 that there may have been as many as 600,000 cases of diarrhoea annually in Lesotho.

The CDD programme sought to reduce morbidity due to diarrhoea by encouraging the use of an SSS mixture (water/sugar/salt/solution) in the home prepared with the "pinch and scoop" method (to be described later), by promoting breastfeeding, and by improving sanitation and hygiene practices in the home. Efforts to teach women how to mix SSS were sporadic. ORS (oral rehydration salts) packets were available in some hospitals and health centres, but no attempt was made to distribute them to VHWs or to mothers. ORS packets were produced locally by the Lesotho Dispensary Association.

In 1987 an Ad Hoc Committee on ORT was formed by the MOH to review government policy toward the use of SSS and ORS, for there had been some ambiguity about what constituted government policy regarding what to promote: the SSS mixture, ORS packets, or both at the same time. The major elements eventually adopted as new policy were:

1) distribution of ORS packets to VHWs and to traditional birth attendants through the government Maternal and Child Health (MCH) drug distribution system;

2) promotion of the use of SSS for those who are unable to obtain ORS packets;

3) encouragement of the use of any home fluid for diarrhoea if SSS or ORS were not available;

4) continued promotion of breastfeeding and other nutritious foods during episodes of diarrhoea.

The MOH began implementing a special programme for the promotion of immunisations (Expanded Programme on Immunisations: EPI) in 1981 supported largely by UNICEF and later by both UNICEF and the CCCD. Substantial improvements were noted in immunisation coverage rates in the early 1980s, especially from 1980 to 1986, as the country changed from a strategy of mixed static units and mobile clinics to only static units (permanent facilities) for immunisations.

In October 1986 the MOH adopted a five-year plan for immunisation with assistance from UNICEF and the CCCD. The goal was to increase coverage rates through heightened public awareness and social mobilization. This would be accomplished, it was thought, largely through an expansion of the HED staff and capabilities, the mobilization of VHWs and other health personnel, and the use of radio.

With these issues and priorities in place, the MOH wanted HEALTHCOM to advise the MOH in expanding the capacities of the HED for doing health education, and to guide the HED in its use of mass media to promote EPI, ORT, and other programmes. Given the MOH interest in the promotion of ORT for diarrhoea and in increasing immunisation rates, and its concern about malnutrition and child health, HEALTHCOM was asked to focus its attention on four domains: ORT, immunisations, nutrition, and child spacing. However, it was agreed that HEALTHCOM would begin by assisting the CDD and the EPI programmes through its work with the HED.

2.3 Communication Channels

There were three obvious communication channels available to reach the public with health messages in Lesotho: radio, which could reach about two-thirds to three-fourths of the population; specialized print

materials such as brochures and booklets which could be distributed or sold through government and private channels; and face-to-face contact between the public and VHWs or nurses, generally in health centres. Television was limited to the towns, and newspapers were not widely distributed in rural areas.

The potential audience for health programmes on the radio seemed to be about 70% to 75% of women in Lesotho. A total of 69% of the women interviewed said they had a radio in their home. A total of 79% either had a radio at home or listened to the radio somewhere else. Since some radios were not in working order, we can say that somewhat more than two-thirds of women listened to the radio.

The great majority (70%) of the women who listened to the radio said they listened every day. In fact, 55% of all women (N=1016) said they listened each day; 10% said they listened from one to three days a week and only 2% listened from four to six days a week. At least 21% never listened to the radio.

Radio ownership and listening were not evenly distributed throughout the country. Eighty-three percent of households in urban areas owned radios, compared to 66% in rural areas, which is a significant difference ($p < .05$). With respect to listening patterns, and considering only the group of women who listened at all (N=808), the proportions of women who listened every day in that group differed according to geographic location. It was found that 81% of urban women who listened at all, listened every day, while the corresponding figures for lowland areas was 71%, for foothills was 70%, but for mountains was only 55%.

Survey data on literacy showed that at least 90% of women could be reached with messages written in Sesotho. Both surveys conducted (1987 and 1990) asked women if they knew how to read in Sesotho, and in both cases more than 90% said yes. Thus one can expect printed materials with simple texts to be understood. That is supported by the fact that in both surveys, 94% of the women had attended school for at least a year or two. Thus only 6% had never been to school.

Most women also sought services from time to time at health centres, with or without their children. In the 1990 survey, 95% of the women gave the name of the health centre nearest to them, which indicated some knowledge of the facility. Furthermore, 63% of the women said they had taken a child to a health centre for treatment of diarrhoea in the past. All of those women might have had the chance to hear messages about ORT when they went to the health centre. If nurses who treat cases of diarrhoea were

to speak to mothers often about diarrhoea when they come to the Health Centres, the majority of women could eventually be reached through contacts at the health centres.

2.4 Evaluation Plan

The CIHDC, in collaboration with the HED and the CCCD, conducted a series of research activities to obtain data for the evaluation of the HEALTHCOM project. Those activities included the planning of a qualitative survey of knowledge of ORT and immunisation among women, a baseline and a follow up national household survey among mothers and caretakers of children, a village health worker survey, interviews with MOH and HED personnel, and an extensive review of project and MOH documents. The evaluation had two main goals: to identify changes in knowledge and practices regarding ORT and immunisations that occurred during the project, and to document evidence for institutionalization, seen as improved potential for the HED to conduct health education according to HEALTHCOM guidelines. This final evaluation report describes the main activities of the HEALTHCOM project in Lesotho, it identifies changes in knowledge and practice concerning ORT and immunisations that occurred during the life of the project, and it provides a reading on how well the project succeeded in passing on skills and a methodology for doing health education.

The two national surveys asked women or caretakers of children less than five years of age what they knew and did about symptoms of diarrhoea, about treating diarrhoea, about the use of health services, and about the immunisation of their children. Knowledge of ORT was judged by whether they knew how to mix SSS, how to mix ORS packets, and the effects of SSS and ORS packets. The use of ORT was judged by the proportion of recent cases of diarrhoea given SSS or ORS. The estimates of levels of knowledge of immunisations were based on answers to questions about the process and purpose of immunisations.

Immunisation rates were obtained by examining the vaccination cards of children under five years of age in the households visited, or by asking mothers whether their children had received specific immunisations, if no card could be found. The first survey (baseline) was conducted in November of 1987 and the second one in March of 1990. Changes in behavior related to ORT and to immunisation were identified by comparing the results of the two surveys.

A sample of more than 1000 women was chosen for each survey from a sampling frame with demographic information from 1986 obtained from the Bureau of Statistics (BOS), the government agency responsible for conducting the census in Lesotho. The country has been divided into more than 8,000 enumeration areas (EA) for census purposes. A cluster sample strategy was used to choose the sample. A random sample of 40 EAs were chosen in each survey with the help of the BOS, 34 in rural areas and six in urban areas. About 25 women were interviewed in each rural EA, or cluster, and about 35 in each urban cluster. In 1990 the original sample frame was used but enumeration areas adjacent to the original ones were chosen to maximize the comparability of the two samples.

The village health worker (VHW) survey interviewed 110 VHWs in March of 1990 from six HSAs to ask them about their knowledge and use of SSS and ORS packets for diarrhoea. The sample of VHWs chosen was those VHWs who lived closest to the health centres. This study was undertaken at the request of the MOH who wanted more information about the use of ORT by VHWs at a time when the MOH was expanding its programme of training VHWs to use ORS packets.

Interviews with MOH and HED personnel were conducted to obtain descriptions of their interaction with the HEALTHCOM project over the previous four years. This information was used in the estimation of the degree of institutionalization achieved by the project, as was the review of records. Documents reviewed included all reports written about the project, all printed materials produced and distributed, MOH policy goals and statements, and numerous internal documents concerned with project operations.

The current capacity of the HED to conduct health education was evaluated on the basis of current activities, on the status of the facilities and equipment available, on documents reviewed, and on interviews with MOH and HED personnel.

3. HEALTHCOM ACTIVITIES

This section describes the activities of the HEALTHCOM project aimed at improving the capacity of the Health Education Division to conduct health education as well as changing the knowledge and behavior of the public regarding diarrhoea, ORT and immunisations. The HED in 1986 (then known as the Health Education Unit) was staffed largely by persons with training in subjects related to health education

(nutrition, home economics, nursing, public health, etc.) but who had never been trained as health educators per se. The three main persons leading the HED in the mid 1980s had all been trained by the MOH as Health Assistants and had been actively doing health education from that training and experience. While Health Assistants received some training in educating the public about health related issues, health education per se was not a top priority in that training programme.

From the beginning of the project the MOH made clear to HEALTHCOM that the training of the HED staff was a high priority. It was thought that the entire staff could profit from training in the principles of health education and communication. Once the staff and work load were examined it also became clear that more personnel were needed to carry out the health education mandate of the HED.

3.1 Training of Personnel

The staff of the Health Education Unit, later renamed the Health Education Division, participated in a number of workshops organized or supported by HEALTHCOM and led by outside consultants. The Resident Advisor (RA) often led discussions or made more formal presentations about the HEALTHCOM methodology to the HED staff and other persons from the MOH and associated organizations. In addition, the RA was assigned one person within the HED who would work closely with him as his counterpart. The person so designated changed several times as the persons available changed or the needs of the HED shifted. The various counterparts of the RA participated in both the planning and implementing of certain parts of the HEALTHCOM methodology with the RA, and thus saw firsthand how educational materials that fit the target audience are developed and produced.

3.1.1 Formal Training

In December 1987 a week-long training session on health education for some HED staff took place, directed by a public health specialist from Ibadan, Nigeria. The sessions were primarily for the three sociologists recently hired but other persons, including the RA and a radio producer, were actively involved. The workshop focused on the development of health education on the basis of research.

Two consultants from PATH spent two weeks in December 1988 teaching the entire staff of the HED a strategy and method for developing instructional materials for health education. The staff was divided into several groups and each group developed materials about a particular domain. The practical side of materials production was emphasized. Three staff members were also trained in the use of the new computer.

A workshop on organizational development and management training was held by a management and broadcast specialist in January 1989. Nearly the entire staff participated in the ten days devoted to these discussions. An effort was made to develop an organizational structure and lines of authority that would fit well with Basotho understandings of authority and responsibility. Everyone eventually agreed to a statement of purpose about the work of the HED.

A computer specialist from AED directed a workshop in March 1989 for those of the staff interested in the use of the computer and software for producing graphic materials. Members of the Graphics Division were most involved but other staff members were welcome. The workshop lasted two weeks.

3.1.2 Informal Training

The impact of informal discussions and more formal presentations of principles of the HEALTHCOM methodology within the MOH is difficult to assess. Project reports show that the Resident Advisor (RA) stressed the principles of organizational structure and accountability, of knowing the target audiences, of always carefully pretesting materials, and of preparing materials that are immediately understood by the audience in his discussions with HED personnel. The same reports often show that the RA participated in 15 to 25 meetings a month with MOH personnel or donor agencies. It is safe to assume that these principles were also often elucidated in those meetings.

The RA worked closely with the radio producers for several weeks in late 1987 to produce a series of ten programmes on ORT. These programmes contained specific messages about diarrhoea and dehydration. The RA also advised them occasionally on the more technical aspects of their work and provided equipment to facilitate programme production and monitoring. With the exception of the short period in 1987, these contacts and collaboration were sporadic and infrequent. The project was unable to have a major impact on radio production within the HED.

At the same time, regular interaction with MOH officials, particularly the Programme Managers (CDD, EPI, FH), provided opportunities to discuss a strategy of print and radio materials development emphasizing knowledge of the audience and careful pretesting. Evidence that this occurred comes from interviews with these persons who all developed a clear vision of the importance of pretesting.

The RA had more interaction with his counterparts than with other persons, but the issue of who should be the counterpart to the Resident Advisor was never truly resolved for long. It would seem that there was some ambiguity within the MOH and the HED about the role of either the RA, his counterpart, or both. The RA had at least six different counterparts at various times for different purposes. These include the former and present Chief Health Educator, the former and present Principal Health Educator, and two Health Educators. Three of the six are no longer working in the HED.

As a result, three persons currently working within the HED have had some experience working with the RA in planning and implementing health education interventions. One of them participated in the entire methodology and would be able to continue using it if properly directed and supported; one saw only small elements of the pretesting process but listened often to descriptions of the methodology, and a third one has heard many descriptions but did not participated in actual implementation.

3.2 Advising the Health Education Division

One of the roles played by the Resident Advisor from AED was to advise the Chief Health Educator (Director) of the HED on matters concerning materials production, communications, and the overall development of the HED as a unit. The RA supervised a needs assessment conducted early in the project by a health educator from the HED, then his counterpart. In addition, the RA wrote up a summary of discussions held with the (then) Chief Health Educator (HED Director) about the development of the HED and included a series of recommendations about four areas for development: 1) recruitment and training of more personnel; 2) expansion and remodeling of office space; 3) purchasing of new equipment; 4) reorganizing of the structure of authority and responsibility within the HED. These four domains of development of the HED became the areas of focus for the HEALTHCOM project within the HED.

HEALTHCOM made major contributions in the development of the HED with regard to each of the areas mentioned. Judging from project reports, one or more of these areas was an important subject of discussion during most of the project. The actual activities in these areas are outlined below.

3.2.1 Recruitment and training of personnel

The Resident Advisor was helpful in creating several new positions to expand the HED staff, including three research sociologists to work primarily with AIDS, but who became involved in many other domains. This was accomplished through a combination of the filling of vacant posts, a reclaiming of positions assigned to other MOH units, and the creation of three new positions. The training of the HED staff by outside consultants was described earlier. There were also a number of short training courses on the use of computers, on public speaking, and on overall strategy given by the RA in the last three months of the project.

3.2.2 Physical Facilities

The Project assisted in drawing up plans and obtaining funding for adding several rooms for HED offices and reorganizing the space available. This included enclosing the veranda and planning an audio studio and an office block that were never built, mostly because official requests for funds by HED was delayed and MOH approval was not obtained. The enclosing of the veranda increased the office space by more than 20%.

3.2.3 Equipment

HEALTHCOM funds were used to purchase a number of items of equipment identified as essential by the HED staff, including a computer, a laser printer, a scanner, two cassette recorders, and an audio playback machine for radio production. In the final three months of the project two more computers were purchased along with other equipment.

3.2.4 HED Internal Structure

A new organizational structure was drawn up and officially adopted by the HED staff to streamline accountability and build more of a team spirit. This exercise followed a number of discussions with senior health educators and the visit of the organizational specialist. The new structure created a hierarchy of supervision, support, and reporting activities so that the Chief Health Educator need not supervise every person within the HED directly. It is still unclear whether or not the new structure will be implemented.

3.3 Research Projects

The Resident Advisor organized, supervised, or participated in a number of separate research projects from 1987 to 1990. Some parts of those activities were linked to the use of research in the planning of health education activities, and some were initiated for evaluation purposes. These activities often used one or two staff members from the HED who were assigned to work on the research by the Chief Health Educator.

The first research activity organized by the RA was a qualitative study of what women knew about diarrhoea and immunisations and what treatments they prefer for diarrhoea. Two sociologists were hired for about two months to interview small groups of women. The information was used in the planning of messages about ORT and in the formulation of questions for the baseline survey.

In 1987 a literature search of printed materials concerning health, medicine, and Lesotho was organized. In this way a small library on public health issues was created within the HED.
The RA spent a great deal of time assisting with the baseline survey. He was responsible for training people to do the data entry and for the accounting. Two of the key persons in the HED (health educators) were assigned to assist with the survey and thus received training in this process. During the second survey in 1990, again two persons from the HED were assigned to assist full-time with the supervision of interviewers.

In 1989 and 1990 a study of the quantity of ORS fluid given by mothers to children with diarrhoea was conducted. This research was organized jointly by the CDD and the HED, with assistance from an outside

consultant, although the RA played a dominant organizing role. One of the junior staff of the HED was assigned to assist with this study full time.

The RA was consulted occasionally for technical advice on the preparation of protocols or other aspects of survey design and implementation by groups working with the MOH. He was involved in the Lesotho Distance Teaching Centre (LDTC) use of the media survey, on qualitative research on AIDS conducted by the HED, on a national AIDS survey, and on a KAP study of public health problems. The experiences of the RA's counterparts in these exercises served to underline the importance of conducting research to understand public knowledge and practices as part of a health education strategy.

It should be noted that HEALTHCOM stressed the need for pretesting all health education materials carefully, and that pretesting was a research activity that was often organized within the HED. The HED conducted two major rounds of pretesting for the SSS mixing directions and the ORT brochure, once in 1987 and once in 1990. Pretesting of EPI posters was organized in early 1990. The RA assisted in the pretesting of materials on AIDS by the HED. In short, in terms of immediate impact, the pretesting training for the HED was the research activity most familiar to the HED staff and the one that had the best chance for adoption by HED staff in the long run.

3.4 Production of Print Materials

From 1986 to 1990 the HED produced print materials on ORT and EPI for the public, for health care personnel, and for primary school teachers. Distribution and use of these materials began during the second half of 1988.

For the general population, about 35,000 pamphlets about diarrhoea and mixing of SSS and ORS were printed for distribution to mothers. Using drawings rather than words, these pamphlets showed the causes of diarrhoea and the way to prepare and give SSS and ORS packets for diarrhoea. Beginning in November 1988, the pamphlets were distributed to hospitals, health centres, and village health workers all over the country with instructions to give one to each mother who came for health services for a child. Appendix A contains a copy of this brochure.

In November 1988 about 120,000 handbills promoting EPI were printed and distributed to wholesale and retail shops and cafes all over the country. The handbills showed the immunisation schedule and explained the importance of immunisations.

For health personnel, 400 flip charts on ORT were produced and passed out to hospitals and health centres in late 1988 for use in teaching mothers about diarrhoea and ORT. The flip charts were essentially the same images as the brochure, greatly enlarged, with an explanatory text on the flip side of each page. Nurses in ORT corners used the flip charts to explain the causes of diarrhoea, talk about prevention, and show how to mix SSS and ORS packets.

The RA made a number of field trips in late 1989 and early 1990 with the CDD Programme Director to observe the use of the flip charts in teaching. They concluded that while most of the materials were in place and nurses were using them for teaching, many nurses were not good at teaching dramatically or engaging mothers in listening.

Early in 1990 a set of guiding principles about giving immunisations was written for nurse clinicians and distributed to health centres. This list was known as the "Ten Commandments." The primary goal of diffusing the list was to reduce missed opportunities and increase consistency of immunisations.

The HED also participated in the preparation of teaching modules on ORT, EPI, child spacing and AIDS in June 1989. These were to be used by primary school teachers in their health classes. About 6,500 copies were printed for distribution to all primary schools. Each module consisted of from three to four pages of basic information that the public should know.

In July and August of 1990 the HED printed materials to be distributed with the commercial marketing of ORS packets throughout the country. This included some 200,000 flyers with mixing instructions.

3.5 Production of Radio Messages

Radio messages about health were broadcast daily at 6:15 AM and twice weekly at 6:45 PM. The evening broadcasts were rebroadcasts of the morning programme. These programmes were prepared by the two

radio producers within the HED, persons who have been producing radio programmes for more than ten years. The Monday morning slot was taken by a special programme called, "Ask the Doctor," for which people sent questions to the HED by mail to be answered by experts, generally by physicians. This programme began June 20, 1988 and continued at the end of the project. The Resident Advisor worked with the two radio producers to initiate this programme.

In addition, a weekly programme dealing with public health issues in general was broadcast at 5:45 PM. The three sociologists responsible for AIDS education produced this programme. There were thus seven different times per week that women could hear news about childhood illness or about government activity related to health. The regular programmes were sometimes preempted by coverage of government activities related to health.

HEALTHCOM has had a direct impact on production of radio messages in four ways. First, the RA participated in the preparation of a series of ten special programmes on diarrhoea, dehydration, and ORT that was first broadcast in 1988. He also assisted in setting up the health programme called, "Ask the Doctor" that began in June 1989. Second, HEALTHCOM sponsored, in collaboration with the HED, a competition for songs about ORT and EPI composed by Health Service Area (HSA) trainers. The performances of those songs were broadcast on the radio. Third, certain items of equipment were purchased to assist in radio production. Fourth, the RA discussed the process of radio production from time to time with people in the HED.

It is not possible to estimate which messages about ORT or EPI were broadcast nor how often that was done, for no records of past programmes were available. Presentations about ORT most often took the form of open discussions with village health workers or physicians about a health-related topic. We believe that the subject of diarrhoea and ORT may have been addressed on the average in two programmes a month, but that is only a statement of probability. All kinds of subjects directly and indirectly related to health were addressed on these programmes, in addition to the coverage of events for the Ministry of Health.

4. ORAL REHYDRATION THERAPY: RESULTS

4.1 Summary of Findings

A comparison of the results from the two data sets shows that knowledge of mixing SSS and of why it should be used changed only slightly from 1987 to 1990. The proportion of the total sample who gave the official and correct recipe increased from 13% to 16%, and the proportion of those who knew why SSS should be used increased from 51% to 56%. The differences in both cases are marginally significant, as can be seen in Table 1. It should be noted, however, that because of the nature of the sample, the tests used for levels of significance slightly exaggerate the strength of the correlations. The tests of significance used in our analyses assume a sample of individuals randomly chosen. The sample used for the survey was a random cluster sample rather than a random individual sample.

The proportion of diarrhoeal episodes that received treatment, however, increased significantly; in 1987 only 58% of all cases received treatment, while 75% received some sort of treatment in 1990. This suggests that women have become more aware of the necessity to treat diarrhoea.

Similarly, the use of SSS and ORS packets in the home increased from 36% to 49% of all recent cases of diarrhoea. When both SSS and ORS treatment in the home were combined, it was found that 37% of all recent cases were given SSS or ORS in 1987 and 56% in 1990. That constitutes a substantial and significant increase in the use of ORT during the life of the project. Part of the increase in giving ORT stems from the increase in treating at home at all.

The use of ORS packets by health centres also increased from 1987 to 1990. In 1987 5% of all recent cases were given ORS packets, while that figure was 12% in 1989. Stated another way, and considering only cases brought to health centers, in 1987, 32% of cases brought to health centres were given ORS or SSS. In 1990 that figure increased to 64%. Health care workers have greatly increased their use of SSS and ORS for diarrhoea.

4.2 Knowledge of ORT

The Ministry of Health, through its CDD programme, had been promoting the use of SSS to prevent dehydration for some years when the HEALTHCOM project began. The basic message for mothers and caretakers was to give SSS at the first loose stool or episode of vomiting. The SSS mixture was to be prepared using the pinch and scoop method according to the following recipe for mixing SSS: three soda cans or one litre of water, two pinches of salt, and two scoops of sugar.

In early 1987 the ORT Task Force of the MOH proposed a revised policy on ORT that was adopted before the end of the year. That policy continued the promotion of SSS but stated that ORS packets were the preferred treatment for diarrhoea to prevent dehydration, and that the MOH would begin promoting the use of ORS packets by village health workers. Therefore, some mothers were being told that they should use ORS packets if they could obtain them, and if not, they should continue using SSS for diarrhoea.

In 1987 the HED, with the assistance of the HEALTHCOM Resident Advisor, prepared new mixing instructions for SSS and conducted two rounds of pretesting before printing the instructions and having them distributed. These instructions used graphic images that did not demand literacy for comprehension.

Following the shift in MOH policy, the second survey included several questions about women's knowledge and use of ORS packets. Both surveys asked about women's knowledge of the symptoms of diarrhoea, about the effects of SSS and ORS, about their general knowledge of SSS and ORS, and about the mixing of SSS. Women were specifically asked if they had ever heard of SSS, if they knew how to prepare SSS, and what were the ingredients and quantities to use in mixing SSS. A summary of the answers to questions about the knowledge and experience of SSS is found in Table 1 where the results of both surveys are shown.

TABLE 1

KNOWLEDGE OF SSS: SURVEYS COMPARED

	1987	1990	
1) % who ever heard of SSS	90%	90%	(NS)
2) % who knew correct effect of SSS	51%	56%	(p=.03)
3) % who said they knew how to mix SSS	74%	75%	(NS)
4) % who gave correct recipe of SSS	13%	16%	(p=.07)
5) % who said they had ever used SSS	67%	74%	(p=.001)
	n=1040	n=1016	

With regard to these measures of knowledge of SSS, the results of 1987 and 1990 showed very little change. The percentage of women who had ever heard of SSS and who said they knew how to mix SSS remained almost exactly the same, as did the proportion of women able to provide the exact recipe for mixing SSS correctly. The proportion of women who knew the correct effect of SSS increased slightly, as did the proportion who said they had already used SSS. One should also note that while most women had heard of SSS and three-fourths said they knew how to prepare SSS, less than 20% of those interviewed were able to state the correct proportions of the ingredients as promoted by the Ministry of Health.

The issue of making mistakes in the SSS recipe promoted by the MOH is sufficiently important to merit a closer look. The results of the two surveys were quite similar with regard to the kinds of mistakes made, so mixing problems will be discussed using data from the second survey only. This report discusses the type of errors made, the percentage who gave a recipe that might be toxic, and a system of scoring that divides interviewees into four categories according to the number of correct amounts of ingredients that are mentioned.

The type of errors made to give such a low percentage (16%) of correct recipes concerned mostly the numbers of pinches and scoops of sugar and salt. If the denominator is taken to be 1016, the total number of women interviewed, then a little less than half of the women gave the right amount of water, and less

than one-fifth gave correct amounts of both sugar and salt. It should be remembered that 26% of those interviewed said they did not know how to mix SSS and they were not asked about the recipe. If the denominator is taken to be the number who were asked the question about the recipe (N=741), 66% of that group gave the right amount of water and about 22% gave the right amounts of sugar and of salt.

Most mistakes with the quantities of sugar and salt were from mentioning the wrong number of pinches and scoops. Many said one or three instead of two pinches or two scoops. For example, 24% of the sample gave an answer of "two scoops" for the amount of sugar, which is the correct amount. Another 18% said one or three scoops of sugar. Similarly for salt, while 27% (N=271) gave an answer of "two pinches" for the amount of salt, the correct amount, another 27% said one or three pinches.

Another way to consider the issue is to ask what percentage of the total sample of women gave a recipe that would have given a concentration of salt that might be toxic. About 6% gave a quantity of salt that was extremely high (two teaspoons or one to three scoops/litre) and that could produce toxic solutions if mixed in that fashion. Another 8% gave quantities classified as "other." We do not know what those 'other' quantities might have been.

Still another way to consider knowledge of mixing SSS is to give individuals a score for correct quantities mentioned. In this case each person received one point for citing the right quantity of an ingredient. A person who gave the correct amounts for all three would get three points, and those with no correct amounts would receive a zero. Table 2 summarizes the distribution of this variable.

TABLE 2

IDENTIFYING CORRECT QUANTITIES FOR SSS MIXTURE

	N	%
None Correct 0	436	42%
One Correct 1	272	27%
Two Correct 2	148	15%
Three Correct 3	160	16%
	1016	100%

It seems striking that two-thirds of those interviewed were able to give only one or no correct amounts for the SSS recipe. However, many of those who received a zero (none correct) never used SSS, and those who used SSS for a recent case scored higher than other groups on the knowledge variable. In fact, 30% of those who used SSS for a recent case gave the correct quantities of all the ingredients.

A number of similar questions were asked about knowledge and use of ORS packets. The results are summarized in Table 3.

TABLE 3

KNOWLEDGE OF ORS: SURVEYS COMPARED

	1987	1990	
1) ever seen a packet of ORS	46%	52%	(p=.006)
2) knew correct effect of ORS	16%	18%	(NS)
3) ever used an ORS packet	31%	36%	(p=.008)
	N=1040	N=1016	

These data show that during the period of the HEALTHCOM project, there was an increase in the proportion of women who had ever seen an ORS packet as well as for those who had ever used one. That is, the data show that there was an increase in the number of women who tried the packet at least once.

In our consideration of the data from 1990, we found a crucial difference in women's knowledge of how to mix SSS and how to mix ORS packets. Not only were there twice as many women who knew how to mix ORS packets correctly as knew how to mix SSS correctly, but there was an even greater difference in the percentage of those who said they knew how to mix and those who actually gave the correct proportions. For SSS, 75% of all women said they knew how to mix but only 16% gave the exact proportions, while 37% said they knew how to mix ORS and 32% gave the right quantities. Otherwise stated, 20% of those who thought they knew about mixing SSS truly gave the right proportions, while the equivalent figure for ORS is 86%. This confirms for Lesotho what has often been noted elsewhere, namely, that mixing ORS packets correctly is easier than mixing the SSS mixture correctly.

In short, there was a small change in knowledge of the preparation of SSS and of its effects from 1987 to 1990. In giving the recipe for mixing SSS, people seemed to make the same kind of mistakes with regard to quantities in the two surveys.

4.3 Use of SSS and ORS Packets

The most important measure of the impact of an ORT program is the use of the product promoted, whether that be home fluids, SSS, ORS packets, or something else. The MOH has been promoting the use of both SSS and ORS packets. Therefore, this report discusses changes in the use of both SSS and ORS packets at home as well as in health centres.

Reports of the use of SSS and ORS are generally based on asking whether they have ever been used, or whether they were used for a specific recent case. To obtain an "ever used" measure, HEALTHCOM surveys ask mothers if they have ever used SSS and if they have ever used ORS packets. The women are also asked if they have a current case of diarrhoea in their children under five years of age. Those without a current case are then asked which child had diarrhoea most recently, and are then asked about the treatments they gave the child, if any, for the current or most recent case. The responses to this question serve as the basis for a "last case use" measure for use of SSS and ORS.

Considering the "ever use" measure as an indicator for SSS shows there was a small increase in use from 1987 to 1990. The fact that the percentage of those who had tried ORS packets increased from 1987 to 1990 suggests that the MOH promotion of ORS is having some effect. The same measure with ORS packets also shows a similar increase. The actual percentages are shown in Table 4.

TABLE 4

EVER USE FOR SSS AND ORS

	1987	1990	
SSS	67%	74%	(p<.0001)
ORS	31%	36%	(p=.008)
	N=1040	N=1016	

The other measure of use, the "last case use" measure, provides a better reading on what is current usage. Many previous analyses have shown that women tend to forget details about cases of illness that occurred several months ago. Therefore, in the analysis of data concerning treatments chosen, including both SSS and ORS, only recent cases of diarrhoea were examined. For our purposes "recent cases" are episodes of diarrhoea that were either current on the day of the interview or that occurred within the past four weeks. There were 261 such recent cases in the 1987 data and 288 in the 1990 survey data.

Mothers reported giving SSS and ORS at home and also at health centres and hospitals, for those persons who reported taking their child to a health centre or hospital for diarrhoea were also asked what treatments their child received there. Table 5 shows the proportion of women who reported giving their child SSS or ORS at home and what proportion reported having received SSS or ORS at health facilities. The data reported are for recent cases only. The percentages use the total number of recent cases as the denominator for all places of treatment.

TABLE 5

SSS AND ORS USE: LAST CASE

	1987	1990	
SSS at Home	36%	49%	(p=.001)
ORS at Home	1%	9%	(p<.0001)
SSS at Health Fac.	5%	7%	(NS)
ORS at Health Fac.	5%	12%	(p<0001)
SSS/ORS Home or at Health Fac.	42%	69%	(p<.0001)
	N=261	N=288	

The table shows a major increase in the percentage of cases of diarrhoea given SSS at home (36% to 49%) and in the proportion of cases given ORS at health facilities. Levels of significance determined by T-test are given at the right. The change in ORS use at home is not important because there are too few cases to properly compare. However, the combined effect of those two changes yield a major change in the percentage of cases that received ORT of some kind in some place, namely, a change from 42% to 69%.

4.4 Treatment Choices

It seems useful to consider the use of SSS and ORS in the context of other possible treatments and to examine changes that occurred in treatment patterns from 1987 to 1990. There were significant changes in the percentages of episodes that were treated at all, in the percentage of episodes treated at home, and in the kinds of treatments received at health centres.

The treatments chosen for diarrhoea were examined in terms of where (from whom) treatments were sought and what was actually given. The source of the treatment is important to note because the treatments most commonly given differ according to the sources (mother, family member, traditional healer, chemist, nurse, etc.). For instance, traditional healers usually give Sesotho medicine or enemas, mothers at home most often give the water/sugar/salt solution (SSS) for diarrhoea, while nurses at health facilities now most often give oral rehydration (ORS) packets for diarrhoea. Furthermore, a behavior of not treating a child at all seems fundamentally different from giving treatment at home or taking a child away for treatment. Table 6 shows the percentages given some kind of treatment by place of treatment.

TABLE 6

PLACE OF TREATMENT

	1987	1990	
Treated at all	58%	75%	($p < .0001$)
Treated at Home	48%	72%	($p < .0001$)
Treated at Health Fac.	23%	30%	(NS)
	N=261	N=288	

The table shows a large increase (58% to 75%) for the proportion of cases "treated at all." This shift appears to be evidence of more awareness of the importance of diarrhoea as an illness to be addressed. Otherwise stated, while in 1987 42% of episodes of diarrhoea went without any treatment, only 25% were not treated in 1990.

The increase from 48% to 72% for the percentage of cases treated at home shows the importance of home treatment and is further evidence of increasing awareness of diarrhoea as an illness. However, the difference in the proportion of episodes treated at health facilities is very small.

Finally, it is important to note that in both surveys, more than twice as many episodes of diarrhoea were treated in the home than were taken to a health facility. That difference widened from 1987 to 1990.

4.5 Exposure to ORT Messages: Production, Diffusion, and Reach

The mass media channels used for diffusing ORT messages were radio programmes and printed brochures. This section discusses the relation of exposure to knowledge and use of ORT.

Only one radio station broadcast regularly in Lesotho and that station was controlled by the government. The population did, however, listen to many radio stations from South Africa. Survey results from 1987 and 1990 showed that between 70% and 75% of women listened to the radio and the majority reported listening to the government station. Furthermore, 55% of those interviewed in 1990 listened to the radio every day.

For the past ten years the HED has had a 15 minute time slot on Radio Lesotho provided free for the broadcast of programmes related to health. While those programmes were sometimes used for covering public events linked to medical services, more often the programmes were those prepared by the radio producers of the HED. In addition, those programmes were rebroadcast two days a week. For the past year there was also a separate weekly health programme broadcast in the early evening.

It is not possible to describe precisely what messages were broadcast about diarrhoea nor with what frequency, for records of the subjects of programmes and the messages broadcast were not available. Thus measures of exposure to messages about diarrhoea and ORT remain largely indirect. Women were asked if they had ever listened to a programme about the health of children and, if so, how long ago? It was found that 396 (39%) had heard such a programme and that 27% of the sample had listened to a programme in the month preceding the interview. That compares to a total of only 15% in 1987 who listened to a health programme the past month.

Considering only the group of women who listened to the radio (N=808), 42% of that group listened to a health programme during the past two months. Otherwise stated, less than half of those who listened to the radio heard a health programme in the two months before the interview in 1990. One can also see that at least 60% of women had never listened to a health programme on the radio.

In order to obtain a more precise measure of exposure, women who listened to health programmes (N=396) were asked about the name of that programme in 1990. While 30% of those listeners identified

the programme as Bophelo ba Rona, the name of the programme broadcast from Tuesday through Saturday, 56% said they did not know the name of the programme they had heard. Another 12% gave a name other than one of the three listed in Table 7. The range and frequencies of responses to this question can be seen in Table 7.

TABLE 7

NAME OF HEALTH PROGRAMMES

	N	Of Total Sample	Heard Prog.
	N=1016		N=396
Bophelo ba Rona	119	11.7%	30%
Rua Tsebo 'Me U Phele	3	.3%	1%
Botsa Ngaka (Ask the Dr)	9	.9%	2%
Other	46	4.5%	12%
Don't Know	222	21.9%	56%

The percentages in the right hand column show most clearly how large a proportion of people who listened to health programmes remembered the names of the programmes. The majority of women did not know the name of the health programme they sometimes listened to. Another indication of the same phenomenon is the fact that while 57 people said they listened on Monday morning, the only time that Botsa Ngaka was broadcast, only nine persons identified the health programme they heard as Botsa Ngaka. The addition of the percentages of those who named one of the three programmes yields a total of 13%, which is the proportion of women of the total sample who listened to a health programme and were able to give the name of that programme. This constitutes a small increase from the 9% obtained in 1987.

A scale to measure exposure to radio health programmes was created with possible scores from zero to four. Persons who had no radio or did not listen to the radio received a zero, those who listened to the radio received a one, and those who listened every day were given a two. Person who had listened to a health programme were given three points while those who heard a programme about diarrhea or dehydration were given four points. According to this scale, people in urban areas had more exposure to health messages than those in rural areas.

A significant difference in exposure was also found among geographic areas as shown in Table 8. The sample was grouped into three categories: those who received no points, those with one or two, and those with three or four points. The table shows the average scores of each of the four geographical areas on this radio listening scale.

TABLE 8

LISTENING BY GEOGRAPHIC AREA

	0	1-2	3-4	
URBAN 11%	52%	[illegible]%	100%	
LOWLANDS	18%	49%	33%	100%
FOOTHILLS	23%	48%	29%	100%
MOUNTAINS	34%	46%	20%	100%

The table shows that about fifty percent of the population in each of the four geographic areas received one or two points on the scale, which meant they often listened to the radio. There is a steady decrease in the proportion of persons who were given three or four points on the scale (third column) as one moves from urban to lowlands, foothills, and mountains. Exactly the opposite effect can be seen in the category of those who were given zero points (left column). The data show that persons living in urban areas were more likely to hear health messages than those living in the mountains, while those in the lowlands and foothills were situated between the two extremes.

The two most frequent subjects of radio programmes recalled by women were diarrhoea (22%) and health in general (19%), followed by AIDS (13%), nutrition (9%), and personal cleanliness (9%). No other subject was mentioned more than 5% of the time.

In the two months preceding the second survey, relatively few people reported listening to health programmes about subjects of most concern to the HED, particularly diarrhoea and AIDS. Considering the entire sample population, only 9% of the women reported having heard about diarrhoea on a health programme in the past two months, and only 5% had heard a programme on AIDS. If the HED is to have a good chance of having an impact on knowledge or practice, the percentages of persons reached must increase considerably.

4.6 Exposure to Health Messages: Effects

While it is encouraging to realize that SSS use increased during the period of the project, it is also important to understand why the increase occurred. The relationships that must be examined in this case are those between exposure, knowledge, and use. Did the persons more exposed to radio messages know more about ORT? Were those who saw the brochure more knowledgeable than those that did not when we control for other variables? Was increased knowledge associated with increased use? Did increased exposure lead to higher use rates without changing knowledge?

These relationships were tested with the sub-sample of women who reported a recent episode of diarrhoea and who thus have had a recent opportunity to use ORT as a treatment. It is assumed that persons who listen more frequently to the radio and those that listen to health programmes will hear more messages about diarrhoea and ORT than those that do not listen. The exposure scale with a range of from zero to four mentioned above was used, for it combined radio listening with having heard health programmes.

Two measures of knowledge were used: a measure about the correct mixing of SSS, and one about the effects on the body of using SSS or ORS. These two aspects of knowledge were covered from time to time in radio programmes about diarrhoea. The correct mixing measure was based on the number of amounts of the SSS ingredients that were correctly given. The effects measure was derived from the answers to a question about the effects of SSS and of ORS. The measure of use was based on the use of SSS or ORS in the home for a recent episode of diarrhoea.

The distribution of the sample for the exposure scale was not normal, for about 40% had a value of one and about 20% were in each of the other three categories. It was found that knowledge is positively related to exposure; people scored significantly higher on all three knowledge variables if they were exposed to health messages. This was still true when we controlled for education. However, it was found that the only factor that made a difference in knowledge was listening to a health programme. Those who listened to a health programme recently scored higher consistently than those who did not.

Table 9 shows the scores of the two types of knowledge from the surveys in 1987 and 1990. The data from 1990 contains information about exposure that is not available for 1987. The effects of exposure

to a health programme on knowledge scores for 1990 can be seen in three results: the mean values for 1990, values for those exposed to the programme, and values for those not exposed.

TABLE 9

KNOWLEDGE SCORES BY EXPOSURE

	1987	1990	1990		
	Mean	Mean	No Expo.	Exposed	
Correct Mix	.85	1.01	.82	1.16	$p < .05$
Effects	.66	.75	.63	.94	$p < .05$

A comparison of the mean values for 1987 and 1990 shows that both values are slightly higher in 1990 than in 1987 but the difference is not significant. A comparison of the values of those exposed versus those not exposed in the 1990 data, however, shows a significant difference for both values. The persons exposed to health programmes had higher values on the knowledge measures, which suggests that exposure to health programmes leads to higher levels of knowledge about diarrhoea and ORT.

While being exposed to a health programme on the radio had an effect on knowledge of mixing SSS, exposure to the brochure about mixing SSS also had an effect on the same knowledge. In 1989 some 35,000 brochures about mixing SSS and ORS were sent to health facilities for distribution to mothers. Women were shown the brochure and asked if they had ever seen it. Some 37% of women said they had seen the brochure. People who saw the brochures knew significantly more about SSS mixing and they scored higher on the mixing scale than people who did not see it.

The effects of having seen the brochure on knowledge about SSS mixing were much stronger among people who did not hear about health programs on the radio (N=594). Among this group, those who did not see the brochure scored very low on the knowledge of mixing scale (.78), and those who saw the brochures scored significantly higher on the scale (1.07). In contrast, among people who had heard a health program on the radio (N=391), the effects of seeing a brochure were not significant (1.20 vs. 1.33, p=.25). In other words, people who saw the brochure knew more than people who did not see the brochure only when they did not hear health programs on the radio.

These results suggest that both seeing the brochures and exposure to radio messages had a significant impact on people's knowledge. Among people who saw the brochure, exposure to radio messages was still significant (1.06 vs. 1.33). Therefore, even when someone had seen the brochure, she might still learn something about mixing SSS from radio, whereas when someone had heard the radio programme, whether she saw the brochure or not does not matter much.

5. IMMUNISATIONS

5.1 Summary of Findings

The overall immunisation rates in 1990 were essentially the same as those in November 1987, which means the MOH just kept up with the annual increase in population (2.5%). Using the verbal report of mothers as the source of information, in 1987 the coverage rates for children 12 to 23 months old by vaccine varied from 94% for BCG and 84% for DPT3 to 78% for measles. The rate of complete coverage (all eight immunisations) for this group was 74% according to the verbal reports of mothers and caretakers. The figures for 1990 were virtually identical and statistically were not significant; the rates varied from 93% for BCG to 79% for measles with an overall completion rate of 76%.

The actual coverage rates change somewhat if one considers only data recorded on vaccination cards as valid, yet that does not change the nature of the results. In 1987, 66% of the women interviewed were able to show vaccination cards, and in 1990 the figure was about the same at 65%. Using only card data, in 1987 the coverage rates for children 12 to 23 months old by vaccine varied from 68% for BCG and 62% for DPT3 to 57% for measles with an overall completion rate of 53%. Completion rates for the same age group in 1990 ranged from 63% for BCG and 58% for DPT1 to 53% for measles, with an overall completion rate of 48%.

A significant difference was found in coverage rates of children with mothers caring for them versus those with caretakers who were not their mothers. The latter had somewhat lower coverage rates consistently. In addition, far fewer caretakers were able to show cards than were mothers.

Examination of the knowledge of immunisations and immunisation coverage rates showed a significant correlation between the two, as higher levels of knowledge are associated with higher coverage rates.

It is not possible to be certain, however, that increases in knowledge helped to increase coverage rates, for it may be that people learn about immunisations when they take their children to be immunised. Thus we are not sure of the causal direction of this association.

There was also a significant relationship between exposure and knowledge of immunisations. Exposure to messages came from two sources: the radio, and contact with health centres. Analysis showed that both sources of messages had an impact on knowledge.

The area that showed the clearest improvement in the EPI programme from 1987 to 1990 was in the timing of giving immunisations. Both BCG and DPT1 were consistently given earlier in 1990 than in 1987, and there was less of a drop-off in the rates from DPT1 to DPT3 in 1990 than in 1987.

5.2 Introduction

During the early 1980s the MOH policy on immunisations changed from a strategy of combining static units and mobile teams to using static units only. Immunisation rates for completed coverage of 12 to 23 month old children increased from 35% to 65% from 1980 to 1986 according to UNICEF/CCCD/MOH surveys. The special EPI programme that began in 1981 and that was renewed in 1986 deserves much credit for the increased coverage rates in Lesotho, rates that were among the highest in Africa. When the CCCD project began, it was hoped that the vaccination coverage could be further improved through increased public awareness and,social mobilization.

In order to follow this discussion of changes in vaccination rates and knowledge of vaccinations, two aspects of the presentation must be clarified. One, certain terms used in the presentation of the findings need to be defined, and two, the logic and considerations that guided the selection and presentation of these findings must be laid out. In this way the reader will better understand what is being presented and why these aspects of the findings were chosen rather than others. It should also be noted that when the word "significant" is used, it refers to "statistically significant."

This discussion of vaccination coverage rates presents findings with reference to several factors: 1) age groups of children, (eg., 12 to 23 months; 12 to 59 months old); 2) rates from card evidence and from verbal reports; 3) completion rates of individuals and those of the sampling clusters.

In our samples of households, we identified the youngest child in each household as the index child. Thus we have data from 1040 index children in 1987, and 1016 index children in 1990. In the 1990 survey, there were more children less than 12 months old (N=365, 36%) than in 1987 (N=317, 31%). The number of children between 12 and 23 months old was basically the same: 288 (28%) in 1987 and 289 (28%) in 1990.

The age of the children refers to the age at the time of the interview in number of months. In both surveys, respondents were asked for the age of the child and the answers were recorded in months. This measure was used in calculations of age specific vaccinations coverage rates that compared the results of both surveys. This measure of age is most reliable when the child is less than one year old, for as a child becomes older, it is more likely for respondents to remember and report his/her age by year rather than by month.

Each respondent was asked if her youngest child had a vaccination card. If she said yes, she was asked to show the card. If the card was shown, the information about vaccination (vaccines and dates) was copied onto the questionnaire. That information for calculating vaccination rates we call "card information." Certain coverage results are presented based upon card information. Of all the index children, 66% in 1987 had cards that were shown, and in 1990, 65% showed cards. Older children in both surveys were less likely to show cards than younger children. This may be because fewer cards were given out several years ago, or because the cards eventually get lost.

Respondents were also asked about each vaccine and if their child had received each one. Those answers about vaccination status we call "verbal report." Vaccination coverage rates according to verbal report are usually higher than the coverage rated based on card information if the coverage rates from cards use the overall population as the denominator. The former may be considered an upper estimate of coverage rates, and close to actual rates, while the latter may be considered a lower estimate.

5.3 Immunisation Coverage Rates: 12 to 23 Month Old Children

Coverage rates of EPI programmes are conventionally reported for children 12 to 23 months of age, for children should have completed all their immunisations by that time. Therefore, we first present those results here.

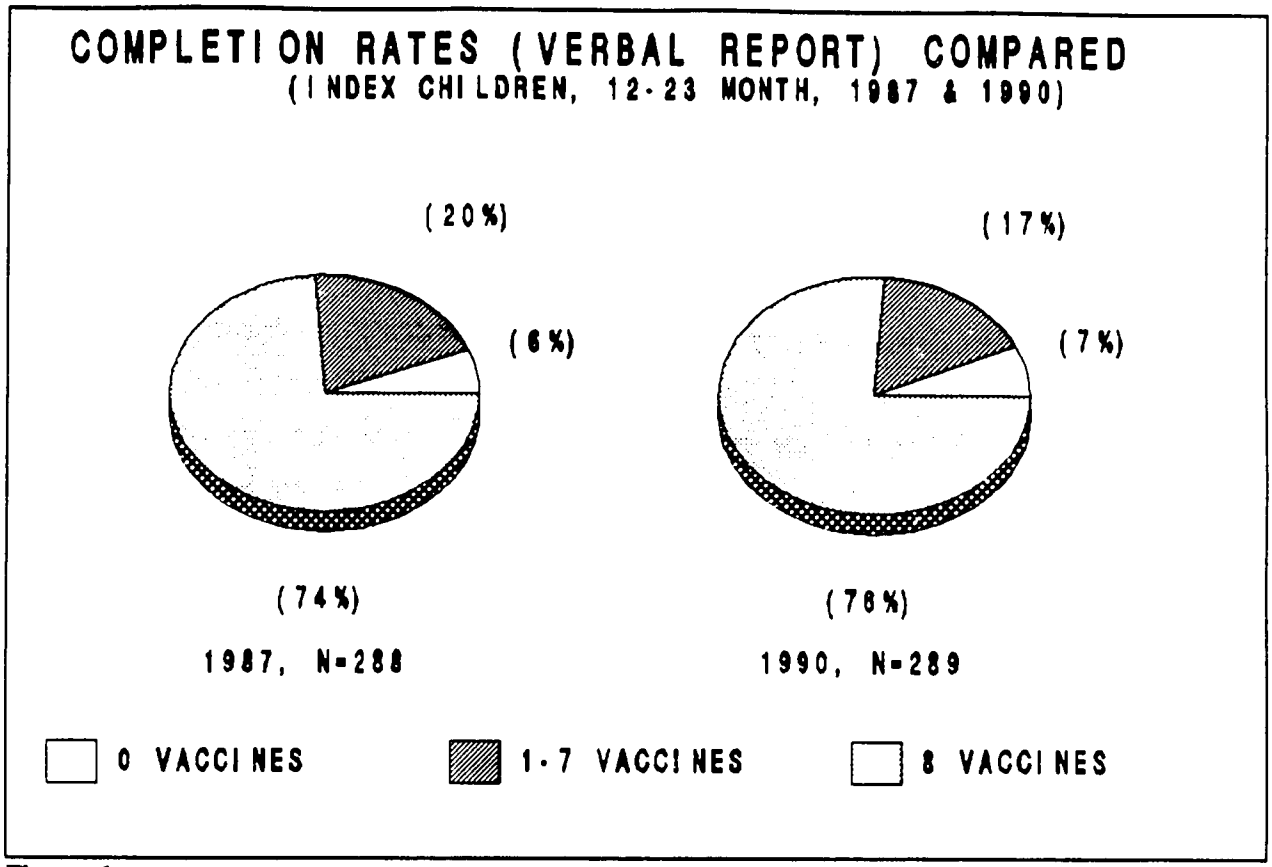

Figure 1

Figure 1 shows the proportion of children with no vaccinations, those with from one to seven vaccinations, and those with the full series of eight vaccinations in the two surveys. The vaccination coverage rates based on verbal report among 12 to 23 months old children are virtually identical for 1987 and 1990. That is, in 1990 76% of the children had completed their immunisations compared with 74% in 1987. In 1990 only 6% had received no immunisations in 1987 and in 1990 the figure was 7%.

In Figure 2 the completion rates by vaccine are shown so that the results of the two surveys can be compared. The differences in the two results, both in terms of completion rates of each vaccine and in term of drop offs (eg. DPT3 coverage rate is lower than DPT2, which is lower than DPT1) are consistent. Rates in 1990 were a few percent higher for most of the vaccines.

The coverage rates in Figure 2 were based on verbal report. Some women may have said yes to questions about whether a child had received a particular vaccine because they thought that was the expected answer. Given that possibility, it may be that verbal report figures were slightly inflated. Even if we were

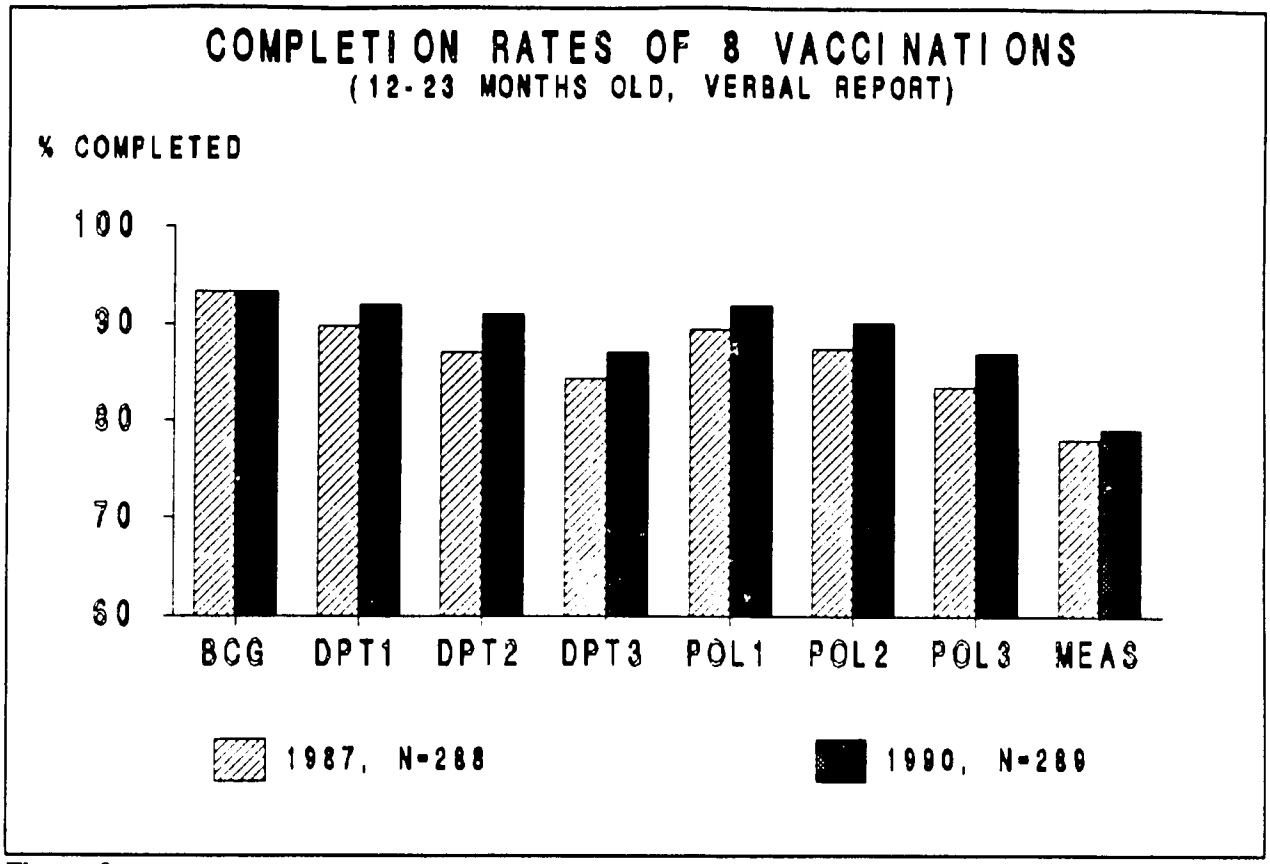

Figure 2

to say that inflation was as much as 5 to 10%, we still would find high coverage rates for measles above 70% and BCG above 80%.

Vaccination coverage rates according to card information were also compared for the two surveys. Based on card information, the 1987 survey showed slightly higher coverage rates: 53% of the 12 to 23 month old group had all eight vaccinations, whereas in 1990, only 48% had received all eight vaccines. The results can be compared in Figure 3.

One can also compare the immunization information from cards from the two surveys by vaccine. Those results are shown in Figure 4 which shows that each individual vaccine was slightly higher in 1987 than in 1990. This difference, however, comes mainly from the difference in percentage of respondents who could show cards in the two surveys. A significant difference in the proportion of women who could show

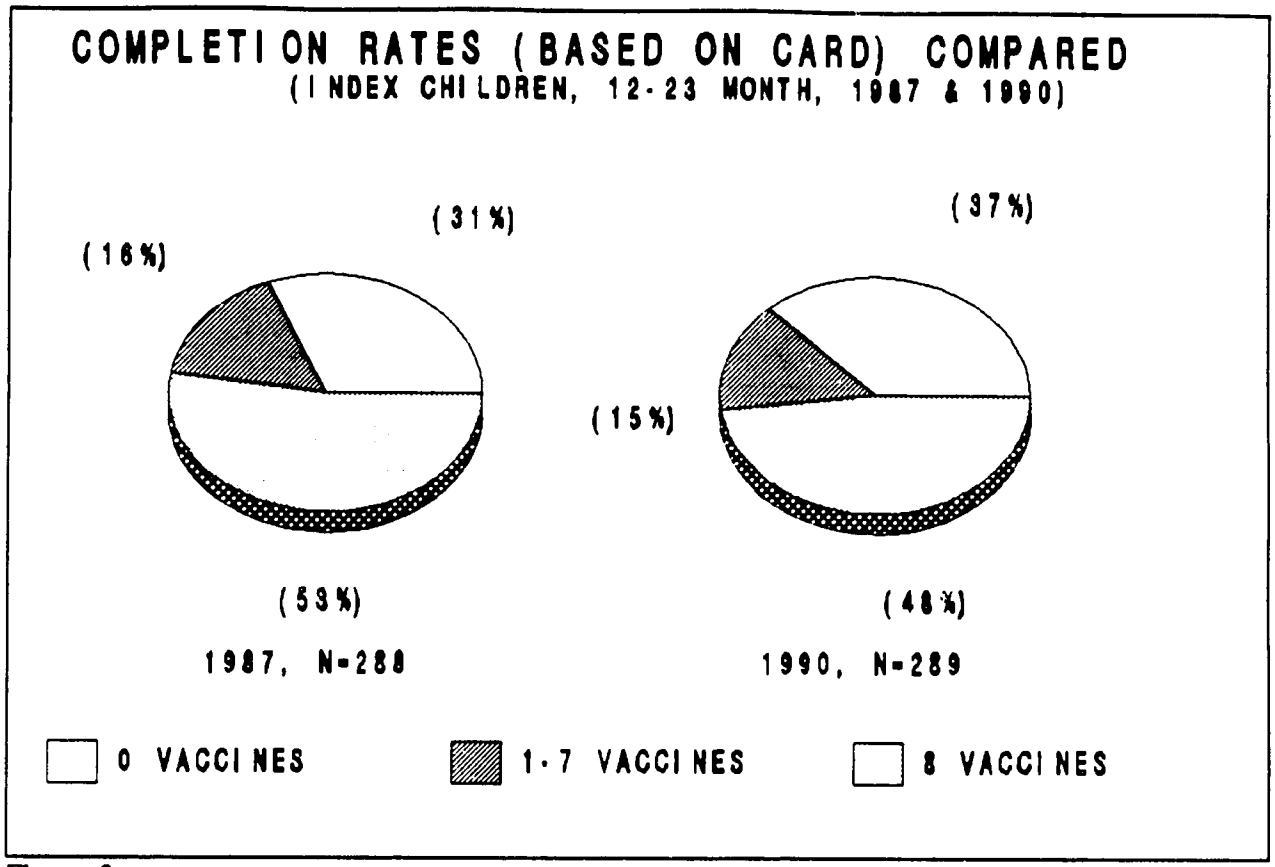

Figure 3

cards was found for children 12 to 23 months old. That seems odd since there was no difference in the total population. In the 1987 survey, 69% showed cards and in 1990, 64% could show cards. Reasons for this difference remain unclear.

If we look at coverage rates among children with cards only, the coverage rates of the two surveys were almost exactly the same: 75.6% in 1987 and 75.0% in 1990. Therefore, the apparent difference in coverage according to card information can be attributed entirely to the difference in the proportion of women who showed cards.

5.4 Showing Vaccination Cards

In the preceding section it was shown that whether a respondent can show a vaccination card for a child or not affects the coverage estimates based on cards. In fact, if all mothers or caretakers were able to show a card for their child, coverage rates for specific vaccines would increase by 20 to 30%. In both

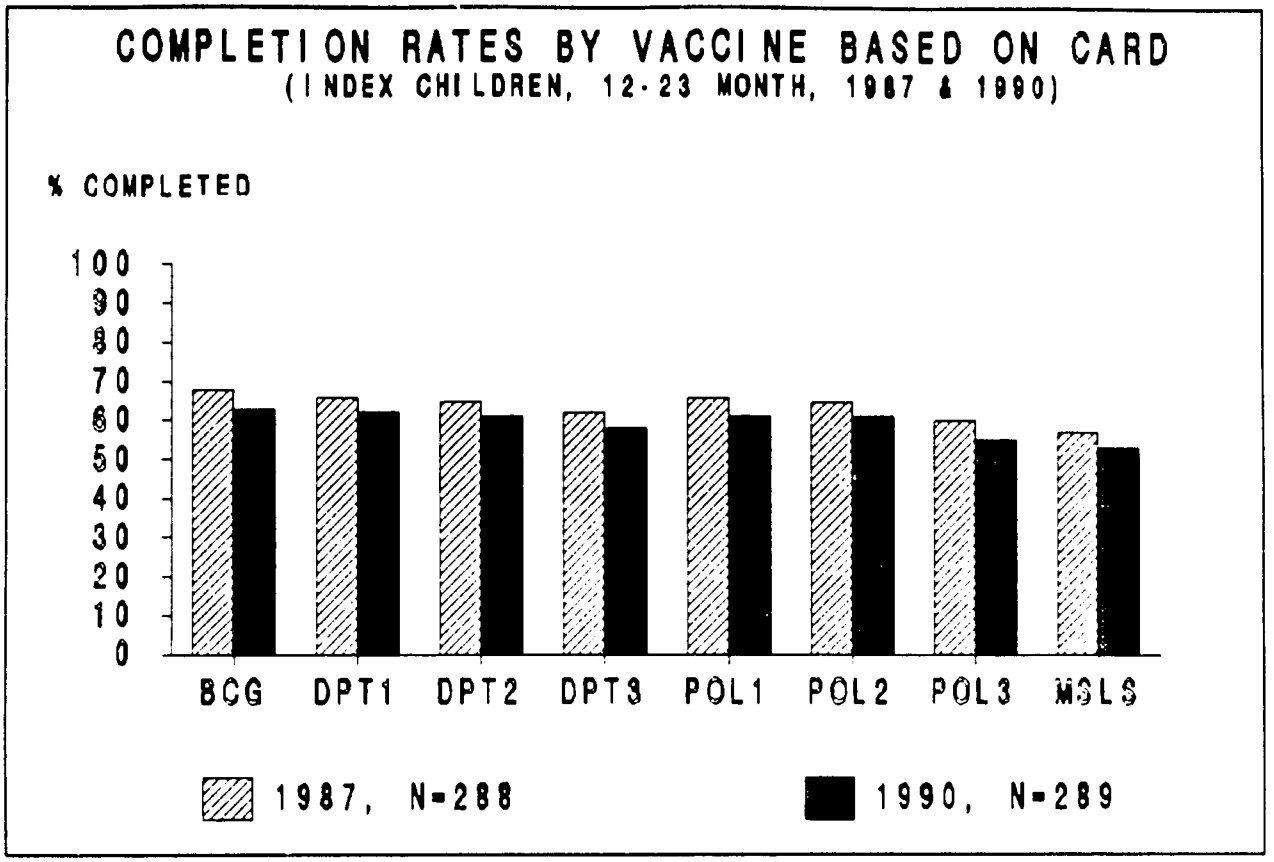

Figure 4

surveys all women were asked if they had a vaccination card for the child in question. If they said no, or they were unable to find the card, they were asked whether or not the child had received each vaccine one by one. If they said yes and were able to show the card, the vaccination information was obtained from the card itself. In both surveys some mothers were unable to locate a card they said they had, while a large group of caretakers (non-mothers) said they had a card but were unable to locate the card.

Why is it that the rate of showing cards is so low when the surveys sponsored by the MOH and CCCD/WHO/UNICEF have reported finding cards with 90 to 96% of the persons interviewed? Other surveys have recorded far higher rates of card showing because they interview only mothers, and because interviewers are sometimes instructed, as in 1988, not to interview a woman if she has no vaccination card. One may also want to know who were more likely to have and show the cards? Are there differences in those who showed cards and those who did not? Do the two surveys show a similar pattern?

In order to have a larger number of cases, these questions will be considered using all index children. We noted earlier that in the 1987 survey, 66% of the respondents were able to show cards, while in 1990, 65% showed cards. There is basically no difference in the two surveys in the proportions who showed a card. In each survey, however, mothers were more likely to show cards than were caretakers. In 1987, 80% of respondents were mothers and 20% were caretakers. In 1990, 83% of the women interviewed were mothers and 17% were caretakers (non-mothers). The proportion of mothers and caretakers able to show cards in 1987 and 1990 are shown in Table 10.

TABLE 10

PROPORTIONS ABLE TO SHOW CARDS

	1987		1990	
Mothers	73%	(of 829)	69%	(of 842)
Caretakers	40%	(of 210)	42%	(of 174)

Table 10 shows that a far higher proportion of mothers in both 1987 and in 1990 were able to show vaccination cards for their children than were caretakers. People with no education at all were generally less likely to show a card. In addition, the respondents with less education were less likely to show cards. In the 1987 survey, 53% of women with no education (N=62) showed cards, and in 1990, only 41% of women with no education (N=63) showed cards.

5.5 Age at Time of Vaccination

The completion rates of immunisation in 1987 and 1990 were compared for the different age groups of children in the sample. The question asked was: was is the proportion of children fully immunized in each age group? Children were divided into age group according to their age on the day of the interview. This information provides an estimate of the age at which a child is likely to receive each vaccine.

Significant differences were found between the two surveys only with regard to DPT 1 and Polio 1. As can be seen in Figure 5, in 1990, by the age of two months, more than half of the children had received DPT1. In 1987, however, it was two or three months later until coverage rates reached that point.

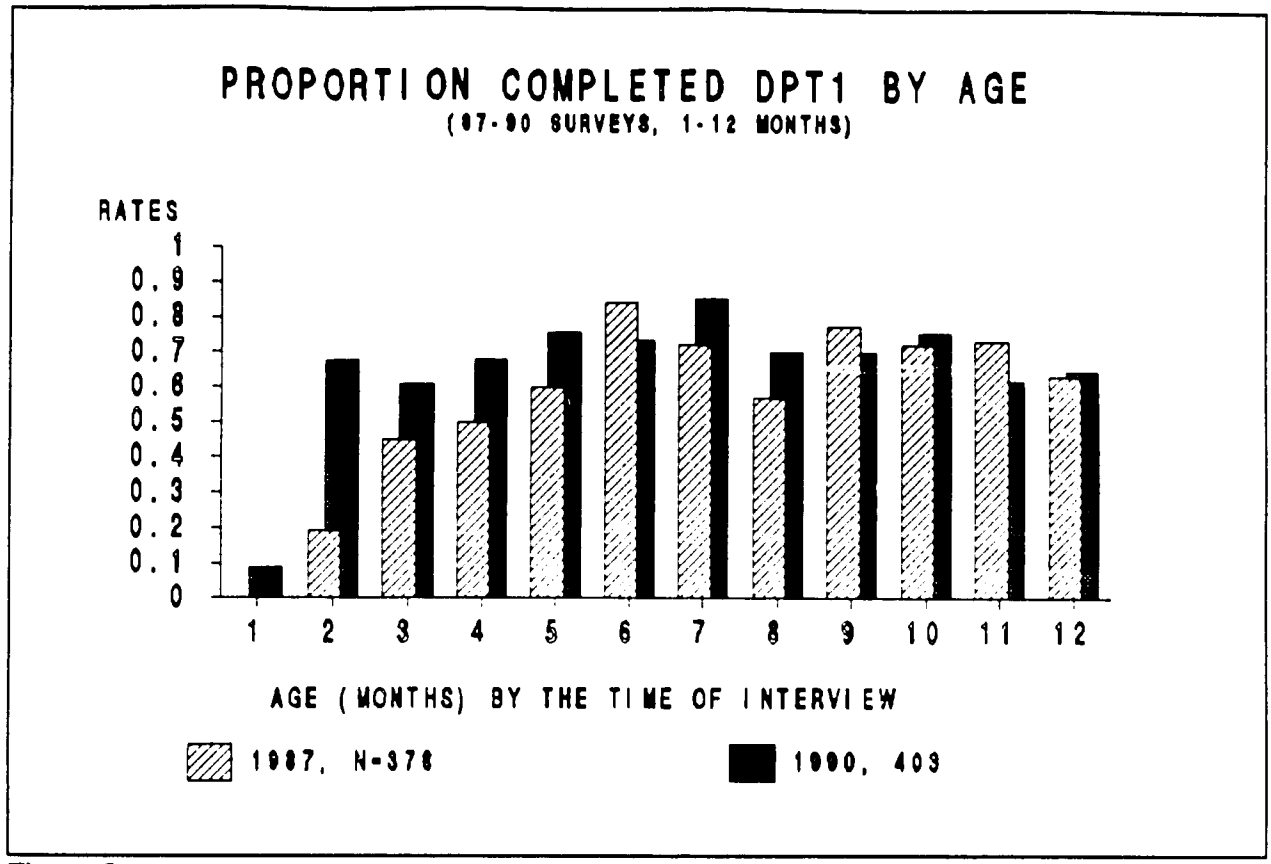

Figure 5

5.6 Immunisation Rates by Cluster

The preceding discussion about vaccination coverage was based on vaccinations considered individually. Another way of examining coverage rates is by comparing the mean rates of each cluster. This provides an additional way to compare vaccination coverage in different geographic areas, as well as coverage rates of the same geographic areas but at different times. While we know that vaccination coverage in 1987 and 1990 are about the same, by looking at coverage rates at the cluster level, we can learn if these coverage rates are evenly distributed throughout the country.

A comparison of the mean values of completion rates show that the distribution of rates seems rather uneven. Furthermore, we found that areas of lower coverage in 1987 often became higher, and higher areas sometimes became lower. There were 40 sampling clusters in the 1987 survey and 39 clusters in the 1990 survey. The mean completion rates for children 12 months or older can be calculated by cluster, which gives one value for each cluster. In 1987 the range of these cluster means was from 24% to 95%,

while the 1990 range was from 57% to 100%. These clusters were ranked according to the mean value of their completion rates and then divided into four categories, or quartiles. The pattern revealed can be seen in Table 11 which compares the quartile coverage rates of the two surveys, ie., the lowest to the highest 25% of each survey:

TABLE 11

QUARTILE RANK OF CLUSTER COVERAGES COMPARED

(12 months or older, verbal report)

	1987	1990
Lowest 10 clusters	57.2	65.7
Lower middle 10 cluster	71.9	76.7
Higher middle 10 cluster	83.6	84.1
Highest 9 clusters	92.4	95.6

As can be seen, there is a general increase in each of the four categories (quartiles), and particularly in the lowest 10 clusters. Note also that the figure for 1990 for the lowest group is 9% higher than that of 1987 in their completion rates.

Since the two surveys selected adjoining clusters, it is possible to compare pairs of clusters and how they performed in 1987 and 1990. The question is, did clusters that had higher coverage rates in 1987 also have higher coverage rates in 1990? Figure 6 compares the two results by cluster by giving the ranking order by completion rate for 1987 on the X axis and the percentage of the completion rates for 1990 on the Y axis. If most cluster pairs had similar rates of completion in both surveys, then we should find a gradual rise, or slope, in the points plotted, for those ranked lower in 1987 should also have lower completion rates in 1990. As can be seen, there is no direct relation between mean coverage rates among clusters in 1987 and 1990.

5.7 Knowledge and immunisations

The relationship between knowledge of immunisations and coverage rates is of interest because a strong relationship would serve as evidence that teaching the population more about immunisation could help increase coverage. Our potential for comparison of the two surveys is limited by the lack of knowledge questions on the first survey. However, one question about knowledge asked in both surveys was about

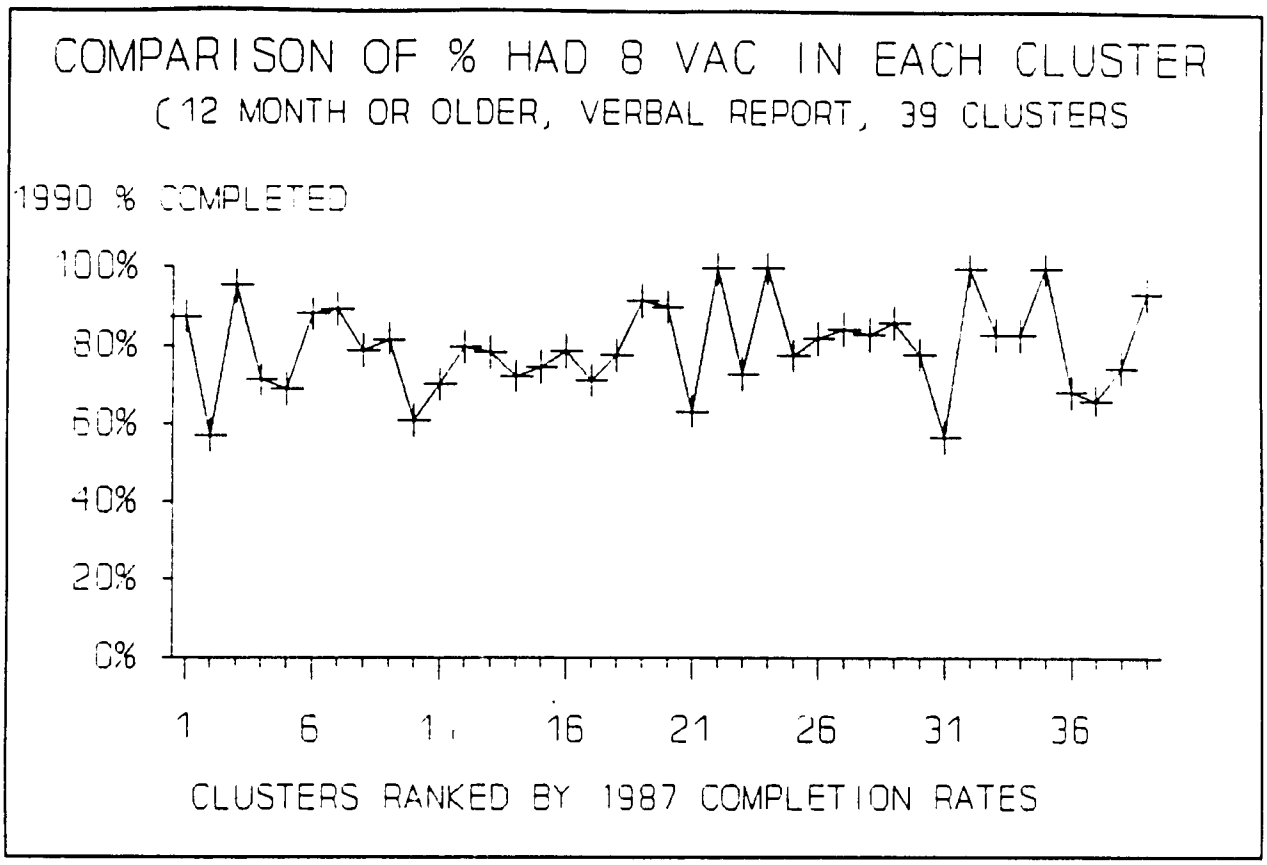

Figure 6

the purpose of immunisations. The correct answer was, "to protect a child from disease.

There was a significant difference in the results of the two surveys. In 1987, 73% of the women answered the question correctly, while 80% of the women answered it correctly in 1990 ($p < .05$). In both surveys, this knowledge of the purpose of vaccinations is positively related to vaccination coverage. Among children 12 months or older, children whose mothers or caretakers knew the correct answer had significantly ($p < .01$) higher completion rates both in 1987 and 1990. Table 12 shows the completion rates of the group of women who knew the correct answer and of the group who did not know the correct answer in 1987 and 1990.

TABLE 12

COMPLETION RATES BY KNOWLEDGE OF PURPOSE OF VACCINATIONS

(12 months or older, verbal report)

	1987		1990	
Knew	81.6%	(of 512)	82.3%	(of 519)
Did Not Know	60.9%	(of 202)	72.0%	(of 132)

Almost exactly the same pattern of the relationship between knowledge and vaccination can be observed in the 12 to 23 months old group, the group most often used in coverage rate estimates.

The data indicate that in 1990, significantly more people knew about the purpose of vaccinations. The data also show that while coverage rates remained the same among women who knew the purpose of vaccinations, among those that did not know, coverage rates increased from 1987 to 1990. Thus, for those who did not know why children should be immunized, their chances of completing all the required vaccinations was significantly higher in 1990. This suggests that the impetus for behavior change (more children vaccinated) was something other than knowledge of why immunisations are desirable. It may have been some other type of knowledge (where or when to get immunized) or something else all together.

There appears to be a clear positive relationship between knowledge and rates of completion. We are unable, however, to state with confidence that those who have learned about the purpose of vaccination are more likely to have their child vaccinated, for we are unsure of the causal direction of the relationship. Do people obtain knowledge first, and then have their children vaccinated, or do they learn about vaccination during the vaccination process? Or is it some of both? The evidence does not permit us to provide a definitive answer to that questions. We can say, however, that in 1990 children had a better chance of getting vaccination than in 1987 whether the mother knew about the purpose of vaccination or not.

Individual knowledge was found to be related to vaccination in the 1990 results, with or without the knowledge variable discussed above. More questions about various aspects of vaccination knowledge were asked in the second survey, including the name of the first and last vaccination a child should have, and the age at which those two vaccinations should be given. The answers to these knowledge questions were combined to create a knowledge scale with a range of values from 0 to 5. This knowledge scale was then used to clarify the relationship between knowledge and vaccination coverage.

The relationship between this scale and completion rates are displayed in Figure 7. One can see that among children 12 months or older, the higher the mother's knowledge, the more likely was the child to have completed all the vaccinations. This correlation is highly significant: $R = .21$ ($p < .001$).

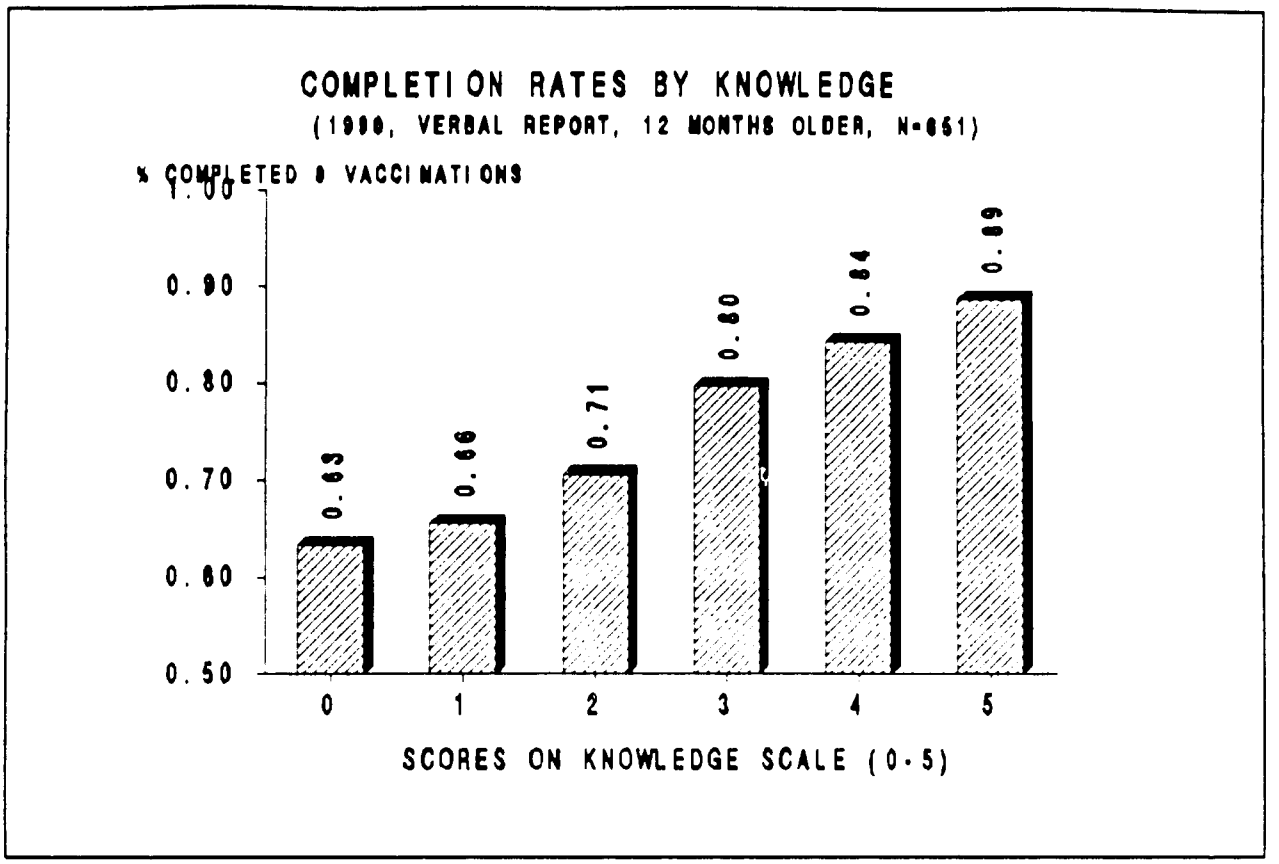

Figure 7

One might suspect that this correlation is due to confounding effects of other variables associated with both vaccination and knowledge. The most likely factor is respondents's levels of education. However, when we control for education, this correlation is still significant $R = .17$ ($p < .001$), which means that this knowledge and vaccination relationship holds true for respondents of all education levels.

Again, this does not demonstrate the direction of the relationship. However, the consideration of the effects of exposure to campaign messages shows that people did not gain vaccination knowledge solely through the vaccination process. The data showed that exposure to radio messages was related to vaccination knowledge among people whose children had not received any vaccinations at all, as well as among those whose children had received all eight of them.

5.8 Exposure and Knowledge of Immunisations

In Lesotho there are three main channels of communication available to reach an adult audience: the

radio, print materials distributed through public and private means, and face to face interactions. HEALTHCOM assisted the HED in preparing radio messages about both ORT and EPI for radio broadcast. The project also participated in the development of print materials for ORT but did not produce many print materials about EPI for general distribution. Finally, the project assisted the EPI programme and CCCD with training materials for health care personnel such as nurses working in health centres.

The national surveys provided some data about the effects of exposure to radio broadcasts and about the face to face contacts. During 1988 and 1989 the HED prepared daily radio messages about health issues, and some of them addressed the subject of immunisations. These programmes were monitored in January and February of 1990 just before the second survey was conducted. It was found that EPI was the subject of three of those programmes. But is there a relationship between hearing health programmes on the radio and knowledge of immunisations?

It is hypothesized that people who often listen to the radio, especially people who have heard health programs, would have higher levels of knowledge about vaccinations. The results from the 1990 survey do support this hypothesis about effects of radio programs on the audience. People who said that they had listened to the radio everyday and had heard health programs knew more about vaccination, ie., they scored higher on the knowledge scale. An exposure scale with a range from 0 to 2 was created by putting these two measures together. Score 0 means neither listening to radio everyday nor having heard a programme about health. Score 1 means either listening to the radio everyday, or having heard a radio programme about health. Score 2 means both listening to the radio everyday and having heard a health program. The knowledge scores may range from 0 to 5.

Table 13 shows the distribution of the respondents into these categories and the knowledge score of each exposure category. About one third of all the respondents fall into each category.

TABLE 13

KNOWLEDGE SCORES BY EXPOSURE

Exposure	Knowledge Score	Distribution
0	3.0	N=363 (36%)
1	3.5	N=354 (35%)
2	3.9	N=299 (29%)

This exposure scale has a significant positive correlation with the knowledge scores: $R=.23$ ($p<.001$). The relationship may, however, be due to confounding variables. We know that knowledge scores and education levels are significantly related ($R=.33$, $p<.001$), and that education is related to exposure scores ($R=.20$, $p<.001$). Thus it may be that the relationship between knowledge and exposure is due to the artifacts of the underlying effects of education. However, controlling for education, the partial correlation between knowledge and exposure is still significantly related ($R=.15$, $p<.001$). Therefore, the relationship between knowledge and exposure is not due only to the confounding effects of education.

The survey results also shed light on the effects of exposure due to face to face contacts at health centres. As indicated earlier, knowledge and vaccination coverage are related, but we are unsure of the causal direction of that relation. We suspect that people learned about vaccination during the vaccination process. We can, however, test that hypothesis and see if exposure to radio had increased the audience members' knowledge while we also control for vaccination coverage.

The group of children 12 months or older were divided into three categories: those who had no vaccinations at all, those who had from one to seven vaccinations, and those who completed all eight of the vaccinations. We then looked at the correlation between exposure and knowledge with regard to these three categories of immunisation status. The results are shown in Table 14.

TABLE 14

KNOWLEDGE BY EXPOSURE CONTROLLING FOR VACCINATIONS

(12 months or older, verbal report)

			Knowledge Scores			R between knowledge & exposure
		N	Exp=0	Exp=1	Exp=2	
# vaccines received	0	(45)	1.7	2.6	3.3	.33 (p=.03)
	1-7	(87)	3.0	3.0	3.2	.06 (ns.)
	8	(522)	3.2	3.5	3.9	.20 (p<.001)

These data indicate that both exposure to radio and to the vaccination process had some effect on mothers' levels of knowledge about vaccinations. The table can be read horizontally to see the relationship between knowledge and exposure to radio messages among each of the three groups: no vaccinations, some

vaccinations, and completed vaccinations. Although exposure to radio led to higher scores for each group, the effects is strongest with the no vaccination group and the completed vaccination group. This trend shows a relationship between exposure to radio and knowledge of vaccinations.

Table 14 can also be read vertically to see the relationship between knowledge and the number of vaccinations received. For each of the three groups (no exposure, some exposure, most exposure) the knowledge scores are higher with more vaccinations. For example, in the 'no exposure' group, the score is 1.7 for no vaccinations and 3.2 for those who completed the vaccination series. For those with the most exposure (exp=2), the respective scores are 3.3 and 3.9. This trend indicates that the process of getting immunized adds to women's knowledge of immunization in general.

This evidence suggests that women have learned about vaccination by both listening to radio programmes and through the process of getting their children vaccinated. Thus knowledge of vaccinations can be increased through the use of radio, just as it can be increased by improving communication during the process of vaccinations.

6. ISSUES OF INSTITUTIONALIZATION

6.1 Indicators of Institutionalization

This report defines institutionalization as having essentially two meanings. First, it refers to the capacity of an institution or agency to apply the project methodology after the project ends. In this case we refer to the capacity of the HED to apply the principles of the HEALTHCOM methodology to planning and implementing health education interventions, particularly the development and diffusion of health related messages. Indicators linked to this sense of the concept provide evidence of skills acquired and principles understood that are basic to the HEALTHCOM methodology. The main question to be addressed is, to what extent can the HED be expected to apply the HEALTHCOM methodology in its overall strategy and implementation?

Second, institutionalization refers to the long term impact of the presence of a project on the overall functioning of an institution. In this case we refer to the changes in the capacity of the HED for conducting effective health education that have occurred because of the operation of the project. The indicators related to this meaning reflect overall capacity to produce messages for health education as well as the relation of the HED to other parts of the MOH. They help us answer the question of how the presence of the HEALTHCOM project has changed the capacity of the HED to function. This understanding of the process of institutionalization was a high priority for the MOH from the beginning.

Four types of indicators were chosen to evaluate these two ways of defining institutionalization. One was the discussions held with each of the HED staff, including the director, about their understanding of the HEALTHCOM methodology. Another was descriptions of a recent project undertaken by the staff that might illustrate to what extent the methodology was applied. Yet another was a review of HED reports that could document the strategy used in the development of health education materials. Finally, there was discussions with the MOH and PHAL personnel who had the most contact with the HED in the course of their work. Those persons were the two people in charge of Primary Health Care for PHAL, the head of the PHC Division of the MOH, and the three programme managers directly concerned with the HED and HEALTHCOM (EPI, CDD, MCH/FH).

6.2 Continuing the HEALTHCOM methodology

The HEALTHCOM methodology as presented in Lesotho featured five specific elements: identifying problems through situational analysis, developing educational materials, pretesting those materials, revising the materials, producing and diffusing the materials. Research was to be used to determine what people know and do about specific problems, and that was known as "situational analysis." In addition, the importance of planning was emphasized using short and long term work plans as well as overall implementation strategies.

Each of the HED staff members were interviewed with a set of open-ended questions in order to get a sense of their work activities and what they had gained from the presence of the HEALTHCOM project. Individuals were also asked to explain what they understood about the HEALTHCOM methodology from their experience. Only one person was able to articulate the main principles of the HEALTHCOM methodology as such. Three other persons explained that it was important to carefully pretest all materials before they were printed and distributed. Four other persons stated that they really did not know what the HEALTHCOM methodology might be.

While very few were able to explain the methodology in terms of principles of operation, some people were clearly aware of the importance of learning about the target audience in message development. In the process of developing messages, some of these persons take what people know and do as a starting point. The importance of careful prestesting seems to have been well recognized.

Only one person was able to describe a recent project of message development that revealed an awareness of the sequence to follow in order to implement the HEALTHCOM methodology. The other persons either did not understand the methodology sufficiently to describe it, or they did not have the kind of task assignments that would permit them to carry through on specific projects from beginning to end. One had the clear impression that both of these explanations currently limit the use of the HEALTHCOM methodology by the HED.

It was not possible to examine cases of the use of the HEALTHCOM methodology from written reports, the third indicator, because there were very few reports available. The conversations with the HED staff

revealed that the personnel was not being encouraged to hold meetings for planning work activities, that most people tended to work in isolation or with one other person, and that few, if any, reports on tasks accomplished were ever required. Nor did there seem to be any current follow up or supervision of work in progress. The staff did not know where they might fit into a system of being accountable. Furthermore, many of the tasks undertaken were self assigned, as with the radio producers and the graphics unit, or people responded to demands made from other divisions within the MOH. While those demands may often be legitimate, they must be made to fit with the overall strategy of the HED.

Given the current climate within the HED at the time of the research, it seems probable that some of the personnel will try to develop messages on the basis of research and will pretest messages. It does not appear likely, however, that the HEALTHCOM methodology will be generally applied as a communication strategy. There are three reasons for that. First, there is not sufficient direction from the Chief Health Educator and his assistant to implement the strategy. Discussions with the Chief Health Educator failed to show what he thought of the HEALTHCOM methodology. Second, there is very little planning or reporting on specific tasks now occurring. Without a system of accountability and a clearer definition of responsibility for each person, no strategy can be applied. Third, there is not enough material and supervisory support for research and pretesting. For example, in the one example given above of a person who described a process of applying research and pretesting to the development of messages, there were three separate attempts made to pretest. Each time the direction of the HED failed to make the proper arrangements. Should that pattern continue, people will eventually stop trying to implement what they have learned. Fourth, not enough people have gained an understanding of the basic principles of the methodology so they could help one another.

Two other factors must be considered in order to understand what has and has not been achieved in terms of institutionalization of the methodology. One, while many of the HED staff had gained practical experience in doing health education, no one besides the Chief Health Educator ever had much formal training in modern methods of health education. Everyone understood that the public had to be taught to think and act differently with regard to health problems, but they had not received training in how best to achieve that goal. Two, there was always some ambiguity about the role of the Resident Advisor and his counterparts, the person or persons he was to train primarily. The RA was asked to advise the Chief Health Educator on policy matters and staff development, which placed them in a kind of counterpart position. At the same time, the RA was given three different persons at different times with whom to

work primarily: a former medical student, a sociologist, and a Health Assistant with many years experience in village health education work. The principles learned were somewhat different with each one.

There are several things that could be done within the HED to improve the chances for the application of a communication strategy along HEALTHCOM lines. First and foremost, more direction is needed from the Chief Health Educator and his assistant. This means instituting a system of planning and reporting so that each person feels rewarded and responsible for his and her own tasks. More than 18 months ago a new organizational structure was developed and adopted for the HED, but it was never implemented by the director. Second, with a clearer structure of authority, staff members will be able to plan their activities from month to month and will need to coordinate their tasks with those of other members of the HED. This will make it more difficult for people to assign tasks themselves. Third, the HED should continue to strengthen its interaction with the Programme Managers (EPI, CDD, MCH/FH) so that messages needed by those managers can be properly developed by the HED. While the Programme Managers expressed satisfaction that the process of message development had improved during the life of the HEALTHCOM project, they also expressed concern about the lack of output of the HED.

6.3 Impact of HEALTHCOM on HED Capacities

The presence of the HEALTHCOM project has greatly expanded the potential for the HED to coordinate MOH policy in health education and to produce health messages better suited to the target populations. Evidence for these changes come from project documents, periodic reports, and interviews with people from the MOH and outside agencies.

6.31 Staff Size

The HEALTHCOM project was helpful in adding five new active personnel to the HED between 1987 and 1990. This was done in part by reclaiming positions lent to other MOH Divisions. However, also added were three permanent positions for persons trained in sociology that would conduct research as well as prepare materials. The idea that one or more persons within the HED should spend time on research

was a new one for the HED. The presence of these three persons adds not only three health educators, but also an entirely new skill and experience--social science research--to the HED.

The three sociologists have participated in a KAP study on AIDS and have lead many discussion groups in order to determine how people currently think and talk about AIDS. They also prepare a weekly radio programme about seven different health problems. It is unclear to what extent their research skills will be used by the HED.

6.32 Training of HED Personnel

A number of staff members participated in workshops sponsored by HEALTHCOM on health education, on materials development, the use of computers, and organizational structure. It seemed clear that the availability of the computer equipment has facilitated the production of materials in many ways, and that some individuals benefitted from the materials development workshop. Results from the organizational workshop were unclear, perhaps because a new organizational structure was developed and accepted, but then not implemented.

Evidence of the effects of these workshops must come from outside observers and from what is actually done, for when these persons were asked about the skills they acquired in these workshops, they were generally unable to describe what they had learned. That does not mean they did not learn specific skills, but it suggests they were not aware of having acquired them. Perhaps these workshops were too short to have more of a lasting impact. However, the Programme Managers (EPI, CDD, FH) each talked about how the materials produced in 1989 and 1900 were of better quality than those from 1986, before the HED was concerned with research or pretesting. This shift can be partially attributed to training provided by HEALTHCOM.

With the benefit of hindsight, it seems that the HED staff would have benefitted from a longer term and more formally structured training in health education. Two reasons explain that may have been difficult to arrange. One is that the personnel was engaged in their daily work routines and training would have taken them away from those duties. A second is that some of the opportunities for training by the RA did not elicit positive responses from the staff.

6.33 Physical Plant and Equipment

Through the purchase of equipment for materials production and finding donors willing to donate funds, HEALTHCOM added a great deal to the capacity of the HED to produce quality print materials. The availability of graphics software and quality printers has changed completely how the Graphic Section operated. The radio producers have benefitted from the purchase of recording and monitoring equipment for producing radio spots. And through the efforts of HEALTHCOM, funds were obtained from donors to pay for a substantial expansion of office space for the HED.

6.34 Organizational Structure

Discussion of the work activities of staff members revealed a great deal of ambiguity in what was expected with regard to planning and reporting of specific activities. Individuals were not expected to regularly report to a colleague or supervisor about what they were doing, and people seemed unaware of what others in the HED were doing outside their section. In short, the lines of accountability were not clearly drawn within the HED. Each person interviewed expressed satisfaction in doing certain tasks that they engaged in from time to time. That satisfaction could be greatly increased with an operational system for planning and reporting.

6.35 Relationship of the HED to other MOH Divisions

Interviews were conducted with the directors of programmes or divisions that had frequent contacts with the Health Education Division, and thus with HEALTHCOM, as well as with personnel from PHAL and the CCCD project. Questions were asked about their contacts with the HED before the beginning of the HEALTHCOM project, about their understanding of the HEALTHCOM methodology, and about the nature of their current interaction with the HED.

The HEALTHCOM project seems to have had a clear impact on the thinking of Programme Managers (ORT, EPI, FH) about how to develop messages for diffusion to the public. Four separate elements were often mentioned. First, the HEALTHCOM project has emphasized the importance of formulating a standard set of messages that all associated programmes and communication channels will diffuse. In the period from 1986 to 1990, the Ministry of Health developed official policies on ORT and EPI, and

HEALTHCOM participated in that process. Second, the project participated in the establishment of committees to promote IEC activities in general in the MOH. The work of those task forces led to the establishment of consistent MOH policy on ORT and EPI. Third, there was an awareness that health education messages must be based upon knowledge and practices of the population, information that can only be obtained through research. Fourth, there was an emphasis upon pretesting all materials before they are actually diffused.

While these and other changes in strategy and awareness during this four year period were not due solely to the presence of HEALTHCOM, the project has had an impact on how people think about health education, and it has played an active role in some of these changes. The awareness of persons within the MOH but outside the HED about the importance of research and pretesting has changed what is expected from the HED. They now expected a higher quality of output. They expressed a desire for the HED to take more initiative in collaborating with them in message development by coming to them with ideas rather than simply responding to requests.

There was also an impression among many of the persons interviewed that the definition of health education priorities had shifted somewhat between 1986 to 1990. In 1986 most of the health education activities concerned the teaching of specialized personnel (nurses, health assistants, village health workers) on how to do health education for the public. Emphasis has shifted to the development of messages for the public as well as a continuing involvement in teaching others how to conduct health education. In addition, while the HED continued its function as a centre for printing materials for the MOH upon demand, for preparing materials for workshops, and for acting as the public relations arm of the MOH, the importance of those functions may have decreased somewhat.

Ministry of Health officials and others were asked to comment on how the HED had developed during the past four years and how the activities of the HED might be strengthened. In terms of changes achieved, people mentioned that the quality of the materials had improved both artistically and with regard to content, and that the emphasis upon pretesting had improved the chances for messages to be heard as intended. Some people expressed satisfaction that the HED was now participating actively in the promotion of IEC strategies within the MOH. Several persons mentioned that the lack of structure and coordination within the HED has led to a low level of output.

6.4 Conclusion

Discussions with a number of individuals indicate that the HEALTHCOM project, with the continual presence of the resident advisor and the visits of consultants, had an impact on how people think about health education. There seemed to be a general awareness of the importance of doing research on current knowledge and practices before developing messages, of considering the target audiences carefully, and of pretesting materials before they were being diffused. Because the resident advisor has had a number of official counterparts in the past four years, no one person within the HED has fully absorbed how this methodology can best be used. However, with clear direction the staff can certainly continue those aspects of this methodology that are suited to their situation.

The HED has greatly expanded its staff, its capacity for production, and its overall potential during the past four years. It has the key role to play within the MOH in directing all health education activities. Discussions with various people suggested that in order to use what has been learned to the fullest once the HEALTHCOM project has ended, and to increase its efficiency, the HED should pay most attention to the following issues.

First, be sure that the education of the public regarding health be its first priority. This may involve some difficult choices, for other divisions of the MOH continue to consider the HED as the MOH printing house. It is not clear to what extent the HED should continue to play that role. Certainly those activities take staff away from the primary business of health education.

Second, that individuals be given assistance in developing work plans that complement what others in the HED are doing. The importance of a team spirit and collaboration cannot be over emphasized. At the moment some persons still choose their own tasks with little regard to what others within the HED are doing.

Third, that individuals receive regular supervision and material support for their activities. This has not occurred in the past year or two. Fourth, that regular reporting on activities be a normal part of everyone's assignment. This has not been a requirement for some time. Fifth, that staff members receive feedback from others about how they are performing.

APPENDIX A

SSS/ORS/Diarrhoea Brochure

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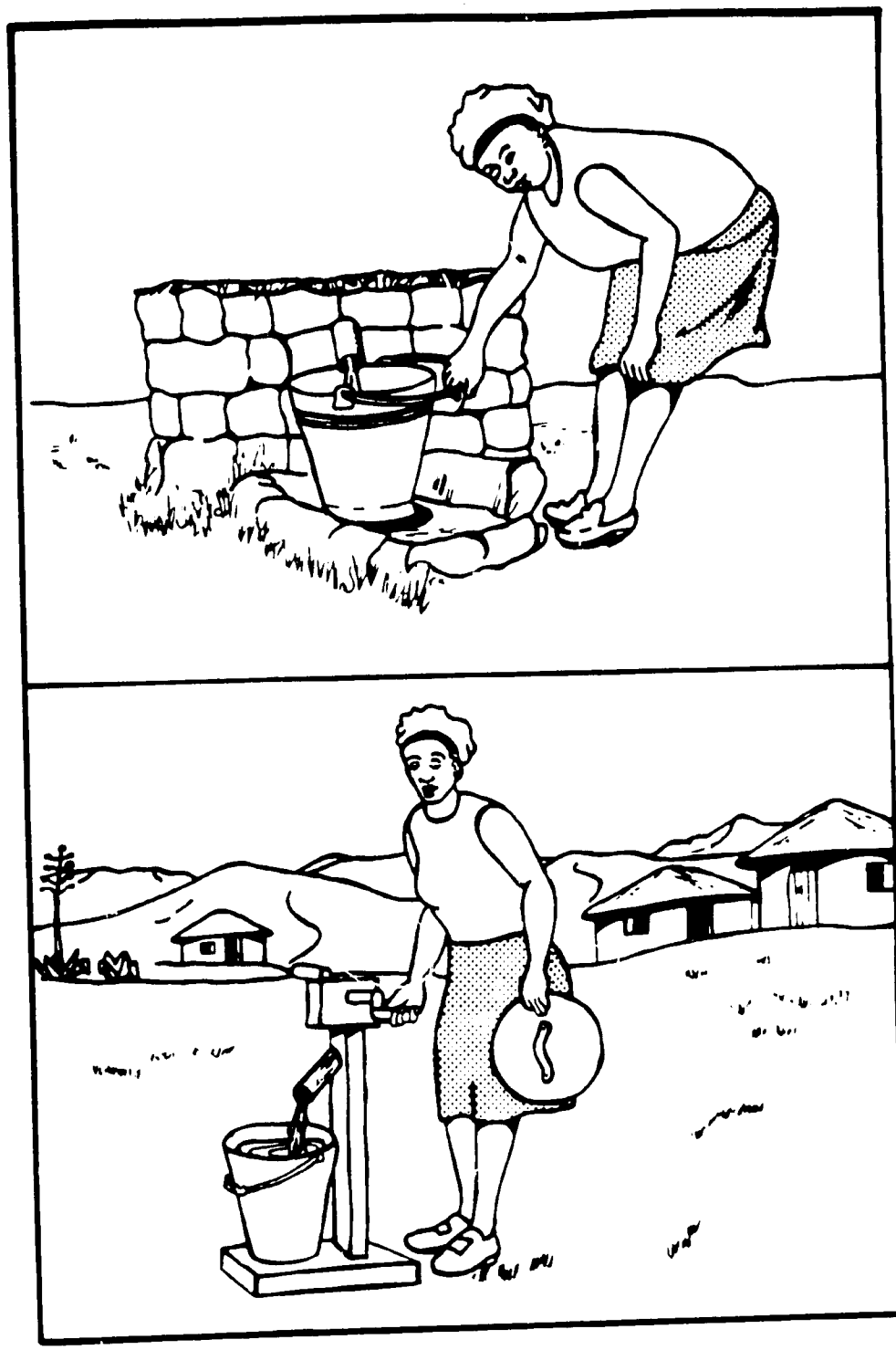
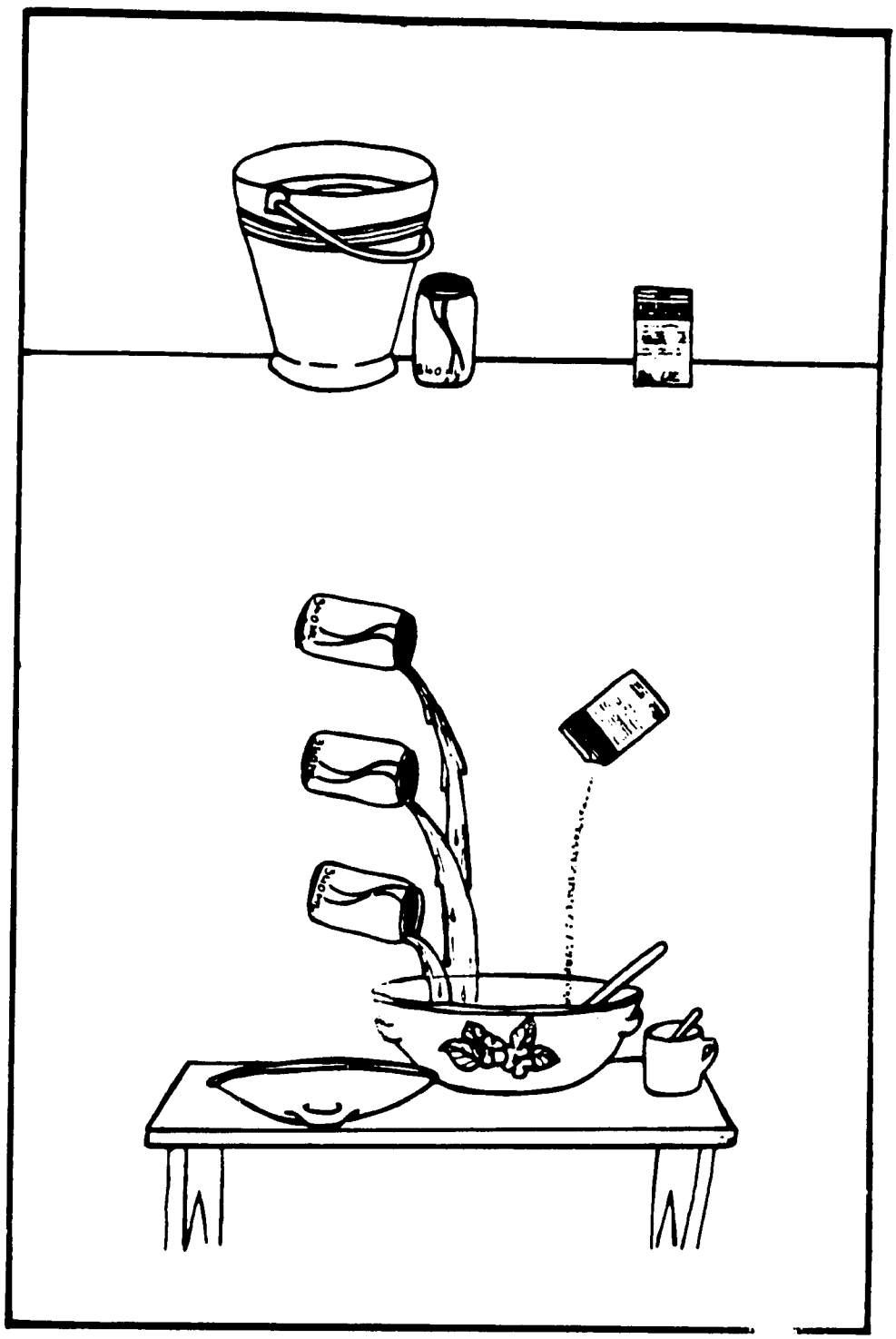
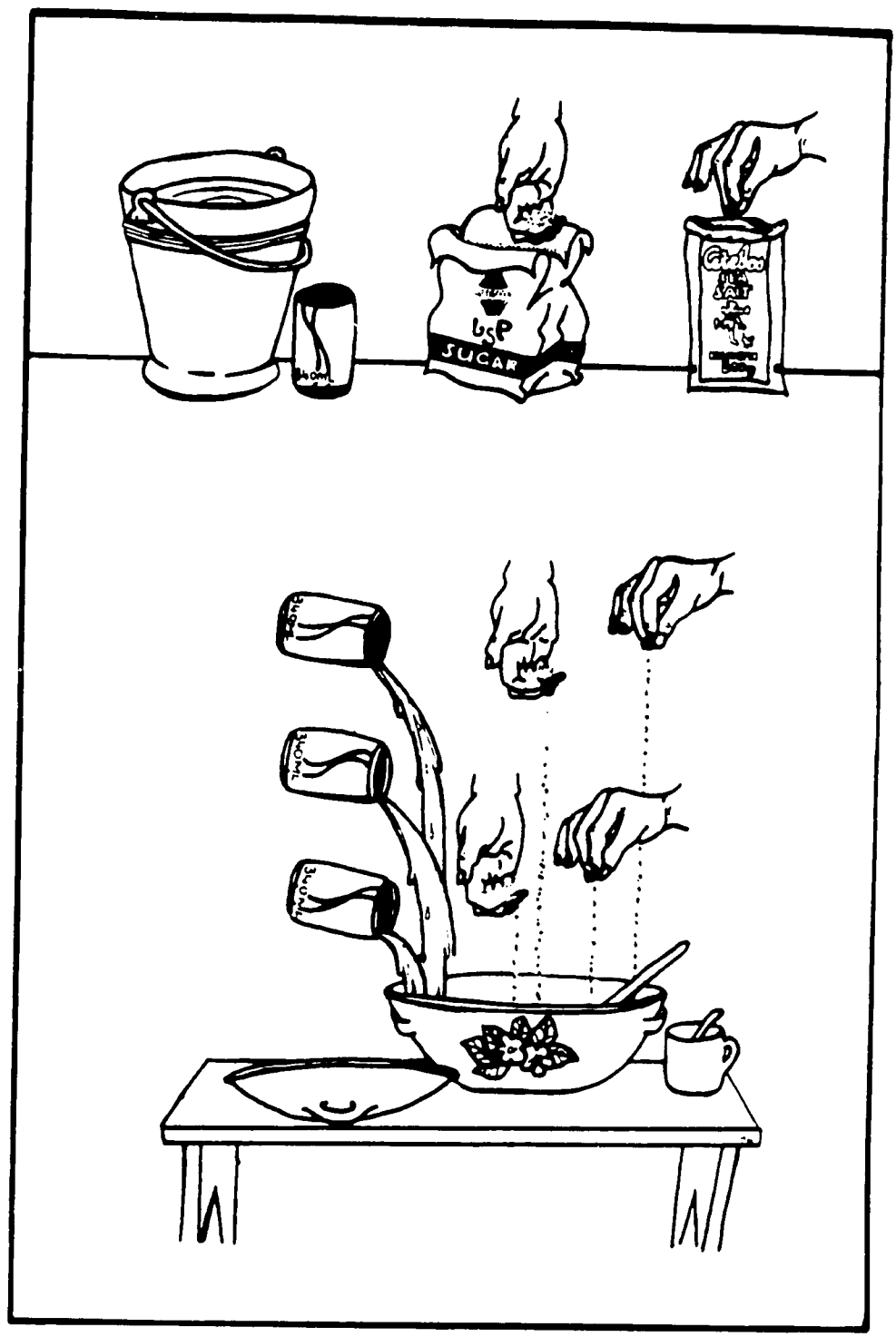
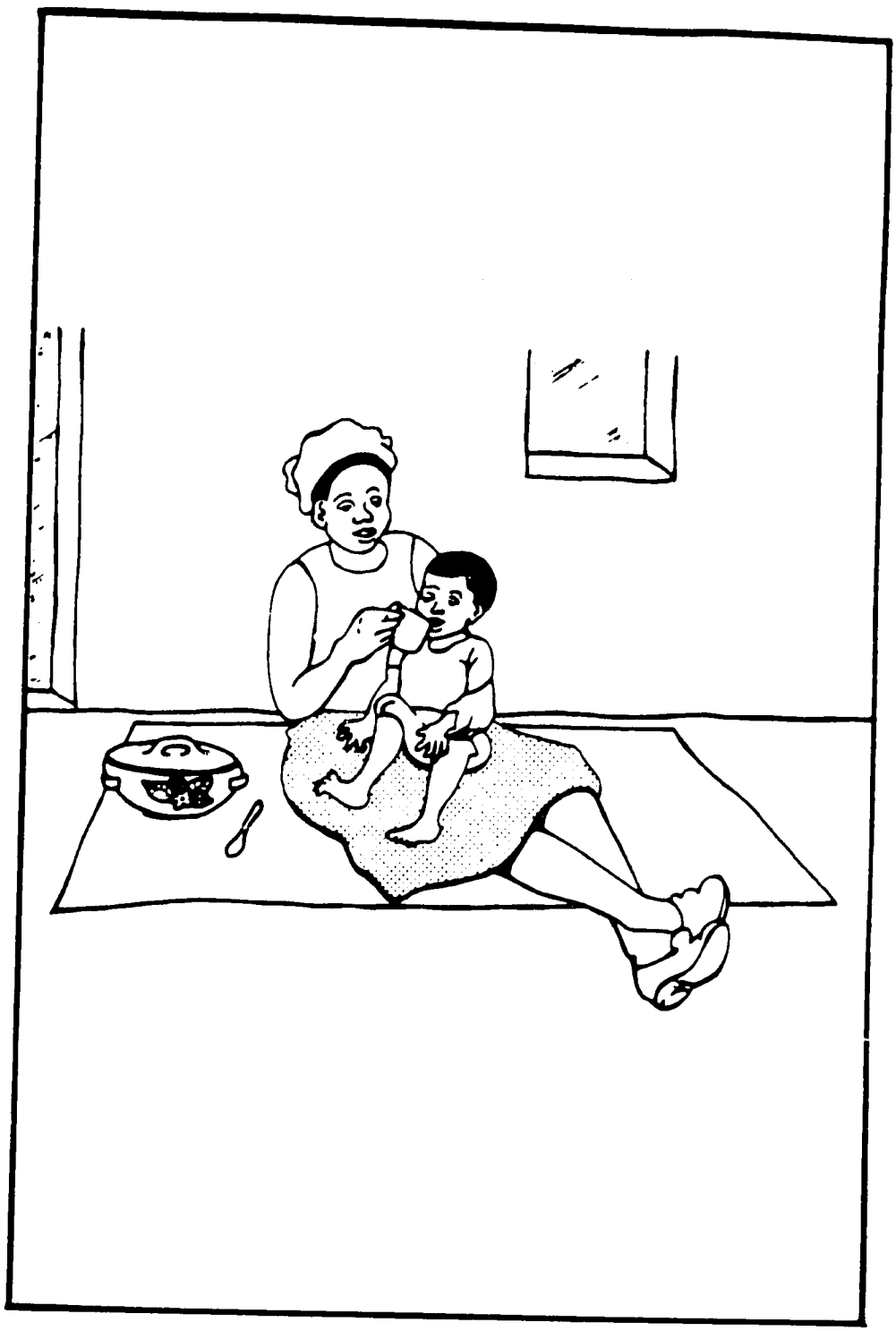
NGOANA EA THABILENG KAMEHLA

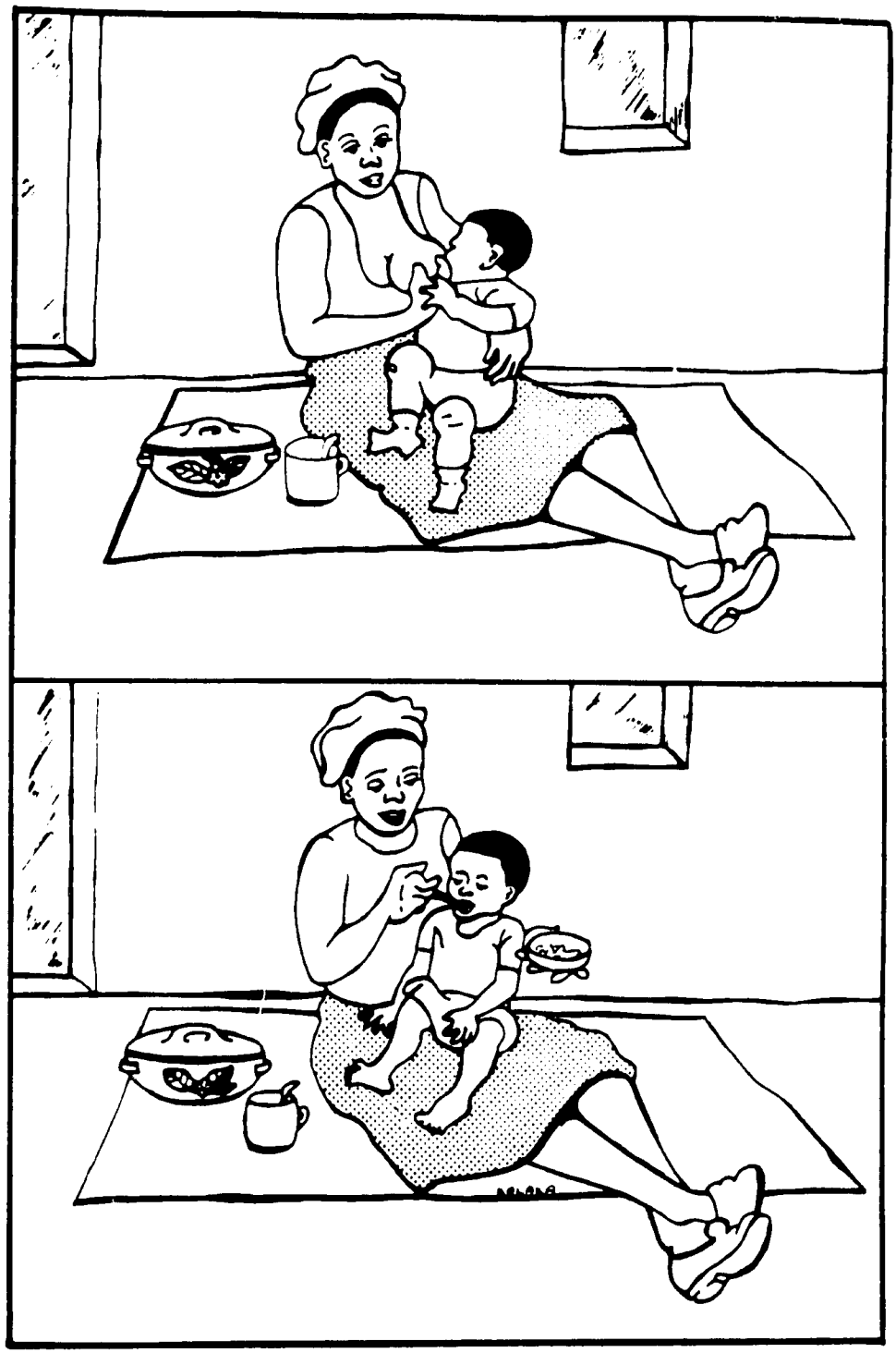
THIBELA TAHLEHELO EA METSI
MELENG OA NGOANA






SUGAR





PREPARED BY HEALTH EDUCATION UNIT
MINISTRY OF HEALTH
P O BOX 514
MASERU - 100
LESOTHO

HEALTHCOM

APPENDIX B

Survey Questionnaire of 1990

HOUSEHOLD SURVEY QUESTIONNAIRE: KNOWLEDGE AND PRACTICES RELATED TO DIARRHOEA, ORT AND IMMUNIZATIONS IN LESOTHO, 1990

I. REFERENCE IDENTIFICATIONS

1. Reference Number ..... /____/____/____/____/
2. District ..... /____/____/
3. Health Service Area (HSA) ... /____/____/
4. Enumeration Area..... /____/____/
5. Village/town ..... /___/
6. Interviewer number ..... /____/____/
7. Date of Interview..... /____/____/____/
   day month yr

Signature of interviewer _____

==========

II. LAST CASE TREATMENT

8. My name is _____, and I work with the Ministry of Health in Maseru. We are studying the diseases which attack children in your area here and also in other parts of the country. We are also interested in knowing how you take care of children. Could I please ask you some questions about yourself and your children?

   1 ... yes 2 ... no (stop interview here)

9. Are you the mother of the young children here?

   1 ... yes (go to #11) 2 ... no

10. Are you the one taking care of children in this family?

    1 ... yes 2 ... no (ask who that person is and write her relation to the children here)

    _____

    (then stop the interview)

11. We would first like to know the names and ages of your children who are less than five years old. What is the youngest child's name? The next one? The third one?

(Write the name of each child who is less than five years old. Then ask the age and if the child is a boy or a girl (M or F). Write the age in months).

	NAME	AGE(Months)	M	F
1.	_____	_____	1	2
2.	_____	_____	1	2
3.	_____	_____	1	2

(1 yr=12 mo; 2 yr=24 mo; 3 yr=36 mo; 4 yr=48 mo)

We now have some questions to ask about illnesses such as different kinds of lets'ollo and mohlala.

12. Does one of your children have a kind of lets'ollo or mohlala today?

1 ... yes 2 ... no (go to #14)

13. Which child is it?

No. _____ Name _____

(number of the child: 1,2,3) (if there are two children, take the younger one)

(then go to #16) **(then go to #16)**

14. Among the children that we have named here, which one was the last child to have lets'ollo or mohlala or a similar illness? (or: has the child had lets'ollo or mohlala or .....)

No. _____ Name _____

(number of the child: 1,2,3)

4 ... They/he/she have/has never had diarrhea. (Go to #47)

15. When did the child begin to be sick?

1 ... 1-14 days ago (2 weeks or less)
2 ... 3 to 4 weeks ago
3 ... 1 month ago (1 mo. or <2 months)
4 ... 2 months ago (2 mo. or <3 months)
5 ... 3 months ago
6 ... more than 3 months ago (go to #47)
8 ... I do not know (go to #47)

16. How many days did the diarrhoea last?

_____ days 88 .. I don't know

19

17. What were the signs/symptoms of illness that you noticed when the child had diarrhea?
(note all answers given by writing a 1 beside the answers given)
(ask twice: any other signs/symptoms?)

____ watery stools
____ frequent stools
____ blood in the stool
____ mucous in the stool
____ fever
____ sunken fontanelle
____ weakness
____ vomiting
____ sunken eyes
____ other
____ I don't know

18. What type of diarrhoea did the child have? Is there any special name given to this type of diarrhoea, or was it just ordinary diarrhoea?

1 ... red diarrhoea
2 ... green diarrhoea
3 ... yellow diarrhoea
4 ... ordinary diarrhoea
5 ... dehydration (mohlala)
6 ... other _____
8 ... I don't remember

19. Were the stools mixed with blood?

1 ... yes 2 ... no 8 ... I don't remember

20. Was the child vomiting?

1 ... yes 2 ... no 8 ... I don't remember

21. Did the child have a temperature?

1 ... yes 2 ... no 8 ... I don't remember

22. When the child was sick, was he eating the usual amount of food, or less food, or not eating at all?

1 ... less food
2 ... usual amount
3 ... not eating at all
8 ... I don't remember

23. In your opinion, how sick was the child? Was the child not sick at all, only somewhat sick, or very sick when the child had diarrhoea?

1 ... he was not at all sick
2 ... he was somewhat sick
3 ... he was very sick
8 ... I don't remember

24. When _____ (name) had diarrhoea, was he/she playing normally, or less than usual, or not at all?

1 ... he was playing normally
2 ... he played just a little bit
3 ... he was not playing at all
8 ... I don't recall

25. Did you do anything for the diarrhoea yourself?

1 ... yes 2 ... no 3 ... diarrhoea continues

26. Did you give something at home to treat the diarrhoea?

1 ... yes 2 ... no
(go to #28)

27. What did you give? (Write 1 beside each item mentioned)
(note all answers given by writing a 1 beside each answer given)
(ask twice: anything else?)

____ only water
____ tea
____ herbal medicine
____ enema
____ SSS mixture
____ ORS packet
____ sorghum porridge
____ other
____ I don't know/no answer

28. Did you seek advice or treatment anywhere?

1 ... yes 2 ... no
(go to #34)

29. From whom did you seek advice or treatment?
(note first one mentioned only)

1 ... friends/family members
2 ... health worker
3 ... traditional doctor
4 ... chemist
5 ... spiritual healer
6 ... clinic
7 ... hospital
8 ... I don't know
9 ... other

30. What kind of advice or treatment did you get?
(Note all answers given by writing a 1 beside the answers given)
(ask twice: anything else?)

____ nothing
____ tea
____ traditional med.
____ syrups
____ pills
____ enema
____ kaolin
____ mixture (SSS)
____ ORS packet
____ other
____ I don't know

31. Is there anywhere else you went for advice or treatment for the diarrhoea?

1 ... yes 2 ... no
(go to #34)

32. From whom did you seek advice or treatment?
(note the first one mentioned only)

1 ... friends/family members
2 ... health worker
3 ... traditional doctor
4 ... chemist/shop keeper
5 ... spiritual healer
6 ... clinic
7 ... hospital
9 ... other
8 ... I don't remember

33. What kind of advice or treatment did you get?
(Note all answers given by writing a 1 beside the answers given)
(ask twice: anything else?)

____ nothing	____ kaolin
____ tea	____ mixture (SSS)
____ traditional med.	____ ORS packet
____ syrups	____ other (explain)_____
____ pills	____ I don't know
____ enema	

34. Did you or any other person give the child an enema?

1 ... yes 2 ... no

35. Did you or any other person give the child a mixture of SSS or powder (ORS) here at home when the child had diarrhoea?

1 ... yes 2 ... no
(go to #42)

36. What did you use?

1 ... mixture(SSS)
2 ... powder(ORS)

37. Did the child take this mixture?

1 ... yes 2 ... no

38. For how many days did you give him this mixture?

1 ... a day	4 ... More than three days
2 ... two days	8 ... I don't recall
3 ... three days	

39. What did he use to drink the mixture?

1 ... spoon	5 ... a beer can
2 ... a dish	6 ... a feeding bottle
3 ... a cup	7 ... other (explain)_____.
4 ... enamel mug	

(Note: write the answer to #39 in #40. and continue with #40)

40. How many _____ of the mixture did the child drink on the first day?

____ number 8 ... I don't know

(if it is at the time when the child still has diarrhoea ask #41, but if it is time since diarrhoea has stopped ask #42)

41. Have you given the child any of the mixture today?

1 ... yes 2 ... no

Let us talk about what your child was drinking when he had diarrhoea.

42. Was _____ (name of child) still breastfeeding before he had diarrhoea?

1 ... yes 2 ... no (go to #44)

43. Did you stop breastfeeding during the time that the child had diarrhoea?

1 ... yes 2 ... no

44. Did the child seem more thirsty than usual, just as thirsty as usual, or less thirsty than usual when he had diarrhoea?

1 ... he was becoming more thirsty than usual
2 ... he was becoming less thirsty than usual
3 ... his thirst was as usual
8 ... I do not know

45. Did you give a child anything special to drink while he had diarrhoea?

1 ... yes 2 ... no (go to #47)

46. What did you give him?
(note all answers given by writing a 1 beside the answers given)

____ tea
____ traditional med.
____ fruit juices
____ water
____ purgative
____ soda (Fanta, etc)
____ sorghum porridge
____ mixture (SSS)
____ powder (ORS)
____ maize porridge
____ other

##########

III. THE KNOWLEDGE OF DIARRHOEA, TREATMENTS AND MIXING OF SSS

Let us discuss diarrhoea in general and the different ways of treating people with diarrhoea.

47. Which signs show that diarrhoea is serious?
(Note all answers given by writing a 1 beside the answers given)
(ask twice: anything else?)

____ stools that come often
____ stools that are liquid
____ diarrhoea that does not stop
____ fontanelle sinks
____ the loss of appetite
____ stools mixed with blood
____ sunken eyes
____ body is hot
____ tiredness
____ loss of weight
____ I don't know
____ other (explain)

48. What happens in the body of a child if a child has diarrhoea for a long time? (ask twice: anything else?)
(Note all answers given by writing a 1 beside the answers given)

____ child is weak
____ child loses appetite
____ child loses weight
____ child's body loses water
____ sunken fontanelle
____ child's eyes sunken/dull
____ other
____ I don't know

49. Have you ever gone to a chemist or a shop to buy medicines for a case of diarrhoea in a child?

1 ... yes 2 ... no 8 ... I don't know

50. What medicines are usually recommended for diarrhoea at a pharmacy or a shop?

1 ... kaolin
2 ... brand name
3 ... syrup
4 ... pills
5 ... Chamberlain colic remedy
6 ... mixture (SSS)
7 ... powder (ORS)
8 ... I don't know
9 ... other

51. Have you ever taken a child who has diarrhoea to a traditional healer or a spiritual healer?

1 ... yes 2 ... no 8 ... I don't remember

52. What medicines do the traditional doctors or spiritual healers usually give for children with diarrhoea?

1 ... enema
2 ... traditional medicine
3 ... syrup
4 ... pills
5 ... slits in skin
6 ... mixture (SSS)
7 ... ORS packet
8 ... I don't know
9 ... other

53. Do you have any village health workers in your village?

1 ... yes 2 ... no 8 ... I don't know

54. Have you ever taken a child who has diarrhoea to a village health worker for help?

1 ... yes 2 ... no 8 ... I don't know

55. What kind of medicine help do village health workers give children with diarrhoea?

1 ... tea
2 ... enema
3 ... Sesotho medicine
4 ... syrup
5 ... pills
6 ... SSS mixture
7 ... ORS packets
8 ... I don't know
9 ... other

56. Have you ever gone to a clinic or hospital to have a child treated for diarrhoea?

1 ... yes 2 ... no

57. What medicine do the clinics and hospitals usually give for diarrhoea?

1 ... kaolin
2 ... syrup
3 ... pills
4 ... brand name
5 ... mixture (SSS)
6 ... ORS packets
7 ... other
8 ... I don't know

58. What is the name of the clinic nearest to you?

1 ... _____ 8 ... I don't know

59. How long does it take you to get there?

1 ... less than 15 minutes
2 ... 15 to 30 minutes
3 ... 45 minutes to one hour
4 ... one hour
5 ... two hours
6 ... three hours
7 ... more than three hours
8 ... I don't know

60. Have you heard about a mixture of sugar and salt in water which people use to treat diarrhoea?

1 ... yes 2 ... no (go to #69) 8 ... I don't know

61. Have you ever used this mixture to help a child who has diarrhoea?

1 ... yes 2 ... no 8 ... I don't recall

62. How does this mixture help children who have diarrhoea? That is, what does it do for a sick child?

1 ... it replaces lost water
2 ... it cures diarrhoea
3 ... it cleanses the digestive system
4 ... other
5 ... it does not help
8 ... I don't know

63. Do you know how to make that mixture?

1 ... yes 2 ... no (go to #69)

64. From where or whom did you learn how to make that mixture?

1 ... friends/family members
2 ... village health worker
3 ... radio
4 ... TBA/midwife
5 ... nurse
6 ... other
8 ... I don't know

65. Tell me how you make the mixture. That is, what do you use to make the mixture and how much of each item do you use?

66. WATER
1 ... 1 can
2 ... 2 cans
3 ... 3 cans
4 ... 1 litre
5 ... 4 cups
6 ... other quantity
7 ... no water mentioned
8 ... does not know
9 ... canned fruit bottle

67. SUGAR

1 ... 1 pinch	7 ... 1 scoop
2 ... 2 pinches	8 ... 2 scoops
3 ... 3 pinches	9 ... 3 scoops
4 ... other quantity	10 ... does not know
5 ... 1 tablespoon	11 ... no sugar mentioned
6 ... 2 tablespoons	

68. SALT

1 ... 1 pinch	7 ... 1 scoop
2 ... 2 pinches	8 ... 2 scoops
3 ... 3 pinches	9 ... 3 scoops
4 ... other quantity	10 ... does not know
5 ... 1 teaspoon	11 ... no salt mentioned
6 ... 2 teaspoons	

==========

IV. RADIO PROGRAMMES

We now have a few question about the radio.

69. Do you have a radio at home?

1 ... yes (go to #71) 2 ... no

70. Do you ever listen to the radio anywhere?

1 ... yes 2 ... no (go to #72)

71. How many days do you listen to the radio in a week? (Note: write the number of days or mark every day (7);

_____ days
7 .... every day
8 .... I don't know

72. Have you ever listened to a programme on the radio which talks about the good health of children?

1 ... yes 2 ... no (go to #78)

73. When was the last time you listened to a radio programme like that, one about the good health of children?

1 ... one week ago (or less)
2 ... one month ago (or less)
3 ... two months ago(1-2 months ago)
4 ... three months ago or more
5 ... I never listen to those programmes
8 ... I don't know

74. What was the name of the programme?

1 ... Bohpelo ba Rona	4 ... other
2 ... Rua Tsebo 'Me U Phele	8 ... I don't know
3 ... Ask the Doctor	

75. What day and time was the programme?

1 ... Monday morning
2 ... Tuesday morning
3 ... Wednesday morning
4 ... Thursday morning
5 ... Friday morning
6 ... Tuesday evening
7 ... Saturday evening
8 ... I don't know/other
9 ... Monday evening

76. What subjects was the programme talking about?
(Note all answers given and write a 1 beside the answers given)
(ask twice: anything else?)

____ health in general
____ nutrition
____ tuberculosis
____ diarrhoea
____ other
____ immunizations
____ dehydration
____ personal cleanliness
____ AIDS
____ I don't know

77. Have you heard any programmes on the radio that talked about diarrhoea or dehydration or ORT in the past month?

1 ... yes 2 ... no

78. Have you ever heard any songs about diarrhoea or oral rehydration or dehydration on the radio?

1 ... yes 2 ... no (go to #81)

79. Do you know any of them now?

1 ... yes 2 ... no (go to #81)

80. Would you please recite a few of the words of the song?

1 ... she recites a little 2 ... she does not recite

81. Have you ever listened to the radio programme called, " Ask the Doctor?"

1 ... yes 2 ... no 8 ... I don't know

##

. **VACCINATIONS**

e now have a few questions to ask you about vaccinations of young hildren.

82. Why do you think that children should be vaccinated?

1 ... to treat specific illnesses
2 ... to protect children against illnesses
3 ... in order to get a vaccination card
4 ... so the child will be in good health
5 ... other
8 ... I don't know

83. What is the first vaccination that a child should get?

1 ... BCG	5 ... tetanus
2 ... DPT	6 ... other
3 ... polio	9 ... I don't know
4 ... measles	8 ... one on the forearm

84. At what age should this vaccination be given?

1 ... at birth (or 1-2 weeks)
2 ... one month (or 3-4 weeks)
3 ... six weeks (or 1 1/2 months)
4 ... two months
5 ... 14 weeks (or 2½ months)
6 ... three months
8 ... I don't know

85. At what age should a child get the last vaccination he or she needs?

_____ months (1 year=12 months, 2 years=24 months)
88 ... I don't know

86. What is the last vaccination that a child should get?

1 ... BCG	5 ... tetanus
2 ... DPT	6 ... DT booster
3 ... polio	7 ... other
4 ... measles	8 ... I don't know

(Look at the names of the children on page 2 and write the names here):
1. _____
2. _____
3. _____

87. Do you have a vaccination card for _____..?
(name of child #1)

1 ... yes
2 ... no (go to #89)

88. May I see it please?
(Please record below if you see the card)

1 ... she shows the card
2 ... she does not show the card

Examine the child's vaccination card. Write the date of birth below. If there is no card, ask the mother for the date of birth. If she does not know the data of birth, write 99/99/99 below. If there is no data on the card, write 99/99/99.

89. Date of birth is: /____/____/____/ (day/month/year)
day mo. yr.

90. Look at the card and fill in the table below with information from the card. For each vaccination, note whether or not the child has received it. If he has received it, circle 1. If he has not,

circle 2. Write the date using six figures. If the child has received the vaccination but no date is given, write 99/99/99.

If you are not given the card, ask if the child has had each vaccination, one by one, starting with BCG. If the response is "I don't know" mark no by circling 2. Use 99/99/99 for each date.

	VACCINATION		DATE	SOURCE	
	yes	no	day/month/year	card	woman
BCG	1	2	/____/____/____/	1	2
DPT1	1	2	/____/____/____/	1	2
DPT2	1	2	/____/____/____/	1	2
DPT3	1	2	/____/____/____/	1	2
Pol1	1	2	/____/____/____/	1	2
Pol2	1	2	/____/____/____/	1	2
Pol3	1	2	/____/____/____/	1	2
Measles	1	2	/____/____/____/	1	2

(Look at the names after #86. If there is a second child listed, write his name below in #91 and ask the questions which follow. If no second child is listed go on to #95).

91. Do you have a vaccination card for _____?
(name of child #2)

1 ... yes

2 ... no
(go to #93)

92. May I see it please?

(Please record if you see the card)

1 ... she shows card

2 ... she does not show card
(go to #94)

Examine the child's vaccination card. Write the date of birth below. If there is no card ask the mother for the date of birth. If she does not know the date of birth, write 99/99/99. If there is no date on the card, write 99/99/99.

93. Date of birth is: /____/____/____/ (day/month/year)
day mo. yr.

94. Look at the card and fill in the table below with information from the card. For each vaccination, note whether or not the child has received it. If he has received it, circle 1. If he has not, circle 2. Write the date using six figures. If the child has received the vaccination but no date is given, write 99/99/99.

If you are not given the card, ask if the child has had each vaccination, one by one, starting with BCG. If the response is "I don't know" mark no by circling 2. Use 99/99/99 for each date.

	VACCINATION		DATE	SOURCE	
	yes	no	day/month/year	card	woman
BCG	1	2	/___/___/___/	1	2
DPT1	1	2	/___/___/___/	1	2
DPT2	1	2	/___/___/___/	1	2
DPT3	1	2	/___/___/___/	1	2
Pol1	1	2	/___/___/___/	1	2
Pol2	1	2	/___/___/___/	1	2
Pol3	1	2	/___/___/___/	1	2
Measles	1	2	/___/___/___/	1	2

(Write the name of the **youngest** child (no. 1) in question #95 below. Then ask the question.

95. Let's talk about your youngest child. Has he been vaccinated? _____ (child's name)

1 ... yes 2 ... no (go to #106) 8 ... I don't know (go to #106)

96. At what kind of facility was he vaccinated?

1 ... clinic/health center
2 ... hospital
3 ... E.P.I. Mobile Clinic
4 ... L.F.D.S.
5 ... other
8 ... I don't know

97. Why did you (or someone else) take the child to the medical facility that day?

1 ... the child was sick
2 ... take child to be weighed
3 ... to have child vaccinated
4 ... to get free food
5 ... to have a baby
6 ... other
8 ... I don't know

98. Do you remember the type of vaccination he received?

1 ... BCG
2 ... DPT
3 ... polio
4 ... measles
5 ... tetanus
6 ... other
7 ... DT booster
8 ... I don't know

99. How much did you pay for the vaccination?

_____ maluti paid
33 .... paid nothing (it was free)
88 .... I don't know

100. Did the child get sick right after being vaccinated?

1 .... yes 2 .... no (go to #102) 8 ... I don't know (go to #102)

101. What symptoms of illness did he have?
(Note each answer given adn write a 1 beside each one mentioned)

____ tiredness
____ fever
____ rash
____ vomiting
____ convulsions
____ swelling
____ other
____ I don't know

102. Did _____ get all the vaccines which he is bound to get?

1 ... yes (go to #106) 2 ... no 8 ... I don't know

103. How many times are left to finish the vaccination?

_____ the number left
8 ... I don't know

104. When the child had gone for his vaccination for the last time, did the person who gave him vaccination say you should return?

1 ... yes 2 ... no (go to #106) 8 ... I don't know (go to #106)

105. When did he say you should return?

1 ... in a month
2 ... on a certain day
3 ... next visit
4 ... in four weeks
5 ... other _____
8 ... I don't remember

##########

VI. HOW TO USE ORAL REHYDRATION SALTS

(lift up the packet of ORS for mother to see, then ask,

106. Look at this packet. Have you ever seen a packet like this?

1 ... yes 2 ... no (go to #115) 8 ... I don't know

107. When did you see this packet for the first time?

1 ... during the last month (or less)
2 ... during the past six months (2-6 months ago)
3 ... during the past year (7 months to 1 year ago)
4 ... one or two years ago
5 ... more than two years ago
8 ... I don't know

108. What is this packet usually used for?

1 ... to cure diarrhoea
2 ... to stop loss of water in the body
3 ... to cure a disease
4 ... other (explain)_____.
8 ... I don't know

109. Do you know how to mix this packet with water to use it?

1 ... yes 2 ... no
(go to #111)

110. How do you preapre the mixture?

1 ... mix it with porridge
2 ... mix it with Oros
3 ... mix it with 1/2 liter water
4 ... mix it with 1 liter water
5 ... another quantity
6 ... I don't know

111. Have you ever used this packet to help a child with diarrhoea?

1 ... yes 2 ... no
(go to #115)

112. From whom or from where did you get it?

1 ... a friend/the family
2 ... TBA/midwife
3 ... village health worker
4 ... health center/clinic
5 ... pharmacy or shop
6 ... hospital
7 ... trad. healer
8 ... I don't know
9 ... other

113. Do you have this packet here at your home?

1 ... yes 2 ... no
(go to #115)

114. Please show me the packet.

1 ... does not show the packet
2 ... shows the wrong packet
3 ... shows the packet

##########

VII. DEMOGRAPHICS

Next I want to ask you a few questions about your family and your life.

115. How many people stay here at your home?/include children
____ number in the family

116. How old are you?

_____ years old
99 .... event
88 .... does not know

117. How many children have you had?

_____ children

118. Can you read Sesotho?

1 ... yes 2 ... no

119. Can you read English?

1 ... yes 2 ... no

120. What was your last standard in school? (mark an x at the correct level and circle the year.

____ I did not go to school
____ primary level 1, 2, 3, 4, 5, 6, 7
____ High School level 1, 2, 3, 4, 5
____ Beyond High School level and Technical School 1 2 3 4

(write total years of school here_____

121. Are you married right now?

1 ... yes
2 ... no (go to #125)
3 ... divorced (go to #125)
4 ... widowed (go to #125)

122. What was your husband's last standard in School?
(write "x" at the correct level and circle the year)

____ he never went to school
____ primary level 1, 2, 3, 4, 5, 6, 7
____ High School level 1, 2, 3, 4, 5
____ Beyond high school level and technical school 1,2,3,4
88 .... I don't know

Write total years of school here _____

123. Does your husband work? what type of work does he do?

1 ... farmer
2 ... he works part-time
3 ... employed by company or government
4 ... self employed (other than farming)
5 ... he is not working
6 ... private company
7 ... other
8 ... I don't know

124. Does he work in Lesotho or R.S.A.

1 ... Lesotho 2 ... R.S.A. 3 ... other country

125. How many fields do you plough?

1 ... none
2 ... one field
3 ... two fields
4 ... three fields
5 ... four fields
6 ... five fields or more
8 ... I don't know

126. How many cattle do you and your husband own?

1 ... 1-5 head
2 ... 6-10 head
3 ... 11-20 head
4 ... 21-50 head
5 ... 51-100 head
6 ... more than 100 head
7 ... no cattle
8 ... I don't know

127. Where are you getting your drinking water?r

1 ... from the spring
2 ... from the river
3 ... from the borehole tap
4 ... from the tap
5 ... other sources

128. Can you tell me what you have from the following:
(read each item; write 1 for each item mentioned)

____ Electricity at home
____ Radio
____ Sewing/knitting machine
____ ox cart
____ television
___ coal stove
____ she has none of these

##########

VIII. VISUAL RECOGNITION

We would like to end our conversation by showing you a few drawings and asking what you see in them.

129. Have you seen this brochure before?

1 ... yes 2 ... no

Look at the brochure for a little (hand it to woman)

130. (Have her close the brochure.) What does this brochure teach you? (write a 1 if mentioned)

____ what causes diarrhoea
____ how to mix ORT
____ how to feed a child who has diarrhoea
____ I don't know

131. Now look at pages 7 and 8. What is going on?
(Note all answers given by writing a 1 beside the answer)
(Ask twice: anything else?) (food is acceptable instead of mixture)

____ stirring mixture
____ tasting mixture
____ pouring mixture into cup
____ covering container
____ feeding mixture from cup with spoon to child
____ interprets the pictures as one story
____ describes in correct order
____ does not describe in correct order
____ describes something else

132. Do you have any pictures or drawings in your home?

1 ... yes 2 ... no

133. When was the last time you looked at any pictures in a book, newspaper, or magazine?

1 ... in the past week
2 ... in the past month
3 ... in the past 2-6 months
4 ... more than six months ago
5 ... never
8 ... I don't know

134. Have you ever read/looked at a book that tells a story with pictures (comic book)?

1 ... yes 2 ... no 8 ... I don't know

Now take a look at these drawings.

135. (show drawing of eye) What is this?

1 ... an eye 2 ... something else 8 ... don't know

136. (show drawing of fire) What is this?

1 ... fire 2 ... something else 8 ... don't know

Now take a look at these pictures.

137. (show the series of four drawings) What is going on in each of these pictures? (Mark ORDER in which she describes the pictures. Circle a 1 if she descibes just objects, circle a 2 if she describes action. Circle only one answer for each picture.)

ORDER

1) _____
1 ... man on horse outside house
8 ... something else

2) _____
1 ... man on horse near tree
2 ... man riding horse away from house
8 ... something else

3) _____
1 ... man on horse at stream/path
2 ... man and horse crossing stream/path
8 ... something else

4) _____
1 ... man with horse and sheep
2 ... man gets off horse, walks to sheep
8 ... something else

5)
1 ... describes as one story
2 ... does not describe as one story

138. (point to the first picture) Which house is closer to the man on the horse?

1 ... big house 2 ... small house 8 ... I don't know

139. (show third picture and point to mountain) What is this?

1 ... mountain 2 ... other 8 ... I don't know

140. (point to **stream**) And what is this?

1 ... **stream** 2 ... path 3 ... other 8 ... I don't know

141. (point to first picture) Where is the man on the horse going?

1 ... to the sheep 2 ... other 8 ... I don't know

Examine the house and answer the following questions:

142. Look at the material used to build the house;

1 ... mud bricks and poles
2 ... masonite
3 ... cement (plaster)
4 ... stone
5 ... corrugated iron
6 ... bricks (gray or red)
7 ... other

143. Observe the roofing of the house.

1 ... grass
2 ... corrugated iron
3 ... tiles
4 ... other

144. Look at the toilet used and note the type.

1 ... in the bush
2 ... the bucket system
3 ... pit latrine
4 ... VIP latrine
5 ... water system