DRAFT

HEALTH SEEKING BEHAVIORS STUDY--SWAZI NURSES

PRELIMINARY REPORT

1 JANUARY 1991

Ruth P. Wilson, Ph.D.
CDC-IHPO Consultant

I. INTRODUCTION

At the 1990 April consultative meetings of the African Child Survival Initiative-Combatting Communicable Childhood Diseases (ACSI-CCCD) project, the Swaziland Ministry of Health requested technical assistance from the Centers for Disease Control's Combatting Communicable Childhood Disease Program for the development of a national study of health seeking behaviors that was not specific to one health problem. A protocol was developed in response to that request (Appendix).

Prior to undertaking the request, it was noted that Swaziland had completed some indepth quantitative studies that have provided baseline data on health seeking behavior for programme areas. CDC has provided technical assistance for two of these disease specific studies in the past year (diarrheal disease and malaria). Additionally, the Swaziland Ministry of Health (SMOH) has recently completed data analysis of its 1988 national family health survey. In the area of family planning, the Family Life Association of Swaziland (FLAS), a NGO, had recently completed data collection for an in-depth qualitative study. Having reviewed final and draft reports from these studies, the CDC consultant worked with MOH staff to prepare a protocol that addressed specific objectives and issues.

II. PURPOSE

This preliminary report assesses the health knowledge and behaviors of Swazi health workers (nurses) in several areas: their definition, diagnosis and treatment of acute respiratory infections (ARI) among young children; their understanding of some childhood immunization procedures; and their perceptions of the success of two programs (the growth monitoring and nutrition program (GMNP) and the maternal and child health/family planning program (MCH/FP)). These data represent a subsection of a larger data base collected during a national study of health seeking behaviors, October 1-30 1990. The data will be used as baseline data in the development of a national ARI program, and will assist in answering key questions about health seeking behaviors related to the EPI, GMNP, and MCH/FP program.

III. OBJECTIVES

The objectives of the national study were:

A. To conduct a study on health seeking practices that clarified current trends in health behaviors that were unexplained by data from recent quantitative studies.

B. To gather information needed to set policy for the ARI program.

C. To involve SMOH staff with "hands on" experience collecting data and designing a study that will produce insights into issues expressed by the primary health care unit heads.

D. To make recommendations based on the data findings to the appropriate channels.

IV. Key Issues Addressed

MOH staff were interested in their health workers' perceptions and practices associated with key issues in four programmatic areas: ARI, EPI, GMNP and MCH/FP. Key questions that needed answers were:

-- Why do Swazi often use health facilities outside of their catchment area before seeking help from the same type of facilities within their area?

-- What were health workers perceptions and practices associated w/GMNP?

-- What was happening in terms of the diagnosis, management, and treatment of ARI at the clinic level?

-- Were nurses providing mothers of children under 5 years of age with information about why their child was being immunized and what antigen was being given?

-- What were clinic practices associated with syringes and the use of frozen polio vaccine?

-- Were nurses aware of their clients' perception of the services offered by growth monitoring clinic and the family planning clinics?

-- Why did pregnant women discard prenatal vitamins received at the prenatal clinic?

V. METHODS

The data on Swazi health providers' perceptions practices were collected by using individual interviews. The individual interviews were conducted by MOH staff members and the consultant using a structured interview guide (Appendix A).

The Sites

The study sites (17 clusters) were selected by taking a systematic random selection of (10%) of the enumeration areas (EA) used during the 1988 Swaziland Family Health Survey. Included was one health facility per cluster which was used frequently by mother-respondents from randomly selected households.

The Respondents

One health worker was interviewed per cluster, a health worker at a facility nearest to and used by the childbearing-age women in randomly selected households. Fourteen of the 17 sites were completed at the time of this report. Data from the remainding sites will be included in the final report.

Selection Criteria

In most cases, there was only one health provider present at the health facility nearest to the selected cluster--a double qualified nurse. In the urban areas (Industrial, Simunye, Mbabane, Piggs Peak, and Good Shepherd), the Senior public health nurse designated a participant who was actively providing ARI, EPI, or MCH/FP services to patients.

Instrument

The health worker instrument was a semi-structured interview guide that included a card sorting activity, and a series of open and close-ended questions about how a) health workers define, diagnose and treat acute respiratory infections, and b) their immunization practices and c) their perceptions of client behaviors associated with/the GMNP and MCH/FP programs.

The interview guide was developed by the research team. It was a composite of a modified form of the CCCD health seeking practices survey that added a card sorting technique. The modifications in the CCCD survey were made to conform to the specific needs of the MOH as expressed by the unit heads and their corresponding worker from the health education unit. The card-sorting procedures assisted in obtaining health workers' perceptions of Siswati ARI diagnostic terminologies.

The first part of the interview guide asked a series of socio-demographic questions (age, sex, marital status, etc). ARI related questions constituted the second part of the interview guide. In the ARI section, health workers were asked to sort a series of 30 cards into piles. Each card contained a Siswati term for a sign or symptom related to acute respiratory infections. The respondents were asked to separate the cards in groups. As the interviewer recorded the terms included in each pile, health workers were asked about the reasoning they used in grouping the terms. Both the groups and the rationale for the groups were recorded by the interviewers.

After the card sorting activity, health workers were asked how they would diagnose and treat two case studies of children with ARI signs and symptoms. A final series of ARI questions asked health workers about the signs, symptoms and treatment, of flue, pneumonia, and severe pneumonia.

The questions on EPI centered on comparing health workers' and mothers' conception of health seeking behavior and health workers' knowledge of procedures used by the EPI trainers. GMNP and MCH/FP questions explored health care utilization issues.

Pretesting

A few respondents (3-5) were interviewed prior to the beginning of the study to develop the categories of mild, moderate and severe acute respiratory infections common among the Swazi. A series of card sorting, or pile sorting, exercises were conducted until the interviewer had a clear estimation of the terms and categories associated with ARI in Swaziland. The interview guide was pretested prior to collecting the sample data. Once in the field setting, additional changes were made.

VI. DATA ANALYSIS

The data were analyzed by the research team in collaboration with the consultant. Health worker interviews were analyzed using EPIINFO and ANTHROPAC. Since the sample size was small (17), text analysis of open-ended questions were conducted manually.

Responses to the open-ended and close-ended questions in the interview guide were entered into EPIINFO. Frequencies and crosstabulations were conducted.

The pile sort data were analyzed using ANTHROPAC, a software package containing a pilesort program that creates an item by item proximity matrix of the terms grouped together by each respondent. The proximity matrix indicates the number of times each term in the card sorting activity cooccurred with another term. The data in the matrix were then entered into ANTHROPAC's multi-dimensional scaling program that produced a 2-dimensional picture of how the terms cluster together. The multidimensional scaling program produces a spacial picture of the best mathematical approximation of how respondents have grouped a series of items together.

VII. PRELIMINARY RESULTS

General Characteristics of the Sample

Fourteen of the 17 sites had been completed at the time of this report (Table 1). A staff nurse was interviewed in each study site. Health centers represented by these nurses

include Engculwini, Hlatikulu, Kalanga, Enkundleni, Gundvini, Kalanga, Lobamba, Lubuli, Mahlalini, Maphagwane, Matsapha, Meshingishinggi, Motshane, Msunduza, Ngomabe, Piggs Peak (Table 2).

TABLE 1: LIST OF STUDY SITES INCLUDED IN THE SWAZILAND HEALTH BEHAVIORS STUDY, OCTOBER 1990

ENGCULWINI
HLATIKULU
KALANGA
LOBAMBA
LUBULI
MAHLALINI
MAPHANGWANE
MATSAPHA
MHLAMBANYATSI
MOTSHANE
MSUNDUZA
PIGGS PEAK
MESHINGISHINGI

Table 2: List of Health Centers Included in the Swaziland Health Behaviors Study, October 1990

Engulwini
Good Shepherd Hospital
Hlatikulu
Lobamba Clinic
Lubuli Clinic
Mahlalini (Dwaleni) Clinic
Mhlambanyatsi Health Centre
Motshane Health Centre
Occupational Health Centre
Piggs Peak Hospital
Sugar Plantation Clinic
Salvation Army
Meshingishingi Clinic

Table 3: General Characteristics of the Nurses in the Sample, Swaziland Health Behaviors Study, 1990

Age:	
Range	24 - 54
Mean	43
Sex	
Male	1
Female	13
Number of years since training was completed	
Range	1 - 41
Mean	20
Type of nurse	
Double qualified	7
Staff nurse	3
Nursing sister	1
No information	3

n = 14 nurses from 14 clusters

Table 4: Nurses' Diagnosis of ARI Case Study #1
Swaziland Health Behaviors Study, October 1990

Upper respiratory tract infection		13	93%
ARI	3		
Fever	1		
Flue	3		
Measles	1		
Severe cold	1		
Upper respiratory tract infection	4		
Lower respiratory tract infection		1	7%
Pneumonia	1		
Total	14	14	100%

Actual responses are indented under the headings

BEST AVAILABLE COPY

Most of the nurses were female (13/14), double qualified, with more than 10 years of experience. The average age was 43 (range = 24-64) (Table 3).

Table 5: Cause of ARI illness by Diagnosis
Swaziland Health Behaviors Study, October 1990

Upper Respiratory Tract Infection/ARI/severe cold	
Child exposed to cold weather or others with colds	5
Virus, viral infection	5
Coughing, mild pneumonia	1
Measles	
Improper cleanliness	1
Pneumonia	
Exposure to cold weather	1
No information	1
Total	14

Results from the ARI Case Studies

Data from the case studies corroborate with the data from the card sorting activity. Repondents were presented with the following case study:

Case I

This is a story of a mother who has a one year old baby girl that is sick with the following symptoms: coughing, fever, sore throat, runninglblocked nose, and redltearing eyes. When you ask the mother, she tells you that the child can breastfeed well but is not actively playing.

Diagnosis of Case I

Diagnosis and Etiology

When asked which illness this child might have, 13/14 the child had an upper respiratory infection (Table 4). One nurse named a lower respiratory tract infection: "pneumonia". Those who suggested that the illness was an upper respiratory tract infected attributed "exposure to cold weather", "exposure to others with a similar illness", or viruses as the cause of the illness. One nurse, the male, diagnosed the case as measles and attributed it to "improper cleanliness." "Pneumonia" was also attributed to exposure to cold weather (Table 5).

Treatment Advice to Mother of the Child

The nurses were then asked what would be the first advice they would give to the child's mother. Those nurses diagnosis the case as an "upper respiratory tract infection" advised mothers to give fluids or breastfeed their child, reduce the child's exposure to wind or cold climate, and reduce the fever.

Five nurses (36%) said they would ask the mother to return to the clinic, 4/14 (29%) said they would give the child medications, 3/14 (21%) said they would refer the child to an

MD. 2 gave responses indicating they would continue treatment at the clinic, and 3. gave no further advice (They had already referred the child at the 1st or 2nd question).

The nurse diagnosing the case as "pneumonia" said she would advise the mother in this manner: Keep the child warm. Give it plenty of fluids. Bring the child back to the clinic if it does not improve. If symptoms persists, she suggested hospital admittance.

Table 6: Nurses' Diagnosis of Case Study #2
Swaziland Health Behaviors Study, October 1990

Name of Illness			
Upper respiratory tract infection			
ARI	1		
Lower respiratory tract infection		9	64
ALRI	1		
Pneumonia	7		
Severe pneumonia	1		
Other		4	29
Diarrhea and chest infection	1		
Dehydration	1		
Don't Know	2		
Total	14	14	100

Treatments

Nine (64%) nurses said that they had treated similar cases during the past winter of those who had treated a similar case 8/9 (89%) said that their patients had recovered. Medications suggested for treating the illness were Panadol (paracetamol) 11/14, cough mixture (6/14), antibiotics (Actifed/Pen VK, 4/14), and nose drops (1/14).

CASE II

"This is a story of a baby boy ten months old who presents to you with the following symptoms: rapid/difficulty in breathing, chest indrawing, fever for one day, sunken eyes, coughing for three days. The mother tells you that the child does not have diarrhoea but has a poor appetite.

Most (64%) of the respondents diagnosed this case as a lower respiratory infection (Table 7). Among

Table 7: Cause of ARI Illness by Diagnosis, Case 2
Swaziland Health Behaviors Study, October 1990

Cause of Illness	Freq.
Pnuemonia	
Exposure to cold/weather/wind	3
Virus/Bacteria	2
Don't know	1
All others	
Coughing	1
Infection	1
Improper feeding, bottle	1
virus	1
Not enough fluids	1
Missing	3
Total	14

Data from 14 nurses at 13 health centers

those who identified the case as an ALRI (9/14), 7/9 specifically diagnosed the case as "pneumonia."

When asked about the cause of the illness in case study two, those who gave a diagnosis of pneumonia attributed the illness to exposure to cold weather, exposure to cold, exposure of the child to the wind after a bath. One respondent did not know what caused pneumonia (Table 7). The one nurse who diagnosed Case Study #2 as "Severe pneumonia" attributed the illness to coughing.

Treatment of Case II

When asked how they would treat a child with pneumonia, most of the nurses indicated that they would refer the child's mother to the hospital (Table 8).

Table 8: Nurses Advice for Treatment of Pneumonia
Swaziland Health Behaviors Study, October 1990

First Advice to Child's Mother	
Admit/refer child to the hospital	2
Give child plenty of fluids and	
treat w/ ampicillin	1
sponge bathe to reduce fever	1
a light balanced diet	1
keep child warm and indoors	1
Continue to breastfeed the child	1
Second Action Should Child Not Improve	
Admit/refer to hospital	3
Change child's diet and give pro. pen.	1
X-ray child, refer to doctor	1
Tell Mom to return child to clinic	1
No other action	1

Data from 7 nurses diagnosing Case 2 as pneumonia

An additional question asked how nurses would advise a mother with a child suffering from symtoms in Case Study #2 if the child began to have chest indrawing. The nurses' responses indicate that they would either have already referred the child to the hospital previous to the development of complications, or they would treat the child with antibiotics, give the child fluids and then refer the child (Table 9).

Recognition of the ARI Signs and Symptoms

After the 2 case studies, health workers were asked how they would diagnose (Table 10) and treat (Table 11) flue, pneumonia, and severe pneumonia. Most were able to correctly identify the signs of flue, pneumonia and severe pneumonia. However, the expected danger signs were recognized by less than half (5/14) of the group. Forty-three percent (6/14) nurses said they had treated a child with the danger signs of severe pneumonia and most said they would refer such cases to a physician or hospital.

Table 9: Nurses' Advice for Severe Pneumonia
Swaziland Health Behaviors Study, October 1990

Action Nurse Would Take Should Chest Indrawing Begins	
Admit/refer child to the hospital	6
Administer antibiotics	3
X-ray child, place in steam tent	2
Advise mother to be patient*	1
Give fluids then refer to hospital	1
Don't Know	1
Total	14

*Refers to child already in the hospital. n=14 .

Table 10: Knowledge of ARI Signs and Symptoms
Swaziland Health Behaviors Study, October 1990

Type of ARI	Number	Percent
Flue		
Correct	10	71.4
Incorrect	2	14.3
Missing	2	14.3
Pneumonia		
Correct	11	78.6
Incorrect	1	7.1
Missing	2	14.3
Severe Pneumonia		
Correct	10	71.4
Incorrect	2	14.3
Missing	2	14.3

n = 14 nurses in 14 clusters

EPI:

Seventy-one percent (10/14) of the nurses indicated that mothers in their catchment area presented one card when bringing their child for immunizations (Table 12). Among the health workers who said mothers presented with one card, 60% said that only 1 card was checked, 40% said two cards were checked. One nurse explained that in some cases, mothers bring only one card because the second card is kept at the clinic. Of those 4 who indicated that mothers present with 2 cards, health workers said that they check both cards (4/4).

Table 11: Knowledge of ARI Treatment
Swaziland Health Behaviors Study, October 1990

Type of ARI	Number	Percent
Treatment for Pneumonia		
Correct	10	71.4
Incorrect	2	14.3
Missing	2	14.3
Treatment Severe Pneumonia		
Correct	11	78.6
Incorrect	1	7.1
Missing	2	14.3
Precautions for Severe Pneumonia		
Correct	10	71.4
Incorrect	1	7.1
Missing	3	21.4

n = 14 nurses in 14 clusters

These data imply that if the EPI program would like to have both cards checked by health workers, mothers should be provided a copy of both cards. When mothers change residences, they will be able to present both cards at the clinic. The health worker would then be able to vaccinate each unimmunized child, or remind mothers when to return for vaccinations.

Table 12: Use of EPI Cards at the Health Center
Swaziland Health Behaviors Study, October 1990

Number of Cards Presented by Mothers		
One	10	71.4%
Two	4	28.6
Number of Cards Checked at the Health Center		
One	6	42.9
Two	8	57.1

n = 14 nurses in 14 clusters

Nurses were also asked to estimate the immunization completion rate for young children in their area (Table 13). Their estimations ranged from 50-90%. When asked to explain their immunization completion rates, those reporting rates, greater than 70% gave these reasons (Table 14): "Mothers are already health oriented", "Mothers are educated and believe immunizations prevent children from these illnesses", "Health education efforts in the area". Problems associated with getting a higher immunization rate were: "Mothers go

to other clinics and the health center can't trace them," and, "Mothers have transportation problems." One nurse added that mothers do well up until their child is 18 months; then getting them to complete is difficult.

Table 13: Report of Nurses vs. EPI Coverage Rates Swaziland Health Behaviors Study, October 1990

Health Center	Nurses' Estimate	EPI Estimate
Enguculwini	85	
Good Shepherd	70	
Good Shepherd	Missing	
Hlatikulu	80	
Lobamba Clinic	65	
Lubuli Clinic	70	
Mahlalini Clinic	80	
Mechingishingi	70	
Mhlambanyatsi	90	
Motshane Health Center	80	
Occupational Health	50	
Piggs Peak Health Ctr	10	
Salvation Army	Missing	
Sugar Plantation Clinic	75	

n = 14 nurses in 14 clusters

Perhaps other primary health units could (e.g., family planning clinics) check immunization records and remind mothers to complete their child's immunizations. Once infancy has past, even mothers in developed countries may forget that immunizations are required for children over 18 months. Or, if the mother has returned to her normal duties and her child is being cared for by an older sibling or a relative, mothers need reminders. A health education message might also be developed that targets mothers with toddlers.

Table 14: Nurses explanations for high and low immunization rates in their Catchment Area. Swaziland Health Behaviors Study, October 1990.

Explanations for High Coverage Rates

The population is already health oriented
Mothers are educated and believe immunizations keep children from sicknesses
Mothers have been motivated by health education
Increased education
People no longer see these diseases

Explanations for Low Coverage Rates

Mothers' ignorance
Mothers lose their cards and are afraid to come back to the clinic
Mothers disappear so nurses don't know if they have continued
People respond where there are food supplements
Transportation problems
After 18 months, the clinic has difficulty getting mothers to complete their children's immunizations

All of the nurses said that they inform mothers about the side effect of the antigens. They gave these reasons for informing mothers: If fever occurs after innoculation, mothers may

think their child is bewitched and feel that immunizations make their child sick. Better data on nurses' behavior in this area may be obtained by observing actual behavior.

Vaccination Practices

Most of the health providers said that their facility used disposable needles (8/14) and that they had at least one month's supply of syringes in stock (Table 15). All reported using 1 syringe per child.

Table 15: Immunization Practices of Nurses, Swaziland Health Behaviors Study, October 1990

EPI Activity	Frequency	Percent
Types of Syringes Used		
Disposables	8	57.7
Reusables	5	35.7
Both Types	1	7.1
Amount of Syringes in Supply		
1 Month Supply	12	85.7
1 Box	1	7.1
1 Week's Supply	1	7.1
Number of Times Syring is Used		
1 Syringe/Child	14	100.0
Is Frozen Polio Discarded		
Yes	9	64.3
No	5	35.7

n = 14 nurses self-reporting in 14 clusters

In response to EPI program interest in Swazi health centers' practices regarding vaccine that might freeze while in storage, we included the question, "Do you and your staff discard frozen polio vaccines?". Nine (9/14) said that they discarded it, but some said that had never seen frozen polio vaccine. None of the health workers had seen a recent case of polio and only one nurse in Piggs Peak said that she had seen a case of tetanos.

THE GROWTH MONITORING PROGRAM

Most nurses (11/14) said that mothers had expressed their opinion about the growth monitoring and nutrition program and that they had informed the mothers of the optimal way to prepare the food for their children's benefit. Of interest would be a comparison of the nurses' answers about the reasons for the growth monitoring program with the community's response to this question.

Despite the GMNP program, 13/14 nurses had seen malnourished children in their catchment area. The Lubuli area nurse was the exception. When asked about the cause of malnourishment in their areas, nurses gave these responses: parents spend their money at the sheebeens (beer halls), the lack of water (rainfall), irresponsible caretakers, ignorance, and weather.

The Questions on MCH/FP

Most nurses (13/14) reported distributing prenatal vitamins to their prenatal patients. They

felt that the dominant reason mothers refuse to take the vitamins was their fear that the tablets would "make the baby too big" and cause a difficult labor leading to a Cesarean section. Swazi mothers fear operations, especially C-sections, and may refuse any medication threatening to increase birth weight.

Programs heads might emphasize proper nutrition for mothers, encouraging prenatal tablets only if mothers feel they will not get adequate nutrition. Mothers fear of difficult labor and Casearean sections is reasonable and should be taken seriously. The same fears have been expressed by mothers in other African countries who refuse to take the prenatal tablets. Mothers' association of difficult labor and prenatal tablets should be addressed by operational research and health education messages.

Home Deliveries

Health personnel cited "health worker attitudes" as a reason why mothers deliver at home. This was also the dominant explanation given by respondents in the focus groups and individual interviews when they asked to explain why mothers deliver at home and why people go outside of their catchment area for health care. The data suggest that health providers can have a decisive role in increasing health facility utilization in Swaziland.

Nurses attribute mothers' using the hospital for delivery to mothers' awareness of the skill of clinicians in handling complications. Technical superiority, not personalized quality care, is the reason given for delivering at the hospital. Comparatively, during the debriefing for this study, the permanent secretary suggested that "attending care" ("politeness", kindness", "diplomacy") is the reason why traditional healers continue to attract their clients despite their curative rate.

Future efforts examining the culture of professionalization and the extent to which it matches with Swazi perceptions of "care" might assist health providers improve client/provider relations and health center utilization rates in their catchment area.

VIII. RECOMMENDATIONS

The National Health Seeking Behaviors Survey

This study was unique in that MOH staff were directly involved in all stages of the project. The national survey should be completed and the additional data should be added to the data base for the final report. MOH staff should review the draft reports for each of the sub-populations (nurses, healers, individual mothers, and focus groups), finalize the recommendations, and design plans for implementation.
ACTION: CCCD Technical Officer-Swaziland, Swazi Health Education Unit, Swazi Primary Health Programme Managers, CDC-IHPO Anthropologist.

Acute Respiratory Infections

Preliminary analysis indicate that most nurses can differentiate upper from lower respiratory tract infections. Most know the signs and symptoms of pneumonia and the treatment for pneumonia. They are less clear about the signs and symptoms of severe pneumonia and the expected danger signs. This may be because clinic nurses refer most pneumonia cases to the hospital and seldom see a case of complicated pneumonia. Training for ARI should acquaint nurses with WHO case definitions of ARI and emphasize the danger signs of severe pneumonia and its appropriate treatment.
ACTION: Swazi ARI programme manager, CDC-IHPO-Nurse educator.

EPI

If the EPI program would like to have both cards checked by health workers, mothers should be provided a copy of both cards. When mothers change residences, they will be able to present both cards at the clinic. The health worker would then be able to check the immunization cards and vaccinate both the mother and her child.
ACTION: Swazi EPI Programme.

It is recommended that other primary health units (e.g., family planning clinics) check immunization records and remind mothers to complete their own immunizations and their children's.
ACTION: EPI and cooperating programme managers.

In response to the problem of vaccinating children after infancy, a health education message might be developed that targets mothers with toddlers.
ACTION: EPI and the Health Education Unit.

EPI should continue their efforts to promote the 1-child /1-syringe message. Additionally, EPI should continue its use of the Facility Needs Assessment evaluation method to verify reported practices.
ACTION: EPI and Health Education Unit.

Participants did not seem to understand the question on "frozen polio vaccine". EPI should reconsider the meaning of the question and try it in another survey.
ACTION: EPI.

Maternal and Child Health
The data findings validate the MCH/FP Programme manager's identification of the use of prenatal vitamins as an issue of concern in the Health Seeking Behaviors Study. Mothers' fear of C-sections at delivery is reasonable and should be taken seriously. However, health messages associating the prenatal vitamins with the health of the developing foetus may only heighten mothers' fears and encourage them to discard the prenatal vitamins. Trainers should verify two things: 1) Nurses should know that prenatal vitamins guarantee mothers essentially minerals and vitamins. Despite the mothers, nutritional state, the foetus will obtain its needs by depleting its mother's supply. 2) During the education of mothers, nurses should emphasize the role of the vitamins in maintaining nutritional requirements for the mother.

Health education materials related to prenatal vitamins should emphasize the health of the mother, not the health of the child.
ACTION: Swazi MCH/FP Programme Manager, CDC-IHPO-TSD Trainer, Swazi Health Education Unit.

Professional Behavior
The pressures on staff are tremendous and many health providers may compromise Swazi social etiquette in the effort to give medical care to all in need. In a country like Swaziland, where there is a strong competitor (traditional practitioners) to modern medical services, the MOH staff might reconsider the importance of its patient population's expectations of the practitioner/patient relationship and design an in-service education course that addresses this need. The supervisory checklist should include measureable items that evaluate this aspect of professional practice.
ACTION: Swaziland CCCD Technical Officer, Swaziland Deputy Directory of Medical Services, IHPO Anthropologist.

ESTIMATION OF EARLY CHILDHOOD MORTALITY IN SWAZILAND USING THE PRECEDING BIRTH TECHNIQUE

Pilot project using first visits to antenatal clinics in an urban and a rural area

DRAFT PROTOCOL

April 1990