

PN ASP-022

2/19/92



**REACH**  
RESOURCES  
FOR CHILD  
HEALTH

## **MEASLES INITIATIVE: KENYA**

# **IMMUNIZATION COVERAGE SURVEYS IN KISUMU AND SIAYA DISTRICTS**

**February 19-March 11, 1992**

**Kenya**



**MEASLES INITIATIVE: KENYA**  
**IMMUNIZATION COVERAGE SURVEYS IN KISUMU AND SIAYA DISTRICTS**

February 19 - March 11, 1992

Mary Harvey  
REACH Senior Technical Officer

The Resources for Child Health (REACH) Project  
1616 N. Fort Myer Drive, 11th Floor  
Arlington, VA 22209 USA

A.I.D. Contract No.: DPE 5982-Z-00-9034-0  
Project No.: 936-5982  
Activity No.: 1717-037

## TABLE OF CONTENTS

<b>1.0</b>	<b>Executive Summary</b> .....	<b>1</b>
<b>2.0</b>	<b>Background</b> .....	<b>3</b>
<b>3.0</b>	<b>Geographic Description of the Area</b> .....	<b>4</b>
<b>4.0</b>	<b>KEPI Immunization Policy</b> .....	<b>4</b>
<b>5.0</b>	<b>Scope of Work</b> .....	<b>4</b>
<b>6.0</b>	<b>Methodology</b> .....	<b>5</b>
<b>7.0</b>	<b>Data Analysis</b> .....	<b>6</b>
<b>8.0</b>	<b>Results</b> .....	<b>7</b>
<b>9.0</b>	<b>Conclusions</b> .....	<b>19</b>
<b>10.0</b>	<b>Annexes</b>	
	Annex 1                      Persons Contacted	
	Annex 2                      Training Agenda for Immunization Coverage Survey	
	Annex 3                      Interviewer's and Supervisor's Guide	
	Annex 4                      Sample Questionnaire - Standard Coverage Survey	
	Annex 5                      Reasons for Child's Immunization Status - Results from Kisumu Urban, Kisumu Rural and Siaya	
	Annex 6                      Coverage Survey Teams and Schedule: Kisumu Urban, Kisumu Rural, Siaya	
	Annex 7                      Standard Analyses of Pediatric Coverage Surveys	
	Annex 8                      Standard Analyses of TT Coverage Surveys	

## ACRONYMS

A.I.D.	AGENCY FOR INTERNATIONAL DEVELOPMENT
BCG	BACILLUS CALMETTE-GUERIN
COSAS	COVERAGE SURVEY ANALYSIS SYSTEM
DPT	DIPHTHERIA-PERTUSSIS-TETANUS
FIC	FULLY IMMUNIZED CHILD
EPI	EXPANDED PROGRAM ON IMMUNIZATION
KEPI	KENYA EXPANDED PROGRAM ON IMMUNIZATION
MI	MEASLES INITIATIVE
NGO	NON-GOVERNMENTAL ORGANIZATION
NT	NEO-NATAL TETANUS
OPV	ORAL POLIO VACCINE
REACH	RESOURCES FOR CHILD HEALTH PROJECT
TT	TETANUS TOXOID

## **ACKNOWLEDGEMENTS**

The author would like to thank the KEPI Management Unit and the REACH/Kenya communications advisor, Grace Kagodu, for facilitating the planning of this coverage survey.

The three surveys were organized, staff were trained and the results were collected and analyzed by the health staff in Kisumu and Siaya Districts in a two week time period. This survey and report would not have been possible without the enthusiastic and committed involvement of the District Public Health Nurses and their staff in these two districts. It was a privilege to be a part of such a dedicated and hard working group of professionals.

Finally, the author wishes to thank the REACH/KENYA and Washington staff who also contributed to assuring that what ever was needed was done to complete this activity in a timely fashion.

## 1.0 Executive Summary

From February 19-March 11, 1992 a Senior Technical Officer from the REACH Project assisted the Kenyan Expanded Program on Immunization (KEPI) in the organization and supervision of three immunization coverage surveys in two neighboring districts of Nyanza Province-Kisumu and Siaya. The results were analyzed by trained, district level, medical records personnel using the WHO/UNICEF Coverage Survey Analysis System (COSAS). A debriefing of survey results was conducted in Siaya and Kisumu on March 6, 1992.

The purpose of these surveys was to provide a baseline for the measles initiative project and to provide information to guide personnel in the implementation phase of this project. The analysis focused on assessing the ability of the EPIs in Siaya and Kisumu to provide a service that is accessible to their target population and one which strictly adheres to the KEPI schedule.

### i.1 KEY FINDINGS:

The results from the immunization coverage survey were calculated in essentially two ways:

- 1) Immunizations verified by card as having been given following the KEPI policy (i.e., valid coverage)
- 2) Immunizations verified by card and/or history (i.e., crude coverage).

The findings of the three pediatric coverage surveys, and from additional data that was collected based on the modified WHO Reasons for Immunization Failure questionnaire, are as follows:

1. Program Access: Access to immunization services as measured by DPT1 crude coverage is very high. All three surveyed areas show that more than 90% of infants have received their first dose of DPT1 and less than 5 percent of children had not received any immunization.
2. Targeting of Under One Year Olds: Targeting of children at highest risk of disease is excellent. Greater than 85% of valid doses of measles vaccine are being given to children less than one year of age.
3. Full and Valid Immunization Coverage: The percentage of Fully and Validly Immunized Children (FIC) by one year of age ranges from 23% to 33% in the three surveyed areas. The reasons for this low coverage are described in points 4-8 below.
4. Dropout Rates: Dropout rates are high as measured by (a) the percent of children who receive DPT1, as documented by crude data, who do not receive DPT3, verified by card or according to history, and (b) who receive a first dose of DPT and do not receive measles vaccine, are high. For DPT1-DPT3, the drop-out rate ranges from 13% in Siaya to a high of 19% in the urban area of Kisumu. For DPT1-Measles, the dropout rate is even higher, ranging from a high of 33% in Siaya District and the rural areas of Kisumu to 29% for the municipality (urban area) of Kisumu. WHO considers a drop-out rate of greater than 10% as high.
5. Adherence to immunization schedule: Noncompliance by health workers with the minimum acceptable age of immunizations and intervals between doses, as established by KEPI, decreased full immunization coverage of children by 14 to 18 percent.

6. Card availability: Poor distribution or retention of immunization cards also affects the coverage rates. Only 75% of the infants in these surveys had cards. Therefore, full and valid coverage could only be 75% if each child received the required immunizations

7. Reasons for immunization failure: As determined by the "Reasons for Immunization Failure" questionnaire, the greatest barrier to immunization is illness, which should not be considered a contraindication to immunizations under most circumstances.

8. Source of information on immunizations: 60-69% of respondents to the above mentioned questionnaire stated that the nurse was their main source of information on the time and place of immunizations. Another 10-15% of the respondents cited the community health worker as their source of information on immunizations.

9. Communication through the radio: 57% of respondents in Siaya District stated they listen to the radio at least once a week. In the urban area of Kisumu District the percentage that stated they listen to the radio increased to 65%. This rate of listeners increased to 75% in the rural area of Kisumu.

Immunization coverage with tetanus toxoid of mothers who delivered in the 12 months preceding the date survey.

The results of the three Tetanus Toxoid (TT) surveys of mothers of children aged 0-11 months of age at the time of the surveys are as follows:

1. Program Access: Access to immunization services as measured by TT1 crude coverage is very high. All of the areas surveyed show that 96% or greater have received their first dose of tetanus toxoid and less than 4% of women had not received a dose of TT.

2. Pre-natal Care: 94-96% of the women surveyed had at least one pre-natal consultation prior to the birth of their child.

3. Card Availability: Poor distribution of cards affects the coverage rates and the ability to assess the percentage of infants born protected against neo-natal tetanus (NT). Less than 18% of the mothers interviewed for this survey had cards. In Siaya District, 14% of the women had cards.

4. Infants Born Protected: This indicator is based on the number of women who have documented evidence of TT and who received a protective dose of TT prior to the birth of their child. The percentage of infants born protected is less than 5% in all three areas.

5. Place of Delivery: In the rural areas of Kisumu District and in Siaya District 55-63% of the women delivered their child at home while in the urban areas of Kisumu only 38% of the mothers delivered their child at home. In urban Kisumu, 52% of the women stated they delivered their infant at a hospital. 30% of the women from rural Kisumu mentioned the hospital as the source of delivery, and in Siaya the hospital was the source of delivery for 16% of the women, and clinics accounted for the other 18% of deliveries.

## 1.2 KEY RECOMMENDATIONS:

To improve the immunization coverage of children:

- Establish a strategy to reduce the drop-out rate. A complete assessment of the existing service delivery system may be required to identify the causes and likely actions needed to reduce the drop-out rate. Focus group discussions with health workers and caretakers could be used to collect the information about the causes of drop-out and appropriate corrective actions.
- Review with health workers the national immunization schedule and policies for contraindications for immunizations. Following the KEPI schedule correctly would result in an estimated gain in coverage of around 20 percentage points in each of the areas. In addition, if health workers were willing to vaccinate sick children as stipulated in the KEPI policy, more mothers might bring their children to be vaccinated when sick.
- Increase the number of children who have vaccination cards. As there appears to be a shortage of immunization cards, action must be taken immediately by KEPI and the suppliers of these cards to maintain an adequate stock in each district.
- Intensify efforts to inform and to raise community awareness about immunizations, specifically the need to bring sick children for immunizations and the importance to complete the immunization series.

For tetanus toxoid the recommendation is:

- To determine accurately the percentage of children protected at birth from neo-natal tetanus, all women should be given a card to document their immunizations with tetanus toxoid.

## **2.0 Background**

From 13-17 January, 1992 a team representing the A.I.D. Office of Health, the Resources for Child Health (REACH) Project, HealthCom and the Quality Assurance Project visited Kenya to review data on the morbidity and mortality due to measles and determine whether Kenya should be selected as one of three sites for the A.I.D./Washington-supported Measles Initiative (MI) Project. During that visit it had been determined that the Ministry of Health of Kenya concurred with this Initiative and that REACH would be the lead A.I.D. contractor for the Initiative in Kenya. By the conclusion of the visit two neighboring districts in Nyanza Province were selected as pilot areas for the Initiative: Kisumu and Siaya.

The next step was to conduct baseline immunization coverage surveys in each district and in the municipality of Kisumu. The REACH Project sent one of its Senior Technical Officers to assist with the three coverage surveys, which were carried out from February 19-March 5, 1992. The results were analyzed by trained, district level, medical records personnel using the WHO/UNICEF Coverage Survey Analysis System (COSAS). A debriefing of survey results was conducted in Siaya and Kisumu on March 6, 1992.

### **3.0 Geographic Description of the Area**

The Districts of Kisumu and Siaya are located in Nyanza Province. Based on the 1989 provisional census Kisumu has a growth rate of 3.35%. The 1991 population of Kisumu District is estimated to be 700,000. Siaya District is estimated to have a population in 1991 of 677,900 with a growth rate of 3.03%. Kisumu District is divided into a municipality and a rural area. The municipality has its own medical officer of health and is largely urban/peri-urban. Kisumu Municipality has an estimated population of 227,190. Some of the areas in the municipality are rural and in other parts one finds densely populated slums.

The rural area of Kisumu District has an estimated population of 468,000.

In Kisumu District there are 49 service delivery points providing immunizations. In Siaya District there are 35 facilities which provide immunizations on a daily basis.

### **4.0 KEPI Immunization Policy**

The KEPI policy as revised in 1987 is as follows:

#### Children

- at birth	BCG + Polio 0
- at 6 weeks	DPT 1 + Polio 1
- at 10 weeks	DPT 2 + Polio 2
- at 14 weeks	DPT 3 + Polio 3
- at 9 months	Measles

#### Pregnant women

Two doses of tetanus toxoid four weeks apart given as early in the first pregnancy as possible. One booster dose at every subsequent pregnancy.

### **5.0 Scope of Work**

The scope of work for the REACH Senior Technical Officer was as follows:

The Technical Officer was to spend 3 weeks in Kenya and, in coordination with KEPI and USAID/Nairobi, specific activities included:

- a. Assembling population-based data from the provisional 1989 census and selecting 30 clusters in each of the three areas to be surveyed;
- b. Designing questionnaires;
- c. Training supervisors in the coverage survey process and selection of the clusters;
- d. Training selected individuals to conduct the survey;
- e. Providing technical input to the implementation of the survey;

- f. Training data entry clerks in COSAS;
- g. Supervising entry and verification of data;
- h. Assessing results of each survey including:
  - coverage as documented by card and reported verbally by mothers;
  - percent of infants born protected against tetanus;
  - missed opportunities for immunization;
  - age distribution at time of immunization for each antigen and dose;
  - reasons for incomplete immunization;
- i. Debriefing at the district levels and with KEPI/Nairobi, USAID and donors.

## 6.0 Methodology

Three surveys were conducted from February 26 to March 5, 1992. The surveys aimed at evaluating the immunization coverage in the municipality of Kisumu, in rural Kisumu District and in the entire district of Siaya. In each of these three areas, 30 clusters of seven children who were 12-23 months of age on the day of the survey, and mothers of children 0-11 months of age on the day of the survey, were randomly selected in conformity with the WHO immunization coverage survey methodology.

In each survey, the sampling units were the list of sub-locations as identified during the 1989 census. Provisional population figures and the growth rate from the 1989 census were used to estimate the 1991 population. Sampling was systematic and proportional to the size of each sub-location. Maps of each of the 30 randomly selected sub-locations were provided by the census bureau and the starting village in each sub-location was randomly selected.

Each district recruited 12 interviewers who were public health technicians and school leavers. They worked in pairs. There was one supervisor, primarily a public health worker, for every two teams. All personnel participated in a two day training, both classroom and field based. Following this training, the teams from Siaya and Kisumu jointly conducted the survey in Kisumu municipality from February 27-28, 1992. From March 1-5, 1992 the surveys in Siaya District and the rural areas of Kisumu District were simultaneously conducted.

In each cluster, the interviewers randomly determined the first house to be visited, then continued from house to house until they found seven eligible children and seven eligible women. Only children and their mothers who were residents of the household for at least one month were considered eligible.

When two or more clusters belonged to the same sub-location, the clusters were randomly selected from the numbered village sites identified on the map.

All eligible children from the same house were surveyed. For each child the mother was requested to show the child's immunization card so as to verify the vaccination dates, as well as a birth certificate or

any other official document to ascertain the date of birth. For each child, the interviewer checked for a BCG scar.

In the absence of an immunization card, the interviewer established the immunization history and wrote "H" for history on the questionnaire for each immunization recalled by the mother.

The same approach was followed for the mother's immunization with TT.

An interviewer's guide, which was used for training the enumerators, is found in the annex. This guide explains in more depth the procedures followed by the enumerators and the supervisors.

## **7.0 Data Analysis**

Data entry and analysis were performed by the medical records unit in Siaya and Kisumu using COSAS 4.1. Medical records staff were trained by the REACH Technical Officer in the use of COSAS prior to data entry.

A total of 638 children were surveyed. A number of children were eliminated from the analysis for reasons of non-eligibility (e.g. mistakes in birthdate) or due to incongruence between the dates of birth and immunization. In the case of incompatibility of immunization dates, for example, DPT 3 administered before DPT 1, dates were considered as being unknown.

In the case of children 12-23 months old at the time of the survey, criteria for being correctly vaccinated were:

- Polio 0 at birth or before 6 weeks of age
- DPT1 and Polio1 at a minimum of six weeks of age
- An interval of at least four weeks between each successive dose of DPT or Polio
- Measles at a minimum of 39 weeks of age

Results were analyzed in two ways:

- The crude data set contains all doses received by children and women in the survey as verified either by the immunization card or according to history. Crude data are accepted as provided, whether valid or not. They reflect the patterns of immunization service delivery and provide operational and managerial information on different aspects of immunization activities, such as accessibility of services, drop outs, and providers of immunizations.
- The valid data set reflects only doses of vaccine given that were verified by card. This data set remains after crude data have been screened by COSAS for validity according to the KEPI schedule stated in section 4.0 of this report. These immunization criteria had been entered into COSAS prior to data entry. In the case of the multiple-dose antigens, (DPT, polio and TT) second, third, fourth and fifth doses have been eliminated if any earlier dose was invalid.

## 8.0 Results

Results are presented for each area surveyed and have a level of accuracy of within plus or minus 10 percentage points. The information was evaluated on the basis of the WHO and UNICEF-selected indicators for the following attributes of program performance:

- accessibility
- continuity of services
- quality of services as measured by the proportion of invalid doses, ability to target under ones, missed opportunities, and card retention
- coverage - crude, valid, and valid by one year of age

The purpose of these surveys was to provide a baseline for the measles initiative project and to provide information to guide personnel in planning for the implementation phase of this project. The analysis focused on assessing the ability of the EPIs in Siaya and Kisumu to provide a service that is accessible to their target population and adheres to the KEPI schedule.

An immunization summary profile, provided by COSAS, provides valid and crude coverage figures. A copy of this summary profile for each of the three coverage surveys is in annex 7 and 8.

In addition to crude immunization coverage, the COSAS standard analysis provides data on the four attributes of program performance: accessibility, continuity, quality, and coverage. Both WHO and UNICEF recommend that EPIs routinely calculate these indicators from coverage survey data and use the results to improve program performance.

The results for Kisumu and Siaya are as follows.

### 8.1 Accessibility

Program accessibility is defined as the percent of children with a DPT1 contact with the EPI and reflects the maximum percent of the target population that could be fully immunized by the program based on the current availability of services and rate of use. DPT1 coverage verified by card and history is the indicator used to measure access. The same type of indicator is used to measure access for pregnant women for tetanus toxoid.

Results from this survey indicate that 96.2% of children under two years old in Kisumu municipality have at least one contact with immunization services, 92.2% in Kisumu rural, and 90% in Siaya District.

The accessibility of reaching pregnant women with the first dose of Tetanus Toxoid is even higher than that for children. 96% of pregnant women in Kisumu Municipality have received at least one dose of TT. 99.6% of pregnant women in the rural areas of Kisumu received their first dose of TT, and 96% in Siaya.

Therefore, we can conclude that these surveyed districts have the potential to achieve greater than 90% coverage with all EPI antigens using existing health facilities.

## 8.2 Continuity/Use of Services

To measure continuity of services, managers need to determine the number of children and women who have at least a first contact with the EPI, but who do not go on to receive all the required immunizations. This indicator is measured for children by the crude drop-out rates from DPT1 to DPT3 (i.e.  $(DPT1-DPT3)/DPT1$ ) and DPT1 to Measles (i.e.  $(DPT1-measles)/DPT1$ ).

### DROP OUT FROM

<u>AREA</u>	<u>DPT1 to DPT3</u>	<u>DPT1 to Measles</u>
Kisumu Urban	19.1%	29.4%
Kisumu Rural	15.5%	32.5%
Siaya	13.3%	33.3%

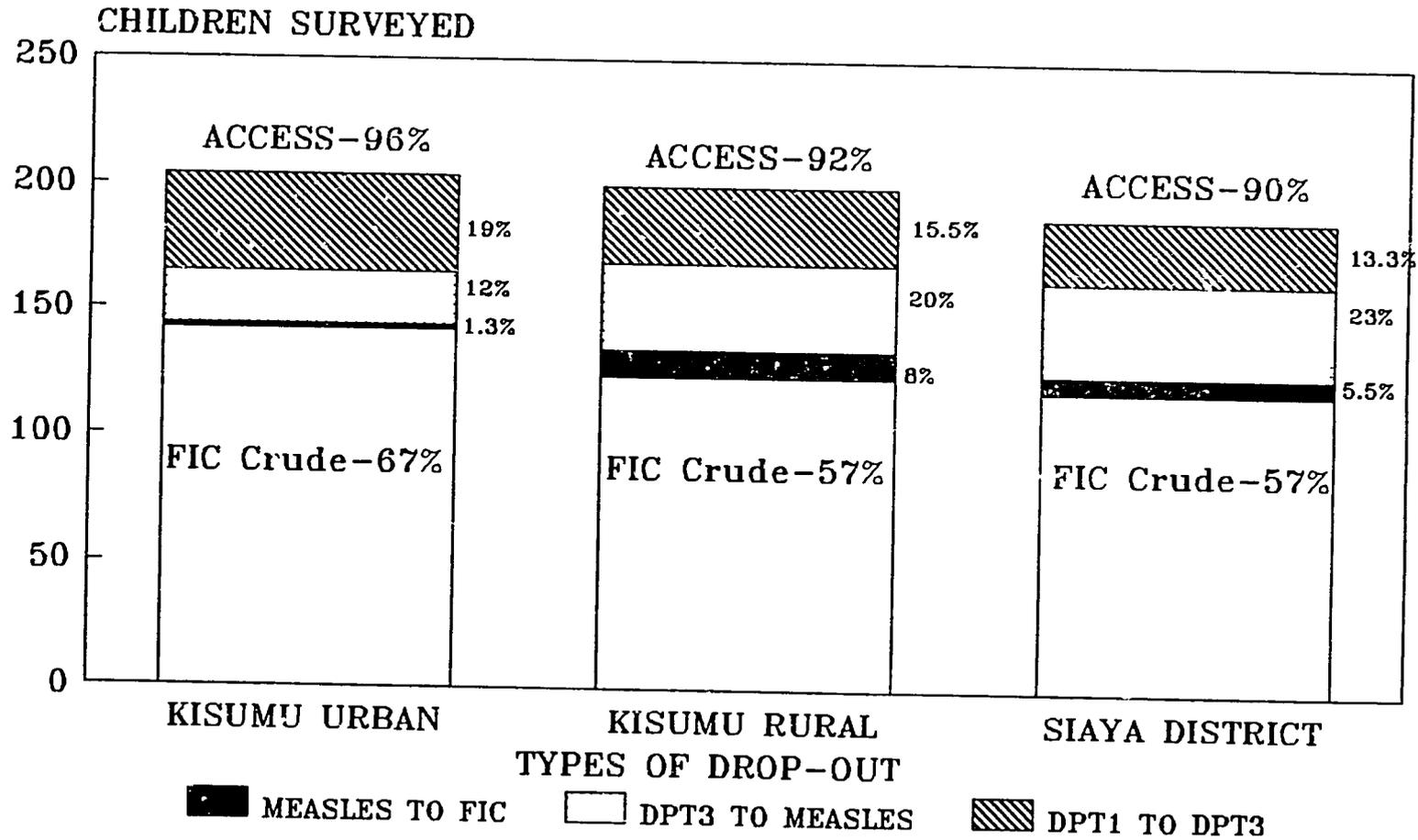
For women, this indicator is measured by the crude drop-out rate from TT1 to TT2 and TT1 to TT3

<u>AREA</u>	<u>TT1 - TT2</u>	<u>TT1 - TT3</u>
Kisumu Urban	6.8%	28.8%
Kisumu Rural	11.3%	32.8%
Siaya	7.3%	37.5%

Graph number 1 shows the effect which the dropout rate for children has on complete immunization coverage (card and history). In the Kisumu rural survey and in Siaya District, the dropout rate from DPT3 to measles is greater than 20%. This high rate is largely responsible for complete crude coverage being more than 30% below the percentage of the target population with access to immunization services.

For Kisumu and Siaya Districts to reach their potential coverage rates of greater than 90%, as indicated by the high percentage of children and pregnant women with access to immunizations, actions must be taken to ensure that children and women continue to return to complete their immunization series.

GRAPH 1  
EFFECT OF DROP-OUTS ON FULL IMMUNIZATION  
COVERAGE - KISUMU AND SIAYA DISTRICTS



### 8.3 Quality of Services

There are four indicators used to measure program quality. They are:

a. Non-Adherence to the Immunization schedule

- Percent of children who received DPT1, verified by card, before six weeks of age;
- Percent of children who received measles, verified by card, before 39 weeks of age.

b. Targeting Under Ones for Measles Immunization

- Percent of children who received a valid dose of measles vaccine by 52 weeks of age.

c. Effect on coverage of uncorrected missed opportunities for measles immunization

- The percent of children surveyed who had the chance to receive measles vaccine at the time they received another antigen, verified by card, but were not immunized for measles by the time of the survey.

d. Availability of Documentation about Immunization

- The percent of children who received at least one immunization, verified by card or history, who had a document showing their immunization status at the time of the survey.

To be effective in preventing disease, vaccines must be administered according to manufacturers' instructions and at the ages and intervals defined in section 4.0 of this report. Immunization cards or clinic records are considered by WHO as the only reliable source of information to use in making this determination.

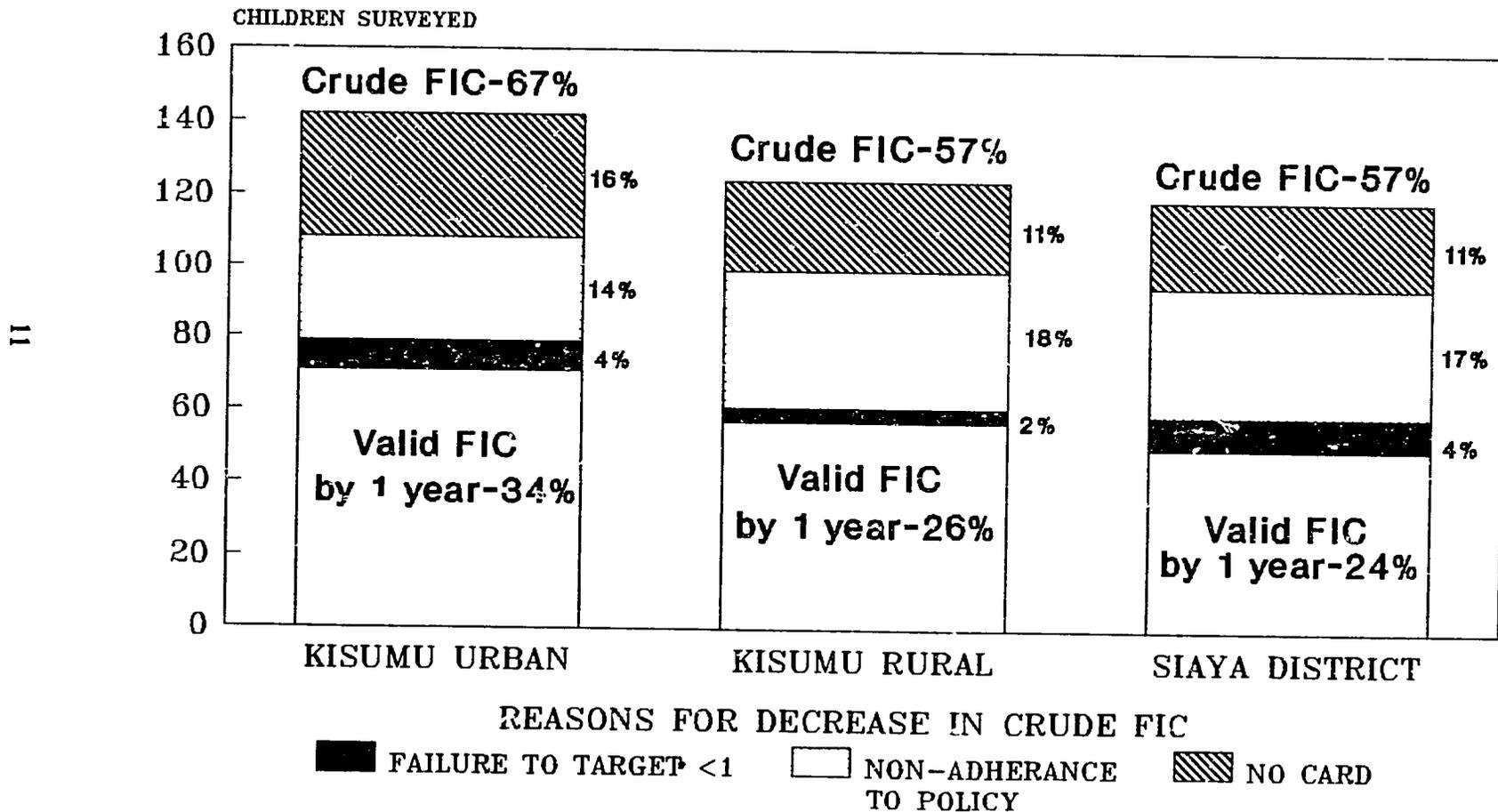
Data analysis disclosed the following about the quality of the program based on select COSAS indicators.

	DPT1 < 6 W	MEAS < 39 W	MEAS < 52 W	MISSED OPPS	CARD AVAIL.
KISUMU URBAN	11.8%	18.2%	88.9%	0.5%	77.6%
KISUMU RURAL	09.2%	20.6%	89.4%	0.92%	78.7%
SIAYA	09.5%	22.9%	86.4%	1.91%	80.9%

The indicators displayed above and in Graph 2 show that 1) lack of documentation about immunization (card availability) and 2) non adherence to KEPI policy (immunizing children prior to the minimum recommended age for the antigen), result in a lowering of the valid, fully immunized child coverage by approximately 30 percentage points in each of the three areas surveyed.

## GRAPH 2

### REDUCTION IN FULL IMMUNIZATION COVERAGE DUE TO LACK OF PROGRAM QUALITY



Graph 3 shows that valid coverage by one year of age with measles vaccine is less than 40% in all three areas surveyed. Valid measles coverage could be improved by 1) providing the vaccine after the minimum age of 9 months and before 12 months of age, and 2) assuring that clients have and maintain childhood immunization cards.

However, these two districts are doing an excellent job in targeting their immunization efforts to children under the age of one year and in providing all antigens for which a child is eligible during each contact with the EPI.

Missed opportunities to provide all vaccines for which the child is eligible during their clinic visit for immunizations occur most frequently in Siaya District. Missed opportunities for measles during an immunization session is less than 2% in all three areas surveyed.

However, it should be noted that these surveys did not measure the missed opportunities that could have occurred during a visit to a health facility for any other reason than that of receiving an immunization.

#### 8.4 Age Distribution

In all three areas surveyed, the data show that infants are beginning their immunization series in a timely fashion. As the indicators above show, those children who complete their series do so prior to one year of age.

The median age for infants being immunized based on valid data is as follows:

	Polio 0	DPT1	DPT3	Measles
Kisumu Urban	2 weeks	7 weeks	17 weeks	42 weeks
Kisumu Rural	2 weeks	8 weeks	19 weeks	43 weeks
Siaya	3 weeks	9 weeks	19 weeks	43 weeks

The long lag time between DPT3 and measles is readily apparent from this table. For improved measles coverage, attention needs to be focused on finding better ways than are currently being used to notify parents three months after the third DPT or Polio dose that their child needs to return for measles vaccine.

This information indicates that it might also be difficult, in these districts at least, to obtain high measles coverage even if the KEPI policy is changed and a first dose of measles vaccine is given at 6 months (26 weeks) of age.

#### 8.5 Coverage

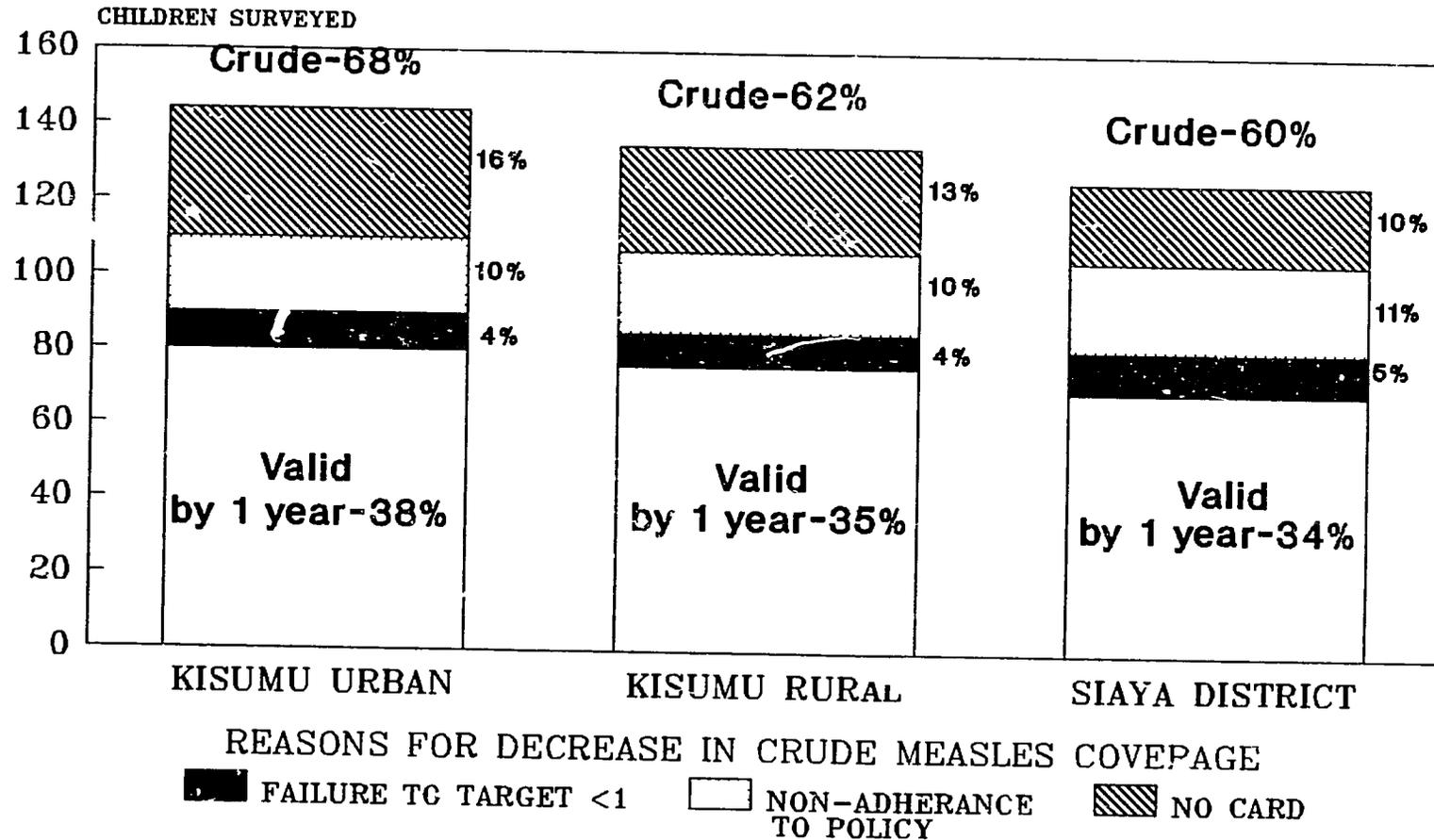
##### A. Pediatric Coverage

The full immunization coverage rate for a fully immunized child from 12 through 23 months of age, based on both crude and valid data for each of the three areas surveyed, is presented below. From 75 to 77% of all children in each of the three areas surveyed had cards.

It should be noted that the coverage results include the dose of Polio 0. According to KEPI policy this dose is given prior to 6 weeks of age. The WHO policy for immunization with Polio 0 is from birth to two weeks of age.

# GRAPH 3

## REDUCTION IN MEASLES COVERAGE DUE TO LACK OF PROGRAM QUALITY



The information below, under the heading crude CARD + HISTORY, shows what coverage would have been if the EPI had adhered to their immunization schedules (CRUDE CARD) and all caretakers had been given and kept their cards (CRUDE HISTORY). However, the valid coverage in the three areas surveyed is that which is indicated under the column headed VALID. The valid results are the ones WHO recognizes as the true indicator of coverage. The difference between the results in the three columns indicates the total effect on valid coverage of caretakers not having cards and health workers not adhering to KEPI schedules.

<u>ANTIGEN</u>	<u>TYPES OF DOCUMENTATION</u>	<u>AREAS SURVEYED</u>		
		<u>URBAN KISUMU</u>	<u>RURAL KISUMU COVERAGE</u>	<u>SIAYA</u>
BCG	crude card and history	96.2%	95.4%	94.7%
	crude card	93.9%	94.9%	93.8%
	valid at time of survey	93.9%	94.9%	93.8%
	valid by 12 months of age	92.9%	94.5%	92.8%
Polio 0	crude card and history	75%	76.5%	84.2%
	crude card	57.1%	58%	64.6%
	valid at time of survey	53%	52%	52%
	valid by 12 months of age	53%	52%	52%
DPT1/OPV1	crude card and history	96.2/95.8%	92.2/92.2%	90/91.9%
	crude card	72.2/72.2%	70.0/70.5%	70.8/71.8%
	valid at time of survey	63.7/62.7%	63.6/64.1%	63.6/63.6%
	valid by 12 months of age	63.7/62.7%	63.1/63.6%	63.6/63.6%
DPT2/OPV2	crude card and history	85.8/85.8%	87.1/87.1%	88/87.1%
	crude card	65.6/65.6%	68.2/68.2%	68.9/67.9%
	valid at time of survey	56.1/55.2%	58.5/59%	59.3/59.3%
	valid by 12 months of age	56.1/55.2%	58.5/59.6%	59.3/59.3%
DPT3/OPV3	crude card and history	77.8/78.3%	77.9/77.9%	78/76.1%
	crude card	61.3/61.3%	63.1/63.6%	61.2/59.3%
	valid at time of survey	51.9/51.4%	48.8/49.3%	49.8/47.4%
	valid by 12 months of age	51.9/51.4%	48.8/49.3%	49.8/47.4%
Measles	crude card and history	67.9%	62.2%	60.3%
	crude card	51.9%	49.3%	50.2%
	valid at time of survey	42.5%	39.2%	38.8%
	valid by 12 months of age	37.7%	35.0%	33.5%
FIC	crude card and history	67%	51.1%	56.9%
	crude card	50.9%	45.6%	45.5%
	valid at time of survey	37.3%	28.1%	28.2%
	valid by 12 months of age	33.5%	26.3%	23.9%

The reasons for the difference in these results are explained above and are visually depicted in graphs 1-3.

## B. Coverage of Mothers of Children Aged 0-11 Months

Immunization coverage of mothers of children aged 0-11 months at the time of the survey based on cards is less than 6% in all three areas surveyed.

The percentage of infants born protected against neo-natal tetanus, documented by mothers having cards ranges from 5.2% in Siaya District, 4.0% in rural areas of Kisumu to a low of 3.5% in Urban Kisumu.

### 8.6 Reasons for Immunization Failure

The questionnaire found in Annex 5 was administered to each caretaker of children 12-23 months of age. This questionnaire was adapted by staff of the REACH, Healthcom, and Quality Assurance Projects from the WHO Reasons For Immunization Failure Form. The purpose for these additional questions was to determine possible causes for immunization failures and to understand the level of knowledge and the attitudes of people towards measles in particular and the health care delivery services.

Graphs 4, 5, and 6, show clearly that obstacles, in particular the child or mother being ill but not brought to the clinic or the child being ill, brought to the clinic and not vaccinated, are the major reasons given by those interviewed for failure to have their child immunized. Negative attitudes, in particular lack of motivation, also play a part in children not being immunized.

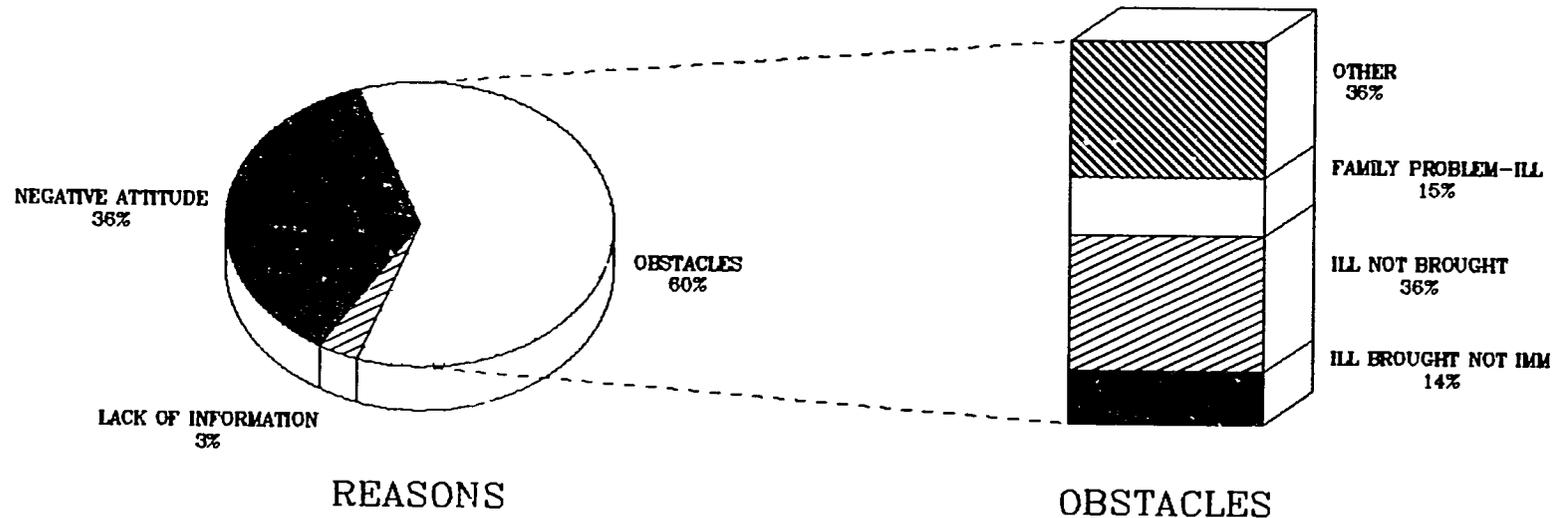
The belief of illness as a contraindication for immunization, is further confirmed by the response to the question: "If your child had diarrhea or fever would it be okay for him or her to get immunized?" Approximately 80% of all respondents think a child with diarrhea should not be immunized.

Over 86% of the caretakers interviewed were familiar with measles, recognized measles as a serious to fairly serious disease and knew that immunization can prevent the disease. One problem which may prevent them from having their children immunized is not knowing at what age this immunization should be given. Only 50% of the respondents in all three areas stated that children should be vaccinated for measles between 9-11 months of age. EPI staff must do a better job in communicating this information.

# GRAPH 4

## REASONS FOR IMMUNIZATION FAILURE

### KISUMU DISTRICT



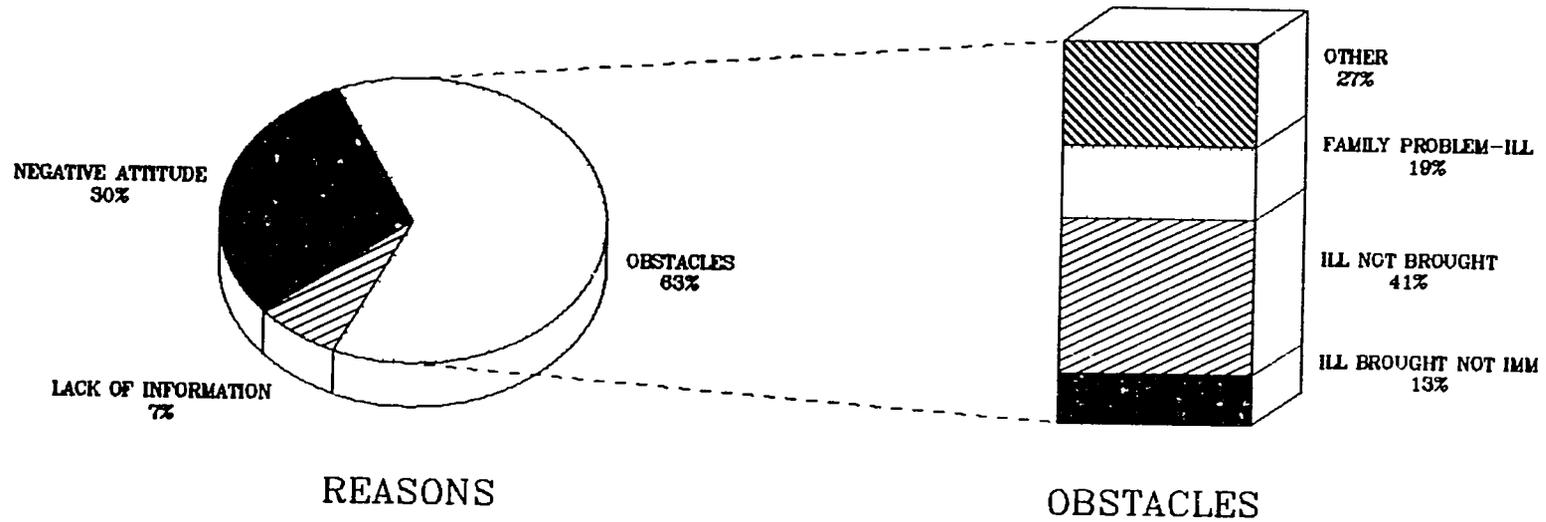
URBAN AREAS

# GRAPH 5

## REASONS FOR IMMUNIZATION FAILURE

### KISUMU DISTRICT

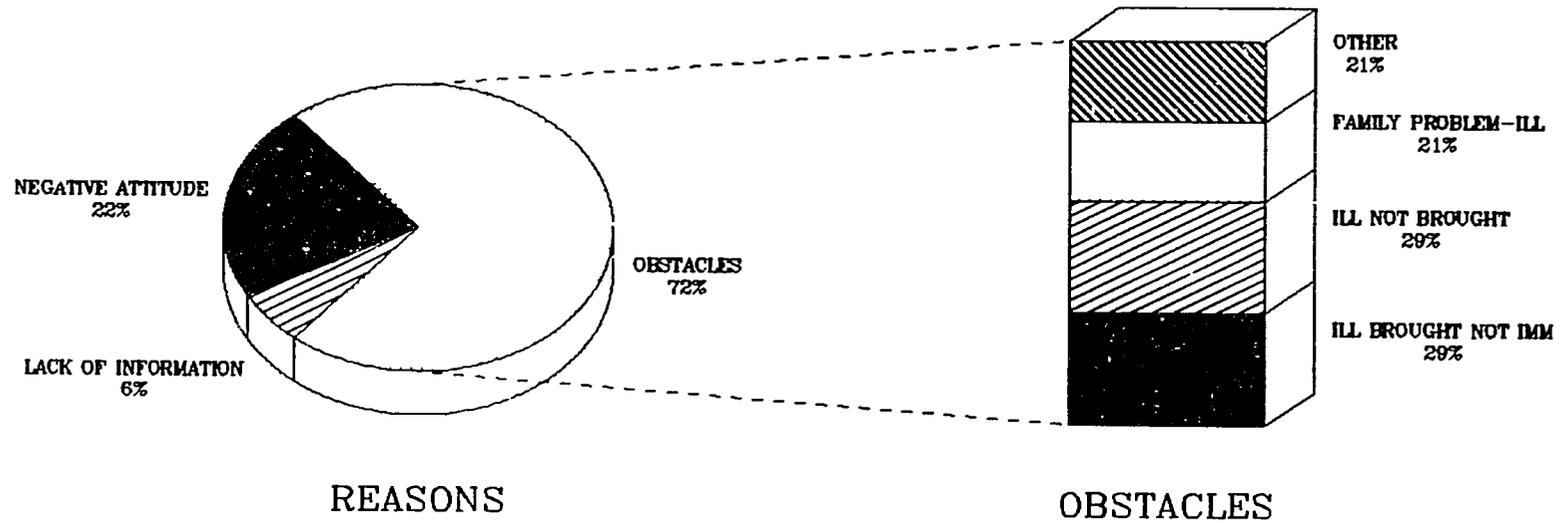
17



RURAL AREAS

# GRAPH 6

## REASONS FOR IMMUNIZATION FAILURE SIAYA DISTRICT

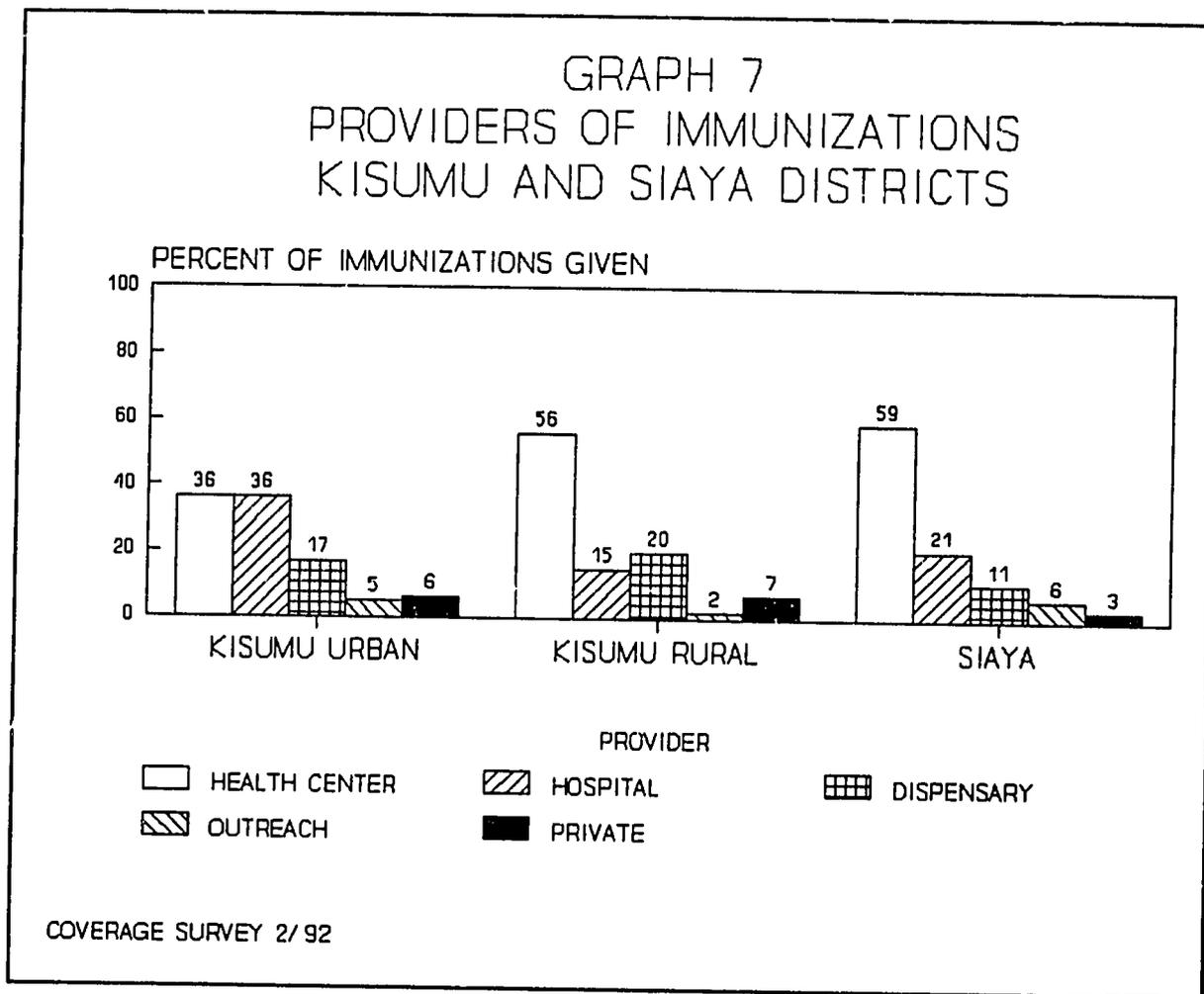


The nurse was the major source of information about immunizations. Next, the community health worker was considered an important source. Posters were not stated by the respondents as a source of information. In Siaya District in particular, radio was seen as an important source of information on family planning.

Results to this questionnaire for the three areas surveyed are found in Annex 4.

### 8.7 Providers of Immunization

The majority of immunizations, as shown in Graph 7, are provided by the fixed government health facilities. Outreach and private providers play a minor role. However, it is difficult to correctly determine if hospitals and the private sector, including NGOs, are providing more immunizations than represented by this graph. Immunization cards do not always indicate the exact source of immunizations, and the enumerators were not requested to probe the names or exact locations of the source of immunizations.



## 9.0 Conclusions

Siaya and Kisumu districts have in many ways very strong EPI's. Accessibility to services is very high, targeting of under ones is good, and the overall quality of the program is good. In both districts the EPIs are well managed by the two District Public Health nurses in charge and their staff.

Based on the survey findings, the following recommendations are offered for consideration by the EPI personnel in Kisumu and Siaya.

To improve the vaccination coverage of children :

- Establish a strategy to reduce the drop-out rate. A complete assessment of the existing service delivery system may be required to identify the causes and likely actions needed to reduce drop-outs. Focus group discussions with health workers and caretakers should be used to collect information about the causes of drop-out and appropriate corrective actions.
- Review with health workers the national immunization schedule and policies for contraindications for immunizations. Following the KEPI schedule correctly would result in an estimated gain in measles coverage of around 20 percentage points in each of the areas. In addition, if health workers were willing to vaccinate sick children as stipulated in the KEPI policy, more mothers might bring their children to be vaccinated when they are sick.
- Increase the number of children who have vaccination cards. As there appears to be a shortage of immunization cards, action must be taken immediately by KEPI and the suppliers of these cards to maintain an adequate stock in each district.
- Improve the targeting of polio doses given during the first two weeks of life.
- Intensify efforts to inform and to raise community awareness about immunizations.

In conclusion, this survey served to validate and document strengths and weaknesses already suspected by the EPI managers. They are aware that drop-outs are a problem and that contraindications to vaccinations need to be reviewed with the health staff. They also realize that more activities to motivate the population are needed if caretakers are to continue bringing their children to immunization sites to complete the series which over 90% of them began.

Siaya and Kisumu districts were selected for the Measles Initiative based on some of the above mentioned strengths and weaknesses. Judging from these surveys and the input of district personnel who conducted them, these two areas were well selected and can be expected to benefit from the additional assistance offered by the Measles Initiative.

**ANNEX 1  
PERSONS CONTACTED**

**NAIROBI**

MOH/Kenya

Dr. D.M. Mutie, Director, Division of Family Health

Dr. F. Muu, Manager, KEPI

Mr. S.M. Kamau, Logistics Officer, KEPI

Mr. M.N. Mwangi, Training Officer, KEPI

Ms. Emma Kariuki, Data Entry/Health Information Systems Assistant, HIS/KEPI

DANIDA/Nairobi

Mr. Per Milde, Senior Management Officer

USAID/Nairobi

Ms. Connie Johnson, Health Officer

Ms. Kate Colson, Intern

REACH/Nairobi

Ms. Grace Kagodu, Communications Advisor

Ms. Ruth Agin, Administrative Assistant

MOH/Kisumu District

Dr. Owino	-	Medical Officer of Health
Mrs. Grace V. Olang	-	District Public Health Nurse
Mrs. Felda Lidambitsa	-	Public Health Nurse
Mr. Douglas Ngaira	-	Medical records Officer
Mr. John Agwaity	-	Statistical clerk
Mr. Ishmael O. Mumbo	-	Central Bureau of statistics
Mr. Amos A. Obudho	-	Central Bureau of Statistics

Kisumu Municipality

Dr. Wendo	-	Medical Officer of Health
Mr. P.B. Okhungu	-	Public Health Officer
Mrs. Ludwina Ragot	-	Matron
Mrs. Christine Ouko	-	Community Nurse
Mrs. Jennifer Odigo	-	Community Nurse

MOH/Siaya District

Dr. Olango	-	Medical Officer of Health
Mr. Odera	-	District Public Health Nurse
Mrs. Siaya	-	Matron
Mrs. Eunice Odhiambo	-	Assistant Matron
Mr. Audi	-	Health Educator
Mr. G.N. Nyangechi	-	Public Health Officer
Mr. Okoth-Olnoch	-	Medical Records Officer

ENUMERATORS/Kisumu District

1. Mr. Wilfred O. Owuor	-	Public Health Technician- Kisumu
2. Mr. Edwin F. Aminer	-	PHT - Ahero
3. Mr. David O. Odera	-	PHT - Bodi
4. Mr. Martin O. Osano	-	PHT - Sangorota
5. Mr. Joshua O. Riwa	-	PHT - Pap Ondit
6. Mr. George S. Odhiambo	-	MRT - Kisumu
7. Mrs. Christine A. Otieno	-	Statistical officer
8. Mr. David O. Otiew	-	PHT - Chrmuii
9. Mr. Fred O. Ochieng	-	PHT - Masogo

- 10. Mr. Paul Obura - PHT - Kisumu
- 11. Mr. Billy Okeya - PHT - Mannwanba
- 12. Mr. Silas Odhiambo - District Health Education Officer Kisumu

ENUMERATORS/Siaya District

- 1. Mrs. Teresah A. Orot - Community Nurse
- 2. Mr. Benedict Ochuodho - PHT
- 3. Mr. Patrick Sande - PHT
- 4. Mr. Eric Mjgouah - PHT
- 5. Mr. Erick O. Obera - PHT
- 6. Mr. Eric M. Odhiambo - C.O.
- 7. Mr. David Odhiambo Achich - School Leaver
- 8. Mr. Maurice Olela - School Leaver
- 9. Mr. Eliaz O. Odumah - School Leaver
- 10. Miss Maryanne Owillah - School Leaver
- 11. Mr. Charles Awuor - School Leaver
- 12. Miss Claris Ogaja - School Leaver
- 13. Mr. Thomas Ochieng - School Leaver

## ANNEX 2

TRAINING AGENDA  
FOR  
IMMUNIZATION COVERAGE SURVEYS  
IN  
KISUMU AND SIAYA DISTRICTS

FEBRUARY 25-26, 1991

### DAY ONE

TUESDAY FEBRUARY 25, 1991

TIME	ACTIVITY
8:00	PARTICIPANT REGISTRATION AND INTRODUCTION OF FACILITATOR AND PURPOSE OF TRAINING AND SURVEYS
8:15	PRESENTATION OF TWO DAY AGENDA A. DAY ONE-IN SERVICE TRAINING ON HOW TO DO A SURVEY B. DAY TWO-FIELD TESTING C. DAY THREE-15 CONDUCT SURVEYS IN THREE AREAS D. DAY 6-15 ANALYSIS OF DATA E. DAY 15-16 PRESENTATION OF RESULTS
8:30	DEFINITION OF ROLES OF FACILITATOR, SUPERVISORS AND ENUMERATORS AND EXPECTATIONS
8:45	INTRODUCTION TO TRAINING MODULE-DEFINITION OF IMMUNIZATION COVERAGE SURVEY " A SURVEY OF A SMALL NUMBER OF INDIVIDUALS TO DETERMINE THEIR IMMUNIZATION STATUS.
9:00	SURVEY METHODOLOGY A. AGE GROUPS TO SURVEY-WHY B. ANTIGENS-WHY-KEPI IMMUNIZATION POLICY PEDIATRIC AND WOMEN C. SOURCES OF INFORMATION D. RANDOM CLUSTER/HOUSEHOLD SELECTION
10-10:15	BREAK
10:15	SELECTING A STARTING HOUSEHOLD-PRACTICAL EXERCISE/ROLE PLAY A. INTRODUCTION TO LEADERS OF AREA B. SELECTING HOUSES IN AN URBAN AREA C. SELECTING HOUSEHOLDS IN A RURAL AREA D. INTRODUCTIONS TO MOTHER OR FAMILY HEAD
11.00	IDENTIFYING ELIGIBLE POPULATION FOR INFANTS AND WOMEN TO BE SURVEYED A. DETERMINING EARLIEST AND LATEST ACCEPTABLE BIRTHDAYS B. PRESENTATION/EXERCISE

- 11:45 CLUSTER FORMS FOR INFANT IMMUNIZATION  
A. PRESENTATION/ REVIEW OF INFANT SURVEY FORM  
B. REASONS FOR IMMUNIZATION FAILURE  
C. LAST STEPS BEFORE LEAVING A HOUSEHOLD
- 12:30 LUNCH
- 1:30 PRACTICAL EXERCISE IN COMPLETING INFANT FORMS
- 2:30 CLUSTER FORM FOR TETANUS TOXOID(TT)IMMUNIZATION OF WOMEN  
A. WOMEN TO INCLUDE  
B. TT DOSES TO RECORD  
C. OBJECTIVE: DETERMINATION OF BABIES BORN PROTECTED  
D. COMPLETING THE FORM
- 3:15 PRACTICAL EXERCISE IN COMPLETING THE TT FORM
- 4:00 ROLE OF THE SUPERVISOR  
A. SUPERVISING DATA COLLECTION  
B. COMPLETING THE CLUSTER FORM  
1. VALIDITY OF IMMUNIZATION  
2. DETERMINES WHICH CHILDREN WERE FULLY IMMUNIZED BEFORE ONE YEAR OF AGE  
3. COMPLETING THE TOTAL COLUMNS
- 5:00 CONCLUSION/PRESENTATION OF SECOND DAYS AGENDA

**DAY TWO**  
**FEBRUARY 26, 1991**

- 8:00**            **PRESENTATION OF DAYS AGENDA/PRACTICAL EXERCISE**
- 8:15**            **DISTRIBUTION OF PRACTICE FORMS/OUTING TO WARDS**
- 11:00**          **RETURN TO TRAINING CENTER/DEBRIEFING BY GROUPS OF EXPERIENCES**
- 12:15**          **LUNCH**
- 1:15**            **ANALYSIS OF FORMS**
- 2:15**            **PREPARATION FOR URBAN SURVEY**  
**A. ASSIGNMENT OF TEAMS/SUPERVISORS-ENUMERATORS-DRIVERS**  
**B. ASSIGNMENT OF CLUSTERS**  
**C. DISTRIBUTION OF CLUSTER PACKETS**  
**D. LOGISTICS**
- 3:15**            **FINAL QUESTIONS**

## ANNEX 3

### INTERVIEWERS' GUIDE

#### I. DOCUMENTS TO BE USED

- INTERVIEWERS' GUIDE
- QUESTIONNAIRES A,B,C
- SUMMARY FORMS A,B,C,

##### I-1 Interviewers' Guide

The guide is the document you are reading. It will give you all the necessary instructions to carry out your study. It has been designed so that at all times you may have an answer to the on-site difficulties you may encounter. Before leaving, read the guide several times to completely familiarize yourself with the tasks to be performed.

I-2 Use of the Questionnaires These questionnaires are to be used for your data collection. The completion of the questionnaires must be done scrupulously following the instructions provided in this guide. Questionnaires are to be filled out in pencil. The three questionnaires are to be used in all the clusters until you reach a total of 7 children or women per questionnaire.

Before leaving for an interview, verify that you have all your documents and a sufficient number of questionnaires.

Once you have left a cluster you must not modify data recorded on the questionnaire.

##### I-3 Questionnaire Guide

This guide explains how each questionnaire was designed. It gives an explanation for each line and column. The wording of each question is more explanatory than in the questionnaire itself so that you may understand the meaning of each question. Next, you are told how to record the answers.

## Questionnaires A,B,C.

Questionnaires A,B, and C have been structured according to the same scheme. They include:

### 1. Identification of the Questionnaire

on the first line, the type of questionnaire ( I.E. children 12-23 months( Pediatric) or Women having delivered in the past 11 months (neonatal tetanus survey).

on the second line the district and sub-location to be included in the survey.

on the third line the cluster number and child number and the household number.

the fourth line includes the date of the interview and the interviewers name.

the fifth line includes the range of birth dates

### 2. Data collecting

Since you are visiting only a small percentage of the houses to represent all houses, it is essential that each question is asked carefully and that the households are visited according to the procedures detailed below.

Before you commence the interview you should explain the purpose of the visit to the mother, family head or other responsible member of the family and the head of the cluster.

#### Recording on form

##### a. For the Infant Immunization Cluster Form:

First determine if there is an eligible child in the household. An eligible child is one who has lived in the household for 1 month. Eligible children should be between 12 to 23 months of age. This means that the child should be born on or between 1 to 2 years prior to the date of the survey interview. That is :

1. Assume an interview date of February 25, 1992.
2. Count back from the interview date exactly 24 months to determine the earliest acceptable birthdate. In this case the date would be 25 February 1990.
3. Count back from the interview date exactly 12 months to determine the latest acceptable date. In this case the date would be 25 February 1991.

Any birthdays falling in between these dates would be included on that day the survey was conducted. Effectively that means all children born from February 25, 1990-February 25,1991. If no immunization cards or birth records are available, you may need to use months of birth instead of specific dates.

b. For the Tetanus Toxoid Immunization of Women Cluster Form:

To determine the earliest acceptable birthday, subtract exactly 12 months from the date of the interview. In this case if the interview date is February 25 then all women who gave birth from February 25, 1991 to February 25, 1992 would be included.

If there are no eligible children or women, then go to the next household.

If there is an eligible child, request the mother or responsible person to produce the following documents (if available): (1) Child's Birth registration certificate, and (2) immunization card or record. These documents should, as far as possible be produced for each eligible child. If there is an eligible child but a responsible person to answer is not present note that on the record and return to that house three times before leaving the area or excluding it from the survey.

Now you are ready to complete the EPI form as follows:

Range of Birthdates: 12 to 23 months prior to the date of the interview:

Households visited: the number of the household visited. This number is based on the identification of the starting household and then the household numbers of subsequent eligible children and women.

Child Number: The sequential number for each statistical unit included; this line is already pre-coded and should help the interviewer in checking that he has indeed the required number of children or women.

Name and Sex: The last and first name of the child and sex

Birth Date: The birth date is verified in the case of a birth certificate; the date will then be recorded using numbers (dd/mm/yy). If you were able to verify the date of birth, go directly to the following question.

If you were not able to answer the preceding question, you will then estimate the date of birth. You will question the parents and estimate the age in months using chronological references provided in the area.:

- traditional and religious holidays
- seasonal calendar
- great historical or social events

**Immunization Card:** If the child has an immunization card, you record the card number and directly go to the next question

for each immunization , record the immunization date (dd/mm/yy) in the corresponding column

If the card is not available enquire from mother if the child has been immunized. If the answer is "YES" put a + in the date/Yes/No Box for the relevant dose.

If the child has not received a dose, put "O" in the date/YES/No box for the relevant dose.

**BCG Scar** You check the lower part of the left forearm and write down Yes if you find a BCG scar or No if you do not find any.

**Source:** Fill-in source. Make sure for the private sector you code for PVO vs Private Physician.

**Tally of Households visited:** Keep a tally of all houses visited and note the name and number of the first household selected to be visited in this cluster.

## **II. ON SITE**

### **A. Before leaving**

Be sure to have all the necessary documents and always an additional set of questionnaires.

### **B. Determination of households to be visited within each cluster**

The first house to be visited in each area should be selected at random (that is, all houses in the sample area should have an equal chance of being selected. The method you use to select the first house will vary according to the population density (rural versus urban areas) and the information which is available to you (for example, household lists).

1. **Rural areas where household lists are available**
  - Obtain a list of the households in the village being evaluated. Census records, tax lists, and voting lists are the lists most commonly available, but any reasonably complete listing is acceptable.
  - Number the households on the list
  - Select a random number from 1 to the highest numbered household on the list (inclusive) by using a table of random numbers or a currency note. Then find the household on the numbered list whose number corresponds to the random number selected. This will be the first household to be visited.

2. Rural areas where household lists are not available
  - Define precisely the limits of the village
  - Number each house in the village with chalk.
  - Select a random number between 1 and the highest numbered household by using a table of random numbers or a currency note. Then find the numbered household selected. This will be the first household to be visited.
  - If there are more than 100 households in a village, and it is not feasible to number them, you will need to use another method to randomly select the first household to be visited.
    - Select a central location in the village or town, such as a market, mosque or church. The location should be near the approximate geographical center of the village or area.
    - As a first step, you will randomly select the direction in which the first household will be located. This may be done in a variety of ways. You may choose to randomly select a single-digit number (last number on a bill) which can indicate direction, 1 = north, 2 = East, 3 = south, 4 = west). You may choose to spin a bottle on even ground. Wherever the bottle points when it stops will be the direction for the first household.
3. Urban areas.
  - Determine if there are subdivisions (geographical, political) of the urban area which contain approximately equal populations or which can be grouped to obtain equal population distributions.
  - If such subdivisions exist, number each subdivision and select a random number between 1 and the total number of subdivisions. The selected number will indicate the subdivision in which the initial household is located.
  - If the household lists exist for the subdivision identified, follow the procedures described for "rural areas where households lists are available." If these lists are unavailable, follow the procedures outlined under "Rural area where household lists are not available."
  - If subdivisions do not exist, you will need to divide the urban area up into sub-limits of approximately equal population for instance blocks with about 100 houses.

### C. DATA Collection when you are in the first Randomly Identified Household

#### 1. Household Identification

If a family chosen at first is away, take the family who replaces her or take the first compound to the left. Within the compound, interview all the households, one after the other, starting with the households on the left or according to an alphabetical order of the mothers given names. Households without children in the 12-23 month group or women having given birth on the date of the interview (e.g. February 26, 1992 and up to 11 months prior to the date of the interview, e.g. February 26, 1991).

#### 2. Conducting an Interview

In each of the households, inform the parents of the purpose of your visit. Ask all children from 12-24 months old in the care of the household to be brought in. (It is indispensable that children be present.) Next ask the parents to bring you birth certificates and immunization cards as you cannot trust family records to certify the date of birth.

- First, identify each one of the children without worrying about the immunization status, because, even if the child does not have a card, he is part of the sampling if he falls within the age group. You will ask for a count of the children born between the 12-24 months from the date of the interview (e.g. February 24, 1990 and February 24, 1991, making use of birth certificates or chronological tables of events for age determination.
- Secondly, ask to see the immunization card of each on the children you just recorded. You will then be able to answer questions concerning the immunization status. You will also be able to fill out questionnaires A and B.
- Next you will use questionnaire C. The children's presence is not indispensable. You will ask for women who gave birth to children on the day of the interview to exactly 12 months from the date of the interview.

#### 3. Interviewers Itinere and Determination of the Number of Compounds in a cluster

When you leave the compound through the main door, go to the closest compound door to the left. If there are no more houses or if you find yourself at the end of the village, when you come out of the compound, take the first street or road on the left, until you find the first compound on the left. If you come back to your starting point or if you find yourself in a compound you already interviewed or in another cluster, do not carry on another interview, come out and look for the compound the closest to this point and follow the protocol described above. If you visited all the village compounds and did not reach your quota of children, you must then go, from the last compound visited onwards, into the geographically closest group of dwellings, be it a hamlet or village, to go on with the interview where you will make use of the same protocol starting with the closest compound. A cluster is completed only when a quota of 7 children aged 12-23 months and 7 women are reached.

### III. Analysis

You will make use of the summary forms for the analysis.

You will only use them in the evening when you are back to your campsite. Without rectifying the data recorded in your questionnaires, you must now, under your supervisor's guidance, transcribe the data on the corresponding summary form.

## SUPERVISOR'S GUIDELINES

### I. OBJECTIVES

- A. To re-visit a total of at least six clusters in the three areas to be surveyed.
- B. To make a qualitative assessment of each selected cluster by means of visiting at least the first four enumerated children and the first four enumerated mothers in the order recorded by the surveyor.

### II. CRITERIA FOR ASSESSMENT

- A. Was the cluster actually visited as reported?
- B. Was the starting house apparently chosen correctly and at random as shown by the location of the first child/mother's house? (e.g. the starting location of all clusters should not all be near to a biasing factor such as a road, sub-post or village headman's house)
- C. Does it appear that the next closest house was correctly selected and visited?
- D. Were any eligible children/mothers/immunization records which were present on the day of the survey missed or omitted?
- E. Were data on forms accurately entered? (e.g. Correct age, correct immunization status?)

### III. METHODOLOGY

- A. Re-visit the first child and first mother enumerated on cluster forms.
- B. Ask where the next enumerated child's and mother's houses are located. En route to these houses, ask at several houses on the way to ascertain if there were any other eligible children in the area and if the houses were visited by a surveyor during the day of the survey.
- C. Interview at the households of AT LEAST the first four children and the first four mothers enumerated on the cluster form, and re-ask the questions on immunization status of the child and the mother (all questions on pages 1 and 4 of the questionnaire). Supplementary questions on pages 2 and 3 of the questionnaire need not be asked. If a responsible person/mother is not present, or it is reported that there is an immunization card but it is not available, then skip that child/mother and take the next one listed.
- D. Try to ensure, if possible, that you interview the same person that the surveyor did.

- E. Note the time taken for the surveyor to complete the cluster and if this appears reasonable based on topography and population density.
- F. Interview carefully to ensure that respondents fully understand what is being asked and that they are giving accurate response. If they have forgotten information, ask relevant questions to help them remember.
- G. Review Team members re-visiting clusters will enter their name and designation on the bottom of the Cluster re-visiting form and note whether or not it is felt that the cluster was acceptable done. If it is felt that the cluster was NOT acceptable done, then full explanation and reasons need to be written on the form as well.
- H. Only persons not involved in the nation-wide survey will complete the cluster re-visiting form.



## Tetanus Toxoid Immunization of Women

(1) Cluster number: _____ (2) Date: _____ (3) Area: _____ (4) Range of birth dates: From: _____ Until: _____		(5)									TOTAL	
			Mother's name									
Woman number in cluster			1	2	3	4	5	6	7	8		
(6) Birth date of child												
Mother	(7) Immunization card	Yes/No										
	(8) TT 1	Date/+/0										
		Source										
	TT 2	Date/+/0										
		Source										
	TT 3	Date/+/0										
		Source										
	TT 4	Date/+/0										
		Source										
	TT 5	Date/+/0										
		Source										
	(9) Antenatal care	Yes/No										
(10) Other visits to health facility during last pregnancy	Yes/No											
(11) Delivery of baby	Home											
	HC/HOS											
	Other											
(12) Child protected against neonatal tetanus	Yes/No											

(13) Tally of households visited: \_\_\_\_\_

(14) Name of interviewer: \_\_\_\_\_

Signature: \_\_\_\_\_

**KEY** Date/+/0.  
 Date = copy date of immunization from card, if available  
 + = mother reports immunization was given  
 0 = immunization not given

**Source.**  
 HC = Health Centre  
 HOS = Hospital  
 OUT = Outreach  
 PRIV = Private



a. Place of immunization too hard to reach	0
b. Days or time not convenient	0
c. Vaccinator absent	0
d. Vaccine not available	4.6
e. Waiting time too long	1.1
f. Child ill- brought but not given immunization	7.9
g. Health staff rude/unpleasant	1.1
h. Immunization denied because no card	2.3
i. Immunization denied because child already had disease	1.1
h. Other	0

<b>PRACTICAL OBSTACLES</b>	<b>TOTAL (%)</b>
a. No time to bring/too busy	11.4
b. Family problem, including mother ill	9.1
c. Child ill- not brought	20.5
d. Too much expense involved	1.1
e. Other	0

[Questions 7-15 - Ask all respondents]

(7) How did you learn when and where to bring your child to get immunized?

	<b>TOTAL (%)</b>
a. Doctor	3.5
b. Nurse	56.4
c. Community Health Worker	18
d. Student	3.5
e. poster	.05
f. Radio	3.5
g. Other	12.8

h. Didn't know 1.7

(8) If your child had a fever or diarrhea, would it be okay for him/her to get immunization?

	TOTAL (%)
a. Yes	23.9
b. No	51.5
c. It depends	14.6
d. Don't know	9.9

(9) Is it easy for you to travel to the place where your child gets immunization?

	TOTAL (%)
a. Yes	89
b. No	7.6
c. It depends	3.5

(10) When parents bring their children to be immunized, do you think health staff treat them well?

	TOTAL (%)
a. Yes	71.3
b. No	2.9
c. Fair/so-so	22.8
d. Don't know	2.3

(11) Have you ever seen a child who has measles?

	TOTAL (%)
a. Yes	93.8
b. No	4.9
c. Don't know	1.2

(12) Do you think that measles is a serious disease?

	TOTAL (%)
a. Yes	61
b. No	0
c. Pretty serious/sometimes	38
d. Don't know	.05

(13) Do you think that measles can be prevented?

	TOTAL (%)
a. Yes	88.7
b. No	2.9
c. Sometimes	4.1
d. Don't know	4.1

[If answer to 13 is "a" or "c", ask 14]

(14) How?

a. Immunization	TOTAL (%)
b. Another way	88.2
	8.9

(15) How old should a child be when it gets his/her measles immunization?

a. Don't know	TOTAL (%)
b. When health worker says	6.9
c. Under 6 months	.05
d. 6-8 months	6.4
e. 9-11 months	13.2
f. Over 1 year	67.6
g. Other	2.3
	2.8

[Question 16 - ask only respondents for children who have not had measles immunization]

(16) Why hasn't your child had his/her measles immunization?

[Mark the best response according to your judgement. Then ask, "Were there any other reasons?" and mark the response. Ask the second question one final time and mark the response.]

NEGATIVE  
ATTITUDES

	TOTAL (%)
a. Lack of trust in health workers/facility	4
b. Fear of side effects	1.4
c. Lack of motivation to make effort	21.6
d. No belief that immunization works	2.7
e. Other	2.7

LACK OF  
INFORMATION

	TOTAL (%)
a. Unaware of need for immunization	8.1
b. Unaware of place or time of immunization	1.3

c. Other 4

HEALTH SYSTEM  
OBSTACLES

TOTAL (%)

- a. Place of immunization too hard to reach 4.0
- b. Days or time not convenient 6.7
- c. Vaccinator absent 1.4
- d. Vaccine not available 0
- e. Waiting time too long 0
- f. Child ill- brought but not given immunization 6.7
- g. Health staff rude/ unpleasant 1.4
- h. Immunization denied because no card 1.4
- i. Immunization denied because child already had disease 1.4
- h. Other 0

PRACTICAL  
OBSTACLES

TOTAL (%)

- a. No time to bring/ too busy 5.4
- b. Family problem, including mother ill 8.1
- c. Child ill- not brought 17.5
- d. Too much expense involved 1.4
- e. Other 4.1

[Ask question 17 to all respondents]

(17) Do you listen to the radio at least once a week?

- a. Yes 65
- b. No 18
- c. Not applicable 16

41'

[If answer to question 17 is "a", ask 18-20;  
if answer to 17 is "b", end interview here]

(18) On which day of the week do you listen most to the radio?

	TOTAL (%)
a. Monday	6.8
b. Tuesday	9.9
c. Wednesday	13.6
d. Thursday	3
e. Friday	1.5
f. Saturday	3.3
g. Sunday	3.7

(19) What language do you prefer to listen to on the radio?

	TOTAL (%)
a. Luo	64
b. English	4.7
c. Other (Swahili)	31

(20) What time of day do you most often listen to the radio?

	TOTAL (%)
a. before 8 am	16.9
b. 8-12 am	24.5
c. 12-3 pm	13.8
d. 3-6 pm	4.4
e. after 6 pm	39
f. no special time	11.3

(21) What particular program do you listen to the most?

	TOTAL (%)
a. Family planning	26
b. Health	27
c. News	8
d. Child	3.4
e. All	15.1
f. Other	20

REASONS FOR CHILD'S IMMUNIZATION STATUS

RESULTS FROM KISUMU RURAL

- (1) Cluster number:
- (2) Area: Kisumu Rural
- (3) Date: March 1-5, 1992
- (4) Range of birth dates: From:  
Until:

(5) Immunization Status:	TOTAL
Not immunized	10
Partially immunized	83
Fully immunized	119

(6) Ask only respondents of "not immunized" or "partially immunized" groups

- A) Why is the child not fully immunized?
- B) Were there any other reasons?

NEGATIVE ATTITUDES	TOTAL (%)
a. Lack of trust in health workers/facility	.083
b. Fear of side effects	.083
c. Lack of motivation to make effort	25.62
d. No belief that immunization works	0
e. Other	1.6

LACK OF INFORMATION	TOTAL (%)
a. Unaware of need for immunization	2.48
b. Unaware of need for additional dose(s)	4.1
c. Unaware of place or time of immunization	.08
d. Other	0

HEALTH SYSTEM OBSTACLES	TOTAL (%)
-------------------------	-----------

- 43

a. Place of immunization too hard to reach	2.4
b. Days or time not convenient	0
c. Vaccinator absent	.08
d. Vaccine not available	0
e. Waiting time too long	2.48
f. Child ill- brought but not given immunization	8.26
g. Health staff rude/unpleasant	1.65
h. Immunization denied because no card	1.65
i. Immunization denied because child already had disease	.08
h. Other	0

PRACTICAL OBSTACLES

	TOTAL (%)
a. No time to bring/ too busy	6.6
b. Family problem, including mother ill	12.4
c. Child ill- not brought	26.45
d. Too much expense involved	0
e. Other	0

[Questions 7-15 - Ask all respondents]

(7) How did you learn when and where to bring your child to get immunized?

a. Doctor	TOTAL (%)
b. Nurse	1.5
c. Community Health Worker	69
d. Student	15
e. poster	1
f. Radio	0
	3.5

g. Other 9.6  
h. Didn't know 0

(8) If your child had a fever or diarrhea, would it be okay for him/her to get immunization?

	TOTAL (%)
a. Yes	28
b. No	54
c. It depends	11.7
d. Don't know	6.7

(9) Is it easy for you to travel to the place where your child gets immunization?

	TOTAL (%)
a. Yes	67.5
b. No	29
c. It depends	3.5

(10) When parents bring their children to be immunized, do you think health staff treat them well?

	TOTAL (%)
a. Yes	79
b. No	5
c. Fair/so-so	16.2
d. Don't know	

(11) Have you ever seen a child who has measles?

	TOTAL (%)
a. Yes	96.5
b. No	3.9
c. Don't know	.05

(12) Do you think that measles is a serious disease?

	TOTAL (%)
a. Yes	61.7
b. No	4
c. Pretty serious/sometimes	33
d. Don't know	.05

(13) Do you think that measles can be prevented?

	TOTAL (%)
a. Yes	92
b. No	3
c. Sometimes	1.5

45

d. Don't know 3

[If answer to 13 is "a" or "c", ask 14]

(14) How?

	TOTAL (%)
a. Immunization	91
b. Another way	6.2

(15) How old should a child be when it gets his/her measles immunization?

	TOTAL (%)
a. Don't know	19
b. When health worker says	15.5
c. Under 6 months	.05
d. 6-8 months	14.5
e. 9-11 months	4.6
f. Over 1 year	62
g. Other	2.5

[Question 16 - ask only respondents for children who have not had measles immunization]

(16) Why hasn't your child had his/her measles immunization?

[Mark the best response according to your judgement. Then ask, "Were there any other reasons?" and mark the response. Ask the second question one final time and mark the response.]

NEGATIVE  
ATTITUDES

	TOTAL (%)
a. Lack of trust in health workers/facility	1.64
b. Fear of side effects	1.64
c. Lack of motivation to make effort	23.7
d. No belief that immunization works	1.64
e. Other	0

LACK OF  
INFORMATION

	TOTAL (%)
a. Unaware of need for immunization	5.7
b. Unaware of place or time of immunization	0

c. Other 6.5

HEALTH SYSTEM  
OBSTACLES

TOTAL (%)

a. Place of immunization too hard to reach	3.3
b. Days or time not convenient	0
c. Vaccinator absent	0
d. Vaccine not available	0
e. Waiting time too long	1.64
f. Child ill- brought but not given immunization	7.3
g. Health staff rude/unpleasant	3.2
h. Immunization denied because no card	4.9
i. Immunization denied because child already had disease	2.4
h. Other	0

PRACTICAL  
OBSTACLES

TOTAL (%)

a. No time to bring/ too busy	6.5
b. Family problem, including mother ill	9
c. Child ill- not brought	19.6
d. Too much expense involved	.8
e. Other	2.4

[Ask question 17 to all respondents]

(17) Do you listen to the radio at least once a week?

a. Yes	TOTAL (%)
b. No	76
	23.9

[If answer to question 17 is "a", ask 18-20;  
if answer to 17 is "b", end interview here]

(18) On which day of the week do you listen most to the radio?

	TOTAL (%)
a. Monday	8
b. Tuesday	3.8
c. Wednesday	1.2
d. Thursday	4.4
e. Friday	3.1
f. Saturday	7.1
g. Sunday	15.5

(19) What language do you prefer to listen to on the radio?

	TOTAL (%)
a. Luo	60.6
b. English	7.6
c. Other (Swahili)	28.4

(20) What time of day do you most often listen to the radio?

	TOTAL (%)
a. before 8 am	3
b. 8-12 am	9.3
c. 12-3 pm	16.1
d. 3-6 pm	0
e. after 6 pm	58
f. no special time	12.4

(21) What particular program do you listen to the most?

	TOTAL (%)
a. Family planning	16
b. Health	33
c. News	10
d. Education	6.1
e. Plays	14
f. Other	21

REASONS FOR CHILD'S IMMUNIZATION STATUS

RESULTS FROM SIAYA

- (1) Cluster number:
- (2) Area: Siaya
- (3) Date: March 1-5, 1992
- (4) Range of birth dates: From:  
Until:

(5) Immunization Status:		TOTAL
	Not immunized	13
	Partially immunized	77
	Fully immunized	120

- (6) Ask only respondents of "not immunized" or "partially immunized" groups

- A) Why is the child not fully immunized?
- B) Were there any other reasons?

NEGATIVE ATTITUDES	TOTAL (%)
a. Lack of trust in health workers/facility	2.5
b. Fear of side effects	2.5
c. Lack of motivation to make effort	14.1
d. No belief that immunization works	2.5
e. Other	0

LACK OF INFORMATION	TOTAL (%)
a. Unaware of need for immunization	0
b. Unaware of need for additional dose(s)	2.5
c. Unaware of place or time of immunization	2.5
d. Other	1.3

HEALTH SYSTEM OBSTACLES	TOTAL (%)
-------------------------	-----------

a. Place of immunization too hard to reach	3.9
b. Days or time not convenient	2.5
c. Vaccinator absent	2.5
d. Vaccine not available	0
e. Waiting time too long	0
f. Child ill- brought but not given immunization	20.5
g. Health staff rude/unpleasant	0
h. Immunization denied because no card	1.3
i. Immunization denied because child already had disease	1.3
h. Other	0

PRACTICAL OBSTACLES

TOTAL (%)

a. No time to bring/ too busy	3.9
b. Family problem, including mother ill	15.4
c. Child ill- not brought	20.5
d. Too much expense involved	0
e. Other	0

[Questions 7-15 - Ask all respondents]

(7) How did you learn when and where to bring your child to get immunized?

	TOTAL (%)
a. Doctor	3
b. Nurse	63.6
c. Community Health Worker	10.2
d. Student	4
e. poster	0
f. Radio	.01
g. Other	17.6

h. Didn't know .05

(8) If your child had a fever or diarrhea, would it be okay for him/her to get immunization?

	TOTAL (%)
a. Yes	34
b. No	51
c. It depends	7.8
d. Don't know	7.3

(9) Is it easy for you to travel to the place where your child gets immunization?

	TOTAL (%)
a. Yes	76
b. No	17
c. It depends	7.8

(10) When parents bring their children to be immunized, do you think health staff treat them well?

	TOTAL (%)
a. Yes	77.5
b. No	6.8
c. Fair/so-so	14.1
d. Don't know	2.4

(11) Have you ever seen a child who has measles?

	TOTAL (%)
a. Yes	89.4
b. No	8.9
c. Don't know	1.5

(12) Do you think that measles is a serious disease?

	TOTAL (%)
a. Yes	50.2
b. No	6.8
c. Pretty serious/sometimes	42.2
d. Don't know	

(13) Do you think that measles can be prevented?

	TOTAL (%)
a. Yes	87.2
b. No	4.5
c. Sometimes	5.1
d. Don't know	0

[If answer to 13 is "a" or "c", ask 14]

(14) How?

	TOTAL (%)
a. Immunization	82.1
b. Another way	16.4

(15) How old should a child be when it gets his/her measles immunization?

	TOTAL (%)
a. Don't know	13
b. When health worker says	.04
c. Under 6 months	7.6
d. 6-8 months	13.8
e. 9-11 months	59
f. Over 1 year	.09
g. Other	4.2

[Question 16 - ask only respondents for children who have not had measles immunization]

(16) Why hasn't your child had his/her measles immunization?

[Mark the best response according to your judgement. Then ask, "Were there any other reasons?" and mark the response. Ask the second question one final time and mark the response.]

NEGATIVE  
ATTITUDES

	TOTAL (%)
a. Lack of trust in health workers/facility	2.4
b. Fear of side effects	.4
c. Lack of motivation to make effort	13
d. No belief that immunization works	4.1
e. Other	0

LACK OF  
INFORMATION

	TOTAL (%)
a. Unaware of need for immunization	1.4
b. Unaware of place or time of immunization	2.3

c. Other	1.2
<b>HEALTH SYSTEM OBSTACLES</b>	
	<b>TOTAL (%)</b>
a. Place of immunization too hard to reach	2.4
b. Days or time not convenient	1.2
c. Vaccinator absent	2.4
d. Vaccine not available	1.7
e. Waiting time too long	1.7
f. Child ill- brought but not given immunization	14.4
g. Health staff rude/ unpleasant	1.2
h. Immunization denied because no card	1.2
i. Immunization denied because child already had disease	1.2
h. Other	0
<b>PRACTICAL OBSTACLES</b>	
	<b>TOTAL (%)</b>
a. No time to bring/ too busy	2.3
b. Family problem, including mother ill	9.6
c. Child ill- not brought	16.9
d. Too much expense involved	2.4
e. Other	2.4

[Ask question 17 to all respondents]

(17) Do you listen to the radio at least once a week?

a. Yes	<b>TOTAL (%)</b>
b. No	56.7
	43.2

[If answer to question 17 is "a", ask 18-20;  
if answer to 17 is "b", end interview here]

(18) On which day of the week do you listen most to the radio?

	TOTAL (%)
a. Monday	9.6
b. Tuesday	13.7
c. Wednesday	14.5
d. Thursday	17.7
e. Friday	4.8
f. Saturday	.8
g. Sunday	6.4

(19) What language do you prefer to listen to on the radio?

	TOTAL (%)
a. Luo	53.4
b. English	4.7
c. Other (Swahili)	41

(20) What time of day do you most often listen to the radio?

	TOTAL (%)
a. before 8 am	6
b. 8-12 am	17
c. 12-3 pm	11
d. 3-6 pm	3
e. after 6 pm	47
f. no special time	14

(21) What particular program do you listen to the most?

	TOTAL (%)
a. Family planning	56.7
b. Education	16
c. Plays	13.5
d. Greetings	13.5

54

## ANNEX 6

### COVERAGE SURVEY TEAMS AND SCHEDULE

#### IMMUNIZATION COVERAGE SURVEY KISUMU URBAN SURVEY TEAMS FEBRUARY 27, 1992

##### GROUP ONE

Vehicle: GKS797  
DRIVER: MR. KOSINDI  
SUPERVISOR: MRS. KIDANBITSA

CLUSTER	MEMBERS	SUB-LOCATION
1.	WILFRED OWUOR	MILIMANI-01922
2.	DAVID ACHICH	COB A0372 (POSTER FLATS)
3.	EDWIN AMINER	COB A-0372 (ROBERT)
4.	CLARIS OGOJA	NYALENDA A- 0102
5.	DAVID ODERA	NYALENDA A - 0202
6.	TOMAS OCHIENG	NYALENDA A - 0302

---

##### GROUP TWO

VEHICLE: GKQ 724  
DRIVER: BEN ODHIAMBO  
SUPERVISOR: MR.S. ODHIAMBO

CLUSTER	MEMBERS	SUB-LOCATION
7.	JOSHUA RIWA	NYALENDA B - 0122
8.	ERIC ODHIAMBO	NYALENDA B - 0152
9.	CHRISTINE OTIENO	CHIGA - OBUMBA
10.	CHARLES AW"JOR	BUOYE - KACHOLA
11.	PAUL OBURA	NYALUNYA - KAMUGA/KABOUR
12.	ELIAS ADUMA	KASULE-0062

55

**GROUP THREE**

VEHICLE: GKT 795  
DRIVER: JOSPHAT KADANAY  
SUPERVISOR: G.N. NYNGECHI

CLUSTER	MEMBERS	SUB-LOCATION
13.	BENEDICT OCHUNDHO	MANYATT A-0482
14.	MARTIN OSANO	MANYATT A-0622
15.	PATRIC SANDE	MANYATT A-0682
16.	BILLY OKEYO	MANYATT A-0162
17.	ERIC OMBERA	MANYATT A-0242
18.	TERESA OROT	MANYATT B-0012

**GROUP FOUR**

Vehicle: GKU 009  
Driver: Mr. Kamau Kiruri  
Supervisor : Eunice Odhiambo

Cluster	TEAM	Sublocation
NO.		
19.	DAVID OTIENO ERIC MBOGAH	
20.	FREDERICK OCHIENG MORRIS ORERA	
21.	GEORGE ODHIAMBO MARIANNE OWILLA	

**IMMUNIZATION COVERAGE SURVEY  
KISUMU URBAN SURVEY TEAMS  
FEBRUARY 28, 1992**

**GROUP ONE**

Vehicle: GKS797  
DRIVER: MR. KOSINDI  
SUPERVVISOR: MR. H. KODO

CLUSTER	TEAMS	SUB-LOCATION
22.	WILFRED OWUOR	KCGNY-0052
2.	DAVID ACHICH	COB A 0372 (POSTER FLATS)
3.	EDWIN AMINER CLARIS OGOJJA	COB A-0372 (ROBERT)
13.	BENEDICT OCHUNDHIO	MANYATT A-0482
14.	MARTIN OSANO	MANYATT A-0622
30.	PATRIC SANDE	MANYATT B-0082
16.	BILLY OKEYO	MANYATT A-0162

**GROUP TWO**

VEHICLE: GKQ 724  
DRIVER: BEN ODHIAMBO  
SUPERVISOR: MRS. KIDANBITSA

CLUSTER	TEAMS	SUB-LOCATION
7.	JOSHUA RIWA	NYALENDA B - 0122
8.	ERIC ODHIAMBO	NYALENDA B - 0152
10.	CHRISTINE OTIENO CHARLES AWUOR	BUOYE - KACHOLA
25.	GEORGE O DHIAMBO	OKOK-0032
29	MARIANNE DWILLA	KANYAKARA B

**GROUP THREE**

**VEHICLE: GKT 795  
DRIVER: JOSPHAT KADANAY  
SUPERVISOR: G.N. NYNGECHI**

<b>CLUSTER</b>	<b>MEMBERS</b>	<b>SUB-LOCATION</b>
23.	DAVID ODERA TOMAS OCHIENG	OJOLLA
24.	DAVID OTIENO ERIC MBOGA	DAGO

**GROUP FOUR**

**Vehicle: GKU 009  
Driver: Mr. Kamau Kiruri  
Supervisor : Eunice Odhiambo**

<b>CLUSTER</b>	<b>MEMBERS</b>	<b>SUB-LOCATION</b>
26.	PAUL OBURA ELIAS ADUMA	KANYAWEGI-014
27.	ERIC OMBERA TERESA OROT	KORANDO-0052
28.	FREDERIC OCHIENG MORRIS ORERA	KORANDO-0112

## KISUMU RURAL COVERAGE SURVEY SCHEDULE

March 1-5, 1992

### GROUPS 1 & 2

SUPERVISOR:

VEHICLE:

DRIVER:

<u>DAY</u>	<u>CLUSTER #</u>	<u>SUB-LOCATION-VILLAGE</u>
Sunday 1/3/92	1	Kodongo-Uso/Seme (007)
	2	Kaila- need map
Overnight		Holo
Monday 2/3/92	3	Kapunja-Barmatara (0081)
	4	Nyahera-Koteta (0031)
Overnight		Kombewa
Tuesday 3/3/92	5	Kombewa-Kanyadwera (0031)
	6	Reru-Kopudo (0031)
Overnight		Kombewa
Wednesday 4/3/92	7	Alungo-Kwayamba-Kowedi
	8	Katieno-Kokuku
	9	Katieno (second cluster)
Overnight		Attero
Thursday 5/3/92	10	Kamswasouth-Kawari
	11	Wangayawar-Ngere

Return at night to Kisumu. Drop off cluster at Mrs. Olunga's office.

## KISUMU RURAL COVERAGE SURVEY SCHEDULE

March 1-5, 1992

### GROUPS 3 & 4

SUPERVISOR:

VEHICLE:

DRIVER:

<u>DAY</u>	<u>CLUSTER #</u>	<u>SUB-LOCATION-VILLAGE</u>
Sunday 1/3/92	12	Sidho East I-Kanjo (007)
	13	Katolo-Yogo (0071)
Overnight		Attero
Monday 2/3/92	14	Kakola North-Obeny/Hare (0041)
	15	Border-Kochigo (010)
	16	Wawidhi A (ask census people)
Overnight		Attero
Tuesday 3/3/92	17	Kaboda West- need map
	18	Jimo Middle
Overnight		Katito
Wednesday 4/3/92	19	Upper Kadiaya- need map
	20	East Kadiaya-Kammua/Buanta (010)
Overnight		Sondu
Thursday 5/3/92 7	21	East Kogut-Wyamaroka (010)
	22	West Koguta-Rachieta (006)

Return at night to Kisumu. Drop off cluster at Mrs. Olunga's office.

6/2

## KISUMU RURAL COVERAGE SURVEY SCHEDULE

March 1-5, 1992

### GROUPS 3 & 4

SUPERVISOR: Mrs. Ladinbista

VEHICLE:

DRIVER:

<u>DAY</u>	<u>CLUSTER #</u>	<u>SUB-LOCATION-VILLAGE</u>
Sunday 1/3/92	23	Kochieng- need map
	24	Lower Bwanda-Kasangany
Overnight		Kisumu
Monday 2/3/92	25	Katho-Koluoch "R" (0021)
	26	Miwani West-Kibos Industrie
Overnight		Muhorni Town
Tuesday 3/3/92	27	Muharoni West-Biafra Daroye
	28	Godaboygoro-Mihonawe
Overnight		Hero
Wednesday 4/3/92	29	Wawhidi Afiat (10)- need map
	30	Kabodha East- need map
Overnight		Return to Kisumu

6/1'

# SIAYA IMMUNIZATION COVERAGE SURVEY SCHEDULE

March 1-5, 1992

## GROUPS 1 & 2

SUPERVISOR: St. Odhiambo

VEHICLE: GK959

DRIVER:

CBS GUIDE: John Owit

<u>DAY</u>	<u>CLUSTER #</u>	<u>SUB-LOCATION-VILLAGE</u>
Sunday 1/3/92	1	Koyeyo-Nyasnaga (0051)
	2	Komolo-Uyomo (0071)
Overnight		Ndere
Monday 2/3/92	3	Mir-Maalanga Matera (0021)
	4	Karapul-Ngoya (0021)
	5	Masumbi-Bugo (0041)
Overnight		Ngierya
Tuesday 3/3/92	6	Kanga
	7	Komenya-Kaleka
Overnight		Uranga
Wednesday 4/3/92	8	Nyamsenda-Ombonya/Ombabo (00310)
	9	Sega-Ywaya (0021)
Overnight		Sega
Thursday 5/3/92	10	Masat-Kobiero/Sirongo (0031)
	11	Simur-Lifungo (0021)

Return at night to Siaya, MOH office.

62

## SIAYA RURAL COVERAGE SURVEY SCHEDULE

March 1-5, 1992

### GROUPS 3 & 4

SUPERVISOR: Mrs. G.N. Nyangechi

Mr. M. Andi

VEHICLE: GKL 562

DRIVER:

CBS GUIDE: L.O. Adera

<u>DAY</u>	<u>CLUSTER #</u>	<u>SUB-LOCATION-VILLAGE</u>
Sunday 1/3/92	12	Maranda-Abungu (0041)
	13	Nyamonye-Ndiwo (0011)
	14	Got-Abiero-Chamagala (0051)
Overnight		Nyamonye
Monday 2/3/92	15	Omia-Diere-Were (0021)
	16	Bar Chando-Rai Gaya (0010)
	17	Siger-Rambuyarambuya-Ramira (0031)
Overnight		Lwak
Tuesday 3/3/92	18	Kantwenga-Odeyo (0061)
	19	Nyabera-Nyabere (0041)
	20	Ndigna
Overnight		
Wednesday 4/3/92	21	Mageta-Mahanga (0011)

Return Thursday to Siaya MOH.

# SIAYA IMMUNIZATION COVERAGE SURVEY SCHEDULE

March 1-5, 1992

## GROUPS 4 & 5

SUPERVISOR: Mr. Odera

VEHICLE: GKS 332

DRIVER:

CBS GUIDE: J. Jango

<u>DAY</u>	<u>CLUSTER #</u>	<u>SUB-LOCATION-VILLAGE</u>
Sunday 1/3/92	22	Rega
	23	Yiro-Lolwe (0101)
	24	Kagilo-Sirowa (0101)
Overnight		Muthmbo
Monday 2/3/92	25	Uranga-Gomby (0011)
	26	Lihanda
Overnight		Sagama/Luanda
Tuesday 3/3/92	27	Ndori-Nyakwere (0051)
	28	Gombe-Ojudha/Kanya (00071)
Overnight		Riat
Wednesday 4/3/92	29	Asango-Urir "A" (0011)
	30	Urango-Gonby (0011)

64

## ANNEX 7

### STANDARD ANALYSES OF PEDIATRIC COVERAGE SURVEYS

Survey title 1992 KISUMU EPI SURVEY  
 Beginning of survey : 27/02/92  
 Type of area : URBAN  
 Target population 227203

Number of records to process: 212  
                                   CARD AVAILABLE 159 ( 75.0%)  
                                   BCGscar 197 ( 92.9%)

Coverage	VALID by one year of age		Card + History
	Card		
BCG	197 ( 92.9%)		( 95.3%)
POLIO 0	112 ( 53.0%)		( 69.0%)
POLIO 1	133 ( 62.7%)		( 83.2%)
POLIO 2	117 ( 55.2%)		( 72.3%)
POLIO 3	109 ( 51.4%)		( 65.7%)
DPT 1	135 ( 63.7%)		( 84.9%)
DPT 2	119 ( 56.1%)		( 73.5%)
DPT 3	110 ( 51.9%)		( 65.9%)
MEASLES	80 ( 37.7%)		( 49.4%)
Yellow Fever	0 ( 0.0%)		( 0.0%)
Other vaccine	0 ( 0.0%)		( 0.0%)
All doses received	71 ( 33.5%)		( 44.0%)
No vaccine , Crude data			7 ( 3.3%)

#### INDICATORS

#### ACCESSIBILITY/UTILIZATION OF HEALTH SERVICES

DPT 1 Crude Coverage + History 96.2 %

#### CONTINUITY OF USE OF SERVICES

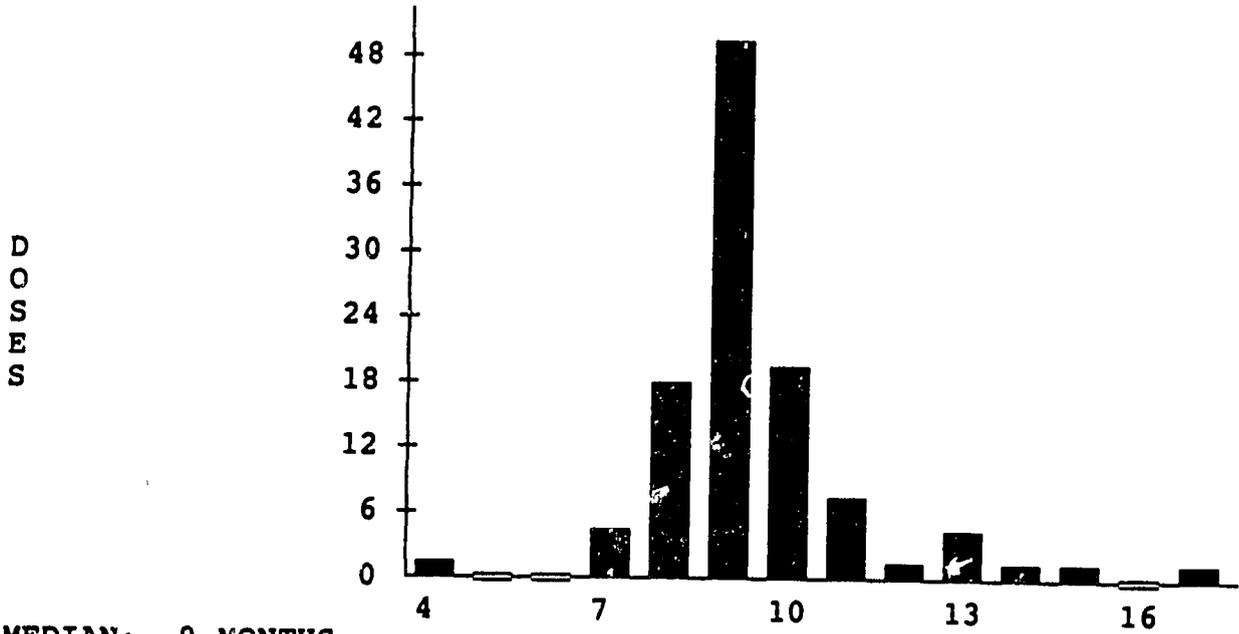
DROPOUT DPT1-MEASLES 29.4 %  
 DROPCUT DPT 1-3 19.1 %

AVAILABILITY OF DOCUMENTATION ABOUT IMMUNIZATIONS 77.6%

#### QUALITY OF SERVICES

Proportion of invalid doses  
                                   Measles 18.2 %  
                                   DPT 1 11.8 %  
 Proportion of valid measles doses given before 52 weeks 88.9%

Survey title 1992 KISUMU EPI SURVEY  
Age of immunization , Crude data  
Age of MEASLES by MONTHS



MEDIAN: 9 MONTHS  
MEAN: 9.94 MONTHS

Survey title 1992 KISUMU EPI SURVEY  
Missed opportunities

Vaccine	Uncorrected	Corrected
BCG :	2 ( 0.94%)	14 ( 6.60%)
DPT1 :	2 ( 0.94%)	7 ( 3.30%)
DPT2 :	3 ( 1.42%)	5 ( 2.36%)
DPT3 :	2 ( 0.94%)	4 ( 1.89%)
POL1 :	2 ( 0.94%)	7 ( 3.30%)
POL2 :	4 ( 1.89%)	5 ( 2.36%)
POL3 :	2 ( 0.94%)	4 ( 1.89%)
MEAS :	1 ( 0.47%)	1 ( 0.47%)
Child	212	

Survey title 1992 KISUMU EPI SURVEY  
Providers

Valid value for the field SOURCE : HOC PD

	H	O	C	P	D	?
BCG :	85(42%)	10(5%)	62(31%)	13(6%)	33(16%)	1
DPT1 :	70(34%)	11(5%)	73(36%)	13(6%)	37(18%)	0
DPT2 :	64(35%)	7(4%)	69(38%)	11(6%)	31(17%)	0
DPT3 :	59(36%)	7(4%)	63(38%)	9(5%)	27(16%)	0
POL1 :	69(34%)	11(5%)	73(36%)	13(6%)	37(18%)	0
POL2 :	63(35%)	7(4%)	69(38%)	11(6%)	32(18%)	0
POL3 :	59(36%)	7(4%)	63(38%)	9(5%)	28(17%)	0
MEAS :	54(38%)	8(6%)	53(37%)	6(4%)	23(16%)	0
	523(36%)	68(5%)	525(36%)	85(6%)	248(17%)	1

Validity criteria

Maximum age for polio 0 up to 6 weeks  
 Minimum age for measles 39 Weeks  
 Minimum age for DPT : 6 Weeks  
 Minimum DPT or POLIO interval : 4 Weeks

67

Paediatric Coverage Survey

Survey title 1992 KISUMU EPI SURVEY  
 Beginning of survey : 27/02/92  
 Type of area : URBAN  
 Target population 227203

Number of records to process: 212  
 CARD AVAILABLE 159 ( 75.0%)  
 ECGscar 197 ( 92.9%)

Coverage Crude data

	Card	Card	+ History
BCG	199 ( 93.9%)	204	( 96.2%)
POLIO 0	121 ( 57.1%)	159	( 75.0%)
POLIO 1	153 ( 72.2%)	203	( 95.8%)
POLIO 2	139 ( 65.6%)	182	( 85.8%)
POLIO 3	130 ( 61.3%)	166	( 78.3%)
DPT 1	153 ( 72.2%)	204	( 96.2%)
DPT 2	139 ( 65.6%)	182	( 85.8%)
DPT 3	130 ( 61.3%)	165	( 77.8%)
MEASLES	110 ( 51.9%)	144	( 67.9%)
Yellow Fever	0 ( 0.0%)	0	( 0.0%)
Other vaccine	0 ( 0.0%)	0	( 0.0%)
All doses received	108 ( 50.9%)	142	( 67.0%)
No vaccine , Crude data		7	( 3.3%)

68

Paediatric Coverage Survey

Survey title 1992 KISUMU EPI SURVEY  
 Beginning of survey : 27/02/92  
 Type of area : URBAN  
 Target population 227203

Number of records to process: 212  
 CARD AVAILABLE 159 ( 75.0%)  
 BCGscar 197 ( 92.9%)

Coverage Valid data

	Card	Card + History
BCG	199 ( 93.9%)	( 96.2%)
POLIO 0	112 ( 53.0%)	( 69.0%)
POLIO 1	133 ( 62.7%)	( 83.2%)
POLIO 2	117 ( 55.2%)	( 72.3%)
POLIO 3	109 ( 51.4%)	( 65.7%)
DPT 1	135 ( 63.7%)	( 84.9%)
DPT 2	119 ( 56.1%)	( 73.5%)
DPT 3	110 ( 51.9%)	( 65.9%)
MEASLES	90 ( 42.5%)	( 55.6%)
Yellow Fever	0 ( 0.0%)	( 0.0%)
Other vaccine	0 ( 0.0%)	( 0.0%)
All doses received	79 ( 37.3%)	( 49.0%)

No vaccine , Crude data 7 ( 3.3%)

61

Standard analysis of the survey (WHO/UNICEF)  
Paediatric Coverage Survey

Survey title KISUMU RURAL EPI SURVEY MARCH 92  
Beginning of survey : 01/03/92  
Type of area : KISUMU RURAL

Number of records to process: 217  
CARD AVAILABLE 163 ( 75.1%)  
BCGscar 199 ( 91.7%)

Coverage VALID by one year of age

	Card	Card + History
BCG	205 ( 94.5%)	( 94.9%)
POLIO 0	113 ( 52.0%)	( 69.0%)
POLIO 1	138 ( 63.6%)	( 83.1%)
POLIO 2	128 ( 59.0%)	( 75.3%)
POLIO 3	107 ( 49.3%)	( 60.4%)
DPT 1	137 ( 63.1%)	( 83.1%)
DPT 2	127 ( 58.5%)	( 74.7%)
DPT 3	106 ( 48.8%)	( 60.3%)
MEASLES	76 ( 35.0%)	( 44.2%)
Yellow Fever	0 ( 0.0%)	( 0.0%)
Other vaccine	0 ( 0.0%)	( 0.0%)
All doses received	57 ( 26.3%)	( 32.9%)
No vaccine , Crude data		10 ( 4.6%)

INDICATORS

ACCESSIBILITY/UTILIZATION OF HEALTH SERVICES

DPT 1 Crude Coverage + History 92.2 %

CONTINUITY OF USE OF SERVICES

DROPOUT DPT1-MEASLES 32.5 %  
DROPOUT DPT 1-3 15.5 %

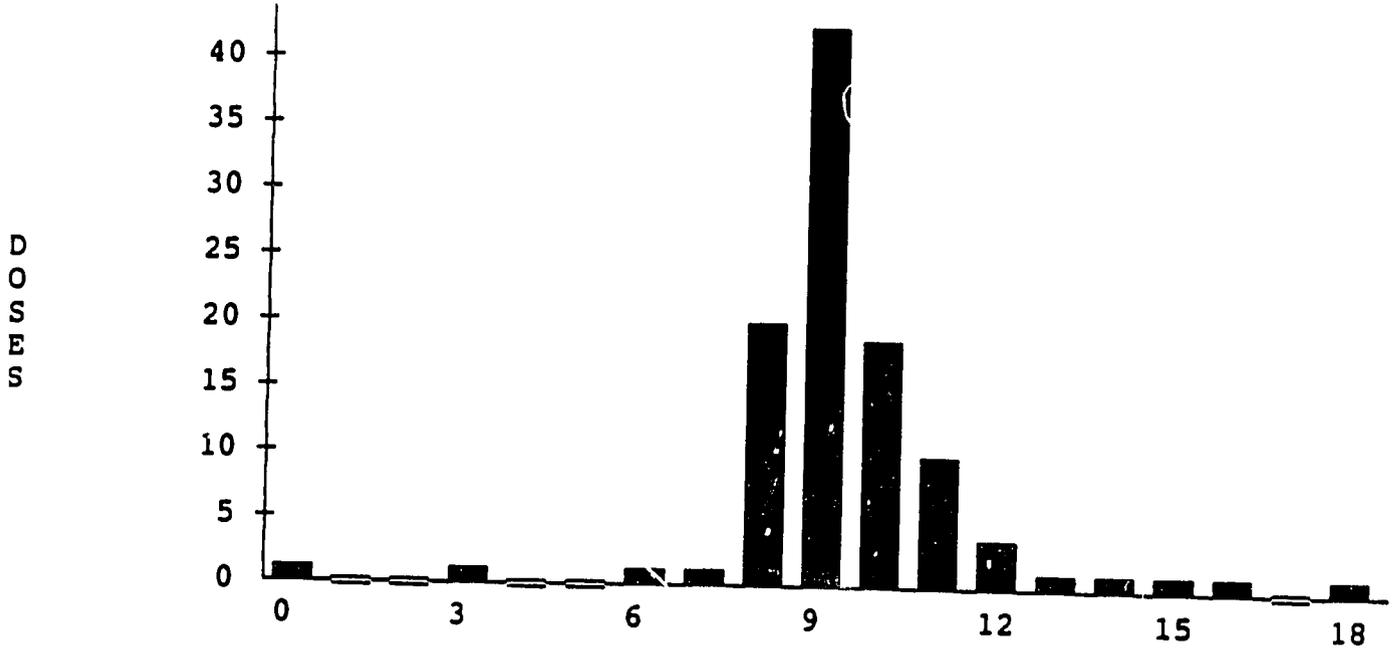
AVAILABILITY OF DOCUMENTATION ABOUT IMMUNIZATIONS 78.7%

QUALITY OF SERVICES

Proportion of invalid doses  
Measles 20.6 %  
DPT 1 9.2 %

Proportion of valid measles doses given before 52 weeks 89.4%

Survey title KISUMU RURAL EPI SURVEY MARCH 92  
Age of immunization , Crude data  
Age of MEASLES by MONTHS



MEAN: 9 months  
MEDIAN: 9.89 months

Survey title KISUMU RURAL EPI SURVEY MARCH 92  
Missed opportunities

Vaccine	Uncorrected	Corrected
BCG :	4 ( 1.84%)	8 ( 3.69%)
DPT1 :	6 ( 2.76%)	7 ( 3.23%)
DPT2 :	2 ( 0.92%)	5 ( 2.30%)
DPT3 :	1 ( 0.46%)	5 ( 2.30%)
POL1 :	5 ( 2.30%)	7 ( 3.23%)
POL2 :	2 ( 0.92%)	5 ( 2.30%)
POL3 :	0 ( 0.00%)	5 ( 2.30%)
MEAS :	2 ( 0.92%)	3 ( 1.38%)
Child	217	

Survey title KISUMU RURAL EPI SURVEY MARCH 92  
Providers

Valid value for the field SOURCE : HCDCP

	H	C	D	O	P	?
BCG :	32(15%)	119(57%)	37(18%)	6(3%)	13(6%)	0
DPT1 :	28(14%)	116(58%)	37(19%)	5(3%)	14(7%)	0
DPT2 :	28(15%)	104(55%)	40(21%)	4(2%)	13(7%)	0
DPT3 :	26(15%)	91(54%)	37(22%)	2(1%)	13(8%)	0
POL1 :	28(14%)	116(58%)	37(19%)	5(3%)	14(7%)	0
POL2 :	28(15%)	104(55%)	40(21%)	4(2%)	13(7%)	0
POL3 :	26(15%)	92(54%)	36(21%)	2(1%)	13(8%)	0
MEAS :	19(14%)	80(59%)	28(21%)	1(1%)	7(5%)	0
	215(15%)	822(56%)	292(20%)	29(2%)	100(7%)	0

Validity criteria

Maximum age for Polio 0 up to 6 weeks  
 Minimum age for measles 39 weeks  
 Minimum age for DPT : 6 weeks  
 Minimum DPT or POLIO interval : 4 weeks

Paediatric Coverage Survey

Survey title KISUMU RURAL EPI SURVEY MARCH 92

Beginning of survey : 01/03/92

Type of area : KISUMU RURAL

Number of records to process: 217  
 CARD AVAILABLE 163 ( 75.1%)  
 BCGscar 199 ( 91.7%)

Coverage Valid data

	Card	Card + History
BCG	206 ( 94.9%)	( 95.4%)
POLIO 0	112 ( 52.0%)	( 69.0%)
POLIO 1	139 ( 64.1%)	( 83.7%)
POLIO 2	128 ( 59.0%)	( 75.3%)
POLIO 3	109 ( 50.2%)	( 61.5%)
DPT 1	138 ( 63.6%)	( 83.7%)
DPT 2	127 ( 58.5%)	( 74.7%)
DPT 3	108 ( 49.8%)	( 61.4%)
MEASLES	85 ( 39.2%)	( 49.4%)
Yellow Fever	0 ( 0.0%)	( 0.0%)
Other vaccine	0 ( 0.0%)	( 0.0%)
All doses received	61 ( 28.1%)	( 35.2%)

No vaccine , Crude data 10 ( 4.6%)

Paediatric Coverage Survey

Survey title KISUMU RURAL EPI SURVEY MARCH 92

Beginning of survey : 01/03/92

Type of area : KISUMU RURAL

Number of records to process: 217  
 CARD AVAILABLE 163 ( 75.1%)  
 BCGscar 199 ( 91.7%)

Coverage Crude data

	Card	Card + History
BCG	206 ( 94.9%)	207 ( 95.4%)
POLIO 0	126 ( 58.1%)	166 ( 76.5%)
POLIO 1	153 ( 70.5%)	200 ( 92.2%)
POLIO 2	148 ( 68.2%)	189 ( 87.1%)
POLIO 3	138 ( 63.6%)	169 ( 77.9%)
DPT 1	152 ( 70.0%)	200 ( 92.2%)
DPT 2	148 ( 68.2%)	189 ( 87.1%)
DPT 3	137 ( 63.1%)	169 ( 77.9%)
MEASLES	107 ( 49.3%)	135 ( 62.2%)
Yellow Fever	0 ( 0.0%)	0 ( 0.0%)
Other vaccine	0 ( 0.0%)	0 ( 0.0%)
All doses received	99 ( 45.6%)	124 ( 57.1%)
No vaccine , Crude data		10 ( 4.6%)

Standard analysis of the survey (WHO/UNICEF)  
Paediatric Coverage Survey

Survey title SIAYA IMMUNIZATION SURVEY 3/1992  
Beginning of survey : 01/03/92  
Type of area : RURAL

Number of records to process: 209  
CARD AVAILABLE 161 ( 77.0%)  
BCGscar 193 ( 92.3%)

Coverage VALID by one year of age

	Card	Card + History
BCG	194 ( 92.8%)	( 93.8%)
POLIO 0	109 ( 52.05)	( 68.0%)
POLIO 1	133 ( 63.6%)	( 81.5%)
POLIO 2	124 ( 59.3%)	( 76.0%)
POLIO 3	99 ( 47.4%)	( 60.7%)
DPT 1	133 ( 63.6%)	( 80.8%)
DPT 2	124 ( 59.3%)	( 75.8%)
DPT 3	104 ( 49.8%)	( 63.4%)
MEASLES	70 ( 33.5%)	( 40.2%)
Yellow Fever	0 ( 0.0%)	( 0.0%)
Other vaccine	0 ( 0.0%)	( 0.0%)
All doses received	50 ( 23.9%)	( 30.0%)

No vaccine , Crude data 10 ( 4.8%)

INDICATORS

ACCESSIBILITY/UTILIZATION OF HEALTH SERVICES

DPT 1 Crude Coverage + History 90.0 %

CONTINUITY OF USE OF SERVICES

DROPOUT DPT1-MEASLES 33.0 %  
DROPOUT DPT 1-3 13.3 %

AVAILABILITY OF DOCUMENTATION ABOUT IMMUNIZATIONS 80.9%

QUALITY OF SERVICES

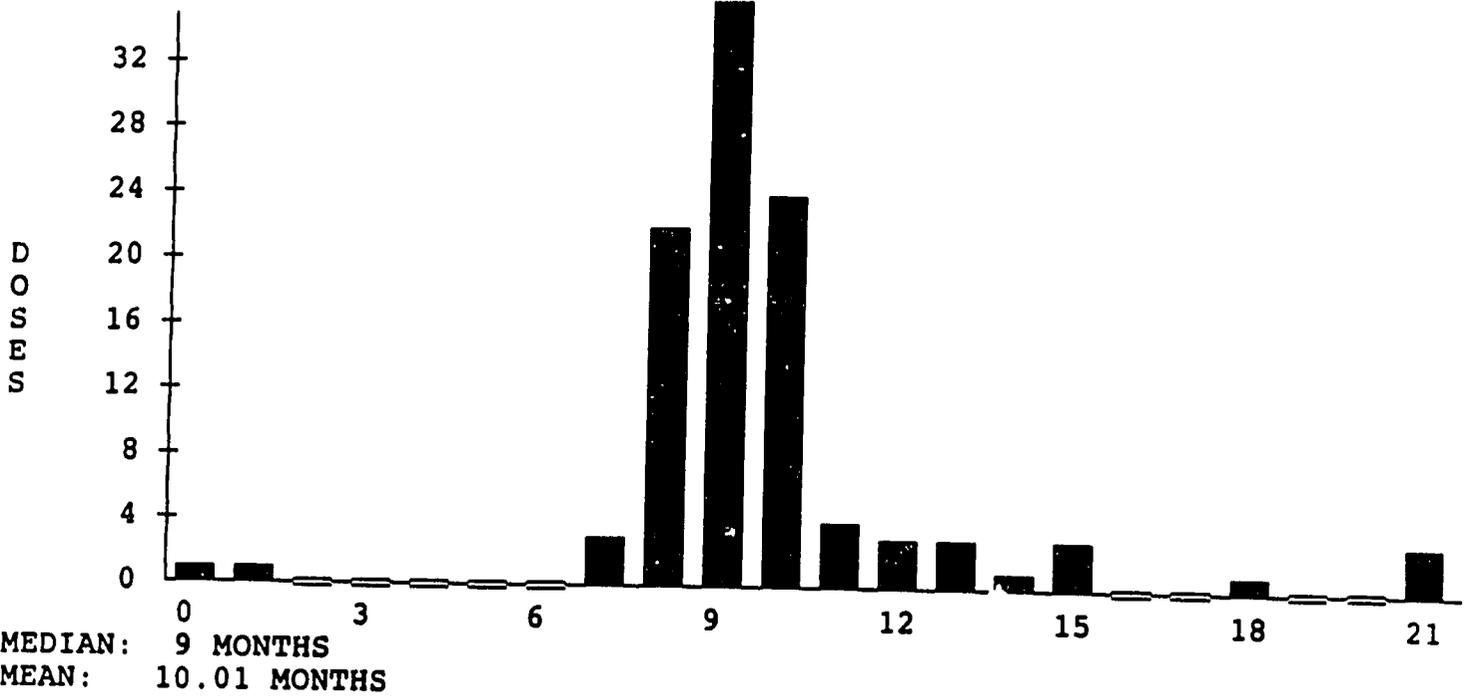
Proportion of invalid doses

Measles 22.9 %  
DPT 1 9.5 %

Proportion of valid measles doses given before 52 weeks 86.4 %

1  
15

Survey title SIAYA IMMUNIZATION SURVEY 3/1992  
Age of immunization , Crude data  
Age of MEASLES by MONTHS



Survey title SIAYA IMMUNIZATION SURVEY 3/1992  
Missed opportunities

Vaccine	Uncorrected	Corrected
BCG :	7 ( 3.35%)	9 ( 4.31%)
DPT1 :	7 ( 3.35%)	12 ( 5.74%)
DPT2 :	6 ( 2.87%)	14 ( 6.70%)
DPT3 :	7 ( 3.35%)	8 ( 3.83%)
POL1 :	5 ( 2.39%)	25 ( 11.96%)
POL2 :	8 ( 3.83%)	19 ( 9.09%)
POL3 :	11 ( 5.26%)	13 ( 6.22%)
MEAS :	4 ( 1.91%)	2 ( 0.96%)
Child	209	

Survey title SIAYA IMMUNIZATION SURVEY 3/1992  
Providers

Valid value for the field SOURCE : CHODP

	C	H	O	D	P	?
BCG :	121(61%)	40(20%)	10(5%)	20(10%)	6(3%)	1
DPT1 :	115(61%)	37(20%)	12(6%)	20(11%)	4(2%)	0
DPT2 :	110(60%)	37(20%)	12(7%)	20(11%)	5(3%)	0
DPT3 :	94(58%)	35(21%)	12(7%)	18(11%)	4(2%)	0
POL1 :	114(59%)	39(20%)	12(6%)	20(10%)	7(4%)	0
POL2 :	107(59%)	39(21%)	11(6%)	20(11%)	5(3%)	0
POL3 :	88(55%)	37(23%)	11(7%)	19(12%)	4(3%)	0
MEAS :	72(57%)	30(24%)	6(5%)	14(11%)	4(3%)	0
	821(59%)	294(21%)	86(6%)	151(11%)	39(3%)	1

Validity criteria

Maximum age for Polio 0 up to 6 weeks  
 Minimum age for measles 39 weeks  
 Minimum age for DPT : 6 weeks  
 Minimum DPT or POLIO interval : 4 weeks

## Paediatric Coverage Survey

Survey title SIAYA IMMUNIZATION SURVEY 3/1992

Beginning of survey : 01/03/92

Type of area : RURAL

Number of records to process:	209
CARD AVAILABLE	161 ( 77.0%)
BCGscar	193 ( 92.3%)

### Coverage Crude data

	Card	Card + History
BCG	196 ( 93.8%)	198 ( 94.7%)
POLIO 0	135 ( 64.6%)	176 ( 84.2%)
POLIO 1	150 ( 71.8%)	192 ( 91.9%)
POLIO 2	142 ( 67.9%)	182 ( 87.1%)
POLIO 3	124 ( 59.3%)	159 ( 76.1%)
DPT 1	148 ( 70.8%)	188 ( 90.0%)
DPT 2	144 ( 68.9%)	184 ( 88.0%)
DPT 3	128 ( 61.2%)	163 ( 78.0%)
MEASLES	105 ( 50.2%)	126 ( 60.3%)
Yellow Fever	0 ( 0.0%)	0 ( 0.0%)
Other vaccine	0 ( 0.0%)	0 ( 0.0%)
All doses received	95 ( 45.5%)	119 ( 56.9%)
No vaccine , Crude data		10 ( 4.8%)

# Paediatric Coverage Survey

Survey title SIAYA IMMUNIZATION SURVEY 3/1992

Beginning of survey : 01/03/92

Type of area : RURAL

Number of records to process:	209
CARD AVAILABLE	161 ( 77.0%)
BCGscar	193 ( 92.3%)

## Coverage Valid data

	Card	Card + History
BCG	196 ( 93.8%)	( 94.7%)
POLIO 0	33 ( 15.8%)	( 20.6%)
POLIO 1	133 ( 63.6%)	( 81.5%)
POLIO 2	124 ( 59.3%)	( 76.0%)
POLIO 3	101 ( 48.3%)	( 62.0%)
DPT 1	133 ( 63.6%)	( 80.8%)
DPT 2	124 ( 59.3%)	( 75.8%)
DPT 3	106 ( 50.7%)	( 64.6%)
MEASLES	81 ( 38.8%)	( 46.5%)
Yellow Fever	0 ( 0.0%)	( 0.0%)
Other vaccine	0 ( 0.0%)	( 0.0%)
All doses received	59 ( 28.2%)	( 35.4%)

No vaccine , Crude data	10 ( 4.8%)
-------------------------	------------

ANNEX 8

STANDARD ANALYSES OF TT COVERAGE SURVEYS

Survey title kisumu urban tetanus survey  
 Immunization summary , Crude data

surveyed :	199	
CARD AVAILABLE	34	( 17.1%)
TT Dose 1	191	( 96.0%)
TT Dose 2	178	( 89.4%)
TT Dose 3	136	( 68.3%)
TT Dose 4	87	( 43.7%)
TT Dose 5	49	( 24.6%)
Prenatal care	187	( 94.0%)
No vaccine , Crude data	8	( 4.0%)
TT1 MISSED OPPORTUNITIES	1	( 0.5%)
DROPOUT TT1-TT2	6.8	%
DROPOUT TT1-TT3	28.8	%

Survey title kisumu urban tetanus survey  
 Immunization summary , Valid data

surveyed :	199	
CARD AVAILABLE	34	( 17.1%)
TT Dose 1	13	( 6.5%)
TT Dose 2	6	( 3.0%)
TT Dose 3	1	( 0.5%)
TT Dose 4	0	( 0.0%)
TT Dose 5	0	( 0.0%)
Prenatal care	187	( 94.0%)
Born protected :	7	( 3.5%)
Woman protected :	8	( 4.0%)
DROPOUT TT1-TT2	53.8	%
DROPOUT TT1-TT3	92.3	%

88

Survey title kisumu urban tetanus survey  
 Variable frequency  
 Delivery Place

DELIVP	Freq	%age
C	11	5.53%
D	1	0.50%
H	104	52.26%
M	3	1.51%
O	75	37.69%
P	5	2.51%
	0	0.00%
199		100.00%

Survey title kisumu urban tetanus survey  
 Missed opportunities

Vaccine	Uncorrected
TT1	1 ( 0.50%)
Child	199

Survey title kisumu urban tetanus survey  
 Providers

Valid value for the field SOURCE : HOCPO

	H	O	C	P	D	?
TT1	92(48%)	4(2%)	69(36%)	6(3%)	20(10%)	0
TT2	89(50%)	4(2%)	59(33%)	8(4%)	18(10%)	0
TT3	62(46%)	5(4%)	48(35%)	9(7%)	12(9%)	0
TT4	36(41%)	3(3%)	32(37%)	9(10%)	7(8%)	0
TT5	22(45%)	2(4%)	16(33%)	7(14%)	2(4%)	0
	301(47%)	18(3%)	224(35%)	39(6%)	59(9%)	0

Survey title 1992 KISUMU RURAL EPI SURVEY  
 Immunization summary , Crude data

surveyed :	223	
CARD AVAILABLE	42	( 18.8%)
TT Dose 1	222	( 99.6%)
TT Dose 2	197	( 88.3%)
TT Dose 3	149	( 66.8%)
TT Dose 4	122	( 54.7%)
TT Dose 5	99	( 44.4%)
Prenatal care	215	( 96.4%)
No vaccine , Crude data	1	( 0.4%)
TT1 MISSED OPPORTUNITIES	1	( 0.4%)
DROPOUT TT1-TT2	11.3	%
DROPOUT TT1-TT3	32.9	%

Survey title 1992 KISUMU RURAL EPI SURVEY  
 Immunization summary , Valid data

surveyed :	223	
CARD AVAILABLE	42	( 18.8%)
TT Dose 1	13	( 5.8%)
TT Dose 2	4	( 1.8%)
TT Dose 3	1	( 0.4%)
TT Dose 4	0	( 0.0%)
TT Dose 5	0	( 0.0%)
Prenatal care	215	( 96.4%)
Born protected :	9	( 4.0%)
Woman protected :	8	( 3.6%)
DROPOUT TT1-TT2	69.2	%
DROPOUT TT1-TT3	92.3	%

Survey title 1992 KISUMU RURAL EPI SURVEY  
 Variable frequency  
 Delivery Place

DELIVP	Freq	%age
C	17	7.62%
D	2	0.90%
H	68	30.49%
O	124	55.61%
P	12	5.38%
	0	0.00%
223		100.00%

Survey title 1992 KISUMU RURAL EPI SURVEY  
 Missed opportunities

Vaccine	Uncorrected
TT1	1 ( 0.45%)
Child	223

Survey title 1992 KISUMU RURAL EPI SURVEY  
 Providers

Valid value for the field SOURCE : HCODP

	H	C	O	D	P	?
TT1	46(21%)	119(54%)	2(1%)	38(17%)	17(8%)	0
TT2	40(20%)	107(54%)	4(2%)	30(15%)	16(8%)	0
TT3	32(21%)	77(52%)	3(2%)	24(16%)	13(9%)	0
TT4	26(21%)	63(52%)	2(2%)	19(16%)	12(10%)	0
TT5	20(20%)	50(51%)	0(0%)	18(18%)	11(11%)	0
	164(21%)	416(53%)	11(1%)	129(16%)	69(9%)	0

83

Survey title 1992 SIAYA TT COVERAGE SURVEY  
 Immunization summary , Crude data

surveyed :	213	
CARD AVAILABLE	31	( 14.6%)
TT Dose 1	205	( 96.2%)
TT Dose 2	190	( 89.2%)
TT Dose 3	128	( 60.1%)
TT Dose 4	92	( 43.2%)
TT Dose 5	63	( 29.6%)
Prenatal care	204	( 95.8%)
No vaccine , Crude data	8	( 3.8%)
TT1 MISSED OPPORTUNITIES	2	( 0.9%)
DROPOUT TT1-TT2	7.3	%
DROPOUT TT1-TT3	37.6	%

Survey title 1992 SIAYA TT COVERAGE SURVEY  
 Immunization summary , Valid data

surveyed :	213	
CARD AVAILABLE	31	( 14.6%)
TT Dose 1	26	( 12.2%)
TT Dose 2	12	( 5.6%)
TT Dose 3	1	( 0.5%)
TT Dose 4	1	( 0.5%)
TT Dose 5	0	( 0.0%)
Prenatal care	204	( 95.8%)
Born protected :	11	( 5.2%)
Woman protected :	13	( 6.1%)
DROPOUT TT1-TT2	53.8	%
DROPOUT TT1-TT3	96.2	%

84

Survey title 1992 SIAYA TT COVERAGE SURVEY  
 Variable frequency  
 Delivery Place

DELIVP	Freq	%age
:	1	0.47%
C	39	18.31%
H	35	16.43%
M	135	63.38%
P	3	1.41%
:	0	0.00%
213		100.00%

Survey title 1992 SIAYA TT COVERAGE SURVEY  
 Missed opportunities

Vaccine	Uncorrected
TT1	2 ( 0.94%)
Child	213

Survey title 1992 SIAYA TT COVERAGE SURVEY  
 Providers

Valid value for the field SOURCE : HCPM

	H	C	P	M	?
TT1	38(19%)	162(79%)	5(2%)	0(0%)	0
TT2	43(23%)	142(75%)	5(3%)	0(0%)	0
TT3	30(24%)	93(74%)	2(2%)	0(0%)	3
TT4	21(23%)	71(77%)	0(0%)	0(0%)	0
TT5	12(19%)	50(81%)	0(0%)	0(0%)	1
	144(21%)	518(77%)	12(2%)	0(0%)	4