PD-AAN-852

CLASSIFICATION

PROJECT EVALUATION SUMMARY (PES) -- PART I

Report Symbol U-447

1. PROJECT TITLE	2. PROJECT NUMBER	3. MISSION/AID/W OFFICE
PL 480 Title II Food Distribution	PL 480 Title II	USAID/DEO

4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) 83-15

☒ REGULAR EVALUATION ☐ SPECIAL EVALUATION

5. KEY PROJECT IMPLEMENTATION DATES	6. ESTIMATED PROJECT FUNDING	7. PERIOD COVERED BY EVALUATION
A. First PRO-AG or Equivalent FY ___ B. Final Obligation Expected FY 83 C. Final Input Delivery FY ___	A. Total $ ___ B. U.S. $ 1,900,000	From (month/yr.) 7/81 To (month/yr.) 6/83 Date of Evaluation Review 9/83

8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

A. List decisions and/or unresolved issues: cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airgram, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
1. The malnutrition problem in Kinshasa is very great indeed. Current efforts are not adequate to attack malnutrition in any meaningful way.		
2. Nutrition interventions should be targeted to the most-affected group, children ages 0-4.		
3. Programs should be aimed at children who are acutely (currently) malnourished.		
4. On-site feeding programs have demonstrated their effectiveness in rehabilating malnourished children, but many more children need to be reached.		
5. Efforts should be directed to the poorest sections of the city where malnutrition is known to be highest. For example, the two zones of Kimbanseke and Masina have about 20% of the population of the city and perhaps 30% of the malnourished children.		
6. A Co-Ordinating Committee, with technical help from the Belgian Government, is currently at work in the Kimbanseke and Masina zones. The Co-Ordinating Committee and workers in the health centers feel very strongly that <u>only</u> locally-produced foods should be used in nutrition programs - both for on-site feeding programs and for taking home. (cont.)		

9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS

- ☐ Project Paper
- ☐ Financial Plan
- ☐ Logical Framework
- ☐ Project Agreement
- ☐ Implementation Plan e.g., CPI Network
- ☐ PIO/T
- ☐ PIO/C
- ☐ PIO/P
- ☐ Other (Specify) ___
- ☐ Other (Specify) ___

10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT

- A. ☐ Continue Project Without Change
- B. ☐ Change Project Design and/or ☐ Change Implementation Plan
- C. ☐ Discontinue Project

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)

Mr. Gerald Johnston (Project Officer)
Mrs. Judith Brown (Evaluator)
Mr. Robert Harrelson (Evaluator)

12. Mission/AID/W Office Director Approval

Signature: [signature]

Typed Name: Richard Podol

Date: 2 Nov 83

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PROJECT EVALUATION SUMMARY (CONT.)

Recommendations (continued from face sheet)

6. There is no question that USAID should cooperate fully with the Co-Ordinating Committee in their impressive work in the southeastern part of the city.

7. Key questions about approaches to malnutrition remain unanswered because of lack of appropiate records. It would be unwise and counter-productive to require cumbersome record-keeping procedures fn every nutrition program. Nevertheless, selected centers could be enabled to keep special records so that future programs can be based on sound knowledge about different approaches.

XD-AAN-852-A

THE NUTRITIONAL IMPACT

OF

KINSHASA PROGRAMS

FOR

YOUNG CHILDREN:

A STUDY OF VARIED APPROACHES

by

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September 1983

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ACKNOWLEDGEMENTS

The study team acknowledges with gratitude the officials of city-wide organizations and the personnel of health centers, who shared unstintingly their time, information, and documents.

I. BACKGROUND

The city of Kinshasa had a population of 2,298,854 in 1981, according to the Department of Territorial Administration. An estimated 20 percent, or 459,771, were children under the age of five.

Malnutrition has been documented among young Kinshasa children at least since the early 1970's. In 1978, the newly-established Centre National de Planification de Nutrition (CEPLANUT) studied the 24 urban zones of Kinshasa and selected three zones (Lingwala, Bumbu, and Kimbanseke) as representative of different socio-economic parts of the city (CEPLANUT Report 2). The zones are marked on the map of Figure 1.

Between September 1978 and December 1982, CEPLANUT repeatedly surveyed and measured children under the age of five living in these three zones. Table 1 shows the results of four annual survey rounds. Overall rates of malnutrition* dropped from 42.4 percent to 36.6 percent. The decrease in malnutrition is statistically significant, but the levels are still alarmingly high.

Many government, church, business, and private health organizations in Kinshasa have programs dealing with child malnutrition. Table 2 shows the number of children reached by the four largest networks during December 1982. We estimate that about 14 percent of all Kinshasa children were being reached by these health-nutrition programs. About seven percent of the malnourished children were being reached.

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* The CEPLANUT surveys considered a child malnourished if he measured below 80 percent of the Harvard Standard weight-for-age. See Appendix A for an explanation of the various standards referred to in this report.

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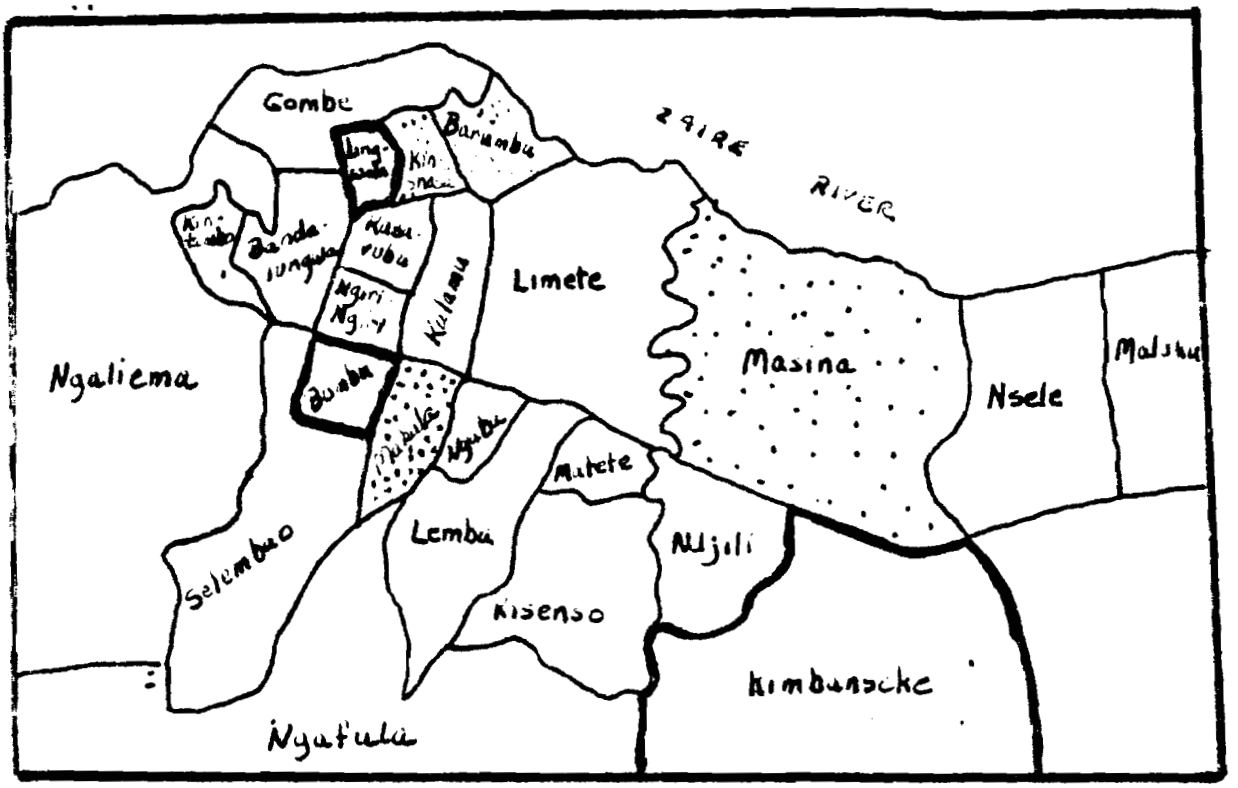
FIGURE 1

THE ZONES OF KINSHASA



Zones included in the present study:

Zones surveyed by CEPLANUT 1978 - 1982

Similar zones

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TABLE 1

PROPORTION OF MALNOURISHED CHILDREN
IN REPEATED CEPLANUT SURVEYS
OF THREE REPRESENTATIVE ZONES OF KINSHASA

Dates of Survey Round	Number of Children Measured	Malnourished* No.	%
9/78 - 2/79	29,083	12360	42.4%
6/79 - 2/80	6,588	2663	40.4
9/80 - 3/81	11,182	3857	34.5
11/81 - 5/82	10,559	3869	36.6

$\chi^2_3 = 264.7 \qquad p < .001$

* Below 80 percent of Harvard Standard Weight-for-Age. See Appendix A for explanation of standards.

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TABLE 2

KINSHASA CHILDREN UNDER 5 YEARS OF AGE
REACHED BY THE FOUR LARGEST
NUTRITION-RELATED PROGRAMS

December 1982

	Well-Nourished*	Malnourished*	Total
Catholic Archdiocese (14 centers and their satellite posts)	18,890	2,206 (10%)	21,096
Catholic Relief Services (25 centers)	14,666	5,084 (26%)	19,750
Mama Yemo Hospital (3 centers)	7,191	1,619 (**)	8,810
Salvation Army (3 centers plus mobile sites)	11,901	2,950 (20%)	14,851
Total children reached	52,648	11,859 (18%)	64,547
Total children in Kinshasa, 1982 (estimates)	300,000	176,000 (37%)	476,000
Percentage of all Kinshasa children reached in December 1982	18%	7%	14%

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* "Malnourished" children were those with weights below the growth curves used in the respective Preschool Consultations (see Appendix A) plus others being recuperated in special programs. The "well-nourished" category includes all other children. As explained in Appendix A, the Catholic centers classified some children "well-nourished" that other centers would call "malnourished."

** Mama Yemo figures for well-nourished and malnourished children were not available. The average, 18 percent, was used to estimate the figures.

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Most nutrition-related programs are connected to Health Centers. Generally two types of programs are offered for children under age five: Preschool Consultations and special sessions for malnourished children.

Preschool Consultations. An individual child attends once a month. Each consultation offers some or all of the following services:

-- Weighing and comparing the child's growth with international growth standards

-- Nutrition and health education

-- Childhood immunizations

-- Treatment for common illnesses

-- Take home food

Mothers usually paid a small enrollment fee (2-5 zaires) and sometimes a fee for each monthly consultation. Take-home food was sold at wholesale or subsidized prices.

The major factor differentiating one Preschool Consultation from another was the take-home food. Some programs provided large quantities to every child and mother; some offered moderate or small quantities as an optional purchase; others offered no take-home food at all.

Special sessions for malnourished children. Each child came to the center frequently--one to six days a week. Malnourished children were discovered and referred from Preschool Consultations, dispensaries, and neighborhood nutrition surveyors or volunteers. Sessions included all or some of the following activities:

-- Weighing

-- Nutrition lessons and demonstrations

-- Individual nutrition counseling

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-- On-site feeding

-- Take-home food

In some centers, mothers paid 5-17 zaires a month for on-site feeding; elsewhere they brought in a food contribution to prepare and feed to the children. Mothers bought take-home food at wholesale or subsidized prices.

The major factors differentiating special malnutrition programs were on-site feeding and take-home food. Some centers offered intensive feeding but small amounts of take-home food. Other centers offered minimal on-site feeding but large amounts of take-home food.

* * * * *

The present study examines the nutritional impact of these various program approaches. It is important to note at the outset that child malnutrition is not the only concern, or even the major concern, of the Kinshasa programs. Some programs state their objectives in terms of improving child health generally. Others are trying to supplement household income levels or to involve participants in economic development or food production schemes. Nevertheless, all the programs are likely to make some impact on child nutrition, and are thus worthy of study.

Members of the study team were appointed by the United States Agency for International Development and CEPLANUT. The team was charged specifically to study the nutritional impact of the various approaches to child malnutrition, and not program management or administrative issues. The team was encouraged to search out relevant programs and documentation wherever they existed.

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II. METHODOLOGY

A. STUDY ZONES

Many past studies of the impact of nutrition programs lack data on simultaneous trends in malnutrition in the community at large or in control areas. Fortunately, the repeated CEPLANUT child surveys from 1978 to 1982 provide the needed community data for Kinshasa. The present study examines the three CEPLANUT study zones plus four adjacent zones similar in important socio-economic and nutrition characteristics (CEPLANUT Report 2):

Zones of Lingwala (1981 population 39,848), Kinshasa (64,461) and Barumbu (64,390):

Old city zones

Very bad housing/medium utilities

Medium levels of malnutrition

Zones of Bumbu (96,164) and Makala (98,327):

Southern extension zones

Bad housing/bad utilities

High levels of malnutrition

Zones of Kimbanseke (363,927) and Masina (113,635):

Peripheral extension zones

Bad housing/bad utilities

High levels of malnutrition

The seven zones are indicated on the map of Figure 1. The zones had a total 1981 population of 840,752, or 37 percent of the total population of Kinshasa. Within these zones, the team studied all nutrition-related programs sponsored by the Catholic Archdiocese, Catholic Relief Services, Mama Yemo Hospital, Salvation Army, and CEPLANUT.

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B. STUDY PERIOD:

The period July 1981 - August 1983 was selected for several reasons. CEPLANUT community data were available for most of this period. Records on Preschool Consultations existed for nearly all centers for the whole period. The special programs for malnourished children underwent significant changes in many centers. Thus a variety of approaches could be studied during the two-year period.

C. VISITS AND DOCUMENTATION

The study team made repeated visits to the Kinshasa headquarters of the five sponsoring organizations. They interviewed officials about program philosophy and procedures, and about changes during the 1981-83 period. They collected enrollment and monthly attendance figures for the 15 centers under study:

ZONE	CENTER	SPONSORING ORGANIZATION
Lingwala	Kitega	Catholic Relief Services (CRS) and Communauté Baptiste du Fleuve Zaire
Kinshasa	Centre Mère-Enfant Barumbu	Mama Yemo Hospital
Barumbu	Kasai	Salvation Army
Bumbu	Centre Mère-Enfant Bumbu	Mama Yemo Hospital
	Center for Nutrition Réhabilitation	CEPLANUT
	St. Jean-Baptiste	Archdiocese
Makala	St. Clément	Archdiocese

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ZONE	CENTER	SPONSORING ORGANIZATION
Kimbanseke	Kimbanguist	Catholic Relief Services (CRS) and Kimbanguist Development Office
	Elikya	Archdiocese
	Kingasani I	Catholic Relief Services (CRS) and private community organization
	St. Joseph de Tourin	Archdiocese
	Mokali	Catholic Relief Services (CRS) and private health organization
	Kingasani II	Archdiocese
Masina	Masina	Salvation Army
	Mapela	Archdiocese

They then visited 11 of the 15 centers*. At the centers we reviewed procedures, rules and activities. While all centers of a given sponsoring organization seemed to follow fairly closely its approach and its rules, centers sometimes differed among themselves on details: for example, criteria for classifying a child as malnourished; the cups or bottles used to measure foods; prices and amounts of food distributed. These details, important in classifying the programs into various types, could be understood only at the centers themselves.

During center visits, the team also copied records on individuals in the special programs for malnourished children. These figures appeared in the register books or on individual "Recuperation Sheets" kept in the centers.

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* Four centers were not visited for the following reasons. CME Barumbu and CME Bumbu were well-known to team members from previous work and visits; no current programs or past records needed on-site visits. The CEPLANUT Rehabilitation Center was no longer functioning. The St. Jean-Baptiste Center is a relatively new center with only part-time operations and a few records. Its statistics are included in only one or two parts of this study.

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III. STUDY OF PRESCHOOL CONSULTATIONS

Two distinct types of monthly Preschool Consultations existed in Kinshasa: those that provided large take-home food packages and those that did not.

Preschool Consultations with food packages:

A "food package" is a large amount of food, with high nutritional value and market value, offered at a low price to program participants. In Kinshasa this type of program existed exclusively in centers of the Catholic Relief Services (CRS) network. The centers were operated by churches, government agencies, businesses, community groups, and private health organizations. CRS distributed to the centers food provided by the United States Government under Public Law 480, Title II. CRS set the rules and procedures for entrollment and weighing of children, the amount of food rations, and the costs to participants.

One ration of food consisted of two kilograms of bulgur wheat, two kilograms of non-fat dried milk, and one kilogram of soya oil (1/2 kilo since October 1982). The recipient paid 5 zaires.

Every mother and every child in the program (regardless of nutritional status) received one ration per month, up to a total of three rations per family. The large majority (about four-fifths) of the mothers had only one child enrolled. The average family thus took home two monthly rations. Nutritional and market values for mid-1982 were as follows:

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	One Ration				Two Rations
	Bulgur Wheat	Non-Fat Dried Milk	Oil	Total	Total
Weight..	2 kg	2 kg	1 kg	5 kg	10 kg
Calories*	7080	7260	8840	23,180	46,360
Protein	224 g	708 g	0	932 g	1864 g
Iron	78 mg	12 mg	0	90 mg	180 mg
Market Value**	ƀ27	ƀ124	ƀ25	ƀ176	ƀ352

* Calorie, protein and iron content from Food for Peace Commodities Reference Guide, Washington : USAID, 1977.

** Market values provided by Commercial Section, U.S. Embassy, from a June 1982 survey. Bulgur wheat rarely appeared on the local market, so rice was considered its equivalent. Milk price was based on 400 g cans of dried whole milk. Oil price was based on a 720 ml bottle of locally-produced Livio oil.

This food package did indeed represent a sizeable contribution to the dietary needs of mother and child:

	Child, age 1-3 years			Active Adult Women (not nursing, not pregnant)		
	Monthly requirements*	Provided by one ration: Amount	Provided by one ration: % of requirements	Monthly requirements*	Provided by one ration: Amount	Provided by one ration: % of requirements
Calories	40,800	23,180	57%	56,400	23,180	41%
Protein	480 g	932 g	194%	720 g	932 g	129%
Iron	300 mg	90 mg	30%	840 mg	90 mg	11%

* From Latham (1979), page 250.

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The food package was also a sizeable income supplement for participating households. A 1981 study of Kinshasa found a median household income of Z746 per month and median food expenditures of Z462 per month (Kalemba 1982). Obviously, a household benefitted greatly from two food rations with a total value of Z352, for which they paid only Z10 at the center.

The four CRS-related centers (Kitega, Kimbanguist, Kingasani I, and Mokali) were thus classified as "programs with food packages."

Preschool Consultations without food packages:

Between 1981 and 1983, some Preschool Consultations offered only soya flour for sale. Mothers could choose to buy about 500 grams of soya flour containing 1990 calories, 170 grams of protein, and 60 mg of iron. The soya, produced in Equateur Region, was sold to the mothers at a price covering cost plus transportation (about Z2-5 per 500 grams). This optional take-home soya could be an important protein supplement to a child's diet, but in caloric value and market value it could not be considered a "large food package."

Five Archdiocese centers (St Clement, Elikya, St Joseph, Kingasani II, and Mapela) were classified as programs without food packages.*

Hypothesis: Nutritional Impact of Preschool Consultations

Centers offering take-home food packages to all children in Preschool Consultations reduce malnutrition among the participants more than centers without food packages.

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* Salvation Army centers also sold small quantities of soya in Preschool Consultations, while Mama Yemo Centers offered no take-home food of any kind. However, neither of these programs had monthly attendance records in a form that could be used.

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Method: Ideally, a test of this hypothesis should follow the growth of individual children in each type of program over a period of time. Appropriate individual records had been kept in registers in CRS-related centers. In other centers, however, registers were not routinely kept, so the ideal retrospective study could not be done.

Attendance figures for malnourished and well-nourished children at monthly Preschool Consultations were available in both types of centers (CRS and Archdiocese). Thus it was possible to examine the monthly proportions of participants who were malnourished over the two-year period, July 1981 - June 1983.

Results: Figure 2 shows trends in malnutrition in both types of centers, plus the trend in the city at large. In the city as a whole, the line gradually descends, showing a slight reduction in malnutrition over the two-year period. For centers without food packages, the line descends parallel to the city line. In centers offering food packages, the line ascends, showing a slight increase in the proportion of malnourished children attending.

The hypothesis is not substantiated. This study produced no evidence that either type of Preschool Consultation reduced malnutrition among its participants. It might be possible to find such evidence in a careful study of the growth records of individual children in both types of programs, as well as children not in any program. Such records were simply not available for the present study.

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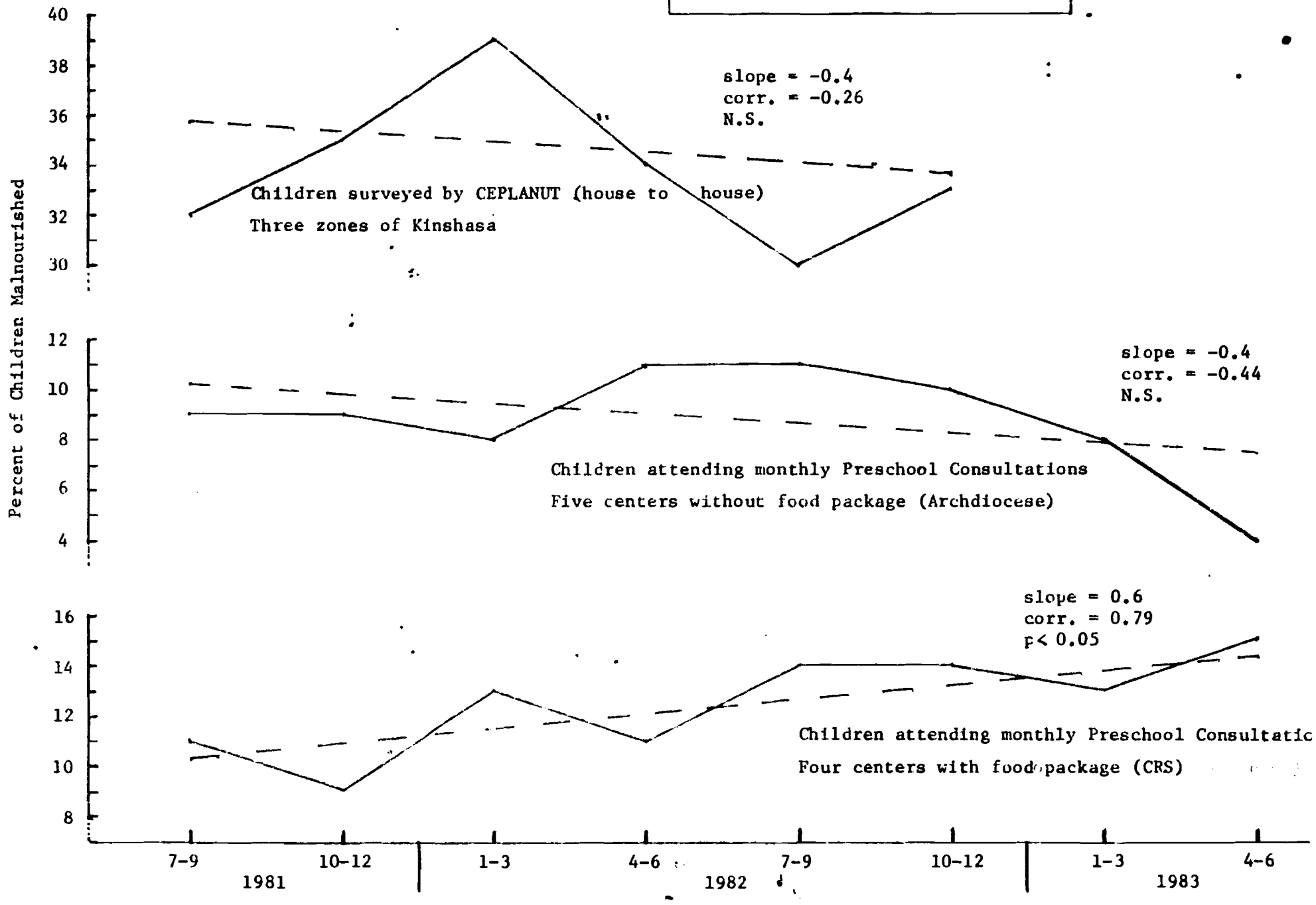
FIGURE 2

PROPORTION OF MALNOURISHED CHILDREN



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IV. STUDY OF SPECIAL PROGRAMS FOR MALNOURISHED CHILDREN

All centers had special programs that a malnourished child attended weekly or several times a week. All programs offered weekly weighing and individual nutrition counseling. All programs fed malnourished children at least one meal a week. All programs required mothers to buy some take-home food at low prices every week. The programs differed considerably, though, in the importance of on-site feeding and of take-home food. Two distinct types of program existed.

Centers related to Catholic Relief Services emphasized take-home food packages. The regular rations for mother and child were given out in weekly, rather than monthly, portions. A malnourished child came once a week and ate one meal on-site. The mother took home about two kilograms of food, with a total nutritional content of 9380 calories, 466 grams of protein, and 45 milligrams of iron.

Centers sponsored by other organizations (Archdiocese, Salvation Army, and CEPLANUT) emphasized on-site feeding. A malnourished child came 1 - 6 days and ate 2-15 meals per week at the center, depending upon the severity of his malnutrition. His mother took home some food, usually soya and corn meal, or soya and milk. The exact types and amounts of take-home food varied from center to center. The portions averaged about 600-700 grams per week, containing 2426 calories, 169 grams of protein, and 23 milligrams of iron.* These are comparatively small amounts.

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* One Archdiocese center, St. Joseph de Tourin, distributed about twice this amount of food. Thus it could not be included in the category "intensive feeding, small amount of take-home food" and was eliminated from this portion of the study.

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In sum, two types of programs for malnourished children existed.

- Programs offering intensive on-site feeding and small amounts of take-home food.

- Programs offering minimal on-site feeding and large amounts of take-home food.*

Hypothesis: Nutritional Impact of Special Malnourished Programs

Malnourished children in programs emphasizing on-site feeding show greater nutritional improvement than malnourished children in programs emphasizing take-home food packages.

Method: Fortunately, it was possible to follow the growth of individual children in special malnutrition programs. Appropriate records were located in three centers emphasizing take-home food (Kitega, Kingasani I, and Mokali) and in six centers emphasizing on-site feeding (CEPLANUT - Bumbu, St. Clement, Elikya, Mapela, Kasai, and Masina).

Individual malnourished children in food-package programs were matched with children in on-site feeding programs, on the basis of age and severity of malnutrition. In other words, a pair of children was found, both

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* Theoretically, two other types of centers could exist : centers offering both on-site feeding and take-home food packages; and centers offering neither service.

No Kinshasa centers are known to have offered both intensive on-site feeding and large take-home food packages. The Mama Yemo centers offered neither service but simply encouraged malnourished children to come for weekly weighing and lessons; unfortunately, growth records were not kept on individual children, so these centers cannot serve as controls in testing the hypothesis.

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the same age (±2 months), both with the same percent (±4 points) of standard weight-for-age.* Both entered a special malnutrition program at the same season of the year.** One child in each pair was in a program with a large take-home food package, while the other was in a program with intensive on-site feeding. A total of 78 pairs was found.

Each child was given a score representing the difference between his entering weight percentage and his weight percentage after eight weeks in the special program. For example, if a child entered with a weight at 68 percent of standard, and eight weeks later his weight was 74 percent, his score was +6 percent.

The child's score was then compared with his "partner" in the other type of malnutrition program. The child whose condition improved most (or deteriorated least) "did better." For example, a child was 67 percent weight-for-age when he entered a special program and 71 percent after eight weeks. His score was +4 percent. His "partner" was 68 percent at entry and 69 percent after eight weeks. His score was +1 percent. The first child did better.

Another child was 65 percent at entry and 63 percent after eight weeks. His score was -2 percent. His "partner" was 67 percent at entry and 62 percent after eight weeks. His score was -5 percent. Again the first child did better.***

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* Capone Standards of weight-for-age were used for calculations of all children in this portion of the study.

** Though not necessarily in the same year. Some centers had appropriate programs and records only in 1982, others only in 1983.

*** Pairs with tied scores were excluded from the test.

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Results: Children improved in both types of program. The median score for children in on-site feeding programs was +4 percent. The median score for children in take-home food programs was +1 percent.

Table 3 shows the results when each individual child was compared with his matched "partner." The children in programs with intensive on-site feeding regularly did better than children in centers emphasizing take-home food programs. The differences were most striking for younger children (ages 12-17 months) and for children who were severely malnourished (<65 percent weight-for-age). The evidence is in favor of the hypothesis.

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TABLE 3

COMPARISON OF MALNOURISHED CHILDREN IN

TWO TYPES OF SPECIAL PROGRAMS

	Number of matched pairs of children	Child with intensive on-site feeding did better	Child with take-home food package did better	Is the difference statistically significant?**
All pairs	73	48	25	Yes ($p<.01$)
Pairs grouped by age at entry				
12-17 months	58	38	20	Yes ($p=.01$)
24-29 months	15	10	5	No
Pairs grouped by weight-for-age at entry*				
<65%	26	18	8	Yes ($p<.05$)
65-69%	20	13	7	No
70-78%	27	17	10	No

* Capone Standards

** Sign Test of statistical significance : Dixon, W. and F. Massey (1969), Introduction to Statistical Analysis. NY: McGraw-Hill.

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V. STUDY OF NEIGHBORHOODS

• Do the different types of nutrition programs affect the level of malnutrition in their immediate neighborhoods?

Hypothesis: Impact on the Community

Malnutrition decreases in neighborhoods with centers offering take-home food packages faster than in neighborhoods without such programs.

Method: The neighborhoods selected for this test were five administrative "localities" in the zone of Kimbanseke. One locality (Kutu) had a center (Kimbanguist) offering large take-home food packages to all children in monthly Preschool Consultations. In special weekly programs for malnourished children, this center offered one meal on-site and a weekly portion (one-fourth of the monthly ration) of take-home food. The program began in mid-1981 and had regular food supplies through mid-1982.*

Two other localities had centers offering little or no food in their monthly Preschool Consultations. These centers held frequent special sessions for malnourished children, who received intensive on-site feeding and small amounts of take-home food. The two localities were Salongo (Elikya Center) and Kingasani II (Kingasani II Center).

Two localities had no centers with nutrition programs. They were Bahumbu and Mangana.

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* The two other Kimbanseke localities with food-package centers did not qualify for this test. In one locality the center did not begin its program until mid-1982. The other locality had two centers, one of each type, in the immediate area.

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To measure the level of malnutrition in these localities, CEPLANUT survey data was used from several rounds during 1980, 1981, and 1982.

Results: Figure 3 shows no particular pattern in neighborhood malnutrition according to the type of nutrition program in the neighborhood. The wide differences in malnutrition over short periods of time were probably due to uneven sampling procedures and very different sample sizes in different months. The CEPLANUT data does not seem to lend itself to analysis at the locality level. Thus, there is no evidence to support or reject the hypothesis. No conclusions can be drawn about the programs' nutritional impact on surrounding neighborhoods.

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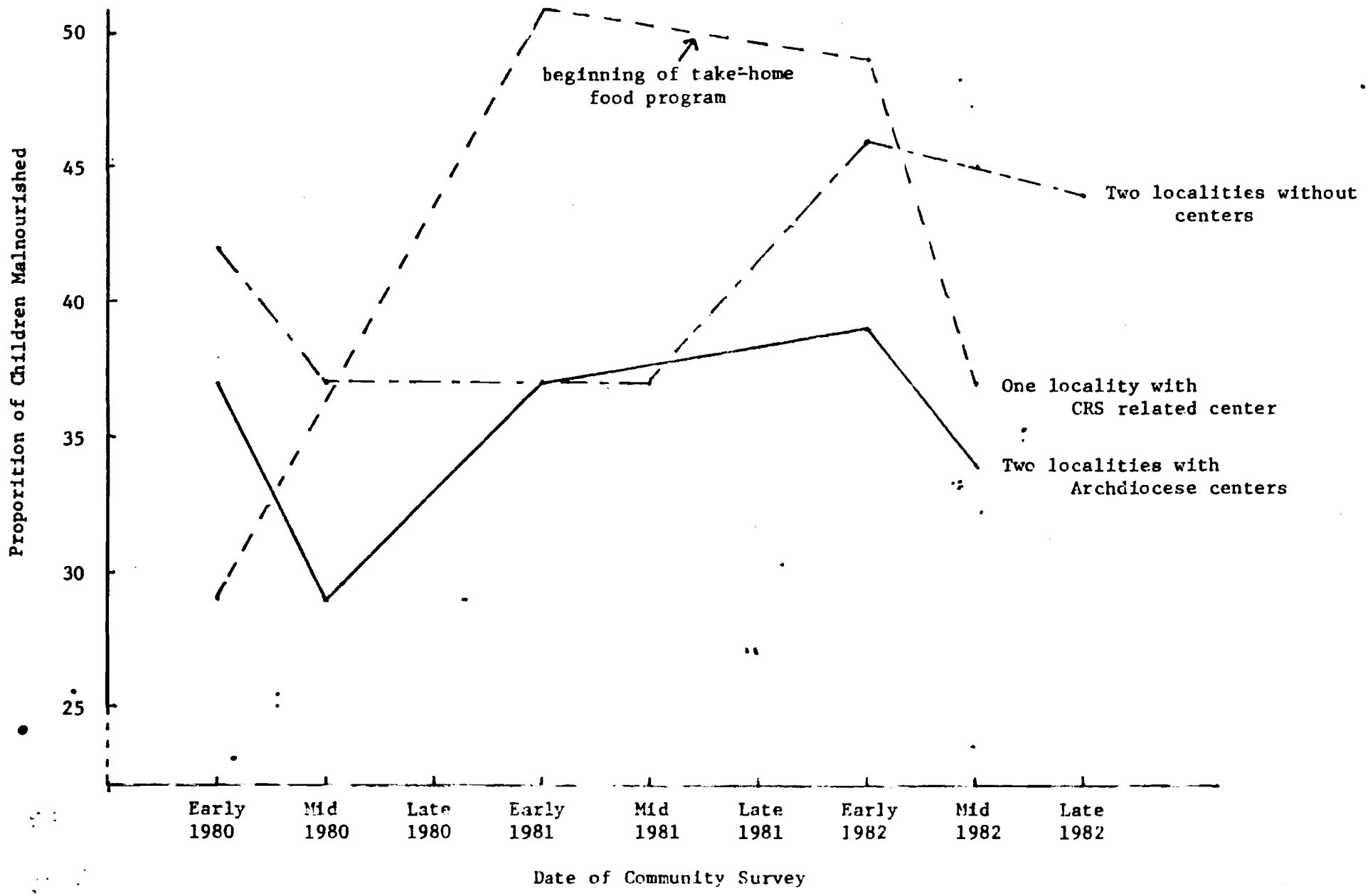
FIGURE 3

PROPORTION OF MALNOURISHED CHILDREN IN LOCALITIES OF KIMBANSEKE ZONE

(CEPLANUT community surveys 1980-1982)



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VI. SUMMARY OF FINDINGS

1. Malnutrition among Kinshasa children continues to be a serious problem of alarming proportions.

2. Kinshasa's four largest nutrition programs combined reach only 18 percent of the city's children. They reach an even smaller proportion (seven percent) of the malnourished children.

3. The present study has not been able to demonstrate that general Pre-school Consultations (with or without take-home food packages) reduced malnutrition among participating children.

4. Special programs that singled out malnourished children did improve their nutritional status. Programs emphasizing on-site feeding showed better results than programs emphasizing large take-home food packages.

5. No evidence was found that any type of program had an impact on the surrounding neighborhood.

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APPENDIX A

ANTHROPOMETRIC MEASURES OF MALNUTRITION

Weight-for-age Measurements:

During the 1981-1983 period of this study, all Kinshasa pre-school programs used weight-for-age measurements to monitor children's growth. Under this system, a child's actual weight is compared with the standard weight for his/her age, and is found to be a certain percent of the standard. For example:

Child	Child's age	Child's weight	Standard weight for this age	Child's percent
1	12 months	9,0 kg	10,0 kg	90%
2	12	6,4	10,0	64%
3	45	12,0	16,0	75%
4	4	5,6	6,3	89%
5	12	10,7	10,0	107%

Several sets of international standards are currently used in Kinshasa: Capone, Harvard, Kangu-Mayombe, Masse, Morley, and World Health Organization.

A set of standards can be displayed on a growth curve, showing the standard weight for each age, as well as the weight below which the child is considered "malnourished." Figure 4 shows one such growth curve.

How do the different standards and growth curves compare with one another? Figure 5 shows on one graph the lower "malnutrition" lines from four common Kinshasa growth curves. The lines used by Catholic Relief Services, CEPLANUT, and Salvation Army programs are almost identical. The line used by Catholic Archdiocese and Mama Yemo programs is lower. A child falling between the two

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FIGURE 4

EXAMPLE OF STANDARD GROWTH CURVE

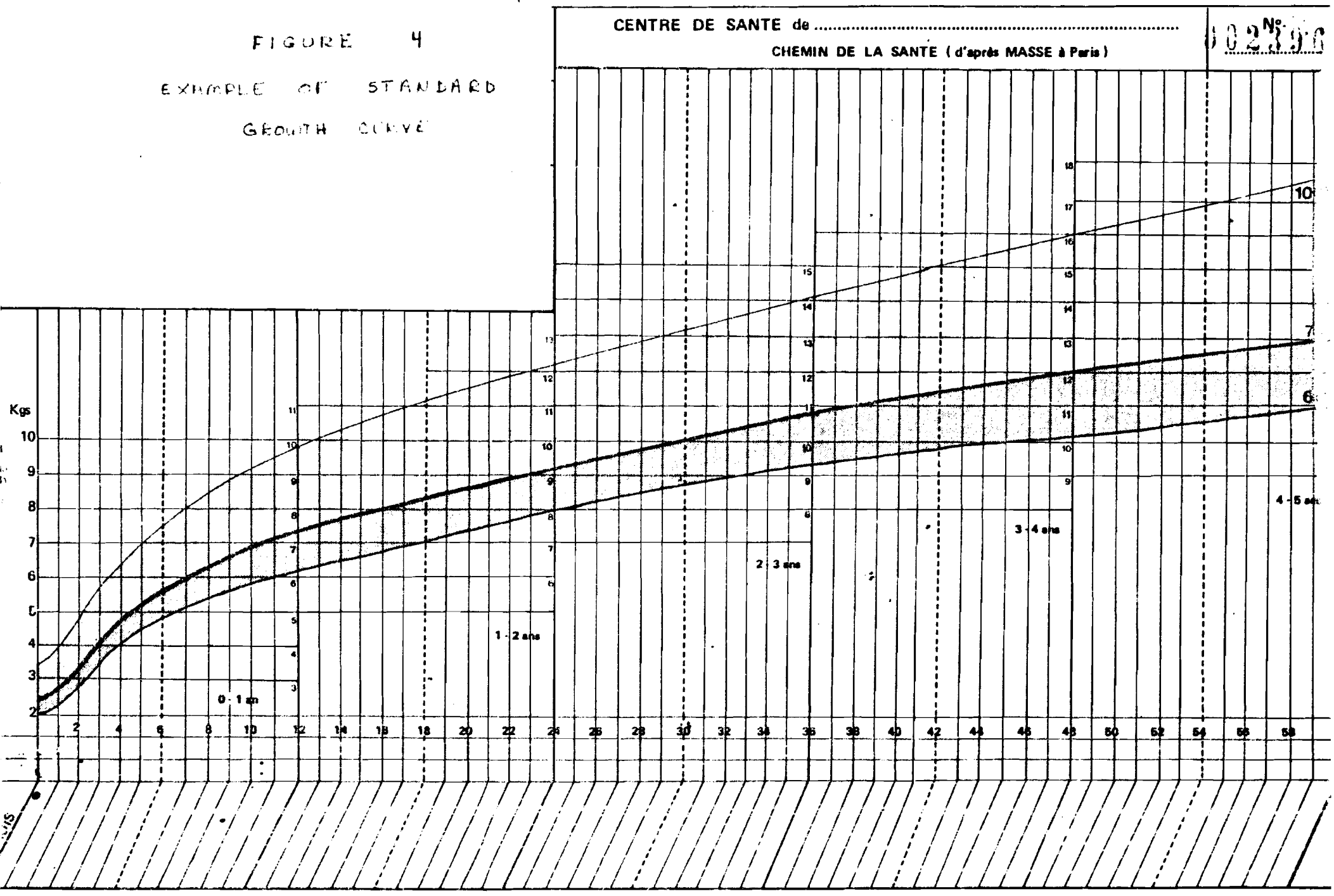

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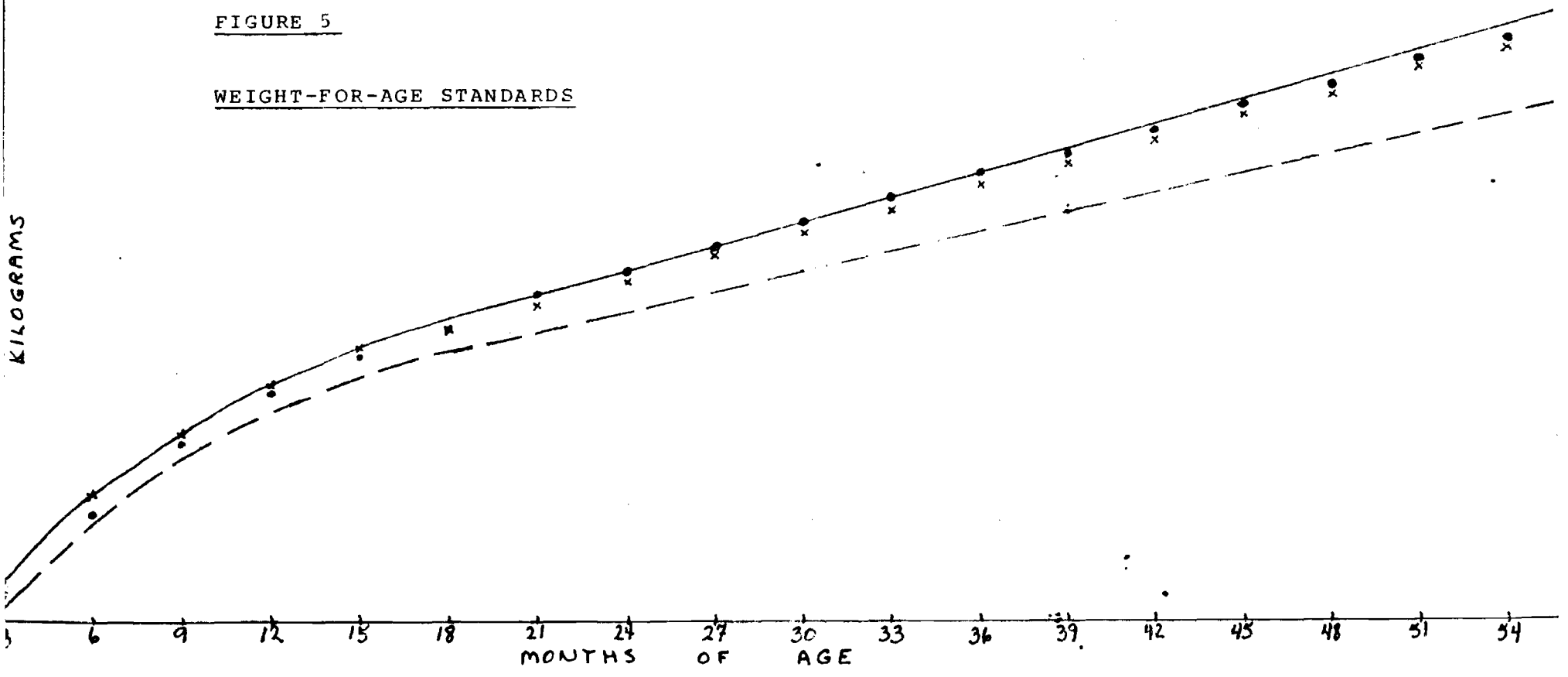
FIGURE 5

WEIGHT-FOR-AGE STANDARDS



Four Standards For Classifying Children as "Malnourished"

——— Capone (80 percent) - used by Catholic Relief Services

. . . . Harvard (80 percent) - used by CEPLANUT community surveys

x x x x Kangu-Mayumbe/Courtejoie (75 percent) - used by Salvation Army

------- Masse (75 percent) - used by Catholic Archdiocese and Mama Yemo

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lines would be classified "malnourished" by the former programs but "well-nourished" by the latter programs.*

When a child is weighed only once, his current weight-for-age percentage is known, but not his current rate of growth. He may actually be gaining weight well (that is, the slope of his weight line may be rising rapidly), though he does not weigh as much as other children of his age. Only repeated measurements will show the rate of growth. As of mid-1983, some Kinshasa centers had begun to study the slope of a child's line (up, down, or steady), as well as his actual weight (high or low), when classifying him as malnourished.

Other Measurements:

Height-for-age (even a single measurement) reflects a child's long-term growth. If he has grown well throughout his life, he will have a normal height for his age. If not, he will be short and stunted (low height-for-age).

On the other hand, weight-for-height (even a single measurement) reflects the immediate past growth of a child. If he has been well-fed recently, his body will be well-proportioned and will have a normal weight for a child of his height (no matter what his actual height may be). If he has recently received inadequate food, he will be thin and wasted (low weight-for-height).

It sometimes happens that a child was malnourished early in life, perhaps at the beginning of his second year. His weight growth rate slowed down; then

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* The use of several different growth curves in Kinshasa (and throughout Zaire) makes a confusing situation for parents and health workers alike. It is very difficult to compare rates of malnutrition, or the impact of various programs, when different standards and charts are being used. Health workers at all levels would welcome a standard chart for Zaire, if it is designed by a team combining sound theoretical principles with practical field experience.

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his height growth slowed. Later he recovered, and by his third or fourth year he is growing well again and has a normal weight-for-height. He may still be stunted (low height-for-age) and he may still have a low weight-for-age. The crisis, though, is past. He is no longer acutely (currently) malnourished, and that fact is reflected in his normal weight-for-height.

In some communities large numbers of children follow this pattern. They are acutely malnourished early in life, then recover. When measured later, they show a low weight-for-age but a normal weight-for-height. For this reason, community rates of malnutrition will differ, according to the measure used. For example, the first CEPLANUT survey round in Kinshasa (September 1978 - February 1979) found 42.4 percent of the children with low weight-for-age (below 80 percent of Harvard Standard) but only 8.9 percent with low weight-for-height (below 80 percent of Harvard Standard). Some experts argue that only the children who are acutely malnourished (low weight-for-height) need special treatment.

Upper arm circumference (like weight-for-height) reflects acute, current malnutrition. Both these measures respond quickly to changes in a child's nutritional condition. Some Kinshasa programs are now using arm circumference, along with weight-for-age, to identify malnourished children.*

Percentages and Centiles:

To date, nearly all Kinshasa programs have expressed children's measurements as percentages of standard. Several international standards, however, express weights also as centiles of standard.

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* These anthropometric measurements are explained and compared in more detail by Anderson et al. (1982), pages 87-102.

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The World Health Organization centile table, for example, shows that the median weight of 12 month-old children is 9.8 kilograms. This weight is the 50th centile; in other words, 50 percent of the 12-month-old children weighed more than 9.8 kilograms, while 50 percent weighed less. The table also shows that for this age the 5th centile weight is 8.1 kilograms; 5 percent of the standard group of children weighed less than that. "Malnutrition" can be defined as having a weight below the 5th centile, so a 12-month-old child weighing less than 8.1 kilograms is considered malnourished.

One advantage of expressing weights as centiles is that centiles have a built-in theoretical expected value. One can expect 5 percent of the children in any community to fall below the 5th centile and to need special attention. A community with only 5 or 6 percent of its children below this limit does not have an unusual malnutrition problem. If the percentage is much greater, though, for example 15 percent or 20 percent of the children below the 5th centile, the problem is of serious proportions.*

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* Centiles are further explained by Morley (1973), Chapter 7.

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APPENDIX B

ATTENDANCE TRENDS WHEN FOOD PACKAGES ARE NOT AVAILABLE

Large take-home food packages are often said to act as magnets drawing mothers and children to Preschool Consultations. If so, one would expect attendance to fall in food-package centers when food is unavailable (because of transportation problems or other difficulties).

Figure 6 shows attendance figures for a one-year period in four centers with take-home food programs, and in two control centers offering no take-home food. Attendance at the Kimbanguist Center clearly reflected the availability or lack of food packages. The center reported no food deliveries from November 1982 through February 1983. Food was delivered in March, but not in April, May, or June 1983. The months without food were the low attendance months.

The other three food-package centers showed fairly steady attendance, with some monthly fluctuations. Attendance did not seem to be systematically affected by the lack of food in April, May, and June 1983.

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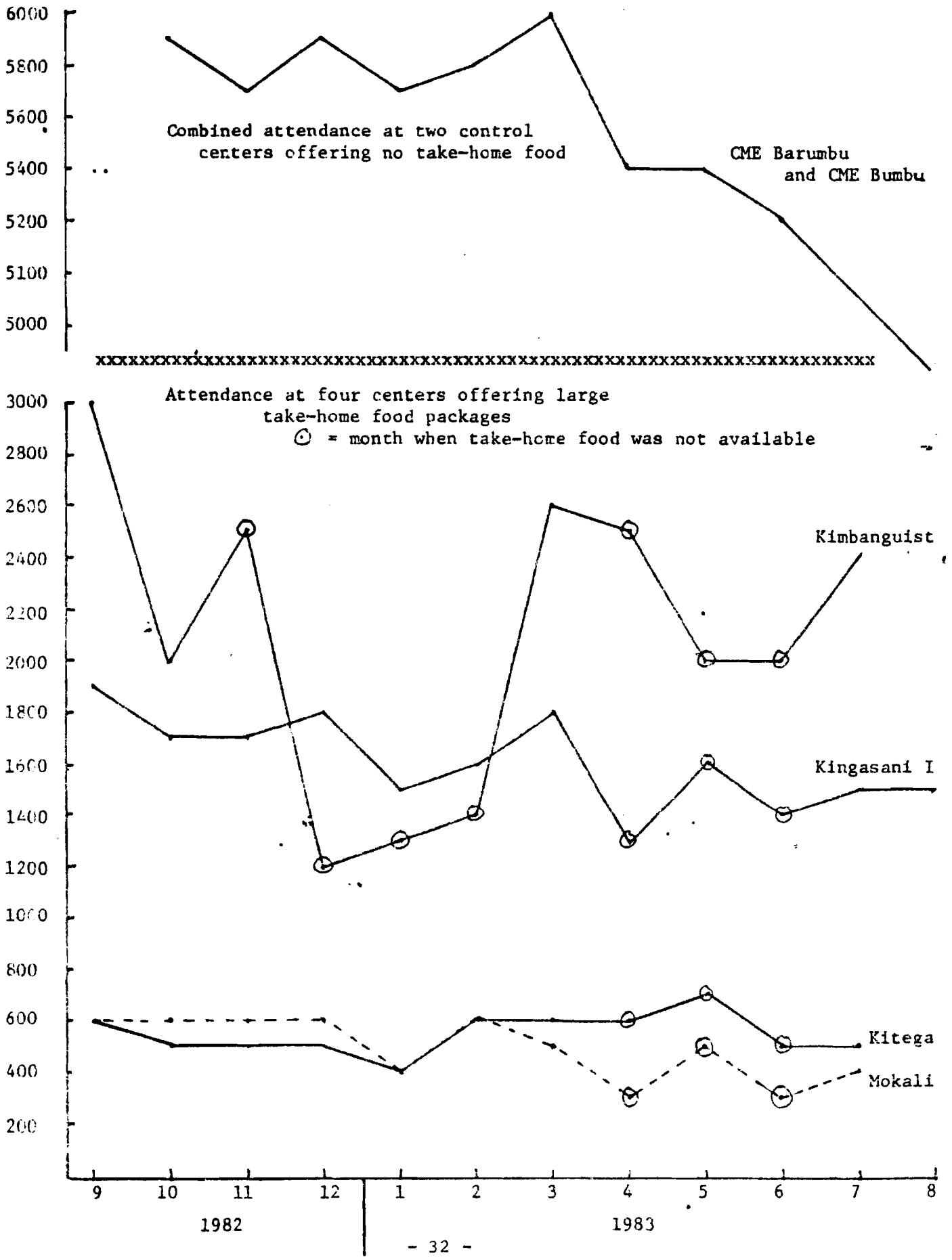
FIGURE 6

MONTHLY ATTENDANCE AT PRESCHOOL CONSULTATIONS



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