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COMPLEXE MEDICO SOCIAL DE LA CITE SIMONE

PORT AU PRINCE

HAITI

REPORT ON THE HEALTH STATUS
OF RESIDENTS OF CITE SIMONE

December 1983

This report has been prepared by the technical staff of the
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THE COMPLEXE MEDICO SOCIAL DE LA CITE SIMONE

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I INTRODUCTION

Organized in 1958, Cite Simone has been since its inception the field of work of several organizations working to improve the living conditions of its population. Of note are the Salesians, involved in community developpement and general education; their schools have an enrollement of over 7000 children; International Foster Parents Plan which maintains an extensive assistance program to destitute families; The National Housing Office of the Ministry of Social Welfare under which tutelage Cite Simone falls; and the Complexe Medico Social de la Cite Simone (CMSCS)

The ^{CMSCS} ~~former~~ organization began in 1975 as a health center supported by Haitian Nationals of Arab origin. To avoid duplication of services, Dr Carlo Boulos, president of the Haitian Arab Center suggested a common approach to the health and social needs of the population of Cite Simone. As a first step, the Haitian Arab Center and a Clinic sponsored by International Foster Parents Plan were fused.

With the assistance of the Sisters of Charity of St Vincent de Paul, Complexe activities expanded over the years and a more systematic approach emphasizing community health and preventive medicine was adopted.

Today the Complexe incorporates the following units:

Centre Haitiano Arabe, Plan International

Centre Medico Social de Brooklyn
Centre medico social de boston
Foyer culturel de Boston
Centre Hospitalier Ste Catherine Laboure, (70 bed)
Centre de Formation des Peres PAPA YO
Centre Artisanal pour les Menes
Centre de Formation des Matrones
Centre de distribution des aliments
10 Foyers de demcnstration nutritionelle

II GOAL

The goal of the Complexe is to improve the living standards of the population of Cite Simone through programs in health, education, vocational training, handicraft, nutrition, sanitation and economic development.

III MEANS

To reach this goal, the Complexe has received assistance from national organizations such as the Ministry of Health (DSPP), the Ministry of Social Welfare, the National Housing Office; from international organizations including International Foster Parents Plan, Josiah Macy Foundation, AID, Oxfam, Appropriate Technology International, Misereor, Caritas, Catholic Relief Services, Care, Church World Services, Friends of Children, Rotary Club, Cardinal Leger; and from many private

donors including haitian families and supporters from abroad.

The staff of the Complexe includes 25 licensed physicians of which 3 have degrees in Public Health; 12 Sisters of Charity; licensed and resident nurses including 4 public health nurses; 1 pharmacist and several aides; 5 laboratory technicians, and 100 voluntary community agents.

IV OPERATIONAL STRUCTURE BASIS

All Complexe activities are supervised by a general Director who is also the Complexe's President and chief operating officer, and who is assisted by a general Administrator, a Sister of Charity. The Administrator is the Complexe's vice President.

The five operational divisions of the Complexe include:

- 1) The division of Research and Evaluation
- 2) Centre Haitiano Arabe Plan International
- 3) The Brooklyn Center
- 4) The Boston Center
- 5) Centre Hospitalier Ste Catherine Laboure

Each division is managed by a Physician, with administrative responsibilities delegated to a Sister of Charity. The Director of Research and Evaluation is also the Complexe's coordinator and his responsibilities are to make the many complexe units function as a whole in the execution of its programs.

V. PROGRAMS OF THE COMPLEXE

A. Maternal Health Program

The objectives of the program are a reduction in maternal mortality rates and a reduction in the rate of post partum complications.

The following strategies have been applied: training of traditional midwives; pre natal care; supervised deliveries; post natal services for mothers and infants.

a. Training of traditional midwives.

A corps of 30 TBAs has been trained under the auspices of the Division of Family Hygiene, DSPP. Once trained, the TBAs were invited to participate in Complexe activities. Currently, their task include: identification of pregnant women; counselling of pregnant women; referral to a health center for pre natal examination and vaccination. Furthermore, TBAs attend at birth, ensure that the new baby is registered and brought to a neighborhood health center for immunization; they encourage breast feeding and advise on post natal problems.

TBAs are assigned to specific sectors of Cite Simone. They are required to file monthly reports detailing the names, due date and age of pregnant women in their assigned sectors; in addition, the report provides information on all births for the

month and the status of the newborn (livebirth or stillborn).

A recent evaluation of the TBAs work was conducted. It focused on coverage issues, on accuracy of reporting and on finality of work in attending delivery.

The report revealed that TBAs as a group reached 71% of target pregnant women. Those women not reached came primarily from 5 of 38 sectors which were served by 2 TBAs found not to be interested in community work.

Most of the TBAs provided accurate reports. Of the 30 TBAs, 2 reported difficulty in obtaining the information from lack of cooperation of pregnant women, 2 seemed incapable of doing the work, 2 seemed uninterested. These 6 were later on assigned different duties.

There seemed to be no relation ^{between} a TBA's inclination to do field work and her capacity to carry out safe deliveries. However, TBAs providing the best reports uniformly provided good services when attending births.

b. Pre natal services.

These are provided at the Boston center, the Brooklyn center, and the Haitian Arab center. The Boston center serves pregnant women from Boston, PCS and Trois Bebe. The Brooklyn

center serves women from Brooklyn, Wharf, Linto. All other registered pregnant women are seen at the Haitian Arab center. Unregistered women identified by TBA are referred to the appropriate center for registration. Services include an education session by a nurse, tetanus immunization and physical examination by a physician.

In 1982, there were 3286 deliveries in the Complexe and 8594 pre-natal visits (2-6 visits per baby delivered). The crude birth rate was 40/1000.

Data on tetanus immunization available at the Brooklyn center show that women who delivered between January and June 1983 had the following coverage:

completely vaccinated	: 55%
2 doses	: 10%
1 dose	: 20%
no vaccination	: 15%

During 1982, 2 deaths due to neo-natal tetanus were noted at Ste Catherine's Hospital.

c. Maternity services.

Of Cite Simone deliveries in 1982, 68% were hospital deliveries and 32% were home deliveries. Of infants born at Ste

Catherine's hospital, the proportion with low birth weight (less than 2,5 kg) was 11%. The stillbirth rate was 47/100⁰ and the neonatal mortality rate 27/1000.

A special study of 1000 consecutive deliveries revealed that:

- 77% of still borns have a birth weight inferior to 2,5 kgs.

- the risk of death in the neonatal period is 14 times higher for babies with low birth weight when compared with babies of normal weight at birth.

B. CHILD HEALTH PROGRAMS.

The objective of the child health programs are: to reduce infant and childhood mortality; to lower the prevalence of childhood diseases and to reduce the case fatality rate of diarrhea and malnutrition.

The following strategies have been applied: motivation of mothers to have their children participate in child health programs; this motivational work is done by community health workers assigned to specific sectors in Cite Simone; health education; growth monitoring of children 0 to 59 months of age; vaccination; prophylaxis for intestinal parasites and for xerophthalmia; curative services on an ambulatory basis; and hospital services.

a. motivation of mothers

Data on the 3749 children (0 to 5 years of age) living in brooklyn area shows these children accounted for 12639 surveillance visits, an average of 3.37 visits per child per year.

b. growth monitoring

This is discussed under the nutrition program.

c. vaccination

Children under 5 are systematically immunized with DPT and polio vaccines; measles vaccination is provided when the vaccine is available.

Over 20,000 doses of the vaccines were administered. Evaluation of immunization coverage of children is shown in appendix 3.

d. curative services.

These are provide at the levels of the health centers and in the hospital. The major health problem being diarrhea, it seems useful to review the Complexe's experience in the management of this disease.

Diarrhea remains one of the major problems of Cite Simone, and combined with malnutrition, accounts for the majority of childhood deaths (87% of deaths of children 0 to 1 year of age and 63% of deaths of children under five).

No current data is available on the incidence and

prevalence of diarrhea in Cite Simone. However, it is known that 1873 cases were referred for treatment to the rehydration center for 1982 and an additional 809 cases admitted to the hospital, for a total of 2682 cases treated on an institutional bases. The majority of cases are sent home with oral rehydration packets.

Institutional cases represent instances where the physician felt that the episode could not be treated at home. In all such cases, there was some degree of dehydration present.

Hospital referrals fell into two major categories:

1) patients admitted at night, or during the week-end (at a time when the rehydration center was closed).

2) patients referred by a health center because the case was felt to be too severe to be treated effectively at the rehydration center.

All children admitted to the hospital were at first resuscitated using IV rehydration (children who could have been treated with oral serum were referred by the hospital to the rehydration center).

Over 95% of children treated at the rehydration center received oral rehydration only.

Of the 2682 cases receiving institutional treatment, 95 (3.5%) died. Table provides a breakdown by age of hospital cases and age-specific case-fatality rates:

HOSPITAL TREATMENT OF DIARRHEA:

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AGE SPECIFIC CASE FATALITY RATE 1982.

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Age	Total cases	Deaths	(%)
0-1 month	109	17	15%
1-5 months	307	37	12%
6-11 months	205	18	8%
1-2 years	110	19	13%
2-5 years	26	4	13%
Total	757	95	12%

HOSPITAL TREATMENT OF DIARRHEA:

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PROPORTION OF CASES AND DEATHS BY AGE.

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Age	Proportion of cases	Proportion of deaths
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0-1 month	13.4%	18%
1-5 months	38%	39%
6-11 months	25%	19%
1-2 years	17%	20%
2-5 years	3%	4%

Over 51% of cases of diarrhea and severe dehydration and 56% of the deaths occur in children under 6 months of age. A possibly related factor is that among mothers of infants 0-3 months of age living in the neighborhoods of Boston and Brooklyn, 92% were using the bottle.

Over 92% of the mothers were breast feeding but only 8% were

using breast milk as the only food for the baby (see appendix 3).

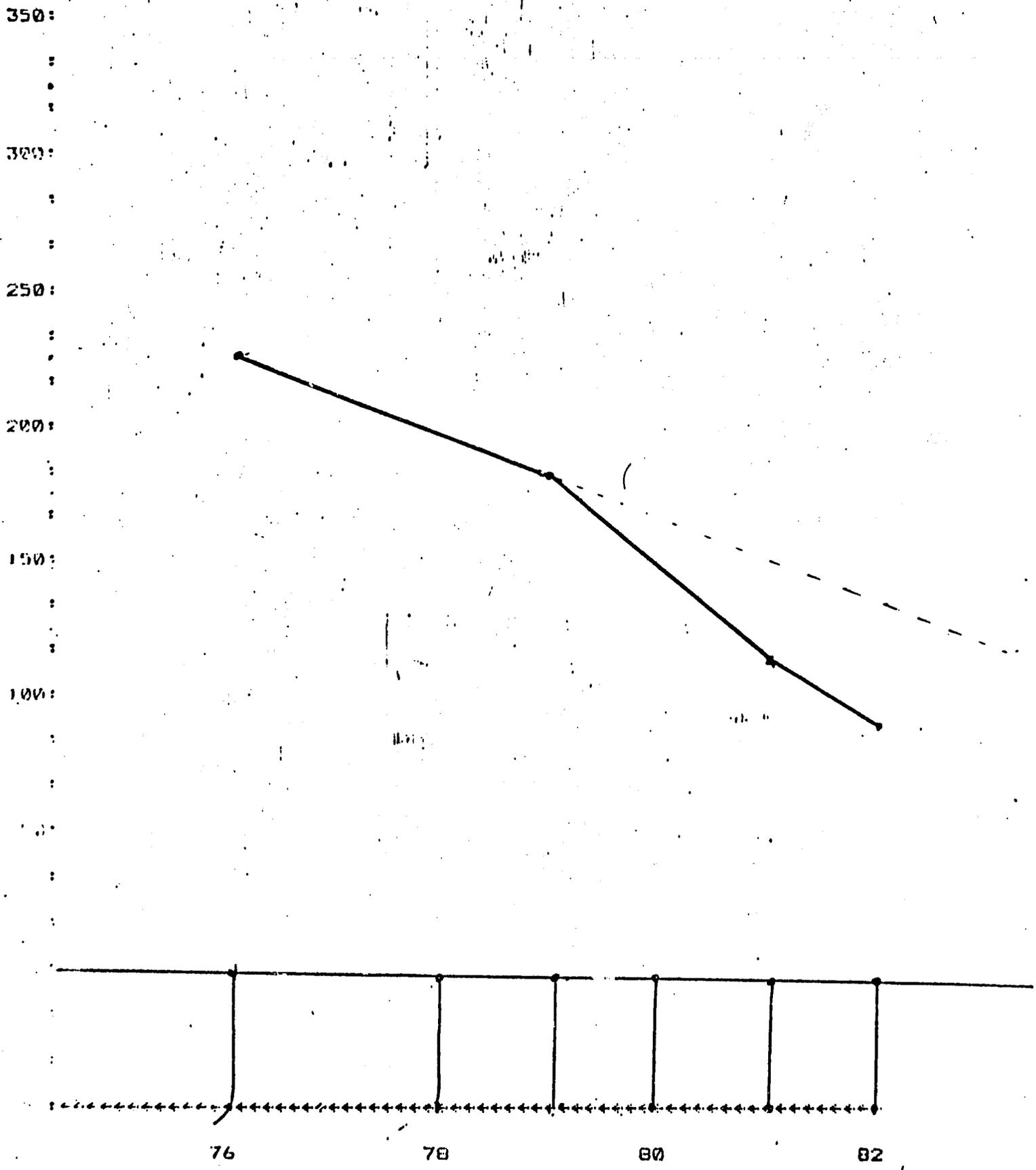
e.- evolution of the infant mortality rate

The Cite Simone demographic surveillance program is heavily dependent on the work of community collaborators. These are 100 collaborators serving the neighborhoods of Boston, Brooklyn, Wharf, Linto, Trois BEBE and PCs. The neighborhoods of Ileme Cite Simone, Cite Jean Claude, Cite Bennet and certain sectors of PCs remain without an effective surveillance program and demographic data from these areas are not completely reliable.

The neighborhood of Brooklyn has been used to keep track of the evolution of the infant mortality rate because it maintains an excellent record system which contains several interval checks.

A study carried out in 1980 provided retrospective data on infant mortality rate in Brooklyn. The following data was obtained:

With a registered infant mortality rate of 235 in 1976, of 184 in 1979, of 114 in 1981 and 84 in 1982, the infant mortality rate curve for recent years can thus be illustrated:



Evolution of infant mortality rate Cité Simone 1976-1982

This shows a continuous decline over the last five year with perhaps a slow-down in the rate of fall for the last year.

A number of factors may have contributed to this drop. First an increased percentage of infants in Cite Simone 0-1 year and 1-4 year of age, have been monitored by the Complex for nutritional status.

Second, the successful intergration of the traditional birth attendants (TBAS) into the program of the Complex has allowed the services to reach 71% of the pregnant women.

Third, the overall reduction in the incidence of neonatal tetanus has clearly contributed. Deaths from neo-natal tetanus have all but been eliminated in Cite Simone. In 1982, 2 deaths were reported. In 1983, no deaths have been reported to date. At least, 55% of all pregnant women have received complete protection and over 85% have received partial immunization prior to birth. In 1979, the incidence of neo-natal tetanus was 120/10,000 livebirths; in 1982, it was 7/10,000 livebirths.

A fourth factor possibly contributing to the reduction in infant mortality is that the Complex is seeing an increasing

number of cases of de-hydration each year. We assume this represents a larger portion of the total number of cases in Cite Simone. Of those cases seen, clearly a number of diarrhea related deaths have been averted. To the extent that nutrition rehabilitation also occurred in the same the overall number of deaths in the population were reduced.

C. NUTRITION.

The objective of the nutrition program is to improve the nutritional status of the population, particularly children 0 to five years of age, to reduce nutrition related child mortality, to decrease the incidence and prevalence of xerophthalmia and nutritional anemia.

Strategies have been applied at the community level and at the level of health centers and hospital and include:

nutrition education carried in the home by community agents and visiting nurses and also provided at the "Foyers de Demonstration", health centers and hospital.

--growth monitoring of children 0 to 5 years of age

targeted food supplementation for malnourished children

--nutritional rehabilitation for severely malnourished children

--follow up of children discharged from the nutrition rehabilitation center

--income generation for the mothers of several

malnourished children.

The prevalence of malnutrition does not appear to have changed much between 1982 and 1983. A review of nutritional surveillance data from early 1982 and early 1983 provides the following information:

Normal	1982		1983	
	1892	37%	2138	36%
M1	2205	43%	2379	40%
M2	957	18.5%	1310	21.1%
M3	75	1.5%	174	2.9%
	←←←←←←←←		←←←←←←←←	
	5129		6001	

The major obstacle to the maintenance of a good nutritional status is the dismal economic picture prevalent in Cite Simone and the widespread use of bottle feeding. Nutritional status has a profound impact on child mortality. It is the diagnosis made with the highest frequency among at hospital patients although very few patients are admitted simply because they are severely malnourished (such cases are treated at

the nutrition rehabilitation center).

Furthermore, nearly 98% of all diarrhea related deaths occur in children with malnutrition.

D. TUBERCULOSIS CONTROL.

The objective of the program is to reduce the incidence and prevalence of the disease and to reduce the case fatality rate of the disease.

The tuberculosis program is carried out at several levels:

← identification of suspected cases through home visits

← referral, treatment and follow up of active cases at the TB clinic

← prevention through BCG vaccination, particularly of infants

Over 2200 individuals were vaccinated with BCG in 1982 including 1500 infants. The number of active cases currently under treatment is 1576 giving a prevalence rate of 2%. There are 350 new cases a year (incidence of 400/100,000 per year).

E. general services.

The general health needs of the population are met through special services provided at the 4 major health centers. Special services including internal medicine, pediatrics,

obstetrics gynecology, general and pediatric surgery, dentistry and ophthalmology are provided. Ancillary services such as laboratory, radiology, pharmacy are also available.

Physicians and other health personnel are available for general and emergency consultations, for minor and major surgery, for complicated obstetrical care and for the most of the health needs of the population.

During the year 1982, the Complexe's centers received over 114,000 patient visits and there were 2750 hospital admissions (a list of discharge diagnoses noted during that period is provided in the appendix).

FUTURE STRATEGY.

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There is still a lot of work to be done to improve the health status of the residents of Cite Simone. After analyzing the results of both evaluations, the Complexe has decided to place emphasis on the following programs over the next five years.

1. There will be a specific approach to the high risk infant. It has been shown that several factors contribute more than others to the risk of infant mortality in Cite Simone. First, a low birth weight and second and third degree malnutrition. The Complexe will take several options to try to reduce the overall risk and deaths in this population. The first objective will be to reduce the proportion of children born with low birth weight.

2. To prevent children in first and second degree malnutrition to fall in the third degree category the actions will include but not be limited to: 1) the identification and tracking of this high risk group among the 100,000 residents at both the community and clinic level; 2) nutrition supplementation for pregnant women; 3) identification and treatment of mothers with any signs of infections during pregnancy; 4) special education of the mothers at the hospital maternity and at the center for nutritional education at the prenatal clinic. Special programs for mothers and children with low birth weight and 5) a special program for children with second and third degree malnutrition. The special program will include, at minimum, monthly monitoring, an emphasis on education and breastfeeding, oral rehydration and family planning. It is believed that by putting this special emphasis on the high risk infant that the Complexe will be able to provide additional impact on infant mortality of the population as a whole.

3. Immunization. Overall, the next five years the Complexe intends to restructure the protocol regarding its overall immunization approach. The goal will be to achieve 75% coverage of the target population for all children under five years of age and pregnant women. In the past, the supply of vaccine was one of the factors limiting coverage.

4. The TB program would be enhanced through the recent addition

of an X-Ray machine at the hospital through the ability to take chest X-Rays, improved surveillance of the TB patients will be achieved.

A more detailed strategy for the next 5 years is being defined in the context of a master plan for the overall program of the Complex for the next 10 years.

APPENDIX I

DEMOGRAPHIC PROFILE OF CITE SIMONE

I. PURPOSE OF THE DEMOGRAPHIC SURVEY.

Since its organization in 1975, the Medico Social Complexe has sought to obtain a valid definition of its target population in order to make possible an evaluation of the coverage and impact of its programs. Between 1978 and 1981 several fractional censuses were carried out, first in the area of Brooklyn, then in the area of Boston and finally in 1981 of the remaining Cite Simone neighborhoods traditionally served by the Complexe. Some areas therefore had had no census since 1978. While the demographic surveillance program was supposed to keep demographic data up to date, there was no guarantee that it had former residents who had moved out of Cite Simone kept their old family registration forms in order to continue benefiting from the services. New residents were arriving at a rate of 300 families a month; whether they were all being properly registered was a question. The demographic survey provided an opportunity to up date the approximately 22000 family records of the Complexe. In addition, it provided an additional opportunity to obtain indicators which could be used for an evaluation of some Complexe programs.

II. DIVISIONS OF CITE SIMONE.

The area referred to here as Cite Simone extends from the Hasco property in the South to the "Double Harvest plantation to the North. It is limited in the West by the sea and in the East, by a line of factories located between the airport road and the National Highway.

The area traditionally served by the Complexe includes 3 zones divided into 9 neighborhoods:

- | | |
|-----------------------|-----------------------------------|
| Boston zone | : neighborhoods of Boston |
| | PCS |
| | Trois BEBE |
| Brooklyn zone | : neighborhoods of Brooklyn |
| | Wharf |
| | Lintho |
| Cite Jean Claude zone | : neighborhoods of Cite Jn Claude |
| | Ileme Cite Simone |
| | Cite Bennett |

Each neighborhood is divided into sectors. A sector, depending on its population, may have one or more community collaborators assigned to it.

III. METHODOLOGY.

The census unit for the demographic survey was the area served by one community collaborator. Each collaborator served as enumerator for his area. In zones with no collaborator (Cite Jean Claude), special enumerators were hired for the task.

The vast majority of collaborators were cognizant of survey techniques as they had participated in several previous such surveys. A special orientation session was organized to explain the protocol of the demographic survey; this was supplemented by practice sessions.

The steps involved in the survey included the following:

1. orientation of enumerators
2. practical exercise on the field
3. final review session
4. collection of data
5. first level correction by field supervisor

6. 2nd level correction by zone coordinator
7. 3rd level correction by survey assistant
(all records with errors and omissions were given back to the enumerator for revision)
8. tabulation of data
9. review of records filed against a listing of all houses in Cite Simone. From previous censuses, and from surveillance work of community worker, a file of all existing houses, with their number, is available for each sector of Cite Simone. During this phase, all known houses for which census information was lacking were identified and a list, per sector, of all houses made available to enumerators to allow them to complete their survey. This in effect created a second round of data collection.
10. secondary data tabulation
11. data analysis.

IV. RESULTS.

A. Population.

There were 82191 persons in the 9 neighborhoods surveyed, with the following distribution:

Name	Code	Population
Boston	1	23,905
Brooklyn	2	17,788
Wharf	3	2,685
Lintho	4	5,030
Cite Bennett	5	1,310
Trois BEBE	6	10,982
Cite Jn Claude	7	2,645
PCS Pele	8	6,935
Ileme Cite Simone	9	8,944
Not classified		1,967

It is a young population with 57% of the population under 25 years of age and with a slight preponderance of women (52% Vs 48%). A correction factor of 15 % should be applied to this figures in order to obtain the total population missed by the census.

B. Occupation.

a. School age population.

Of children 5 to 10 years of age, 72% are at school. The corresponding number for children 10 to 15 is 74%, and 26% for youngsters 15 to 19 years of age. Globally 57% of children 5 to 19 are attending school.

b. Employment.

Only 13% of the adult population (20 and over) is reporting a regular salaried factory related job. The remainder attempts to make a living through trade (27%), sewing (5%), construction work (4,5%) etc. At the time of the census 22% reported no source of income.

c. Marital Status.

Of persons over the age of 15, 27% reported themselves not to be involved in union; 11% reported that they were married; and the remainder were in some kind of relationship.

d. Home Environment.

House survey in Brooklyn showed that of 4177 houses, 71% had a tin roof and cement floor. Most the remainder had a tin roof and a dirt floor. 52% of families mentioned that a latrine was available to them (48% said no latrine was available).

APPENDIX II

SERVICE STATISTICS (1982)

These were over 114,000 patient visits to all services of the Complex, including surveillance visits, ambulatory visits for curative care and hospital emergency and referral visits.

These visits were distributed over the numerous clinics of the Complex: surveillance, nutrition, pediatrics, medicine, surgery, gynecology, pre and post natal, ophthalmology, emergency, tuberculosis and dental.

Of note are the 3928 visits to the TB clinic and the 3130 visits to the dental clinic.

There were 54803 injections and 8465 dressings. Over 22000 laboratory examinations were performed as well as more than 2000 XRay examinations.

More than 20000 doses of piperazine citrate were administered, as well as 2618 capsules of Vit A and 20000 doses of vaccines.

Patient visits	114.013
Laboratory exams	22.087
X Ray exams	2.034
Dental exams	3.130
Injections	54.803
Dressings	8.465
Vaccination doses	22.433
Hospital admissions	2.750
Pre-natal visits	8.594

APPENDIX 3.

CITE SIMONE IN NUMBERS

Total Population	100,000
Registered Population	82,191
Crude birth rate	40/1000
Total number of births	3,286
Infant mortality rate (Brooklyn)	84/1000
Neonatal mortality rate	27/1000
Stillbirth rate	47/1000
Prevalence rate of tuberculosis	2%
Incidence of tuberculosis(per year)	400/100,000

Diarrhea institutional rehydration (0 to 5 yr)(cases) 2682

case fatality rate, institutional cases of diarrhea 3.5%

Prevalence of severe malnutrition (Gomez III) 2.9%

VACCINATION

←proportion of pregnant women completely vaccinated
with tetanos toxoid at the time of delivery
(Brooklyn) 55%

←proportion of children 1 to 4 completely vaccinated

(Brooklyn)	DPT	37%
	Polio	27%
	Measles	8.6%
	BCG	85%

VACCINATION COVERAGE.-

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BCG	DITEPER				POLYO	
	0	1	2	3	2 doses	3 doses

85%	15%	38%	10%	37%	10%	27%

MATERNAL HEALTH

←proportion of hospital births 68%

FAMILY PLANNING

←proportion of women at risk using a method of
contraception 6%

SANITATION

←proportion of households with a latrine 52%

BREAST FEEDING

BREAST FEEDING

←proportion of mothers of infants 0 to 3 months of
age breast feeding

92%

←proportion of mothers breast feeding exclusively

13%

SERVICE STATISTICS

Outpatient visits	114013
Laboratory exams	22087
XRay exams	2034
Dental exams	3130
Injections	54603
Dressings	8465
Vaccination doses	22433
Hospital admissions	2750
Pre natal visits	8594

APPENDIX 4

INFANT FEEDING PATTERN IN CITE SIMONE

INTRODUCTION.-

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For some time, the generalised use of infant feeding bottles, has been a source of great concern for those interested in maternal and child health. Throughout much of the world, bottlefeeding has been progressively supplanting breastfeeding. This decline of breastfeeding is greater in underdeveloped countries, those very communities which require the benefit of breastfeeding the most.

This change in feeding patterns has had negative implications for infant mortality and morbidity. Bottlefeeding presents economic and health disadvantages especially for third world countries.

When formula feeding is attempted under the harsh economic and sanitary conditions prevailing in many third world settings, it results in diluted feedings, use of contaminated water and unclean bottle. These, in turn, may lead to diarrheal diseases, malnutrition and even death. In Haiti, Berggren et al (1982) estimated that an adequate supply of cow's milk to feed an infant would absorb half the income of the average poor working class women in Port au Prince. But even if the need for a greater emphasis on Breastfeeding as a mean of economically supplying the

nutrients required by the young infant is well appreciated, there are still difficulties in identifying the interventions best suited to combat the problem. It is therefore conceivable that a systematic analysis of current beliefs, practices and constraints should be carried out and will be of great importance in the design of a comprehensive approach to the bottlefeeding problem.

STATEMENT OF THE CONSTRAINTS AND SUPPORTING LITERATURE.--

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The last decade has seen a rise in the economic pressures impinging on both rural and urban families. The price of both food and fuel has risen while purchasing power has remained stable or even decreased. In their follow-up study of health and food practices in a rural village, Alvarez and Murray (1981) found that women in 1980 were no longer able to remain economically inactive following delivery for the 18-month period which the investigators had observed to be the norm in 1972.

Not being at all customary to take infants to market in Haiti, (a practice common in West Africa but stamped out of the Haitian repertoire, according to some observers, through past government regulations), women had introduced two practices:

1) early weaning, and 2) bringing their unweaned infant with them to the city in an attempt to combine breastfeeding with their regular trading activities.

But this practice more often than not resulted in eventual

bottlefeeding and early weaning. The labor-intensive, competitive nature of female trading in Haiti is difficult to combine with breastfeeding.

A rapid urbanization process is taking place in Haiti. Many of the migrants are women. According to World Bank(1976) figures, in Port au Prince, females exceed males by 33%. This exodus of women to the cities is a practice World Bank experts associate with the decline in breastfeeding and rise in infant formula use. Urbanization also leads to rapid social change. The uprooting of people, the reduction in the extended family resources and supports characteristic of village life, facilitate the break with past traditions and the incorporation of new practices. In addition, part of the urbanization mindset is precisely the incorporation of new behaviors and the leaving behind of old traditional practices. In many instances, people have associated the early weaning with the industrialization process where women no longer have the time to spare to breastfeed their child.

In the 1980 Baseline Survey, Berggren as identified some characteristics of mothers more at risk of introducing bottle early. They were:

- 1) young mothers.
- 2) mothers in first and second pregnancy.
- 3) factory workers.

- 4) better educated women.
- 5) higher socio economic status.

These informations are very important if someone is to try to promote exclusive breastfeeding in such a setting. Therefore, the need to further clarify and help pinpoint the most vulnerable mothers was felt necessary before any program should be implemented.

RESULTS.-

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From the Census results, 1256 women working in factories from approximately a total of 10.000 women living in Cite Simone were identified. An approximately equal number of women (1325) not working in factories were also selected. From these 2 groups a total of 831 women had a child whose age was less than 36 months. Feeding patterns for these 831 mothers are therefore presented here.

AGE DISTRIBUTION.-

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33.5% of mothers of a child 0-36 month of age were in the 25-29 years age group and over 60% were less than 30 years of age (Table 1). Table 2 shows the distribution by age and place of

work. Women working at home tend to be older than women working in factory. 60% of women working in factory were between the age of 20-29, while only 43% of women working at home were in this age group.

MARITAL STATUS.-

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In all groups of women, 47% of them were "Place"; Table 3 shows the distribution by marital status in both groups of women. Approximately 21% were categorised as "Place" and "Separe", which means that they had been living for a while with a man but at the time of the Census they were separated and an average of 21% were regularly married.

PARITY.-

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Table IV shows the parity distribution by place of work. 28% of factory workers had no child against 21% for non factory workers. 76% of factory workers had less than 3 children while 65% of non factory workers had less than 3 children. The Median parity was 2 for the factory group and 3 for the non factory group.

FEEDING PATTERNS.-

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Among the 831 children age 0-36 months, 15% were bottlefed exclusively and only 4.8% were breastfed exclusively. Table V shows the type of feeding practiced by all 831 mothers.

In the overall, factory workers tend to breastfeed their children slightly less and use modestly more exclusive bottlefeeding. Table 6 shows the feeding patterns among all mothers by place of work, regardless of age. Only 3.9% of children of mothers working in factory were breastfed exclusively against 5.4% for children whose mothers work at home. Conversely, 19.6% of children in the factory group were feed with bottle exclusively against 12.9% for mothers working at home.

Table 7 shows the percentage using the breast by age group among children 0-36 months of age by place of work of mother: There is no significant difference between the 2 groups up to 15 months of age. But by 18 months of age, 50% was still using the breast in the non factory workers group, against 29.3% in the factory group.

There was a significant difference for exclusive bottle usage among the two groups: Factory workers tend to introduce exclusive bottlefeeding earlier than non factory workers. Table 8 shows the exclusive bottlefeeding by age group of children for the two groups.

5.7% of mothers which parity equals to one use the breast

exclusively and this stays relatively the same as parity increases (Table IV).

However, mothers tend to give more solid foods to their child as they (the mothers) are getting older. While only 10% of mothers 15-19 years of age feed their child with solid foods, this percentage gets to 40% for mothers 45 and over (Table X).

DISCUSSION.-

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There is no doubt that in general in Cite Simone the early introduction of bottle is still a major problem. In a setting where the income of a family is merely enough for this family to survive, more than 42% of children 0-36 months of age are not being breastfed at all and more than 66% receive the bottle either as a sole source of feeding or as a supplement. This clearly defines the role of a breastfeeding campaign in that area.

The results also confirm that first born children were more at risk to receive the bottle than children of later pregnancies. In total, 68% of first born children 0-36 months of age were bottlefed in contrast to 55% and 51% respectively for second born

children and third born children. These suggest that in prenatal care a special attention should be given to these mothers that are pregnant for the first time.

In contrast to the Berggren findings, the study did not show any significant differences among factory workers for the first 15 months of life of the child. The major difference appears at 18 months of age where 50% of mothers not working in factories were still breastfeeding and only 29% in the other group. The same pattern was observed in regard to the exclusive bottlefeeding where by 18 months of age 36% of mothers working in factory were already bottlefeeding exclusively against 19%.

This might suggest that although these mothers know the role of breastfeeding, they tried to hold it to a certain point where it became merely impossible to continue.

Overall, the results confirmed earlier studies showing the need for an intensive breastfeeding promotion campaign. It supports also the idea that breastfeeding itself is not essentially the problem, but rather the early introduction of bottle. The need to identify specific target groups such as described earlier is confirmed, but it is very important to understand that any program should not be restricted only to them. These groups might be slightly more at risk than others but in general the problem concerns the overall population.

TABLE 1 -- AGE DISTRIBUTION OF MOTHERS OF 0--36 MONTHS OLD CHILD

IN CITE SIMONE.-

AGE	N.	%
15 - 19	(20	(2.4%
20 - 24	(217	(26.1%
25 - 29	(278	(33.5%
30 - 34	(178	(21.4%
35 - 39	(80	(9.6%
40 - 44	(28	(3.4%
45 - 49	(22	(2.6%
50 - 54	(8	(1.0%
TOTAL	(831	(100%

TABLE II - DISTRIBUTION BY AGE AND PLACE OF WORK OF WOMAN WITH

A CHILD 0-36 MONTHS OF AGE IN CITE SIMONE.--

AGE/PLACE OF WORK	FACTORY	HOME	MARKET	OTHER	NOT RE-- PORTED	TOTAL
15 - 19	6 (1.4)	4 (4.3)	0 (0)	3 (2.3)	7 (3.7)	20 (2.4)
20 - 24	106 (25.6)	15 (16.3)	4 (50.0)	26 (20.2)	66 (35.1)	217 (26.1)
25 - 29	147 (35.5)	25 (27.2)	3 (37.3)	47 (36.4)	56 (29.8)	278 (33.5)
30 - 34	90 (21.7)	28 (30.4)	0 (0.0)	27 (20.9)	33 (17.6)	178 (21.4)
35 - 39	41 (9.9)	11 (12.0)	0 (0.0)	15 (11.6)	13 (6.9)	80 (9.6)
40 - 44	10 (2.4)	4 (4.3)	1 (12.5)	5 (3.9)	8 (4.3)	28 (3.4)
45 - 49	8 (1.9)	4 (4.3)	0 (0)	5 (3.9)	5 (2.7)	22 (2.6)
50 - 54	6 (1.4)	1 (1.1)	0 (0)	1 (.8)	0 (0)	8 (1.0)
TOTAL	414	92	8	129	188	831

TABLE III: DISTRIBUTION BY MARITAL STATUS OF MOTHERS

OF A 0-36 OLD CHILD IN CITE SIMONE.--

	FACTORY WORK =====	NON FACTORY WORK =====
PLACE / SEPRE	21.4%	20.1%
CELIBATAIRE	7.9%	2.9%
PLACE	47.3%	47.8%
MARIE	21.5%	24.5%
MARIE / SEPRE	1.0%	3.0%
VEUVE	.3%	.3%
OTHER	.3%	1.0%

TABLE IV: DISTRIBUTION BY PARITY AND PLACE OF WORK OF WOMEN

IN CITE SIMONE.--

PLACE OF WORK:	FACTORY	NON FACTORY
PARITY		
0	28.7	21.7
1	28.0	23.9
2	19.5	19.3
3	10.0	14.6
4 and over	13.8	20.5

TABLE V - FEEDING PATTERN OF 841 CHILDREN 0-36 MONTHS OF AGE

IN CITE SIMONE.--

TYPE OF FEEDING	N	%
BREAST EXCLUSIVE	41	4.9%
BOTTLE EXCLUSIVE	125	14.8%
SOLID FOODS EXCLUSIVE	236	28.1%
MIXED FEEDING	439	52.2%
TOTAL	841	100.0%

TABLE VI- FEEDING PATTERN OF 841 CHILDREN 0-36 MONTHS OF AGE

IN CITE SIMONE BY PLACE OF WORK OF MOTHERS.--

PLACE OF WORK	FACTORY	HOME	OTHER	NOT REPORTED	TOTAL
FEEDING TYPE					

BREAST					
EXCLUSIVE	16	5	4	16	41
	(3.8)	(5.4)	(2.9)	(8.3)	(4.9%)
BOTTLE					
EXCLUSIVE	82	12	12	19	125
	(19.6)	(12.9)	(8.8)	(9.8)	(14.8%)
SOLID FOOD					
EXCLUSIVE	114	26	47	49	236
	(27.3)	(28.0)	(34.3)	(2.9)	(28.1%)
MIXED FEEDING	206	50	74	109	439
	(49.3)	(53.8)	(54.0)	(56.5)	(52.2%)
TOTAL	418	93	137	193	841
					(100%)

TABLE VII: PCT USING BREAST BY AGE GROUP AMONG CHILDREN

0-36 MONTHS OF AGE BY PLACE OF WORK OF MOTHERS.--

PLACE OR WORK	FACTORY WORKERS		NON FACTORY WORKERS	
AGE GROUP (MONTH)	N		N	
1 MONTH	13	92.3%	8	100%
2 MONTHS	22	95.5%	20	100%
3 MONTHS	14	100.0%	18	83.3%
4-6 MONTHS	51	90.0%	62	90.5%
7-9 MONTHS	46	73.3%	45	88.9%
10-12 "	43	76.8%	48	71.1%
13-15 "	42	52.3%	30	57.1%
16-18 "	41	29.3%	21	50.0%
19-21 "	24	20.8%	25	44.8%
22-24 "	36	13.5%	29	9.5%
25-27 "	23	4.2%	40	11.8%
28-30 "	22	4.5%	21	10.3%
31-33 "	22	4.5	20	2.9%
34-36 "	15	0%	18	0%
	←←←←←		←←←←←	
	414		395	

TABLE VIII: PCT USING EXCLUSIVE BOTTLEFEEDING AMONG MOTHERS

OF 0-36 MONTHS OF AGE CHILDREN IN CITE SIMONE BY PLACE OF WORK

OF MOTHERS AND AGE GROUP OF CHILD.--

PLACE OF WORK (N)	FACTORY WORKERS (N)	NON FACTORY WORKERS
AGE GROUP		
1	13 7.7%	6 0.0%
2	22 4.5%	20 0.0%
3	14 0%	18 11.1%
4-6	51 8.0%	62 9.5%
7-9	46 20.0%	45 8.3%
10-12	43 16.3%	48 15.8%
13-15	42 33.3%	30 38.1%
16-18	41 36.6%	21 19.0%
19-21	24 33.3%	25 10.3%
22-24	36 24.3%	29 11.9%
25-27	23 29.2%	40 11.8%
28-30	22 18.2%	21 0%
31-33	22 13.6%	20 5.7%
34-36	15 0%	18 0%
	414	395

TABLE IX: PCT DISTRIBUTION BY PARITY AND TYPE OF FEEDING.-

PARITY	BREAST (EXCL)		BOTTLE (EXCL)		MIXTE	
	=====		=====		=====	
	N	PCT	N	PCT	N	PCT
1	(15)	5.7	(46)	17.5	(34)	51.0
2	(15)	6.9	(33)	15.3	(87)	40.3
3	(8)	5.0	(26)	16.4	(56)	35.2
4	(2)	2.0	(20)	12.0	(92)	50.0

TABLE X: PCT DISTRIBUTION BY AGE OF MOTHERS

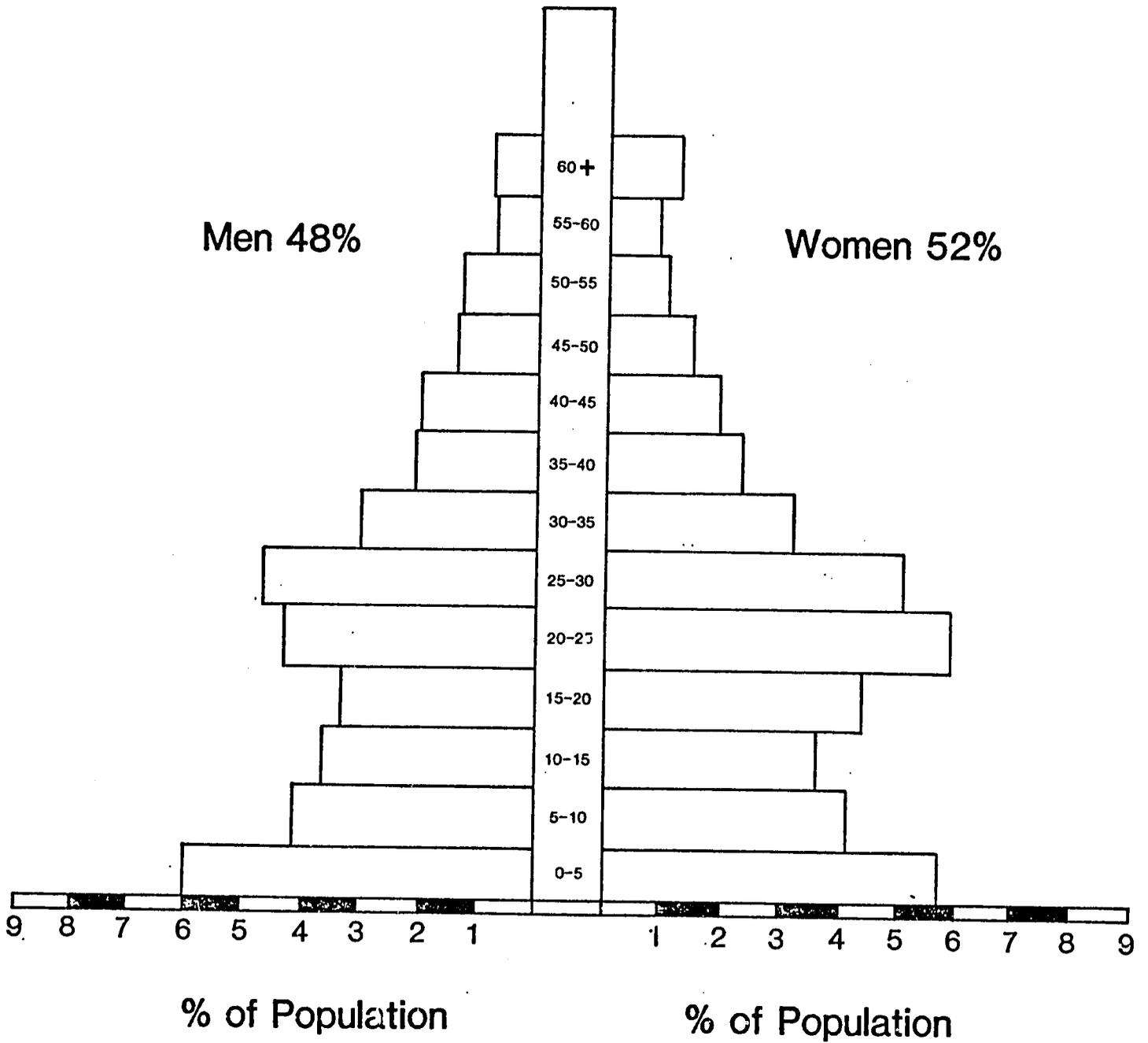
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AND TYPE OF FEEDINGS.--

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	BREAST EXCL.	BOTTLE EXCL.	MIXTE	SOLID FOOD
	=====	=====	=====	=====
AGE OF				
MOTHERS				
=====				
15-19	10	15	55	10
20-24	4.6	15.7	51.2	22.1
25-29	6.1	15.5	45.7	26.3
30-34	3.4	16.3	41.6	29.8
35-39	3.8	11.3	35.0	37.5
40-44	0	10.7	42.9	39.3
45 and over	6	12.0	30.0	50.0

CITÉ SIMONE



AGE PYRAMID

SOURCE: 1982 CENSUS

50'

