

PN - ABT 183

Women and Infant Nutrition Field Support Project (WINS)

91229

**A Rapid Assessment of Infant
Growth Faltering and Capacity for
Community-Based Responses
in Uganda**

March 1993

SUBMITTED BY:

**Charles Teller, WINS Team Leader
The Pragma Corporation**

**John Mudusu, Medical Nutritionist
Ministry of Health**

**Charlotte Neumann, WINS Consultant
School of Public Health
University of California, Los Angeles**

**Louise Sserunjogi, Nutritionist
CHDC/Makerere University**

**Ursula Wangwe, Nutritionist
Ministry of Health**

**Imelda Zimbe, Nutritionist
IPH/Makerere University**

**Education Development Center, Inc.
1250 24th Street, N.W., Suite 300
Washington, DC 20037**

This assessment was funded by the U.S. Agency for International Development, Bureau for Research and Development, Office of Nutrition Contract No. DAN-5117-C-00-0015-00 with Education Development Center, Inc./WINS Project and through a subcontract with The Pragma Corporation.

TABLE OF CONTENTS

Acronyms	i
List of Tables and Figures	iii
Acknowledgments	iv
Executive Summary	v
I. Introduction and Background	1
II. Assessment Methodology	2
A. Site and Case Selection	5
B. Assessment Limitations	8
III. Results: Prevalence of Infant and Maternal Malnutrition	9
A. Infant Malnutrition	11
B. Maternal Malnutrition	12
C. Low Birth Weight	13
IV. Determinants of Infant Growth Faltering	14
A. Case Control Study: Methods and Major Findings	15
B. Focus Group Discussions, Group Meetings, Multiple Observations, Key Informant Interviews: Major Findings	20
V. Institutional Capacity and Entry Points for Community-Based Nutrition Activities	25
A. Growth Monitoring/Promotion (GMP)	25
B. CDD Home Visits	27
C. Nutrition Education	27
D. Maternal Nutrition	28
E. Promising Entry Points for Linking the Community with the Formal Health Care Sector	29
VI. Practical Strategies/Recommendations for Integrating Nutrition into Maternal Child Health (MCH) and Community-Based Health Care (CBHC)	31
A. Strengthening Nutrition at the District and Community Levels	31
B. Strengthening Nutrition at the National Level	32

Annexes 36

Annex 1: Conceptual Framework for Nutrition, Uganda

Annex 2: Methods and Sample Sizes

Annex 3: Selection Instrument

ACRONYMS

AAO	-	Assistant Agriculture Officer
CB-GMP	-	Community Based Growth Monitoring Promotion
CBD	-	Community Based Distribution (contraceptives)
CBHC	-	Community Based Health Care
CDA	-	Community Development Assistant
CDD	-	Control of Diarrhoeal Diseases
CDO	-	Community Development Officer
CHDC	-	Child Health and Development Centre
CHW	-	Community Health Worker
DHMT	-	District Health Management Team
DMO	-	District Medical Officer
EPI	-	Expanded Programme of Immunisation
GM/P	-	Growth Monitoring/Promotion
GOU	-	Government of Uganda
HA	-	Health Assistants
HI	-	Health Inspectorate
HIS	-	Health Information System
HO	-	Health Officers
IDD	-	Iodine Deficiency Disorder
IPH	-	Institute of Public Health
IUGR	-	Intra-Uterine Growth Retardation
LBW	-	Low Birth Weight
MA	-	Medical Assistants
MCH	-	Maternal Child Health
MLG	-	Ministry of Local Government
MOH	-	Ministry of Health
MUAC	-	Mid Upper Arm Circumference
NFNC	-	National Food and Nutrition Commission
PAPSCA	-	Programme for the Alleviation of Poverty & Social Cost of Adjustment (World Bank)
RAP	-	Rapid Assessment Procedures
RC	-	Resistance Council
RUWASA	-	Rural Water And Sanitation
SHEP	-	School Health Education Project
SIDA	-	Swedish International Development Agency
SWIP	-	South West Integrated Programme
TBA	-	Traditional Birth Attendants
TOT	-	Training of Trainers
UCLA	-	University of California, Los Angeles
UDHS	-	Uganda Demographic Health Survey
UNICEF	-	United Nations Children's Fund

- USAID** - **United States Agency for International Development**
- VHC** - **Village Health Committee**
- VHW** - **Village Health Work**
- WINS** - **Women Infant Nutrition Support**

LIST OF FIGURES

Map of Uganda: Selected Assessment Areas	3
Figure 1: WINS RAP Methods: Conceptual Framework	4
Figure 2: Types of Growth Patterns	5
Figure 3: Levels of Stunting, Primary 1 (ages 5 to 8), By Sex, Selected Schools, Rukungiri District, Sept. 92	9
Figure 4: Stunting and Underweight Children, <18 Months, EPI Clinic, Bugangari, Rukungiri District	10
Figure 5: Percent Underweight, September 1992, Some MCH/EPI Sites, Iganga and Rukungiri	11
Figure 6: Socioeconomic Characteristics, Case History Households, 1991-2	16
Figure 7: Main Determinants of Young Child Growth Patterns (Positive and Negative), 1991-2	18
Figure 8: Young Children's Growth Patterns by Household Food Security and Intra-household Nutrition Management: A Matrix	19
Figure 9: Growth Pattern of Young Children by Who Takes Care of Child While Mother is Away	22
Table 1: Maternal Nutritional Status, Rukungiri District	13

ACKNOWLEDGMENTS

The team would like to express their appreciation to numerous individuals who helped make the WINS Uganda Nutrition Assessment possible: Joan Larosa, USAID/Kampala; Susan Anthony, AID/Washington; Bibi Essama, EDC/WINS, Washington; Wellstart and MotherCare colleagues, Washington and Kampala; Ivonne Rizzo, UNICEF/Kampala; Dennis Lwamafa, MOH/Nutrition, Entebbe; Jessica Jitta, Tom Barton and their support staff, CHDC/Makerere, Kampala; Dr. Hitimana, SWIP/Mbarara; Ronnie Rwamanja, SWIP/Rukungiri; James Akatwijuka, DMO/Rukungiri and his staff; Dr. James Baguma, DMO/Iganga and his staff; and Esther Kazilimani, Pragma.

EXECUTIVE SUMMARY

Over half of the young children in Uganda have chronic undernutrition, one of the highest levels in the world. Steep declines in adequate growth begin in the first year of life. The new Uganda National Food and Nutrition Policy recommends further study of this alarming situation before developing appropriate responses. Moreover, the new Ministry of Health plan proposes to expand Primary Health Care and mobilization of Community-Based Health Care as strategies to prevent illness and malnutrition.

The purposes of the WINS assessment were to:

- conduct a rapid, in-depth analysis of the infant growth and weaning situation; and
- identify feasible approaches for strengthening the links between the formal health care delivery system and the community.

The WINS assessment team was composed of two external and four Ugandan nutrition experts. They worked for three weeks in September, 1992 in both Kampala and in two districts, in collaboration with District Health Management Teams. The assignment was carried out in coordination with the Child Health and Development Centre, Makerere University and the Nutrition Division of the Ministry of Health.

The WINS methodology consisted of rapid assessment procedures (RAP) for nutritional analysis and programme evaluation at multiple levels: national, district, sub-county, parish, community and household. The two districts selected for in-depth study were among the most malnourished areas in the country: the Eastern district of Iganga and the Southwestern district of Rukungiri. Several qualitative and quantitative methods were implemented with the assistance of district counterparts and members of the Resistance Committees at the 1 through 3 levels:

- anthropometric measurements taken on nearly 700 individuals, including mothers, infants and young school children;
- in-depth case histories on 32 households with children under two;
- seven formal focus groups: three with health workers, two with mothers, and two with fathers
- observations at 26 health service delivery points;

- eight semi-structured group meetings; and
- numerous key informant interviews.

Two crucial aspects of the RAP are immediate feedback of the information to potential users in order to generate dialogue for better interpretation and mobilization for planning and training of Ugandan staff in the RAP methodology from planning to analysis and interpretation of findings.

MAJOR FINDINGS

The main findings from the WINS assessment can be summarized as follows:

LEVELS OF UNDERNUTRITION

We confirm the results of the 1988-89 Ugandan Demographic and Health Survey (UDHS) which showed very high levels of moderate and severe stunting in rural young children. Much of the growth faltering is initiated between four to six months of age, and peaks to over 50 percent in the second year of life. We went beyond the DHS results to explore intra-district differentials and associated maternal malnutrition. Within the same district, a wide range of stunting was found, from 70 percent in the rift valley of Northern Rukungiri, to only 10 percent in an elite private school in Rukungiri town. Maternal nutritional problems were quite prevalent, such as undernutrition (PEM) (20 to 40 percent), anaemia and goitre.

DETERMINANTS OF POOR INFANT GROWTH

Major illnesses (measles, malaria, pneumonia and diarrhoea) were the main factors identified in the case histories as precipitating specific periods of growth faltering (leveling off or weight loss), as analyzed in the case control histories. Other important situational factors were food unavailability, lack of access to quality health care, inadequate child care, and social and family problems. The interruption of breastfeeding because of a new pregnancy usually resulted temporarily in faltering of growth (as observed on the child health card records), after which there was usually catch-up growth. The key underlying determinants identified were year-round food insecurity and poverty, poor sanitary environment, conflictive husband-wife decision making on intra-household resource allocation, and maternal malnutrition.

FEEDING PRACTICES

All mothers breastfed their infants on demand and day and night. The type of supplemental foods used during the weaning period or the age of introduction did not vary much among children with poor or adequate growth. Self-perception of adequacy of quality and quantity of breastfeeding was associated with good growth. Average age of introduction of supplementary foods was between four to six months. Earlier introduction was related to the common belief of getting the child accustomed to other foods in case the mother is unable to breastfeed (due to illness, separation, pregnancy, etc.), and to perception of inadequate milk production by the mother. Some impoverished women were observed to lack the time, energy or confidence to better utilize available traditional foods for child feeding.

HEALTH SYSTEM

The overall access and quality of care in both the government and private health systems was criticized by people at all levels. The RAP identified similarities and differences in nutrition-related health care delivery in the two districts. There is little or no growth monitoring being carried out, particularly in one district. When it happens, it is usually attached to immunization clinics (which have good coverage) and thus concentrated on children under five months. This leaves the older, more nutritionally vulnerable infants and toddlers with little coverage. The nutrition counselling opportunities are potentially available through control of diarrhoeal diseases (CDD) home visits, but these visits tend to be infrequent and untargeted, and often malnutrition-related observations are being missed. Prenatal coverage is quite high in Uganda, but usually consists of only one visit, and usually late in the pregnancy. Under these circumstances, little or no maternal nutrition assessment or education takes place. One District has better distribution of the health inspectorate staff with community linkage capability, the other has effectively mobilized community-based health committees and trainers of community health workers.

COMMUNITY ENTRY POINTS

To link the health and social sectors with the community (Resistance Council levels 1 and 2) several entry points considered to be physically, culturally and economically feasible were identified and include:

- Community-based health care committees (CBHCCs)
- Expanded Programme of Immunization (EPI) outreach clinics linked to community-based growth monitoring and promotion (GM/P) and followed up by integrated home visits (Control of Diarrhoeal Diseases, and Community-Based Distribution (contraceptives))

- antenatal and family planning clinics and the use of pregnancy monitors
- women's clubs, parent-teacher associations (PTAs), and church groups with related income-generating activities
- primary schools
- existing traditional community advisors (in health and nutrition-related areas).

To support these community-based activities, the district supervisory and operational level (multisectoral) outreach workers (teachers, agriculture extension, community development and home economist and health) should be reoriented in nutrition and motivated and trained to include nutrition in their activities and to work in coordination with the Resistance Council structure and traditional midwives/healers. This will ensure that the community's priorities are known, respected and that households are sufficiently mobilized.

MAJOR RECOMMENDATIONS

The WINS team proposes the following recommendations to the government, university, non-governmental organizations, international donors, and private sectors and community.

POLICY

Promote and encourage multisectoral approaches to addressing the nutrition problem, as articulated in the National Food and Nutrition Policy, and the Ministry of Health (MOH) integrated Maternal and Child Health (MCH) programme through the new Child Nutrition/Growth Promotion Action Plan.

Address the serious problem of household food insecurity in a broad, multisectoral manner, in coordination with the Ministry of Local Government and District Administrator's Office, and under the process of decentralization.

PROGRAMME

Use multiple entry points to bridge the gap between the health facilities and the community within the new Three-year Health Plan.

Strengthen the nutrition component of the MOH's integrated MCH programme by inclusion of explicit objectives and activities and by provision of adequate technical resources for implementation at operational levels.

Revitalize growth monitoring/promotion of young children as well as maternal nutrition monitoring into the MCH programme.

TRAINING/CAPACITY-BUILDING

Develop capacity-building strategies in policy and programme-relevant applied research, nutritional monitoring and surveillance, programme planning and evaluation to support the new Nutrition Division of the MOH and appropriate centres/institutes/departments of Makerere University.

Strengthen the new integrated MOH approach to training for the MCH/nutrition programme within Primary Health Care, and accelerate Community-Based Health Care strategies. The programme should include breastfeeding protection, maternal nutrition, improvement of infant and young child feeding promotion and dietary management of illness.

Extend and refine RAP approaches, such as those developed in collaboration with the Ugandan colleagues and used by the WINS Assessment team, to other priority districts and to other sub-counties within Iganga and Rukungiri Districts, with greater local participation.

RESEARCH

Extend and intensify applied, operational and qualitative research on the causes of infant growth faltering and maternal malnutrition during pregnancy and lactation. Updated social science and epidemiological techniques should be applied.

Support careful research on the impact of major illnesses in the first two years of life on breastfeeding and young child feeding and other nutrition-related factors.

INTERNATIONAL DONORS

USAID and UNICEF should continue to collaborate to ensure that nutrition programmes are appropriately studied and planned, with accelerated implementation, starting in selected experimental districts which are sensitized and committed.

I. INTRODUCTION AND BACKGROUND

Uganda has only recently recognized its serious problem of malnutrition when compared to neighboring countries; The Uganda Demographic and Health Survey (UDHS) of 1988-89 documented the high prevalence of chronic undernutrition, and the steep decline in growth (growth faltering) beginning in the first year of life. Subsequent in-depth analysis and national seminars have raised Government of Uganda and public awareness about the magnitude of the problem--one that had never been taken seriously by this food-rich country until recently. The problem of stunting and underweight have now been more accurately redefined as chronic undernutrition and long-term deprivation related to poverty, disease and ignorance rather than acute malnutritional disease (e.g., kwashiorkor or marasmus). Further, President Museveni has recently identified malnutrition as one of the top five problems in Uganda.

However, the determinants of early growth faltering have not been studied in detail. The new Uganda National Food and Nutrition Policy and Strategy recommends further study of this alarming situation before developing appropriate responses. Moreover, the new Three Year Plan of the Ministry of Health (MOH) proposes expansion of Primary Health Care (PHC) and mobilization for Community-Based Health Care (CBHC). These steps should provide important operational strategies for linking the health and social sector with the Resistance Council (RC) structure and the community.

The main sponsor of the WINS Assessment, USAID, in coordination with the UNICEF health/nutrition country programme, has been actively involved in sponsoring applied research and policy development in nutrition, and in addressing nutrition considerations in their Control of Diarrhoeal Diseases (CDD) programme. However development of direct nutrition programmes and components, recommended by previous consultants and the MOH, has been slow. Reason for encouragement is that UNICEF is now considering raising the importance of nutrition in its revised Country Programme, and USAID may incorporate breastfeeding and weaning into its new Family Health (DISH) project design. Other bilateral and multilateral donors are now assisting the government to think through its nutrition programming.

The WINS assessment had two major objectives:

1. conduct a rapid, in-depth analysis of the infant growth and weaning situation;
2. identify feasible approaches for strengthening the links between the formal health care delivery system and the community.

The assessment was conducted in coordination with a USAID-sponsored breastfeeding assessment¹.

The main users of these results were expected to be the Ministry of Health, the District Ministry of Local Government and donors. Donors requested that practical recommendations be forthcoming to meet both short- and medium-term information needs for policy-making and programme development. Two months after the completion of the infant growth and breastfeeding assessments, a dissemination seminar and planning workshops were held.

Capacity-building was also a major consideration of this assignment. The counterpart institutions, the Nutrition Division of the Ministry of Health, and Makerere University, allowed some of their key nutrition personnel leave in order to participate full-time as colleagues in this three-week assignment. Nutrition had just been elevated to the important level of "Division" within the Ministry of Health. Thus, training in new social science and epidemiological methods and techniques as applied to nutritional assessment and programme formulation, and sharing of experiences, were important elements of this assessment.

The assessment team was composed of and three Ugandan nutrition experts with extensive applied research and programme implementation experience and two external consultants with substantial experience in Ugandan nutritional studies (a social scientist/nutrition planner and a medical nutritionist). Moreover, at the District levels, the District Medical Officers (DMOs) assigned their technical and supervisory personnel to join the team, and at the community levels, the RC structure opened doors to the villages and households and actively joined in the assessment.

II. ASSESSMENT METHODOLOGY

The study methodology consisted of rapid assessment procedures (RAP)² for nutritional analysis at multiple levels: national, regional, district, sub-county, parish, community and household. A literature review and document search were carried out, and

¹Mukasa, G; Steel, A; Sserunjogi, L; Holley, M; Mateega, P; Tindiweegi, J. Supporting Optimal Breastfeeding in Uganda: An Assessment of the Breastfeeding Situation. Wellstart International, September, 1992.

²Rapid Assessment Procedures, as applied in this exercise, are designed for timely and participatory assessment of the nutrition situation with emphasis on appropriate follow-up action. The data instruments should be developed together by the team, with emphasis on applicability for accomplishing the data gathering within an abbreviated timeframe. However, the validity, reliability and appropriateness of the data should not be compromised by making the process too rapid or too superficial. The WINS/Uganda Team is preparing a more complete description of the Rapid Assessment Approach.

A Rapid Assessment of Infant Growth Faltering and Capacity for Community Based-Responses in Uganda

meetings were held with major nutrition donors (USAID, UNICEF, WHO), MOH policy makers and programme managers, non-governmental (NGO) and private sector, and university personnel to identify major nutrition issues and programme activities.

In the subsequent field work, the WINS team spent a week in each of two high malnutrition prevalence areas of the country (see Map, below). One district in each area was selected on the basis of the high degree of interest expressed (in previous reconnaissance visits) by the DMO in addressing the nutrition problem: the Eastern District of Iganga (the most populous district in the country); and the Southwestern District of Rukungiri--where numerous RAP qualitative and quantitative methods were implemented with the participation of district and community-level counterparts.

Selected Assessment Areas: Uganda

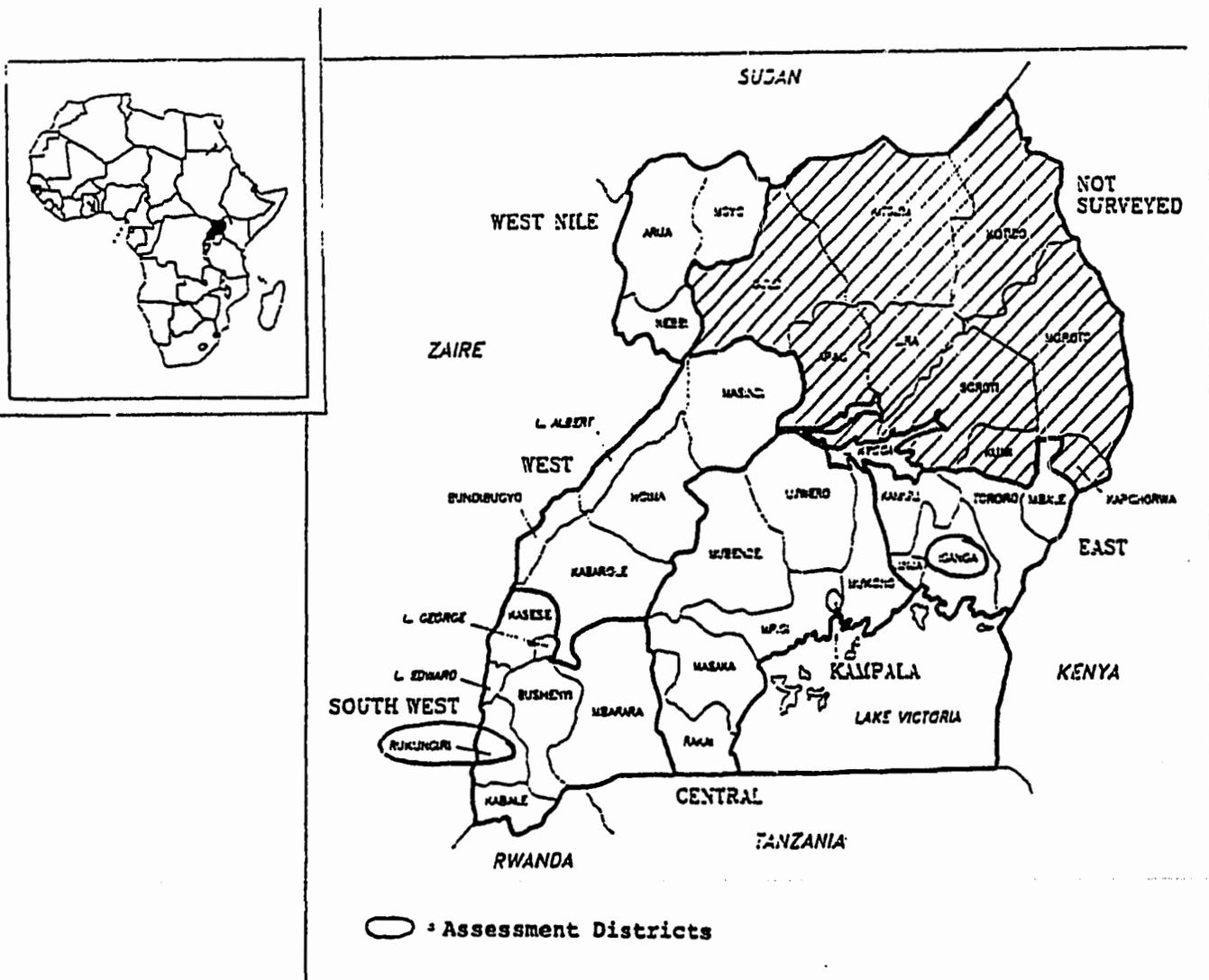
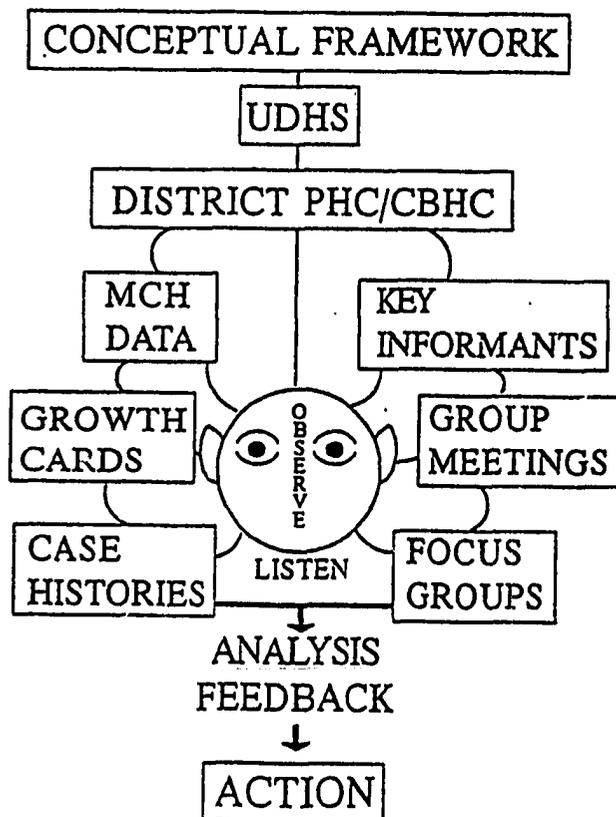


Figure 1 presents the sequence of RAP methods used during the three-week assessment period. A conceptual framework, developed earlier in the year to analyze the UDHS, was used as a convenient point of departure (Annex 1). It helped the team focus on the two immediate determinants of infant growth: breastfeeding and dietary intake and health status; and on four key proximate determinants: food availability, access to resources, caring capacity (of the family), and health/social services.

The left-hand side of Figure 1 represents the more quantitative filtering process through the health system by which growth cards were obtained and representative growth patterns selected for in-depth case history analysis. The right-hand side presents the more qualitative sequence through community structures of key informant interviews and group meetings through which key targets of health workers and parents of infants were identified and appropriate focus groups organized.

In summary, some 691 persons were measured at the study health centres/posts and schools, using anthropometric procedures, including 368 children under two, 193 school children five to eight years old, and 134 mothers. Numerous in-depth case histories, focus groups, group meetings and multiple observation sites (e.g., home, market, clinic, school, etc.) were employed at all decentralized levels. (A listing of the methods used, their number of applications, and the sample sizes of persons screened is presented in Annex 2.)

Figure 1



A. SITE AND CASE SELECTION

The 1988-89 in-depth Uganda Demographic and Health Survey analysis permitted the identification of high prevalence regions and characteristics of families with malnourished children. The three highest prevalence regions identified included the East, the Southwest and the West Nile. Time permitted implementing the assessment in the closer Eastern Region (Iganga); and in the Southwest (Rukungiri), where the presence of CBHC and DMO interest in the assessment provided the rationale for selection.

Within each district, parishes were selected where there were already established entry points into the community, either through CBHC or through Expanded Programme of Immunisation (EPI) outreach clinics and CDD home visits. In Rukungiri, where there are nearly ten parishes to choose from, the assessment team selected one where the District Health Management Team suspected a lot of malnutrition (Bugangari), another, where there was regular growth monitoring (Kisiizi), and a third, representing the most highly mobilized CBHC parish (Kichwamba). The team spent one full day in each parish.

The case control histories were selected on the basis of the established growth pattern of the infant or young toddler (see Annex 3 for the selection instrument). Three types of growth patterns observed on the child health cards were actively searched for:

- a positive or steady upward growth pattern
- a negative or declining growth pattern
- a recuperative or up-down-up pattern.

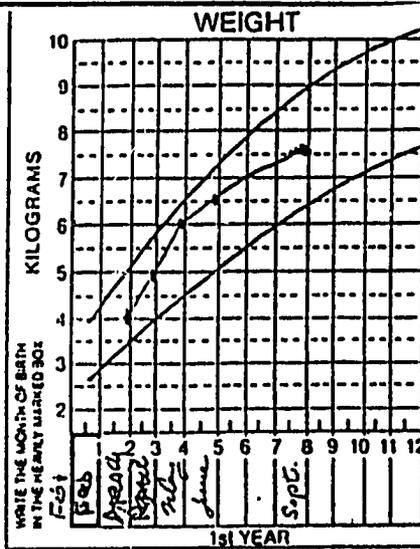
An example of each of these growth patterns is found as figure 2.

These three patterns were selected at EPI outreach clinics if there was regular growth monitoring and plotting, or, if not, by house-to-house visits in the company of the RC and the community health worker (CHW).

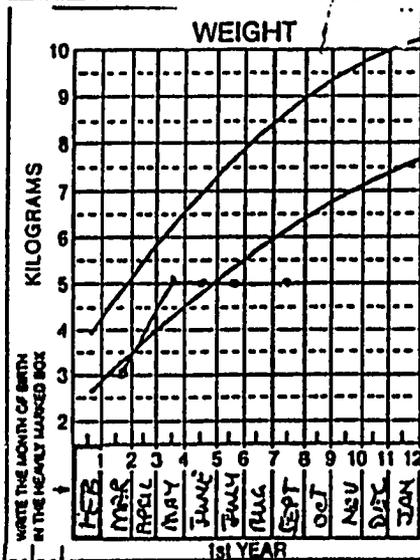
In Buruba Parish, Iganga, where the nearby Mission hospital does regular weighing, the infants were selected by examining child health cards during home visits in two villages. In Bulamagi, Iganga, one village selected infants in the same way, while in the other, a well-mobilized EPI outreach identified over 54 children from which six were selected for their contrasting growth patterns. Here, however, very few under-twos had ever been weighed nor had weights been plotted. In Kisiizi and Bugangari, the static Maternal Child Health

Figure 2

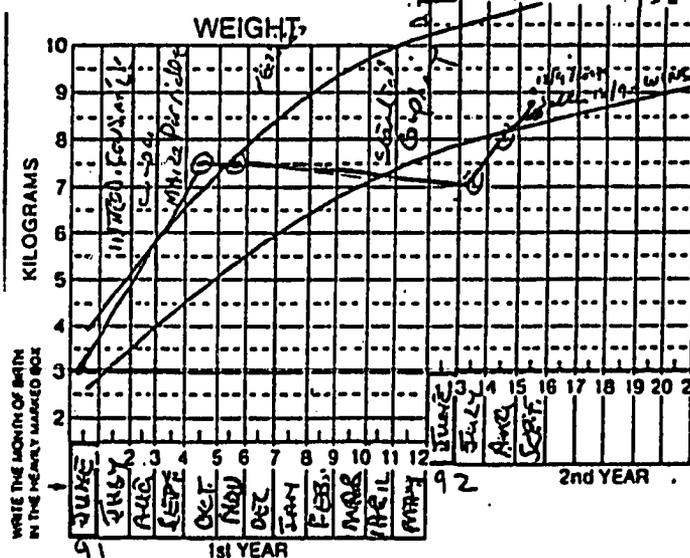
Positive or steady upward growth pattern



Negative or declining growth pattern



Recuperative or up-down-up growth pattern



BEST AVAILABLE DOCUMENT

(MCH)/EPI clinics were doing regular weighing³ and study children were selected from those in attendance, while in Kichwamba, Kasindiro and Ruhinda, the RCs, community development assistant (DA) and village health workers (VHWs) led the team to identify infants with varying growth patterns.

Primary P-1 schools were selected in areas where CBHC or growth monitoring was taking place. After the children left the opening line-up at 8 am, the P-1 students were lined up again according to sex and age grouping (young sixes, older sixes, young sevens, etc.) and their heights were taken. At Buluba, clinical screening for chronic malaria (large spleens), anaemia, goitre and Vitamin A deficiency was carried out. At the conclusion of the height census, instant analysis and feedback to the headmaster and his staff was provided, with subsequent discussion.

Mothers were identified for anthropometric screening in various locations: antenatal clinic (Kisiizi); hospital maternity ward (Rukungiri town); hospital paediatric ward (Buluba); EPI static clinics (Iganga and Bugangari); and their measurements during home visits.



Age screening for school height census

BEST AVAILABLE DOCUMENT!

³Infant lengths were also taken at Nyakibale Hospital and the Bugangari EPI clinic.

B. ASSESSMENT LIMITATIONS

The rapid assessment approach has distinct advantages, namely providing critical information in a timely way, through a participatory process, to inform an appropriate course of action. However, the approach also carries with it certain limitations, as implied by its name, "rapid" assessment procedures. As previously mentioned the validity, reliability and appropriateness of the data should not be compromised by making the process too rapid or too superficial, nor should one generalize study findings to a larger population than the one that is studied.

The following limitations in this study should be noted:

- 1) *Short study time frame:* this particularly affected the design, pre-testing and interviewer (N=3) standardization of the case history method; the three interviewers were better prepared for their work in the second study site of Rukungiri. Also the short time frame precluded selecting a more isolated area in Iganga.
- 2) *Lack of child health cards with weight records in numerous parishes:* the sample was restricted to those parishes where at least some weighing and plotting on child health cards were being implemented.
- 3) *Multiple languages:* interpreters were needed for most of the case histories, community meetings and traditional birth attendant (TBA) interviews in Rukungiri District and interpreters may have *influenced* some of the interactions and slightly altered the questions.
- 4) *Lack of measurement data:* neglect of focus on maternal and birth weight measurements and school height anthropometry census data in Iganga. Also lack of infant lengths except for a few.
- 5) *Small sample sizes:* several factors contributed to small numbers—the tedious process of selecting different growth patterns, and the time-consuming nature of case histories.
- 6) *Small number of Districts sampled:* only two districts were selected, as these represented the two District Medical Offices most interested in addressing the nutrition situation. Thus the study findings cannot be generalized to other regions of the country.
- 7) *Retrospective investigation of growth faltering:* mothers may have better recall on factors such as major illness than on other types of determinants of growth faltering.

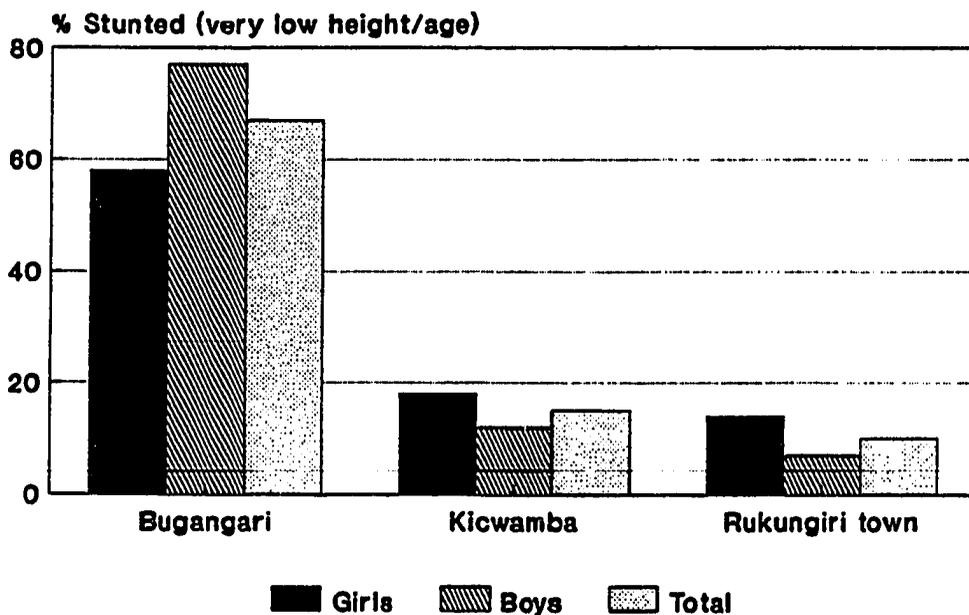
III. RESULTS: PREVALENCE OF INFANT, CHILDHOOD AND MATERNAL MALNUTRITION

The WINS assessment confirms the UDHS and previous surveys' findings of very high levels of chronic undernutrition, with higher levels in the Southwest, and early growth faltering:

- The school height census documented a wide range of past stunting (under 3rd percentile), from nearly 70 percent in the rift valley of north-central Rukungiri (Bugangari) to only 10 percent in the elite private school (Universal) in Rukungiri town (Fig. 3). This finding is of particular significance because it dispels the notion that genetics play a major role in determining small stature. Within the similar Ankole (Banyankole) ethnic group areas in central and north-central Rukungiri, such a wide range in stunting levels is found in young school children. We suggest, therefore, that stunting is mainly a result of different socioeconomic, agro-ecological and epidemiological environments. Also older P-1 students and those who had to repeat P-1 were more malnourished in Buruba and Universal schools than their younger classmates. Except in one school, stunting in girls was more prevalent than in boys in three of the four schools surveyed.

Figure 3

Levels of Stunting, Primary 1, By Sex Selected Schools, Rukungiri Dist. Sept92

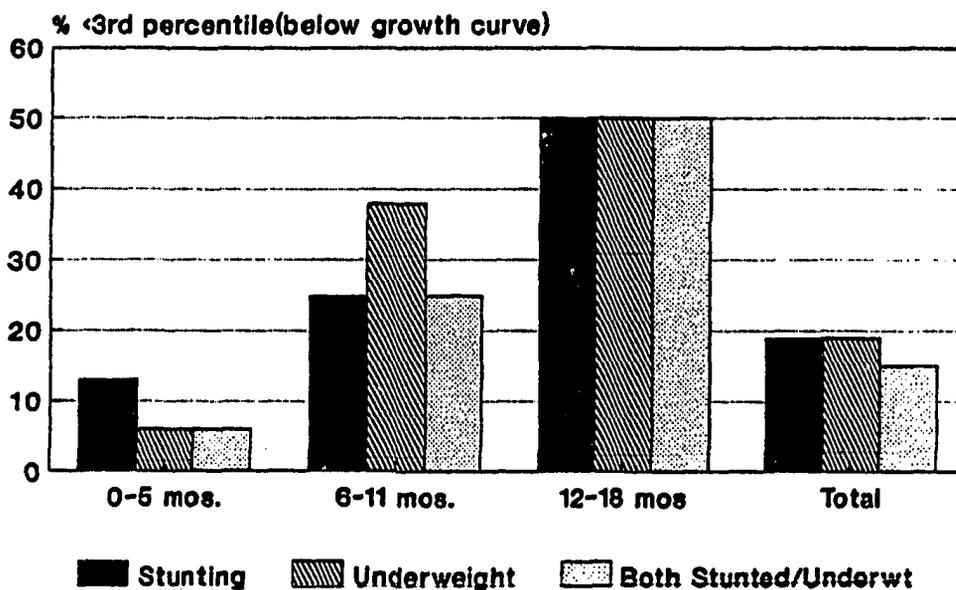


N=168Bugan,73Kicwam,49Ruku/Univ; ages 5-8

- Longitudinal and cross-sectional growth monitoring data from child health cards at over one dozen urban and rural sites in this study and others show that much of the growth (weight gain) faltering begins between four to six months of age, and peaks early in the second year of life (see Figure 4).
- Close associations were found between anthropometric measures of mid-upper arm circumference (MUAC), stunting (very short for age) and poor incremental weight gain.
- Maternal malnutrition was found to be high: between 20 percent in Iganga to nearly 40 percent in selected Rukungiri sites.
- Other nutritional problems of anaemia and goitre were also found to prevail in women, particularly in the Southwest where iodized salt is not used and the area is mountainous.

Figure 4

Stunting & Underweight, Children <18mo EPI Clinic, Bugangari, Rukungiri District



N=26: 0-5=16; 6-11=8; 12-18=2; Sept.1992
Source: clinic attenders, WINS/MOH data

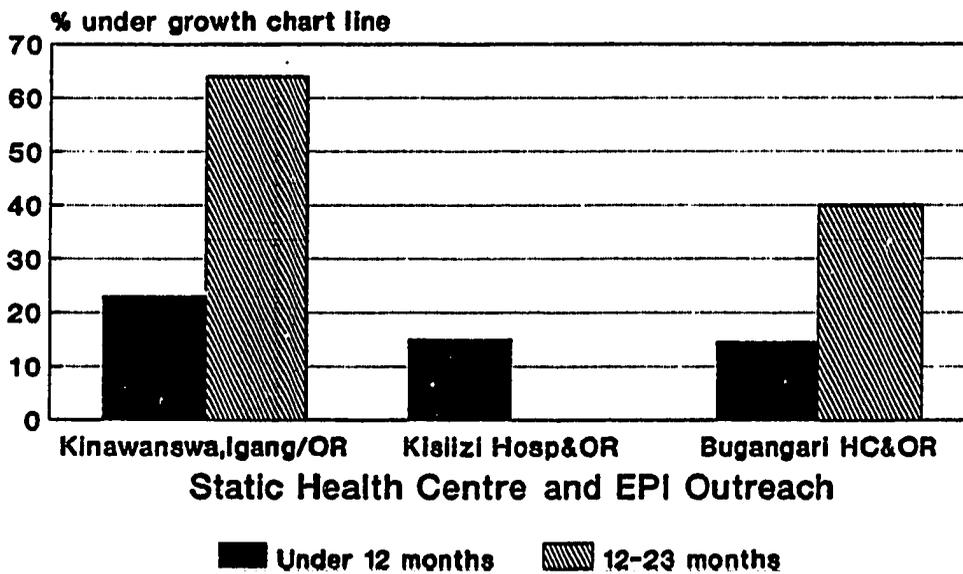
A. INFANT MALNUTRITION

It appears that the prevalence of underweight children as observed in the EPI clinics and MOH information system is artificially low because most of the children are under five months of age, a period when most growth faltering has barely begun. Levels of underweight in the second year of life are around three times as high as in the first year (Figure 5). Even within the first year of life, the MOH data on underweight underestimates the percentage of children who are already in a growth faltering pattern. In Bugangari, for example, only 10 percent of the children observed were underweight (below 3rd percentile), but 33 percent were already growth faltering (i.e., weight not increasing or increasing at a rate under that of the 3rd percentile line).

In Kisiizi, only 5 percent of the EPI attendees were underweight; this rose to nearly 10 percent if only re-attendees were included. However, it rises to 40 percent in the few children over two who attend.

Figure 5

**Percent Underweight, Sept. 1992
Some MCH/EPI sites, Iganga & Rukungiri**



Kinaw N=53; Kis=113 reattend; Bug=69 reattend
HC=health centre; OR=EPI outreach

B. MATERNAL MALNUTRITION

Maternal weight and height, pregnancy weight gain, and arm circumference have been used to assess maternal nutritional status. In this assessment, weight or height measurements were obtained only sporadically, so pregnancy weight gain, height or weight status data were not available from records of women observed by the team in either Iganga or Rukungiri districts. Nutritional status was gauged using a rapid assessment mid-upper-arm circumference (MUAC) measurement⁴ with a cut-off point of ≤ 23.5 cm for a diagnosis of malnutrition and ≤ 152 cm (5 feet) for stunted height. MUAC measurements determined that 15 percent of women in Kisiizi⁵, 30 percent of women in Bugangari⁶, 37 percent of women in Nyakibale Hospital⁷, 24 percent in Buluba Hospital, and 11 percent of the case study mothers were malnourished. About 20 percent of women at Kisiizi Hospital were noted to be stunted.

Short stature places women at increased risk for labor and delivery complications. Cephalo-pelvic disproportion is relatively common in areas of widespread malnutrition. Because Iganga, Kisiizi and Nyakibale Hospitals are referral centres, a higher caesarean section rate than in the general population is expected: 12.3 percent to 13.3 percent. The high caesarean section rate may represent the presence of cephalo-pelvic disproportion. Small pelvis in mothers may reflect protein-energy malnutrition (PEM) with stunting early in life. Also adolescent pregnancy may be a contributor.

Maternal malnutrition prior to and during pregnancy and lactation may affect the infant's size at birth and the mother's ability to lactate optimally. An association between maternal MUAC and birth weight has been shown (see Table 1). In this assessment, low birth weight was more prevalent in those women with a MUAC of ≤ 23.5 cm compared to those > 23.5 cm.

⁴MUAC correlates very highly with body weight and body mass index and has been found in a WHO collaborative study to be a good predictor of low birth weight. It is also a measurement that can be easily performed by CHWs or traditional birth attendants (TBAs).

⁵Women attending the antenatal clinic in Kisiizi Hospital in Rukungiri District may not be wholly representative of the women living in the surrounding rural area; they may either represent high-risk pregnancies or may represent women of higher socioeconomic status. Thirty-three out of 50 women, in various stages of pregnancy, were measured.

⁶Sample size: 26 mothers seen in a static EPI clinic.

⁷Sample size: 19 women who had just delivered infants.

Table 1

MATERNAL NUTRITIONAL STATUS
Rukungiri District

Maternal Nutritional Status	Kisiizi Hospital Antenatal Clinic n=33	Bugangari EPI Static Clinic n=22	Nyakibale Maternity Ward n=19
% with arm circum (AC) \leq 23.5	15%	37%	37%
% with height \leq 5 ft. (152 cm)	18%	--	
% with goitre (WHO grading 0-4)	--	27%	
4/5 women with low AC were stunted and 2/3 of stunted women had low AC			

This assessment also revealed a moderate iodine deficiency problem in Rukungiri District, based on a goitre rate of over 10 percent⁸. Goitre was noted in 23.1 percent of pregnant women in Kisiizi (from 1+ to 3+ grades) and was casually noted in the other groups of pregnant and non-pregnant women. In a group of Bugangari school girls, three of ten pre-adolescent girls were observed to have goitres. Contributing factors to iodine deficiency (IDD) include: reliance on water from mountain streams with leaching of iodine in the soil, goitrogenic foods in the diet (particularly cassava and soy) and very limited use of iodized salt. Even moderate IDD can result in poor pregnancy outcome and poor growth in children.

C. LOW BIRTH WEIGHT

Infants born with low birth weight (LBW) due to prematurity may take one to two years to achieve normal size if postnatal conditions are favorable. However, infants who are of LBW due to intrauterine growth retardation (IUGR) show little if any catch-up growth⁹. Low birth weight infants, particularly due to IUGR, may partly explain the short stature found in infants in the first year of life (particularly from 4 to 12 months) reported by the UDHS survey. To attempt to distinguish preterm LBW infants from IUGR LBW infants, the assessment team examined several Ugandan reports. Only summary statistics from the health

⁸Women were examined by Dr. Neumann for presence of goitre by visual inspection and palpation, using the World Health Organization (WHO) 0-4 grading scale.

⁹This has been documented by long-term follow-up studies on infants around the world.

planning unit of the Ministry of Health reported categories of overall LBW with percentages attributable to prematurity¹⁰. From this we could estimate the number of LBW infants attributable to IUGR. We accomplished this by subtracting the percentage of premature births (5 percent) from the overall LBW rate of 17.9 percent, deriving a figure of 10.8 percent for our crude estimate of IUGR¹¹. From this we can draw a tentative conclusion that the predominant cause of LBW in this sample is IUGR.

Of particular note are the high overall LBW rates for infants in Iganga and Masaka Districts, at 30 percent and 28 percent, respectively. While IUGR is usually associated with maternal malnutrition and/or infection, particularly placental malaria, it is possible that the higher LBW rates reported for Masaka and Iganga could also be associated with maternal HIV infection.

In addition to examining the above, the assessment team also culled data on LBW from maternity unit log books in Iganga and Rukungiri Districts, looking at newborn birth weights <2500 grams and between 2501-2800 grams¹². The latter were included because they represent sub-optimal birth weight and also reflect maternal nutritional status. About 10 percent of all live births in the hospitals studied were <2500 grams, while the group with birth weights between 2501 and 2800 grams varied from 12.3 percent at Iganga Hospital to 18.8 percent at Kisiizi Hospital in Rukungiri District and 11 percent at Nyakibale Hospital, also in Rukungiri. In a 12 percent sub-sample in Iganga, low birth weight was examined by maternal age to see if LBW or suboptimal weight infants could be attributable to very young women. In this sub-sample, 16 percent of women <17 years of age gave birth to LBW infants, while women >17 years of age did not give birth to any LBW infants.

IV. DETERMINANTS OF INFANT GROWTH FALTERING

Determinants of infant growth faltering were derived through rapid assessment procedures including:

1. an in-depth case control study of 32 households with children under age two;
2. focus group discussions, multiple observations and key informant interviews.

¹⁰Data reported from 15 hospitals and districts.

¹¹Total number of live births: 18,522.

¹²A 50 percent sub-sample, representing January through September, 1992, was selected from the maternity unit registry of births.

The case control study examined the underlying and situational determinants of early growth faltering. Focus group discussions, group meetings, multiple observations, and key informant interviews supplemented the case study information, providing careful, in-depth discussion and opportunities for consensus building on certain key issues including: health status; husband-wife decision making on intra-household allocation, control and management of resources; health care utilization; maternal and child caring capacity and women's workload; feeding practices; social and emotional problems; and household food security.

A. CASE CONTROL STUDY: METHODS AND MAJOR FINDINGS

In the case control study, particular emphasis was placed on specific periods of weight loss or levelling off (the "valleys" on a growth card) and on recuperative periods (the subsequent "peaks" or uphill trends). Focus was placed on observing the actual pattern of growth in the first year or two and identifying key factors that influenced the pattern (in a negative, recuperative or in a generally positive direction). The interviewers were asked to probe, observe and discuss in depth the main factors that influenced these patterns of growth.

Thirty-two households and their under-two-year-old index children and mothers were home-visited at length. Approximately one-third of each were selected to have either positive, negative or recuperative (or irregular) patterns. The nutritionist/investigators completed an analytic exercise to derive key underlying and conditioning factors that included the following steps:

- Step 1: Coded each case history, including ordinal and relative summary ranking of important nutrition-related factors such as:
 - resources to satisfy basic minimum food and other basic needs
 - maternal time for child care
 - food preparation/weaning food/feeding situation
 - maternal competence/confidence
 - husband/wife communication/decision making on intra-household allocation of resources.
- Step 2: Classified child's growth pattern over a period of at least six months into four categories
 - positive (adequate weight gain within the "road-to-health" (above 3rd percentile weight for age)
 - negative (inadequate weight gain or loss, often falling below the "road-to-health")
 - recuperative (a return to adequate weight gain after having been below the "road-to-health")
 - indefinite/unknown (insufficient number of measurements).

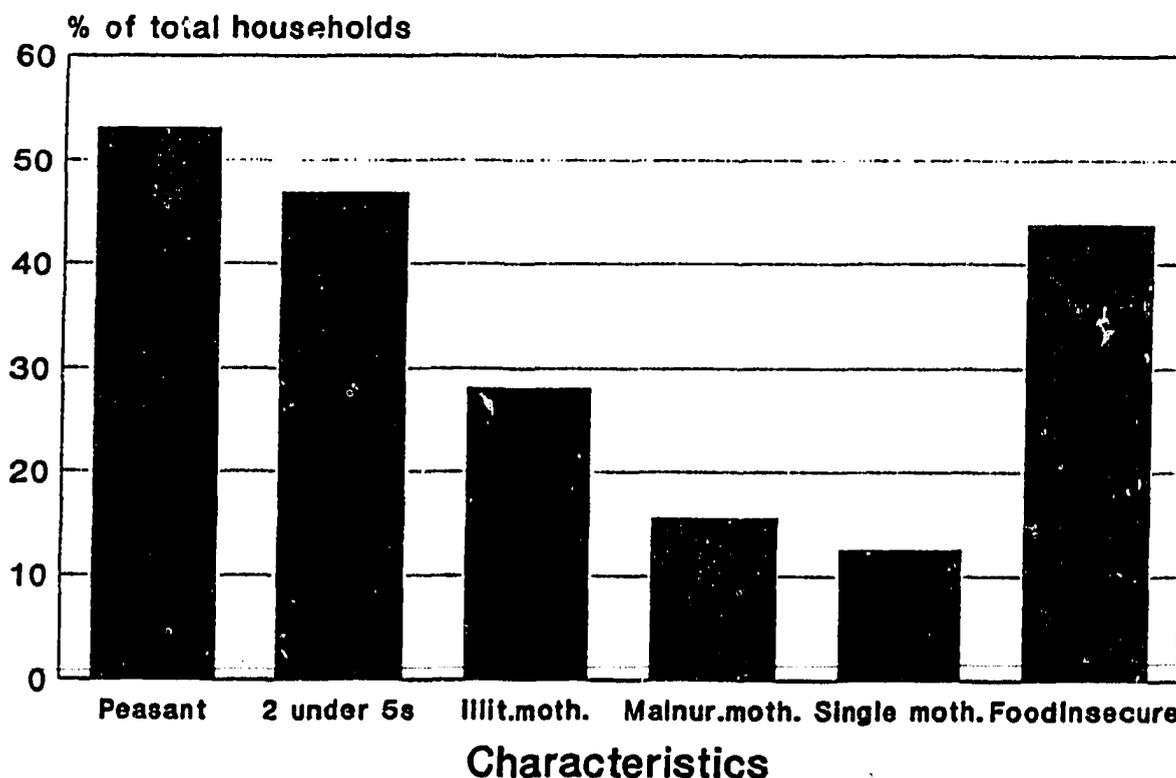
- Step 3: Identified up to three underlying and situational factors that most contributed to maintaining a positive growth pattern, or influenced the upward trend of the recuperative growth pattern; and up to three situational factors that most contributed to the major "valley" or "valleys" in a negative growth pattern. This crucial final analysis in step 3 was carried out on a daily basis by the interviewer in consultation with the supervisors (who co-observed some 20% of the cases) and other team members. The ranking of the most important factors was done at the end of the field work, taking into account their importance as compared with those of other infants studied in the same parish. A high degree of consensus on these factors was reached by the interviewers and supervisor.

1. Socioeconomic and Epidemiologic Characteristics of Households

A summary of socioeconomic and epidemiological characteristics of the 32 households is graphically depicted as Figure 6.

Figure 6

SOCIOECONOMIC CHARACTERISTICS CASE HISTORY HOUSEHOLDS, SEPT.1992



Sample=32households:18Iganga;14Rukungiri

2. Findings

In all 32 index children, 18 negative "valleys" were identified (14 in negative patterns and four in the initial pattern prior to a recuperative pattern), and 18 positive trends. Figure 7 presents a listing of the main factors analysed to be related to the 18 growth faltering "valleys".

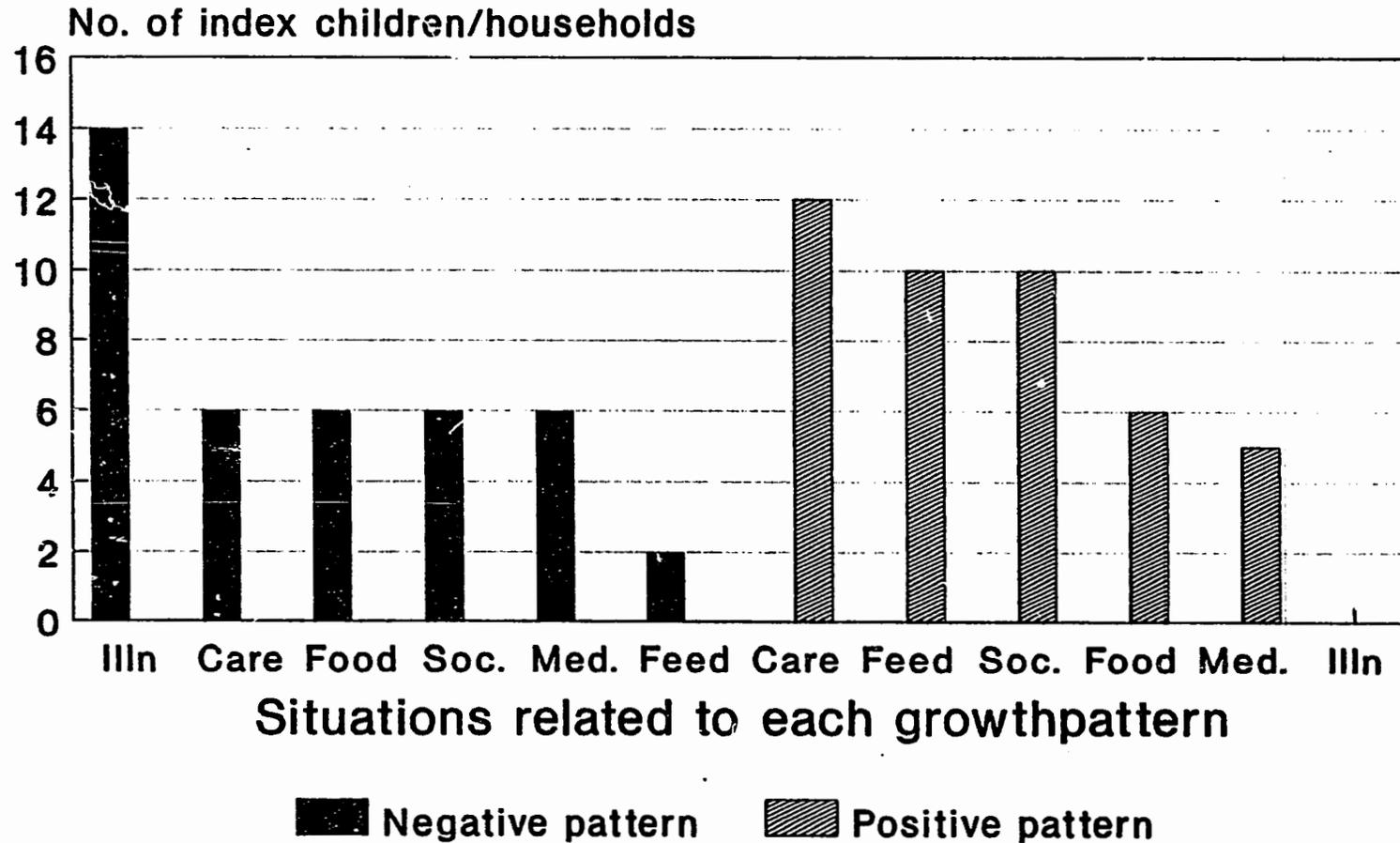
The leading factor for growth faltering, by far, was major illness: in 14 of the 18 valleys illness was a major determinant. Other important factors in growth faltering were food unavailability, inadequate child care, poor utilization of health care, and social/family problems.

Breastfeeding practices and the quality and timing of early supplementation were relatively less important factors influencing early growth faltering in these 32 rural households. Among the 18 positive and recuperative patterns, however, appropriate feeding practices (per opinion of participating Uganda nutrition experts) and absence of severe illness were among the most important situational factors, along with good child care, and adequate social and family support. Adequate quality and quantity of breastfeeding (self perceived, i.e., described by "successful" breastfeeding mothers) combined with adequate quality supplementary foods and protective child care appear to have helped to buffer many of these infants from early growth faltering.

Investigators also looked at overall satisfaction with the household food supply and other basic needs, and the overall management of the infant's growth pattern. The 32 case study households were ranked high, medium, low on both household food security/basic minimum needs and intra-household allocation and management of resources for nutrition, and these were associated with growth patterns. A "3 by 3" matrix (see figure 8) compares the families ranked high, medium, low on the basis of meeting basic food and other minimum needs all year round, most of the year (seasonally) and rarely. This is matched with a subjective ranking of the quality of intra-household resource allocation and management to sustain a healthy and well nourished infant, as compared to other mothers within the same parish. Factors assessed included women's time and task allocation, her child care and hygiene, her maternal self-confidence, and any other family support or unusual social consideration.

Of the 32 households, 10 ranked high, 12 medium and 10 low on nutritional management, while 8 were high, 11 medium and 13 low on satisfaction of basic minimum needs. All six households which ranked lowest on both rankings had negative child growth patterns; the four which ranked highest on both factors had children with positive or recuperative patterns. Households in between and on either side of the diagonal had mixed growth patterns, some showing good growth in spite of tremendous constraints.

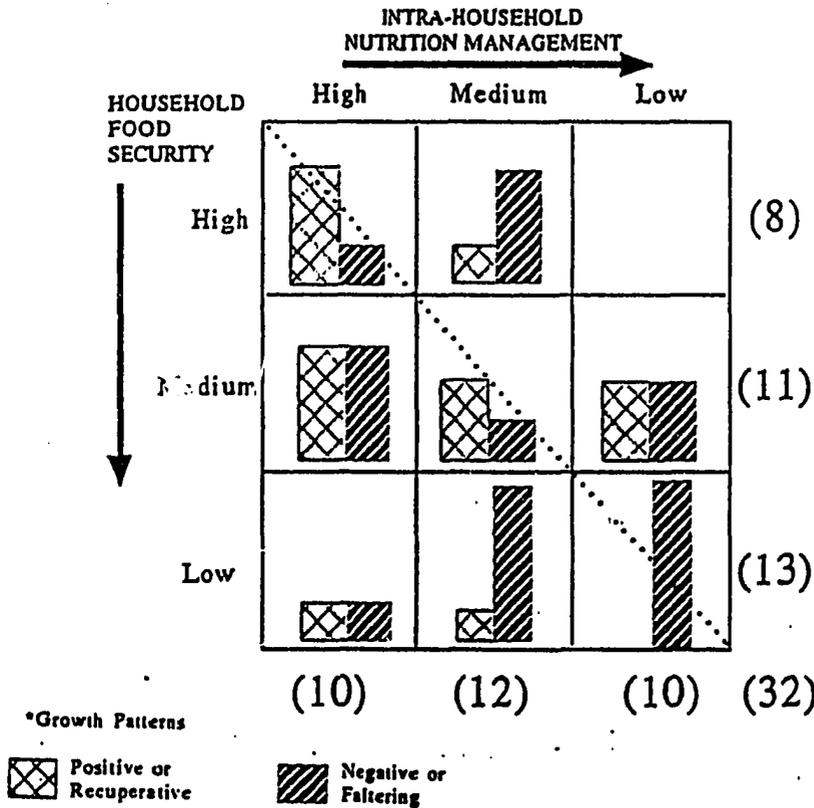
MAIN DETERMINANTS OF YOUNG CHILD GROWTH PATTERNS (POSITIVE AND NEGATIVE), 1991-92



N=32 case histories of under twos; up to 3 determinants identified by WINS research team for each pattern

Figure 8

**YOUNG CHILDREN'S GROWTH PATTERNS*
BY HOUSEHOLD FOOD SECURITY
AND INTRAHOUSEHOLD NUTRITION
MANAGEMENT**



Source: WINS Assessment, 32 Households with index child under two

Results emanating from this type of analytical matrix have direct programme implications. The health and social sectors have the capacity to help mothers and households move from the right hand towards the left hand intra-household management boxes. The economic, employment and agricultural sectors can help raise the households from the bottom to the higher boxes. The lower right hand box (e.g., low/low) is the most intransigent type of household, and their targeting is probably more the responsibility of the Resistance Councils than any the above sectors. This group will require a combination of nutrition and health education as well as increased income to improve their status, and may not represent the best group to target first in a programme because of the need for long-term intense inputs resulting in very slow change.

B. FOCUS GROUP DISCUSSIONS, GROUP MEETINGS, MULTIPLE OBSERVATIONS, KEY INFORMANT INTERVIEWS: MAJOR FINDINGS

Important similarities and differences were found between rural Iganga and rural Rukungiri through several rapid assessment procedures. Major findings are highlighted.

1. Health Status

In both Iganga and Rukungiri Districts parents and health workers were concerned with the high prevalence of diseases, especially sanitation-related diseases among children such as worm infestations, diarrhoea, and recurrent fevers (particularly from malaria). Many women described persistent backache, lower abdominal pains and fever as problems. Also described in Rukungiri were sudden attacks of fever leading to death, especially among fathers and orphans (e.g., suspected viral meningitis epidemic or cerebral malaria).

Illness due to measles was found to be a major determinant of poor growth among 53 percent of the 17 children with current or past growth faltering periods. Fever (presumably malaria) and diarrhoea were the other most common illnesses. Among the 17 children with current or past negative growth patterns, 59 percent were reported to be currently sick, suffering from fever, diarrhoea, worms and anaemia. Three mothers of the same children had fever and anaemia. Mothers universally described the anorexia accompanying and following the illnesses in their children.

Malnutrition (mid upper arm circumference ≤ 23.5 cm) was found among 60 percent of mothers with children having a currently negative growth pattern. None of the mothers of the children having recuperative or positive growth patterns were found to be malnourished.

2. Health Service Utilization

Health facility accessibility in both Districts was poor and mothers found transport to these facilities expensive. Government health facilities¹³ were in general considered inefficient and unfriendly, particularly static units. Mothers found health staff at outreach or mobile units more understanding, but when these services were available, found themselves faced with long waits for limited services and inadequate drug supplies. Private health care services were in general more widely utilized and accessible, with better and more efficient services and ample drug supplies. However, medicines were reported as very expensive at these facilities and not affordable for most women. Many women reported "self-diagnosing"

¹³District medical services were reported to have limited operational funds and inadequately supervised workers.



Immunisation session; he was all by himself vaccinating

their child's illness and purchasing medicines from local shops and markets, where no expert medical advice was available. When either the cost of medicine was prohibitive or when, after treatment with a "self-prescribed" drug, the child's condition did not improve, women reported resorting to traditional medicines.

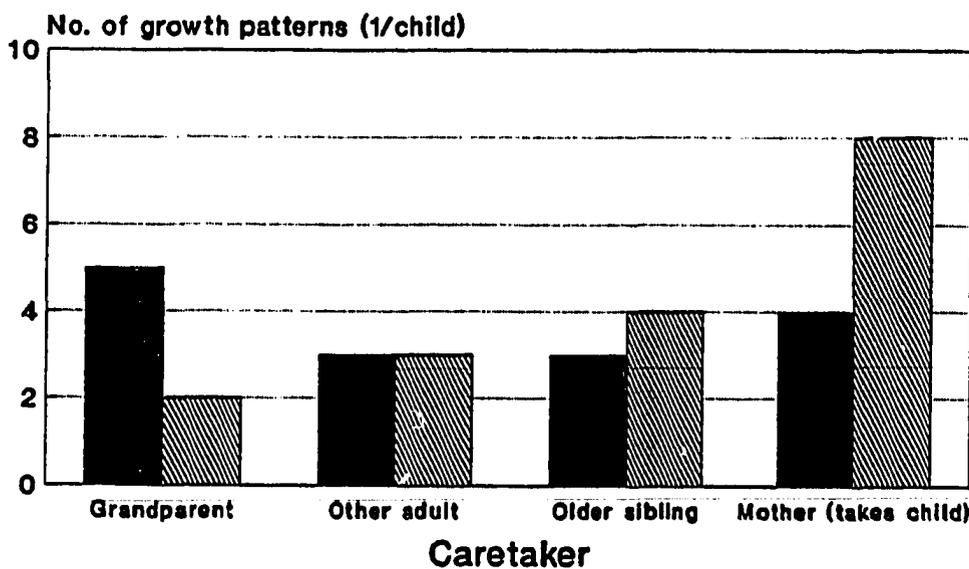
All mothers were aware of child health cards. In Rukungiri District more infants had been immunised appropriately for age compared to Iganga District where the age at which immunisation started was late, and varied among the infants. Growth monitoring or weighing of children was regularly accomplished at immunisation sites (EPI Units) in Rukungiri district, while in Iganga district, weighing and plotting of growth was accomplished mainly at the government and mission hospital static (EPI) units. True growth monitoring with counselling of mothers was not carried out efficiently in all districts.

3. Child Care

Women in Iganga and Rukungiri Districts considered it a natural responsibility to take charge of their children's welfare, and men categorically stated that child care is a woman's job. However, perceptions about the burden of child care differed dramatically between parents in Iganga and those in Rukungiri. In Iganga, child care was not seen as a burden or a problem, but a natural state, and ineffective child care was associated with lack of resources and poverty. In Rukungiri, women complained that their heavy work burden, in home management and income-generation, as well as poor status, confidence, psychological well being, and in some cases health, affected the quality and quantity of care they were able to offer their children. Men typically described their role as providers and supervisors, but not as active participants in home management. While men in both Districts agreed that women have too much work to do, men in Iganga seemed more sympathetic and open to the idea of providing help to their wives than men in Rukungiri, and actually did in the area of food cultivation.

While some mothers had relatives or neighbors who were able to care for their child while they engaged in income-generating activities, mostly cultivation and selling food, others had no alternative but to take their child with them. Five of the 12 mothers of children who had negative growth patterns took their children with them wherever they went and five of seven children with positive growth patterns stayed with grandparents while their mothers were away (figure 9). Children with negative growth patterns were unkempt and dirty, coming from very poor, untidy, and littered homes.

Figure 9 GROWTH PATTERN OF YOUNG CHILDREN BY WHO TAKES CARE OF CHILD WHEN MOTHER IS AWAY*



*away from home; N=32 case study children

■ Positive growth ▨ Negative growth

It was noted that frequent pregnancies significantly affect the quality of child care. Breastfeeding stops immediately when the mother becomes aware of a new pregnancy and poor child care is not an uncommon occurrence. In fact, often women send their children away to live with grandparents or other relatives during a pregnancy. Women did express a desire to limit the number of children that they have.

4. Feeding Practices

- a. ***Breastfeeding:*** In both Iganga and Rukungiri Districts, breastfeeding is widely and confidently practiced. Introduction of other liquids and weaning foods earlier than four months was reported. Common explanations for early supplementation included: "as a precaution," feeling the need to "accustom" the child early to other foods in case of unexpected breastfeeding interruption due to illness, pregnancy or separation; "weak" breastmilk (self-perceived), leading to poor infant weight gain; and "insufficient breastmilk" (self-perceived), attributed to a heavy workload and poor diet, especially in Rukungiri District. Maize porridge, diluted cow's milk and millet porridge were the most commonly mentioned foods/liquids used for infant supplementation.

The type of supplemental foods/liquids used and the age at which these foods are introduced did not vary much among children with negative, recuperative and positive growth patterns. Household food security and the general family food supply were probably the most important factors in determining the amount and quality of supplemental food available.

The most notable factors impacting positive growth patterns included:

- better "self-perceived" quality and quantity of breastfeeding;
- better maternal nutritional status¹⁴;
- greater year round household food security
- more salaried work for mother, father or both.

¹⁴All mothers of infants with positive and recuperative growth patterns had adequate arm circumference (> 23.5 cm). In infants with negative growth patterns, 38 percent of mothers had low arm circumference, indicative of protein-energy malnutrition.

- b. **Child Feeding:** Introduction of solid family food was timely in both Districts--around four to six months of age. Inadequate and limited food intake for family members, especially children, was due to the small number of meals taken daily, i.e., usually just two and sometimes only one meal per day in both Districts (related to time constraints and sometimes anorexia).

The quality of food given to children was uneven. Women seemed unable to make best utilization of available traditional food commodities for child feeding. For instance, one 18 month old child was fed 200 mls of watery maize porridge without soya for two meals; breastfeeding had ceased at age 13 months. Common family foods such as bananas, cassava, rice, millet-bread, and sweet potatoes were sometimes not considered suitable for young children, leaving very little other available foods to choose from.

5. Household Food Security

Year round food security is important in supporting positive growth patterns in infants and young children, yet in both Iganga and Rukungiri Districts, basic food security needs were deeply affected by a prolonged drought period in 1992, more pronounced in Rukungiri.

As a result, in both Districts cash crops were not sufficiently prolific to provide for other than non-farm necessities. In Rukungiri, families were observed to be taking only one to two meals per day and most granary storage facilities were low or empty. Most people in both Districts depend on the sale of their labour for income. Lack of money significantly affects their ability to cover basic needs, such as school fees, taxes, clothes and medicines, forcing people to sell their only available staple foods. Some of the additional reasons for increased food insecurity include: 1) conversion of staples, such as millet in Iganga and matoke in Rukungiri, to beer production, often the main income-generating activity for women; 2) men's predominant role in selling the food that is harvested and in deciding how to spend money, is not always supportive of the family's basic food security needs; 3) increasing inequalities in land distribution, particularly in densely populated areas, such as in highland Rukungiri; 4) marital instability, premature death of husbands, unemployment and migration factors. It was apparent to the assessment team that other forms of income-generating activities, apart from sales of precious foods, could improve food security.

6. Husband/Wife Communications and Household Decision Making

In both Districts men are the primary decision makers, resource controllers, wage earners and spenders. Social conflicts between men and women were described, particularly relating to division of labor and allocation of resources. Only in Iganga did some men participate in food cultivation and allow women to both sell food and expend monies. But in general, in both Districts, women are the primary caregivers and household managers, but without support from their husbands and little to no decision-making authority. They labor hard and

long and are suspiciously regarded when it comes to money. Men were almost consistently found reluctant to relinquish money to women. In addition, social outlets (clubs) were regarded suspiciously by men, although women found them useful and educational.

In general, women suffer from low self-confidence, and status and have no outlet for their frustration. The very thing that does provide an outlet for men, drinking, is viewed with contempt by women, although some women are engaged in beer production as an income-generating activity. Nonetheless, women expressed great concern and anger over the amount of drinking that is done by men, particularly in having to spend their precious income on freeing their husbands from jail or buying clothes for them.

It was noted, however, that in better mobilized communities especially by CBHC, there was shared responsibility, less female mistrust and better management. This resulted in better planning of the diets and less social disharmony between wife and husband to the benefit of the family, especially the under-five children.

V. INSTITUTIONAL CAPACITY AND ENTRY POINTS FOR COMMUNITY-BASED NUTRITION ACTIVITIES

The objectives for this assessment emphasized the need to examine both the institutional capacity to carry out community-based nutrition activities, as well as feasible approaches for strengthening linkages between the formal health care sector and the community. In order to identify key entry points within the community and approaches for strengthening these entry points/linkages, it was important for the assessment team to actually see the types, quality and frequency of nutrition-related services being offered in the community, to assess the constraints to service delivery, and identify approaches for strengthening service delivery. Meetings were held and field visits conducted with District Health Management Team supervisory and operational staff in both Iganga and Rukungiri to carry out this mission. The following highlights the team's findings.

A. GROWTH MONITORING/PROMOTION (GMP)

GMP is supposed to be routinely incorporated as part of EPI, CDD and health education activities. However, since little GMP had been documented through previous nutrition assessments, the team visited the very few places in both Iganga and Rukungiri Districts where it was actually taking place. While age calculation and weight plotting were

accurately and carefully done at two mission hospitals visited¹⁵, GMP was rarely being implemented in either government static or outreach EPI stations visited; here very few cards contained weight information to capture growth trends. The EPI environment is not conducive to feedback, parent counselling and education. Time constraints and inadequate motivation and personnel are apparent. Even where GMP was taking place, it was discovered that the lowest risk children were being weighed and counselled. For instance in Rukungiri, most of the GMP was attached to EPI clinics and thus included only very young infants, leaving the most vulnerable (over four months of age) with little GMP coverage.

In summary the team found that GMP was very rare in Iganga (the team visited one of the only few functioning GMP sessions), but more common in Rukungiri. When performed, feedback and counselling were found to be inadequate, often lasting less than ten seconds and rarely over a minute.



CBHC worker counselling mother after taking weight and plotting on chart

¹⁵Buluba Mission Hospital and Kisiizi Hospital

B. CDD HOME VISITS

While health inspectorate staff (includes Health Inspectors (HIs), Health Assistants (HAs), and Health Officers (HOs)) are instructed to spend half of their time (approximately 12 days) visiting high-risk homes, it was apparent to the assessment team that home visits are untargeted and not as frequent as planned, often being limited to only one afternoon per week¹⁶. According to "CDD Home Visit Guidelines," visits should include food and nutrition-related observations and advice. Yet, when team members were given opportunities to observe actual home visits in both Iganga and Rukungiri (see observation form, Annex 6 (VII), it appeared that the HAs/HOs made somewhat superficial and quick visits, looking more at the water and sanitation situation and the EPI record, and paying little attention to food and nutrition.

Some of the constraints to more effective home visits, described by the HAs/HOs¹⁷ to the team, included: lack of adequate targeting criteria; discomfort in communicating with uneducated women and in being in their homes while the husbands were absent; lack of coordination with the RCs and CHWs whom they view as rather ignorant, and as siding with their own villagers despite poor health, hygiene and sanitation conditions and practices; lack of growth monitoring points on the child health card and an orientation as to their use as an educational tool; lack of sufficient motivation, incentives and transportation to reach the more distant at-risks.

In contrast, the assessment team found that in well-mobilized CBHC areas, community health workers made targeted visits to high-risk families, were motivated, knowledgeable, and at ease in the homes.

C. NUTRITION EDUCATION

Currently CDD home visits, EPI clinics and antenatal services provide opportunities for nutrition education. The assessment team noted that very few nutrition education materials are used. Only rarely was a nutrition-related poster observed in a dispensary.

Most nutrition education is delivered in a group setting using a "question and answer" format with preset or "canned" materials. The assessment team did observe in a CBHC community in Rukungiri, however, a "social preparation approach" to health education, tailoring education topics to the expressed needs of the attendees. CBHC was observed to be well

¹⁶Only one of 32 case history mothers responded affirmatively when asked if she had been home visited.

¹⁷These were health inspectors, primarily men, who were observed to sometimes speak roughly to women.

mobilized in the three sub-counties studied in Rukungiri, where village health committee members and community health workers are involved in training activities, including training of trainer workshops. In Iganga, the CBHC experience appeared limited to Busoga Diocese and to one subcounty, but training had been suspended for a time due to organizational and financial problems.

D. MATERNAL NUTRITION

Little maternal nutrition assessment, monitoring or education seems to be taking place in the health system and what little is taking place seems inadequate. Although in general prenatal coverage is high¹⁸, most women visit an antenatal clinic in their second trimester of pregnancy and usually only once, and then deliver at home with the help of relatives or TBAs. Only high-risk pregnancies are referred to the hospital. In a static antenatal clinic at Kisiizi Hospital, Rukungiri, women were observed to be screened for high-risk by their height (< 152 cm). MUAC measurements were never obtained, nor were habitual weighings and recording of weights despite the presence of scales. Nutrition counselling was limited. Women were checked for anaemia when they appeared pale and given iron and folic acid with a positive diagnosis.

TBAs and nurse assistants interviewed in Rukungiri and Iganga Districts did describe providing mothers with some nutrition-related information, but this was not observed by the team. It was noted that training of midwives, TBAs and assistant midwives is uneven. The two TBAs interviewed never received formal training. Yet these health workers offer the greatest potential for reaching women, particularly in their homes. They would welcome further training.



TBA advertising her services

¹⁸According to the Uganda DHS, 1988-89.

E. PROMISING ENTRY POINTS FOR LINKING THE COMMUNITY WITH THE FORMAL HEALTH CARE SECTOR

It became clear to the team after extensive observations and meetings and intensive interviews in the field that while operational personnel in most government sectors say they should deliver continuous outreach services to the scattered rural areas, where the majority of the high-risk population resides, they find it difficult to do so. But the team observed many activities taking place in the community now that with further development and strengthening, offer potential for providing sustainable nutrition-related services to families at-risk and for linking the health and social sectors with the community. These key entry points include:

- Community-based Health Care (CBHC) Committees: the presence of a strong CBHC network has sensitized and mobilized communities through their village and parish health committees and community health workers.
- EPI outreach clinics with follow up by community-based GMP and integrated home visits (CDD, CBD, etc.); assumes greater use of nurses aides, CHWs and "trained mothers;" for instance, when pregnant women come to an EPI outreach clinic for a tetanus toxoid injection, clinic staff could use the opportunity to provide nutrition education, focusing on improving maternal nutrition during pregnancy and lactation or work with mother's groups or other groups, i.e., pregnancy monitors, along with EPI activities.
- Antenatal/family planning clinics. Antenatal has the highest coverage of MCH services, and is the earliest practical entry point for both maternal and infant nutrition services. Moreover, the growing awareness of AIDS and women's frequent complaints of STDs suggest the heightened salience of maternal health issues.
- Women's clubs/associations/societies with related income-generating activities. The informal linkages through women's clubs working with the home economics and community development extension workers and local health communities can serve as linkages from the household to the health system. Most husbands are supportive of clubs that are attached to income generation if they believe that their wives' participation will lead directly to the benefit of their children's health and nutrition.
- Primary schools. This is the most available entry point into the small communities and villages (RC-1 level). Schools obviously play an important educational role and are highly desired by parents. Their levels of coverage vary, but are highest in P-1, usually attaining over 70 percent of the children between 6 to 8 years old. Those children who cannot afford to attend are probably at the highest nutritional risk, and

should be actively recruited by collaboration between CBHC and the Parent-Teachers Association. Teachers and older students can also be used in case finding and nutrition education.

- Traditional community advisors (in health and nutrition-related areas) (e.g., traditional birth attendants (TBAs), mothers-in-law, etc.). The traditional sector is an important point of entry, and mothers resort to this system on a frequent basis. For example, TBAs give important nutritional advice to mothers during pregnancy and lactation, as do mothers-in-law and senior co-wives.
- Pregnancy monitors. These volunteers collaborate with the Safe Motherhood Initiative in pilot districts to identify pregnant women and refer them to antenatal services, EPI (tetanus toxoid) and to hospitals in the case of high-risk indicators. Their effectiveness should be evaluated but represent another potential collaborator.



Women's Focus Group Discussion, Bunono, Kisiizi

BEST AVAILABLE DOCUMENT

To support these community-based activities, the district supervisory and operational level outreach workers (e.g. 's, teachers, community development assistants, assistant agriculture officers, home economists, health assistants, health officers, etc.) need to be retrained to provide the technical backstopping for food and nutrition plans of action. Finally the Resistance Council structure and "traditional healers" and TBAs have a major role to play in ensuring that the community's priorities are respected and that households are sufficiently mobilized.

VI. PRACTICAL STRATEGIES/RECOMMENDATIONS FOR INTEGRATING NUTRITION INTO MATERNAL CHILD HEALTH AND COMMUNITY-BASED HEALTH CARE

Under the decentralization policy of the Government of Uganda and the new Three Year Health Plan of the Ministry of Health, expanding Primary Health Care and mobilizing Community-Based Health Care are articulated strategies to prevent illness and malnutrition. Strengthening key entry points/linkages between the health care delivery system and the community is essential, particularly if approaches for optimizing infant and young child nutrition are to be sustainable.

A. STRENGTHENING NUTRITION AT THE DISTRICT AND COMMUNITY LEVELS

A Plan of Action¹⁹ (approach) for strengthening nutrition at the district and community levels might encompass, among others:

1. Sensitization and mobilization of commitment and resources to nutrition promotion.
2. Training of a group of facilitators in practical nutrition activities.
3. Workshops in participatory RAP-type methods at operational levels.
4. Retraining of CBHC-level personnel in practical nutrition activities.
5. Application and extension of RAP, school height censuses and baseline surveys in all mobilised CBHC parishes, with full participation of the village health committees and

¹⁹In both assessment districts, Iganga and Rukungiri, the District Health Management Teams are firmly committed to and ready to embark on this type of action plan for promoting child growth and nutrition.

resistance councils, as a basis for food and nutrition surveillance, CV-Health Information Systems and CB-growth monitoring/ promotion.

6. Selection and assignment of one qualified person to serve as coordinator of an integrated food and nutrition and breastfeeding support programme, with immediate technical support and training to be provided by national- and international-level resources.
7. Frequent and immediate feedback of the nutrition monitoring, including RAP results, to village health committees and resistance councils and prioritization of food security and nutrition interventions and activities at the parish and community levels.
8. Extension and continuity of MCH/EPI growth promotion activities beyond the fourth month of age, and then beyond the ninth month of age (measles age).
9. Inclusion of the above with food-related, income-generating activities by promoting clubs, associations, unions and other productive and educational women's and men's groups.
10. Mobilization of minimum adequate resources for all operational personnel: allowances, transportation and logistical support.

B. STRENGTHENING NUTRITION AT THE NATIONAL LEVEL

A Plan of Action for strengthening nutrition at the national level might encompass, among others:

1. **Organizational and Management**
 - a. Strengthen the nutrition component of the Ministry of Health's integrated maternal/child health programme by inclusion of explicit objectives and activities, and by provision of adequate technical resources for implementation through Primary Health Care outreach. Sensitization and mobilization must be followed by practical planning and a technical and resources commitment to its implementation.
 - b. Prioritize selected experimental districts which are sensitized and committed as the first areas to strengthen the Ministry of Health programme in nutrition. Utilize entry points into the community, as outlined above. The draft plan of action for Rukungiri, where four CBHC-mobilized parishes are first targeted, can be used as a model for other districts, such as Arua, Lira, and Mbarara.

- c. Incorporate CBHC strategies into the new MOH integrated approach to training for the MCH programme within PHC. The new Nutrition Division in Entebbe can develop the capacity to form district level teams of facilitators that would train a multisectoral level of supervisory and operational personnel at the county and sub-county levels. Within the District Medical Office, the cadre of personnel that can make the EPI/GMP/CDD links with the community is the Health Inspectorate, particularly the health assistants and health officers. The cadre of nursing aides is also quite a relatively abundant resource at the health facility and EPI outreach levels. Key skills needed here include household food insecurity and intra-household resources management assessment and maternal/child nutrition counselling skills, both to be imparted in CDD-related home visits. Learning how to organize GMP sessions at the outreach and community levels is important for planning the targeted follow up at the household level. Moreover, better approaches for integrating the operational staff community-level work with the resistance council structure and community health workers are essential.
- d. Donor-supported PHC and CBHC programmes should incorporate maternal and infant nutrition improvement as explicit objectives with concrete plans of action. The major existing area-based programme where this could start immediately is the 1992-95 Plan for SWIP (UNICEF supported). Others on the horizon include the new Family Health Project (USAID-supported), the Second Health Project (World Bank supported), and various NGO projects.
- e. The new USAID-supported Family Health Project could incorporate nutrition objectives and key activities which address reproductive health and family planning. Maternal nutrition monitoring of energy depletion and intrauterine growth retardation, as well as poor nutrition in lactation are the starting points. GMP should be used as a family planning counseling entry point to promote continued breastfeeding during the weaning period, and establish a growth (e.g., between 10 kilos by 18 months and/or an adequate growth velocity of at least 100 grams/month in the 2nd year of life) and development goal (walking alone) to be reached before starting a subsequent pregnancy.
- f. Promote and encourage multisectoral approaches. The latest draft of the National Food and Nutrition Policy and Strategy should accelerate its Plan of Action to ensure that all relevant sectors are supporting nutrition activities. Target development programmes which can attack the major factors identified above in causing early growth faltering and maternal malnutrition. These would include, among others, household food insecurity, such as PAPSCA, primary school education, food processing, marketing and storage, and women-in-development programmes.

2. Specific Activities

- a. **Revitalize and integrate growth monitoring/promotion (GMP) of young children and maternal nutrition monitoring into the MCH programme.** Begin stronger nutrition screening and counseling procedures in the antenatal period (which has relatively good coverage) and increase them as part of an expanded EPI through community-based GMP and improved as part of a targeted follow up in the home-based CDD programme. It would be insufficient to merely incorporate breastfeeding and weaning promotion and broad-based nutrition education into existing programmes, for other situation-specific factors need to be addressed in the prevention and case management of early growth faltering. (For example, community-based drug kits are being recommended as part of an effort to deal with the illness management component of the growth faltering problem).
- b. **Prioritize prerequisite actions to improve maternal nutritional status, such as:**
 - Sharing of information and further rapid assessment for maternal nutritional condition with feedback to community and district level for awareness building over sensitization to the problem, e.g., village, parish (RC1-3) health committees, parishes etc, mothers', fathers' clubs.
 - Training for facilitators, trainers, and all levels and variety of outreach workers, (CHW, CDD, EPI, HA, HO, NA, pregnancy monitors, midwives, traditional midwives, extension workers, in Agricultural Home economics, community development staff, and school teachers) on recognition of maternal nutrition signs, and concrete steps for follow up.
- c. **Address maternal undernutrition and energy depletion as a priority in the health and related sectors.** Ensuring sufficient child spacing (at least two years) is also important. Antenatal screening for undernutrition and anaemia is needed at both facility and community levels. Labor/energy/time-saving approaches with appropriate technology and organization are needed. Income-generating activities must be supported.
- d. **Extend and intensify applied and operations research, including RAP approaches, to address the numerous remaining questions that this WINS assessment began to address systematically.** This is needed to supply accurate, relevant and current information for rational decision making. Capacity-building strategies are called for to assist the Child Health and Development Centre and related Makerere University institutes and departments to further their policy and programme-relevant research efforts.

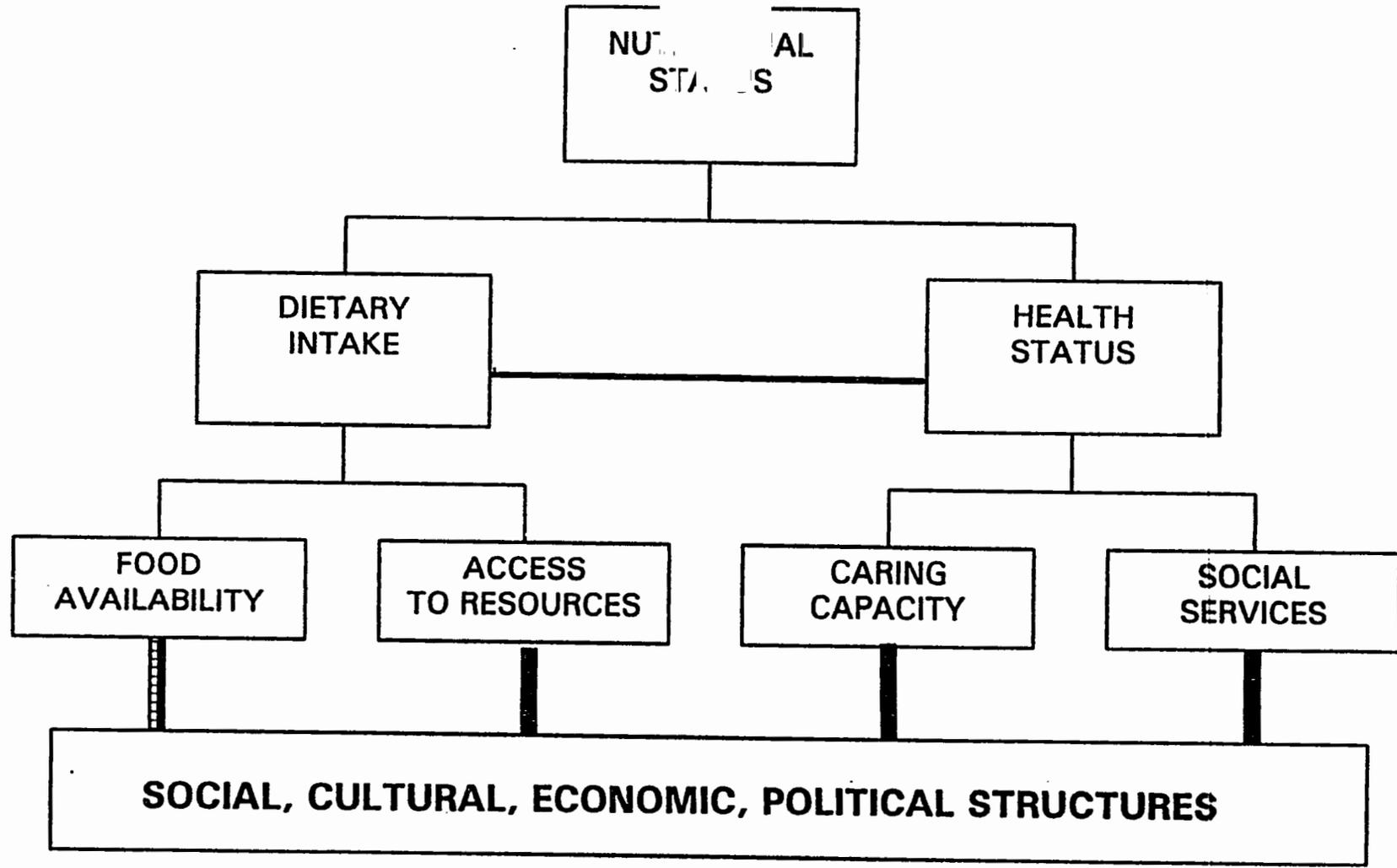
- e. It would be appropriate to capitalize on the "starvation" for accurate, relevant information that has generated much interest in the RAP approach of nutrition assessment, at both central and district levels, and by the Education and Agricultural Ministries. Requests for extension of the RAP to cover the rest of the two districts, as well as to other PHC and CBHC priority districts should be followed up. The same team which was trained to do this WINS assessment, could continue to work, under CHDC and MOH coordination. The RAP school height census and CB-GMP can both serve as the basis for an on-going parish-and sub-county level nutrition surveillance and HIS to further mobilize communities for relevant action.
- f. Much more attention is required in order to address the serious problem of seasonal and chronic food insecurity and intra-household acquisition, allocation and management of food and other resources for addressing maternal and child malnutrition. Assessment, research, training and decentralized planning on the underlying conditions and immediate situations that were identified in this assessment must be addressed. These include difficult topics such as husband-wife communication, women's status/role, decisions to sell or store staple food crop post-harvest food losses and storage, and RC support of insecure households, and adequacy of lactation by moderately malnourished women.
- g. Strengthening and enrich the current integrated training with nutrition components. Aim at building a multisectoral supervisory and operational team at district level. Key skills needed include intra-household resource management, growth promotion counselling, household food security, and case management of illness-related growth faltering.



Sign of maternal self-confidence

BEST AVAILABLE DOCUMENT!

CONCEPTUAL FRAMEWORK FOR NUTRITION



ANNEX I

Source: Jitta et al 1992

ANNEX II

THE WINS UGANDA NUTRITION RAPID ASSESSMENT PROCEDURES (RAP)

METHODS AND SAMPLE SIZES, SEPT. 1992

I. Levels

Sample Size

1-National	1
2-Regions	2
3-Districts	2
4-Sub-counties	6
5-Parishes	6
6-Communities	12
7-Households	32

II. Methods

Number

1- Case Control Histories	32
2- Observation points of service delivery	26
3- Semi-structured group meetings	8
4- Formal focus groups	7
5- School height censuses	4
6- Maternal anthropometry screening	4
7- Infant/child anthropometry screening	1
8- Food security (markets, millers) assessments	3
9- Review of the literature (over 100 sources)	2

III. Other RAP Opportunities

- 1- Spontaneous small groups
- 2- Key informant interviews
- 3- Available data/records analysis

ANNEX III

Draft 22/Sept./92 WINS Maternal/Infant Nutrition Assessment

CODING/PRELIMINARY ANALYSIS FORMS. CASE CONTROL HISTORIES

District _____ Sub-County _____ Village _____ #Household _____ Date _____
Investigator _____

Sum
Code

ANTHRO.
(index
child)

Growth Pattern: pos__ neg__ recup.__ unknown__

Birth Weight: kgs. _____

Age__yrs Sex _M _F

Present Wt.____; Nut.St-above____ below ____3rd P.

Current: Fever__ diarrhea __ ARI__ measles__ other

Others: Pallor__ Edema__; Kwash__; other_____

Maternal
Charact.

Age: ____yrs (known__ estimated__)

Nut.Status now: ____ (AC in cm)

Anemia: pallor of eyelid ____

Pregnancy weights_____kgs; complications_____

Lactating now__ pregnant now__

Completed edu. level _____ yrs; (if none.
literate)

Marital Status/situation _____

Migratory status (Permanent, temporary, length of
residence) _____

Religion _____

Relationship to index child _____

Income generating (in cash & cash) activities (type,
time, use) _____

Others: _____ **BEST AVAILABLE DOCUMENT**

-2-

SUM
CODE

Household Wealth (acres/use/ownership of land/ type/
no. of animals) _____

Charact. Crops/gardens grown on own farm/garden _____

Working (remunerated) adults _____ (no.)

Food security: all year ___ or seasonal ___

Food availability now: types _____
amount stored _____

Housing quality: permanent ___ impermanent
wall ___ roof ___ floor _____

Water source _____ : time spent daily ___ min. : amount

Latrine: available ___ ; observed that it is used

Others: _____

Practices Breastfeeding: (self-assess and observ.)
Affect Quality _____ Quantity _____
Infant

Growth Supplemental feeding: when introduced ___ mo.
Pattern What _____ Why _____

Persons preparing/feeding the supple. food: Who _____

Child care-(when mother is absent): Who _____ Freq _____

Past major illness/hospitalizations- When _____
What _____

Housing compound- level cleanliness observed:
prepared food ___ water storage ___ ; ← infant
dishes ___ ; fecal matter: other _____

Personal Hygiene mother/infant- level observed:
hands ___ face ___ clothes ___ other _____

Other practices: _____

BEST AVAILABLE DOCUMENT

		RANK H/M/L
<u>Social</u>	1. Overall HH resources available for basic minimum needs (food, clothing, shelter, med. care):	_____
<u>Situation</u>		_____
(Relative Rank)	2. Mother's sufficient time available and responsibility) sharing for child ← growth promotion/crisis case management:	_____
	3. Food preparation/weaning food/feeding situation:	_____
	4. Woman's social status within HH/control ← over resources:	_____
	5. Husband/wife communication/decisionmaking:	_____
	6. Maternal competence/confidence in ← infant growth promotion /mgt. growth faltering:	_____
	7. Other unusual situations/conditions: _____	_____
	<i>Total Score</i>	_____

Final Analysis A. Main conditions/behaviors supporting good growth pattern:

- 1-
- 2-
- 3-
- 4-

B. Key situations determining poor growth periods (valleys):

- 1-
- 2-
- 3-

BEST AVAILABLE DOCUMENT

C. Key situations determining recuperative growth periods:

- 1-
- 2-
- 3-

D. (If B &/or C) (In the parents/investigator's opinion) What could have been done to prevent poor growth by the:

- 1-Household _____
- 2-Community _____
- 3-Health sectors _____
- 4-Other sectors, other factors _____

SUMMARY ANALYSIS/"GUT" EVALUATION: _____

BEST AVAILABLE DOCUMENT

BEST AVAILABLE DOCUMENT!

AVAILABLE DOCUMENT!

PROCEDURE FOR THE CASE HISTORY

Selecting the Household

1. Must have a child between 4-15 months
2. Child must have a child health care with at least 2 weights recorded or plotted (3rd or another weight can be taken during visit).
 - the card should have a birth-weight and at least one other weights-below 6 months of age.

3. The household must be in a rural setting-

In any community take at least 2 ^{households} ~~hundred~~ with each of the following growth patterns;

- a - a good growth pattern
- b - a fluctuating growth pattern
- c - a poor - faltering growth pattern

Checklist for Case History:

Before proceeding, check whether mother or principal caretaker is at home.

- Observe
- environment; sanitation, layout, etc.
 - house quality
 - food crops, fruits, domestic animals, vegetables, etc.

Information Sought

Composition of the household - sex, age, relationship to head of head of household, employment of adult members, etc.

Mother's and Child's Health Status

1. Check information on CHC.
2. Cross check by asking - birth date, birth weight, type of birth, birth order.
3. Where was the child born?, at home or in a health facility?
4. Abnormalities at birth - congenital or otherwise?
5. Mother's gravid history - illnesses during pregnancy.
6. Discuss child condition or circumstances as per CHC. Refer to

7. Child's illnesses past or present?

At end of interview - do weight, height of child and mother's arm circumference and height.

DIET/FEEDING

Breastfeeding History

When started?, any special problem?, is baby breastfeeding now, day and night?

Weaning - type of food. Is water given separately? Boiled? How many is baby fed a day/night?

What is being given now? Detailed description of the foods given.

What was given previous day?

How much? (cup, spoon, plate)

Who gives the food? (same person always?)

How long does it take to feed the child? (short time, long time? Why?)

Is the recipe(s) specially for the child?

Is food given from family pot?

Is the same food given always?

Is it given occasionally?

Is the food used bought, is it grown at home?

What is bought?

What is from the home garden?

What type of salt is used, iodised or not?

What type of fuel is used?

What cooking methods are used?

Any special household technologies used?

Cultural Beliefs:

- Are there special food for children at certain ages? What foods?

- Are there any food s prohibited or recommended during certain illnesses, during pregnancy lactation or either for boys alone or for girls alone?

- What is the mother's perception of a child?

- Who is healthy? Who is not growing well? Who is malnourished?

Child Care

- Who looks after the child when mother is away? Does mother have employment outside the home?

- How does the mother allocate the time in 24 hours? Recall her previous day's activities?

- Is this usual pattern? Does the pattern vary on individual days?

MOTHER'S SOURCE OF INFORMATION:

- Who or which extension worker has been to the household in the past months?
- Has mother received any Nutrition education, formal or informal from? From whom and where?

If she has school children- do these ever bring home information they have learned at school concerning nutrition or health - has mother acted according to this information?

Who has helped her most with the health of her child? (Field workers). Did the program make any difference (e.g., CDD? EPI?).

Household Food Security.

The food available or grown in the home, is for what use; e.g.,
 for eating
 for sale

Who decides what is to be sold:
 - for brewing
 - used for other purposes (which?)
 - which foods

If food is sold how is the money used? Who has a say?

- Is there food in the store/garden at time of visit?
- Which foods?
- How much?

Other Information

Take child's weight

What could the informant have ^{done} to prevent the valleys in the graph of the child? (Static or losing).

Good Pattern:

How do you manage to maintain the weight of the child going up?

BEST AVAILABLE DOCUMENT