

SUPPLEMENTARY FEEDING PROGRAMS IN INDONESIA

by

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I. Scope of Work:

To assist USAID and UNICEF in describing and analyzing the nature, problems and potential of supplementary feeding programs in Indonesia, to include:

1. A review of the role of supplementary feeding in malnutrition problems
2. Assist with the analysis of current supplementary feeding activities in Indonesia and recommend specific activities to enhance this component and assist in establishing operational guidelines
3. Review data collection and analysis for UNICEF supplementary feeding review
4. Advise USAID and UNICEF on future programming for supplementary feeding activities in Indonesia within the context of UPGK and community development

Preliminary Remarks

This report summarizes a review and analysis of Government of Indonesia (GOI) feeding programs currently in progress. An attempt is made to identify areas in which these programs could be strengthened to better accomplish the stated objective of improving the nutritional well-being of families, particularly children, pregnant and lactating women. Recommendations are made for modification in the current program to improve performance and for field research to provide guidance for future planning of feeding programs within the context of the national nutrition program (UPGK). It is the view of this consultant that conceptually the UPGK program is sound. Refinements are needed in implementation to improve efficiency and effectiveness.

The report is based on a consultation from October 3-31, 1982. During this period I reviewed documents provided to me that described the various programs as originally designed and subsequently modified based on experience and mid-program evaluations. I did not attempt to gather original evaluation data. Rather, I interviewed numerous people who have been directly involved with the programs at all levels, i.e., Ministerial, Provincial, Kabupaten, Kecamatan and Desa. Some of these interviews were conducted during on-site visits to activities in progress at a taman gizi, Puskesmas and training center in East Java and in Desa with a limited number of home visits in Central Java. I also held discussions with some individuals engaged in income generating activities for women, and at the village and small industry levels in the production of foods. Additionally, I observed the special NIPP program area in East Java, reviewed the technical aspects of the program and attempted to extract from that experience elements for supplementary feeding that might be successful if placed in a self-reliant mode. I reviewed my analysis of the NIPP program with Mrs. Sayogyo to evaluate other experiences with village-supported feeding programs in Indonesia.

It should be noted that several of the questions that arose from reading program documents have already been recognized by others and some are currently being addressed in small research projects and surveys. I mention some of them in this report because the survey and evaluation data were not yet available. I acknowledge that some of the answers, therefore, are forthcoming and that some of my suggestions are already in the early stages of implementation.

Finally, a one month consultancy is insufficient time to become fully acquainted with all aspects of a program and to explore in depth the problems, their causes and possible solutions. It is hoped that the recommendations that have emerged are balanced and applicable to the usual situation. But, Indonesia is diverse and it is obvious that no recommendation is likely to be applicable nationwide. The recommendations, therefore, should be adapted to regional situations as appropriate.

II. UPCK - Family Nutrition Improvement Program

A. Brief program description

The UPGK program in Indonesia is an attempt to deliver integrated services at the village level in a manner that maximizes village level participation and self-reliance. The specific objective of the program is improvement in family health and nutritional status. Emphasis is on the healthy child and maintenance of a healthy state exemplified by continuous weight gain. The program is based on the premise that the mother is the critical agent to maintain the Health of her children and the focal point for bringing about behavioral changes where these are needed to improve their health and nutrition, particularly for those under 5 years old (Balitas). Hence, all aspects of the program are designed around assisting the mother in identifying when her young children are "at risk" of becoming under nourished and the steps she can take to lessen the risks. The implications for programs of this philosophy is involvement of the mother and the community in supportive roles and the tapping of extra-community resources for necessary help only when these are non-available within the community. During the start-up period, the government's role and that of external agencies is to provide for a limited time the necessary resources and training to assist the community in developing an appropriate, self-sustainable integrated program. It is intended that at the end of this start-up period the program will be supported at the local level.

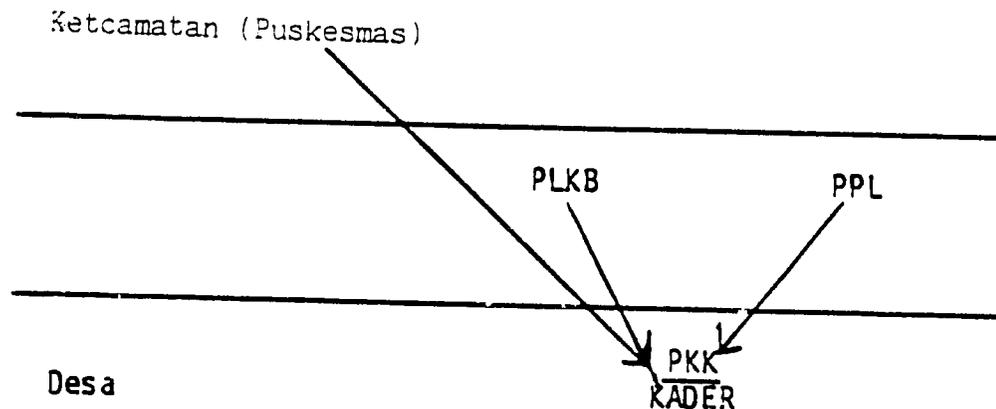
Four government of Indonesia groups involved in the nationwide program are health (MOH), family planning (BKKBN), agriculture (MOA) and religion (MOR). The first three of these groups through their departments have activities that attempt to directly influence feeding patterns and/or the family food supply. The ministry of religion through the Department of Religious Affairs attempts to stimulate awareness and participation in the program. The type of activity developed by each ministry to influence the feeding pattern and supply is summarized as follows:

Type Feeding Program

Dept. of Health (MOH)--- Directorate Nutrition----	→ Rehabilitative/ demonstration
National Family Planning Agency (BKKBN)-----	→ Monthly demcnstration
Dept. of Agriculture (MOA)--- Agric. Extension----	→ Food Production/home gardens
Dept. of Religion (MOR)-----	→ Motivation

The MOH currently covers about 10,000 villages in Indonesia with the UPGK program; the BKKBN covers about 20,000 villages.

The organizational structure developed to provide coordination of activities is a series of intersectorial coordinating boards at the national, provincial, Kabupaten and Kecamatan levels chaired by the appropriate leader or his designated representative at each of these levels, i.e., governor, bupati and camat, all in government service under the Ministry of Home Affairs. The LKMD (village institution) whose head is the lurah (village head) is the organization responsible for the local program. The lurah is an elected official. Most activities are carried out by kader organized through the village women's organization (PKK) or family planning acceptor groups. All kader in the MOH villages currently are trained in nutrition and referrals. Technical supervision in Depkes (Department of Health) villages is provided from the Puskesmas at the Kecamatan level. BKKBN area workers currently are trained in nutrition and could be prepared for referrals to the UPGK program. The supervision of kader in BKKBN villages is from family planning field workers (PLKB). The agricultural extension worker (PPL) under the MOA programs provides supervision to extension activities of kader. All supervisor personnel are paid government employees.



All Puskesmas doctors are heads of the UPGK Technical Implementation Team (Kecamatan level) so that they are responsible for referrals from UPGK programs.

The activities (taman gizi) to be carried out by the kader at central locations within the Desa that constitute the UPGK program include:

1. Monthly community weighing of all balitas to determine how many have gained weight (normal growth) and to identify those who have not gained weight or whose weight is below the "red line" ("at risk" balitas) on the road to health card.
2. Guidance to mothers of "at risk" balitas on means of improvement. This guidance is supposed to include appropriate menus using locally available foods if inadequate solids are being given, and the use of oral rehydration fluid, if diarrhea is a problem. Vitamin A is given to 1-5 year olds and iron-folate supplements to pregnant and lactating mothers as nutritional "first-aids", the former based on a six-month schedule using a massive dose (200,000 IU).

3. Referral to the Puskesmas in the case of illness, weight below the "red line" or failure to gain weight for three consecutive weighings. These children from some areas (i.e., those covered by the Depkes program) are eligible for scheduled rehabilitative feeding.
4. Educational demonstrations for all mothers on topics to include food preparation especially for feeding infants and children, sanitation, immunization and family planning.
5. Village gardening for the purpose of diversification of the family menu.

Kader are unpaid volunteers selected from the community usually on the basis of ability to read and write, being married and over 20 years of age. They must express willingness to devote time and energy to the program. The criteria for selection, however, is variable and determined in large part by the lurah. The reward for kader participation is limited to the prestige of being selected as a village leader and in some areas, a uniform to designate their position. Kader most often are part of the PKK or village women's group since all women of the village by definition are a part of this group. However, kader are not necessarily active in PKK activities, although, I am told, this tends to be the usual case. Among the 10 designated activities of the PKK, nutrition is one, and therefore, participation in, and support of, UPGK is included in their mandate.

For the purpose of local management decisions and monitoring, a simplified system has been developed for monthly recording and charting. The data charted include the number of eligible (1-5 years old) children (S), those having received a growth chart (K), the number weighed that month (D) and the number gaining weight (N). The data collected through this system (SKDN) is displayed for the purpose of monitoring the program locally. Program managers can obtain additional useful information by calculating the ratios of K/S = a measure of potential program coverage, and D/S = actual monthly coverage, hence the level of actual community participation. These data, however, do not allow calculation of continuity of participation of individual children nor a quantitative measure of physiological impact, i.e. number graduating from various grades of malnutrition. For this purpose more specific information is needed and should be obtained on occasion as a separate study cross-sectionally conducted on a subsample, or alternatively by obtaining a random sample of KMS cards and evaluating them. (In my view, the kader should not be asked to routinely obtain these kinds of evaluation data as it would greatly increase their administrative chores at the expense of time available for interaction with mothers.)

B. Program strengths

Conceptually the UPGK program is sound. It captures indigenous strengths in Indonesian life and culture, e.g., that of helping each other through group activities organized at the community level, using community resources for the development of the community toward self-reliance. The overall objective of the program, i.e., improvement of the quality of family life through improved health and nutrition, is clearly stated in program documents and is recognized and accepted in theory at all levels. Both political and budgetary commitment to the program nationally, provincially, and, in some instances a lower levels, is evident although variable. The theme that a growing child is a healthy child is a simple understandable concept down to the level of individual mothers. The tool of weighing children to identify those not gaining adequate weight and therefore in need of special attention is reasonably easy to perform by minimally trained volunteers. An understanding of how to interpret the findings and give appropriate counseling however, is more complex. The UPGK program by its inclusion of nutrition and health, family planning and home food production has the potential for providing an integrated, mutually supportive group of interdisciplinary messages and activities that should increase the impact of the program above that attainable by any one of the program elements implemented vertically.

The increased awareness of nutrition and health issues obvious at the village level is evidence that the potential strengths of the program are in fact having an impact. Unannounced home visits resulted in mothers producing their KMS cards and an awareness of the weighing program and its purpose. There is little doubt that the increased awareness of nutrition and health issues brought about through UPGK activities have had a positive influence on the nutritional conditions in Indonesia.

C. Program areas identified that need strengthening

While the UPGK program is conceptually sound, has been enthusiastically implemented in many villages, and has heightened the awareness to child health and nutrition concerns, there are some programmatic areas that should be strengthened prior to further expansion. There are also some components of the supplementary feeding program that need to be modified if the program is to become institutionalized within the community. The problem areas that directly or indirectly influence the feeding component of UPGK can be grouped under:

1. Conceptualization issues

There is an obvious need to explicitly define the terminology used to describe the components of the UPGK program and the outcome expectations from each of these components. It is especially important that kader in the BKKBN program involved in demonstration, but not rehabilitative feeding, clearly understand the difference. Confusion now exists because the Indonesian term "pemberian makanan tambahan" (PMT) is being translated as "supplementary" feeding and being used indiscriminately by kader for both demonstration and rehabilitative feeding. It is my understanding that the term refers to the giving of additional food but does not distinguish whether this results in a net increase in kcal and nutrients above that in the usual diet. The outcome expectation of the demonstration type of PMT is a qualitative change in menu unlikely to result in a demonstrable change in rate of weight gain as recorded on the KMS. In contrast, the outcome expectation of rehabilitative PMT should be a demonstrable change in rate of weight gain, e.g., increase above the red line or restoration of an upward from the flat or downward (three times no weight gain) line on the KMS. The new policy is that PMT at the Kecamatan level is available for BKKBN referrals as well; not just Depkes referrals. This change may help to dispel the previous confusion. It should be made clear, however, that a change in the rate of weight gain will occur only if rehabilitative PMT results in a net increase in kcal. In practice this may not be occurring under several local adaptations in implementing the program, such as when the UPGK-PMT is a 1 or 2 time weekly meal and the other days covered by a take home package that is insufficient in quantity to cover dilution of the extra food into the family pot.

This problem of differing meanings applied to feeding programs is not unique to Indonesia. Supplemental feeding is a term that has been loosely used in several countries to describe a variety of different kinds of feeding programs. Some of these programs have provided food that truly supplemented the usual diet (net increase in kcal and nutrients) and these successful programs have resulted in improved rates of weight gain. Usually these successful programs have been on-site feeding programs for obviously malnourished children. But even these programs have not always been effective because of compensatory decreases in food provided from the home diet. Other programs in which "supplementary" food is sent home are less expensive to operate but because of dilution into the family pot, frequently do not result in a significant net increase in kcal for the targeted child. Often confusion has occurred when "supplementary feeding" programs have been

evaluated because this distinction in definition and expected outcome has not been explicitly stated and understood at all levels from the outset of the program. As a result such programs frequently have been considered "failures" on the basis that graduation from stages of malnutrition as classically defined is not shown except for the most serious forms. This, of course, should not be the expected outcome for a feeding program that does not provide a net increase in kcal. Although planners of the UPGK program may clearly distinguish the difference, supervisors and kader too must not confuse these two programs, i.e., demonstration and rehabilitative, and their expected impacts.

Another confused conceptual issue is that of how to use the dynamic concept of incremental weight gain as the basis for managerial decisions, rather than the classic nutritional status indicators of gizi buruk, gizi kurang and gizi baik. It is important to retain the distinction of gizi buruk (below the red line) and the emphasis on this group as high risk medically and nutritionally. But, the intermediate levels and how to interpret them is confusing since the KMS does not use this categorization. Furthermore, appropriate use of the KMS graduated shaded areas is not fully understood by kader and program managers. For some kader, to move to a darker shaded area is the goal implied; for others, to move to a lighter area is not alarming if there occurred a weight gain at least once in three weighings. They frequently do not recognize that mothers able to retain the weight of their children within the same shaded area are achieving the goal and should receive praise. This is important because the criteria of "three times no weight gain" does not focus on children who may not be progressing along their normal growth channel. These children who are faltering in growth may thus not be identified as in need of special dietary help until they have become seriously underweight.

I would suggest considering some modification in the instructions on "three times no weight gain" as the trigger to identify "at risk" children. The modifications suggested are based on the following facts. Normally children gain weight more rapidly in the first year of life than thereafter. For infants 6-12 months old a gain of about 500 gm per month is normal when there has been no diarrhea or other illness. Therefore, an infant who has not gained weight for one month or who has failed to gain less than 300 grams per month for two consecutive months should be considered eligible for special dietary counseling aid. For children 1-3 years old, a normal growth pattern is a weight gain of 500-600 gm in a three month period (150-200 gm monthly). Therefore, a child should be identified for special dietary counseling if he/she has gained less than 100 gm since the previous month and eligible for supplementary feeding if he/she has gained less

than 300 gms in the previous 3 months. If diarrhea has occurred in the week prior to weighing, the weighing should be repeated to determine if weight loss represents a trend rather than a temporary phenomenon or error in measurement. In setting a quantitative expectation on weight gain, it is important to determine the relative sensitivity of weighing using the system now operating in the UPGK program, i.e., how much "noise" is in the system per se.

The observation was made that kabupaten managers are unaccustomed to reporting in the KMS format and as a result resort to traditional tabulations (gizi buruk, etc.) as the basis for their managerial decisions. This may be passed down to kader confusing their perception of the use of KMS for decisions. Introduction of the SDKN is a step toward solving this problem. An additional step would be to require that baseline weighing data for each community, and annually after the start of the program, be displayed on community KMS cards. This is a much more dynamic way of visualizing the nutritional conditions in the community.

There exists a basic structural weakness in the national program as now being implemented. There is no single line of authority and accountability for program implementation. Both the department of health and the family planning agency have responsibilities for carrying out the UPGK program in their respective villages. Other groups are also carrying out weighing programs. Although in theory there is standardization in what are the minimal basic components that constitute the national program, there is diversity in implementation. A difference between UPGK-Depkes and UPGK-BKKBN exists in the budget allocation, training format, and supervisory responsibility for kader. This diversity has caused confusion. It is likely to cause dissatisfaction and negative feelings among kaders and communities whose programs appear to be receiving less political/budgetary support. Over time this can have a deleterious effect on motivation and commitment of the unpaid kader, and as a consequence, in the participation rates. There is an immediate need, therefore, to implant well what constitutes the basic national program; once this has occurred, diversity to adapt to changing local needs and resources should be encouraged.

2. Management issues

- a. Program coverage and regularity in participation. Currently available data suggest nationwide participation rates of about 40%. Personnel report irregular participation in the weighing of many children and in the participation of their mothers. The perceived reason for the irregularity is the occurrence of competing responsibilities and activities of mothers for their

limited available time. An in-depth study is needed to characterize the irregular attendees and non-participants. It is important to determine if those not participating or irregularly doing so tend to be a nutritionally or medically distinct group. It is equally important to ascertain their reasons for non-participation to determine if minor changes in program schedules or in the frequency or kind of contact of mothers with kader would improve coverage and participation. I noted considerable confusion and delay in activities occurring at the monthly weighing session, and other reports suggest that extensive delays are usual, especially when Puskesmas staff are delayed in their arrival. Busy mothers repeatedly frustrated by delays are unlikely to participate regularly. An orderly, organized and managed session is important. Skills for organizing and conducting meetings should be emphasized in training of PKK, and management responsibility for monthly session should be placed under their (or an appropriate equivalent community organization) authority.

Comparisons among communities of program coverage for monitoring and evaluating purposes depends on a reasonably complete census of eligible children. I was told that some communities have not made a complete census of balitas but have simply registered those who responded to the announcement that they should come to the taman gizi. In these cases the "S" in the monitoring system does not provide the necessary base for determining coverage of the program. More importantly, however, is that those balitas not coming to be registered are likely to be those most in need.

A rigorous effort must be made to motivate every mother with eligible children to visit the weighing center every month so that weight changes can be plotted on the KMS, and those in need of referral and/or additional food identified.

b. Referral system

Kader, particularly those in the BKKBN villages, are confused about their role as referral agents to the Puskesmas. In contrast to Depkes kader, BKKBN kader currently have not been trained in nutrition and referral and are therefore, unprepared to serve as referral agents. Further, the Puskesmas staff is confused as to their response to BKKBN village referrals, when they occur, verses Depkes village referrals. Much of this confusion is due to specific funding through the Puskesmas for rehabilitative feeding of eligible

"at risk children" in the Depkes program but not in the BKKBN program. Because of the lack of clear directives each Puskesmas can set its own policy with respect to rehabilitative feeding. Where the policy is not to provide rehabilitative feeding for BKKBN referrals, then there is little reason for kader from these villages (the majority of the UPGK program) to refer "at risk" children who are not ill, since nothing substantive will be done. Even Depkes kader do not clearly understand the criteria for referral. I observed among kader, particularly BKKBN kader, that weight below the red line in the absence of clinical illness was not sufficient for immediate referral to the Puskesmas, only failure to gain weight for three consecutive months. Thus, these kader due to lack of training or insufficient training were not prepared to provide early identification and attention to the most severely "at risk" children. This situation needs immediate attention. All UPGK kader must receive training in nutrition and referral. In addition attention should be given to providing more explicit instructions to kader as to their role as identification and referral agents. It should be recognized that the long term credibility of the UPGK program rests on the responsiveness of the system to the identified "at risk" children, and the system's ability to meet the critical needs of those severely malnourished. Without this responsiveness mothers over time will see little personal benefit to continued participation in the routine monthly weighing of their children when there are competing demands for the use of their valuable time.

- c. Information distribution system problems were observed in the timely distribution of budget and training material from the regency/Kabupaten level to the Kecamatan level. Coordination is important in the availability of budgets, equipment, and training materials. Training programs should not be implemented in the absence of the standardized training materials. This is critical to assure clarity in understanding of general and subobjectives of the program, standardization in the basic messages to be communicated and directions on appropriate referral procedures. Distribution channels, therefore, should be clearly established from the Kabupaten down to the community. Coordinating committees should be responsible for determining that the appropriate distribution channels have been established and are functioning effectively before allowing new programs to start in their areas of responsibility.

- d. Supervision and technical support

Currently in many areas the technical supervision of kader, particularly in Depkes villages, is inadequate. In these villages, technical supervision is from the Puskesmas staff who visit the community weighing sessions monthly when the availability of staff permits.

Usually it is the midwife who attends; her primary responsibility is medical, rather than nutritional, issues. In BKKBN villages, supervision and technical guidance of kader is through the family planning field worker (PLKB), an intermediate paid position between the Kecamatan and desa levels. The PLKB have been given limited if any training in nutrition; family planning is their primary career role. There is need of a closer supervision of kader than currently provided through existing channels, and for more frequent opportunities of kader to discuss their problems and experiences with supervisory personnel who can provide technical guidance. This will require that the PLKB and PPL have access to guidance on technical issues relevant to the nutrition component of their program areas, and that an equivalent intermediate supervisory position be established in the Depkes program under Puskesmas supervision but with sole responsibility for nutrition activities of the participating desa.

3. Training issues

Three problems are evident in the training of participants in the UPGK program relative to nutrition and feeding issues. First, there is minimal involvement of professionally trained nutritionists in the direction of the program below the Kabupaten level. Second, the five day period for kader training without provision for periodic refresher. discussion or re-training sessions is inadequate. Third, the format for training tends to be top-down lecture and rote learning rather than oriented to problem-solving.

Motivation is critical to sustaining the quality of a program based on volunteers and on government servants whose primary responsibilities are to other programmatic areas, e.g., medical treatment, family planning, midwifery. Enthusiasm engendered during training sessions will wane, and interest in learning personally and in assisting mothers in problem solving will decline if there are not periodic opportunities for discussions with professionals and those outside the day-to-day program operations. Kader need to feel personal gains for their voluntary participation as well as the satisfaction of performing a service.

The issue of more involvement of trained nutritionists should be addressed. There are three groups with professional training in nutrition in Indonesia who could effectively serve as technical resources for training and advise at various levels:

- a. Graduates of the Faculty of Medicine/SEAMEO course in public health nutrition University of Indonesia. These graduates most of whom are medical doctors are

few in number but strategically placed in University faculties throughout the country. They could be more effectively used in periodic training of Puskesmas doctors.

- b. Graduates of the Academy of Nutrition, again limited in number, and placed at the province level throughout the provinces. Currently my limited observations suggested that these individuals tend to be heavily involved in administrative activities and not sufficiently involved in the technical training of supervisory personnel.
- c. Graduates of the home economics high schools. These graduates, to my knowledge, have been under-utilized in the implementation of the UPGK program. They could be a significant technical resource to the PKK and kader in the demonstration/education feeding component of the program.

To be effective, each of these groups would need "retooling" to adapt their technical knowledge to its appropriate application in the UPGK program.

The method used in training at all levels in the UPGK program is important since teachers/counselors tend to teach/counsel as they have been taught/counseled. The key to success is bringing about behavioral changes among mothers with "at risk" children and this will occur only through the counseling sessions with kader. For kader to be effective in doing this, their training sessions should also be in a discussion/problem-solving format. The five day training program schedule I was shown allowed very little opportunity for discussions and had minimal instruction on "how to" (not only "what to") counsel mothers. There was no provision for some on-site kader training sessions through home visits jointly with supervisory personnel which would permit training in dealing with individual problems. Kaders I interviewed had never had a supervisory person give guidance in how to work with the problems of individual mothers and had never been accompanied in their home visitations in the community.

Currently most Puskesmas staff are not adequately trained to provide rehabilitative feeding that is in accord with the policy directions of the UPGK program. The current pilot project of Depkes to upgrade through short courses the awareness of Puskesmas doctors of the UPGK program and their critically important role as a team member in referral and rehabilitative feeding, may determine if this training will reduce the seriousness of this problem within the Puskesmas staff.

(The long term solution is to include in the medical school curriculum more training in nutrition and nutritional rehabilitation through diet.) In many cases, the problem is likely to continue until the goal of a nutritionist in each Puskesmas is achieved. It is hoped that current efforts to increase the number of graduates from the Academy of Nutrition with skills needed for the UPGK program will soon expand the involvement of professionals at the Puskesmas level.

4. Program content issues

a. Education/demonstration activities. (Comments are restricted to the food preparation and feeding demonstrations.)

1) Confusion in objectives.

The primary purpose of the demonstration feeding program is to demonstrate the preparation of low cost, locally available nutritious foods in a form suitable for complementing breast milk during the period of transition to the family diet, and as a nutritionally balanced menu throughout the preschool years. The food prepared in these sessions, is fed by the mothers to the children in attendance. When this demonstration and feeding occurs monthly, this, of course, is not "supplementary" feeding. Since a similar type of demonstration and feeding session is a part of the rehabilitative feeding program of Depkes, confusion in objectives may occur. The difference of course, is for the Depkes program in the frequency of the sessions and in the take home food provided between sessions. The Depkes program may be true supplementary feeding. The difference between demonstration and demonstration/rehabilitation feeding is recognized by those involved in the design of the UPGK, but is confused in the perception of many kaders. In theory, the expectation from the monthly demonstration is a behavioral change by mothers toward diversifying the child's menu. This can be accomplished by using the demonstration session to provide intensive practical nutrition education. However, some kaders expect the impact of the demonstration program to be a significant shift upward in the weight chart rather than being satisfied with a continuation of growth in channel and behavioral changes in child feeding. It is important to continually reinforce this point to kader as done in the "N" column of the monthly data summary charts

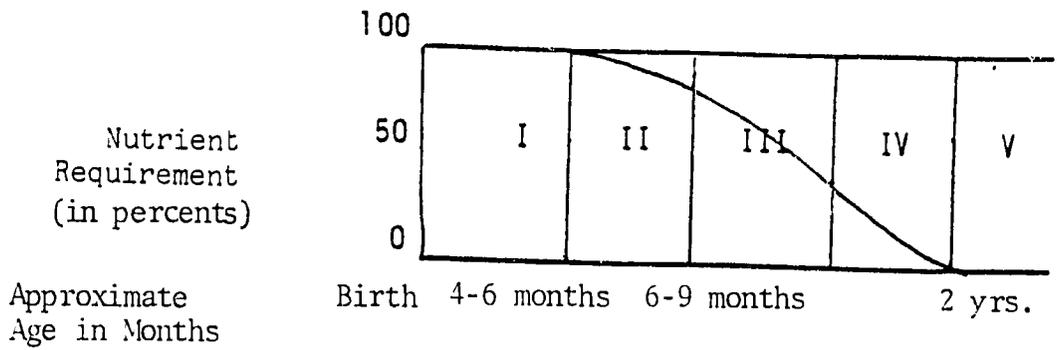
to avoid confusion in the expected impacts of how rehabilitative feeding compare with the educational feeding components of the national program.

2) Appropriateness of demonstration menus

Flexibility in menus for demonstration food preparation is desirable in order to adapt to local conditions. However, kader need more training in how to decide on appropriate alternatives within the guiding principle of fostering self-reliance (especially among low income families) through the use of low cost locally available food. I observed, for example, the frequent use of milk in one program, the expense of which absorbed a major part of the available budget and was not replicable in most homes of participants. On another occasion, because donated milk was available, it was used in the monthly demonstrations. This practice of using imported foods is counterproductive to the educational goals of the program; kader need to have a clear understanding of the program goals and the boundaries within which there is flexibility for menu selection. This can be facilitated through providing a series of written alternative menus and appropriate substitute foods. These menus should include the necessary quantitative amounts of each food to achieve the level of kcal intake desired.

Currently the program emphasizes the feeding of the 1-5 year old and does not appear to deal adequately with the issue of appropriate foods for infants to complement breastfeeding. Usually it is during the second six months of infancy when growth faltering becomes evident. A slowed rate of weight gain often has been established by the time children are one year of age and are eligible for the program. There should be teaching modules in the demonstration feeding program, therefore, that consider specific locally available Indonesian Foods for the complementary feeding period.

Figure 1 illustrates progressive periods in feeding children in the early years of life relative to their nutritional requirements.



Period I represents the time of virtually full breastfeeding with little or no additional food needed to fulfill the energy and specific nutrient needs; this period usually lasts for 4-6 months post partum but may be as short as 3-4 months under unusually stressful circumstances that limit maternal lactation capacity. Period II is the time when additional food is needed mainly to provide the energy needs of the growing infant, protein and most other nutrients still being adequately supplied by breast milk; this period usually occurs between 4 to 6 months. Period III is the time when it is important to diversify the infants diet to include additional sources of protein as well as micronutrients such as iron and vitamin A. This period which usually occurs after 6-9 months is important also to familiarize the suckling infant with a variety of tastes to develop an appetite for foods in addition to breast milk. Period IV is the time of increasing dependence on non-breast milk foods coming from the family pot, and period V is when full weaning to the family diet has occurred, after two years of age in many cultures.

In the UPGK program, more emphasis should be placed on periods III and IV stressing quantities as well as kinds of appropriate foods. Some foods suitable for these periods are illustrated on the KMS, but how to prepare these and additional low cost alternatives in suitable form is needed, e.g., how to cook green leaves and remove, by straining, some fibrous cellulose material that can irritate the immature bowel, or how to mash cooked carrots or potato and fresh papaya to avoid risk of a 6-12 month old choking on solid pieces of food. Also, the lessons should include instructions on how much of the specific food should be fed, how many times daily and the timing in relation to breastfeeding. For example, during period III, a cereal gruel composed of a rice-legume mixture of 2-3 teaspoons (5 gm teaspoons) fed three times daily after first breastfeeding to satisfaction, would supply 60-80 kcal and 2-3 gm protein. Addition of _____ gm tahu could substitute.

The addition of 2 teaspoons mashed, strained green leaves, carrots or yellow squash fed two times daily would provide about _____ gm iron and _____

ug vitamin A enough to adequately supplement that provided by the diminishing supply of breast milk. These foods and amounts are suitable complements for the breastfed infants fed in increasing amounts during period IV, the latter period being a time when additional foods such as tempe, egg, and fish, when available, should be added. Placing additional stress in the UPGK program on period III is a strategy aimed at preventing the usual decline in the rate of weight gain evident by one year when children become eligible for monitoring in the UPGK program. (It is my feeling that infants should be entered into the weight monitoring program at 6 months of age.)

b. Interaction of kader with mothers.

Intensive nutrition education activities are an exceedingly important part of the UPGK program and vital to achieving the objective of fostering self-reliance.

In the educational demonstration sessions and in personal counseling the degree of interaction between kader and mothers is critical. I was not able to observe a session in progress. The comments of several individuals interviewed indicated that too often the demonstration sessions are perfunctory and non-responsive to the issues/questions of individual mothers about child feeding problems. I was also told that the personal counseling of mothers is more of a lecture than a discussion of her individual situation, and advice is seldom directed and adapted to her individual problem.

c. Rehabilitative feeding

Rehabilitative feeding as now carried out is confused and variable. The way it is implemented in some situations may, in fact, be counterproductive to the UPGK concept. The delivery system for example, may be quite different depending on the location. In some villages the rehabilitative feeding is carried out within the village; in other areas it is conducted at the Puskesmas. Eligibility criteria in theory are "at risk" children. In practice, children are enrolled for feeding who do not meet these criteria. The reasons for this are in part a function of the system. In most Desa the cases of serious malnutrition (below the red line) are few (1 or 2 in a hamlet) and the number failing to gain weight for three consecutive weighings may also be few. It is not labor or "cost" effective to run daily rehabilitative

feeding programs for so few children. Consequently the tendency is to provide either a meal once weekly only or to simply send a six or seven day supply of food home with no extra allowance for dilution of the supply in the family menu. In addition, within the Desa, a budget is supplied for feeding a larger number of children than those meeting the "at risk" criteria. If unused for feeding purposes, it is not available for other purposes. As a result, programs frequently are not targeted only to those "at risk". Certainly there is nothing wrong with feeding children not "at risk", but this should no longer be viewed as government subsidized rehabilitative feeding. The proportion of the current Department of Health budget which is used for this supplementary feeding is substantial.

Community based, non-targeted, communal feeding programs may be viewed as desirable in some communities by active PKK groups. If these programs include at least all "at risk" children (government subsidized participation) and the feeding costs are sustained for those not at risk from community or fee-for service resources, these activities should be encouraged as complementary to the UPGK program. Only the "at risk" group, however, should be considered as part of the national program. This concept is discussed in Appendix I of this report.

Most Puskesmas staff are not prepared to provide rehabilitative feeding on an out-patient basis. Most Puskesmas doctors are too busy with critical medical concerns and other programs to devote their personal energies to rehabilitative feeding when there is no concurrent medical problem. The responsibility is usually given to other staff members often the midwife or nurse who have minimal training in nutrition. They do not know how to translate nutrient quantities into foods. Further, it is not practical to ask mothers to come daily or twice weekly for a plate of food if the distance from her Desa is great. She is unlikely to be able to afford the costs of transportation or time. Sending a 6 or 7 day food supply home without provision for daily follow-up is unlikely to be effective in getting the food to the intended undernourished child unless the supply sent home is large enough to counterbalance dilution into the family pot (an estimated 2-3-fold increase). Hence, a take home program from the Puskesmas without frequent follow-up is unlikely to bring about rehabilitation; this could have a negative educational impact on the mother's perception

linking child feeding and health. Furthermore, since there is no daily contact for delivery of the food, the kind of food sent home may be inappropriate to the concept of UPGK, i.e., low cost, locally available. The rehabilitative feeding from a Puskesmas that I was able to observe was limited and in a model Puskesmas setting. It consisted of providing the mothers of two children who had failed to gain weight for three consecutive months (they were above the "red" line and with no obvious illness) with seven eggs to be taken home with the assumption that the food would be fed the target child as a supplement (not a replacement) to the daily diet. The mothers were to return in a week to have their babies weighed and receive a supply of food for the next week. There was no weekly demonstration/education on on-site feeding as designated by the theoretical program design. The reason cited was that for only two children, it was not worth the cost and energy to provide a demonstration session. Hence, in this instance, which I suspect is not unique, the rehabilitative (supplementary) feeding was not providing the theoretical goal of a 300-400 Kcal, 10-15 gm daily supplement to the diet. It is unlikely that through a take home feeding program of this kind an impact measurable by significant weight increment will be achieved. Furthermore, this Puskesmas had no provision for follow-up should the child not be returned the following week.

Rehabilitative feeding as now conducted is taking a major portion of the GOI-UPGK budget and appears to be ineffective in the majority of circumstances. Furthermore, Puskesmas staff seem confused as to the goal of rehabilitative feeding and what their respective objectives should be particularly when referrals come from BKKBN-UPGK or Depkes-UPGK villages. Only the latter referrals are covered by budgetary provision through MOH for rehabilitative feeding. Hence, Puskesmas policy is variable and has led to misunderstanding and confusion.

If the rehabilitative feeding is retained as a responsibility of the Puskesmas, then clearer written guidelines, i.e., specific menus and alternatives should be provided. These menus for those referrals above the red line should be based on alternative foods locally available, not on imported or expensive food sources such as milk and meat. Limited use of milk and meat for cases of severe malnutrition (below the red line) may be justified particularly for "in patients." Another alternative is to provide the PMT to the Puskesmas in a prepackaged

form suitable for daily feeding in appropriate amounts to children.

Consideration should be given to terminating the rehabilitative feeding of the Puskesmas as now designed for those children showing three times no weight gain without obvious medical complications. These cases might better be handled by more intensive and frequent intervention and interaction with kader working in the homes with more specific technical guidelines. Specific suggestions for developing alternate models will be discussed in appendix I and II.

d. Vitamin A Component of the Nutrition First-Aid Package

Currently only the high dosage 200,000 IU vitamin A capsule is available as part of the "first aid" package in the UPGK program. In theory kader dispense the capsules at the taman gizi on a 6 month schedule. The record of administration is maintained on the KMS. Frequently, I found on inspection that the record was missing from the KMS. I was told the Puskesmas often has retained control over dispensing the capsule for fear that the high dose will be inappropriately dispersed by kader and potentially cause harm. Hence, currently there is no uniformity in the UPGK program in managerial aspects of vitamin A prophylaxis.

The high dose capsule originally was designed for use in programs where contact of the medical system with mothers and infants was infrequent. The UPGK program provides a means of frequent regular contact. Under these conditions a lower dosage pill (10,000-15,000 IU) could be given monthly by kader without fear of adverse effects to infants, young children or pregnant and lactating mothers. Furthermore, the smaller dose given more frequently would likely be more efficiently absorbed and utilized.

With the lower dosage, there would be no need for kader to be concerned about precise record keeping. The high dose capsule could then be retained at the Puskesmas to controlled treatment of cases with specific eye signs. It is important that the high dose capsule or its equivalent continue to be available in all Puskesmas facilities, hospitals and clinics for use where eye signs are evident, and in communities where the UPGK program has not been implemented effectively. Capsules are manufactured and available at lower potencies. An alternative to the capsule would be to use a liquid concentrate in a dark brown bottle with the appropriate amount dispensed at the monthly weighing from a spoon or eye dropper directly onto the child's tongue. There are legitimate arguments for wanting to limit the availability of vitamin A to a single concentrated high dose pill to avoid confusion.

However, since a vitamin A fortification program is in the early implementation stages and the UPGK program is rapidly expanding its outreach, there is increasing reasons in Indonesia to consider alternatives to the high dose capsule.

Training and educational materials

The training material prepared thus far is appropriate in substance although, based on experience, it could and should be simplified when revisions occur. There is need, however, for additional, more detailed specific information on program management issues and on "how to counsel". This should be incorporated into the educational materials and not in separate form.

Flexibility in the selection of menus to be used in demonstration and in rehabilitative feeding in order to adapt to local preferences and food availability is desirable. The use of three food groups as a classification guideline allows for this. However, it is difficult for kader, but more importantly Puskesmas staff, to translate principles such as low cost foods with adequate kcal and protein (for rehabilitative feeding, 300-400 kcal and 10-15 gm protein daily) into specific foods, and then into specific menus. The tendency is to use such foods as milk and eggs that traditionally are recognized as nutritious but are beyond the economic reach of many families.

For these reasons, there is need to develop a series of appropriate examples of menus that translate kcal and protein into specific foods and alternative combinations of foods. For example, how much tahu/tempe/beans and rice/maize/cassava, would provide 60-80 kcal and 2-3 g protein so that five such feedings daily in addition to the regular diet would provide a 300-400 kcal and 10-15 gm protein supplement to a usual diet.

The educational material developed for the UPGK program areas, i.e., family planning, home gardening, MCH and nutrition, could be improved by providing a better integration of the basic principles from each area that are mutually supportive. This might best be done by preparing integrated modules for presentations by kader that deal with specific issues. For example, module on eye health might integrate information on the importance of sanitation in eye care, how to detect signs of unhealthy eyes and the importance of seeking help to obtain a vitamin A capsule if symptoms of night blindness or bitot's spots are noted. The module might include

the role of feeding dark green leaves and vegetables and yellow fruits to prevent night blindness, and how specific vitamin A active food can be provided through planting them in the home garden. Another module might deal with the role of breastfeeding in infant health, maternal health and as an effective contracepting strategy until substantial complimentary feeding is introduced. The module would include information on the appropriate "signals" as to when the mother needs an adjunct contraceptive strategy to prolong birth intervals and what are the appropriate contraception alternatives while lactation continues. A complementary module might deal with antenatal care issues including nutrition and foods grown in the home garden that are especially appropriate for this period. This module should stress the importance of maternal weight gain and of limiting excessively heavy work activities of mothers as term approaches and the importance of feeding colostrum to the newborn. All messages should be presented within the context of a healthy mother and infant. Although the UPGK program is focused primarily on the 1-5 year old infant, maternal and infant survival issues underlie those of participation in family planning and nutrition programs.

Since family planning MCH and nutrition issues are so interrelated throughout the pregnancy-lactation continuum, and have critical implications for family well-being, kader in the UPGK program could play a key role. However, it is not easy even for vertically trained professionals in family planning, MCH, or nutrition to effectively integrate this information. Therefore, the conceptualization and development of a simplified illustrated pregnancy through lactation chart with the timely nutrition and/or family planning information noted (such as is done on the KMS) to be retained by mothers for use with kader could be useful. Such a development would require pilot testing before production for use in the UPGK program. This suggestion is discussed in Appendix III.

5. Additional relevant issues

- a. Role of imported foods in the UPGK program.
In the past Title II foods have been used extensively in child feeding programs, including those in Indonesia. These programs have provided needed food to the physiological benefit of many children at a time when there were not alternative programs available. This approach, however, fostered a dependency of programs on an imported foreign product and many of these feeding programs suffered from interruptions by the irregularity of supplies. This has led to minimal nutritional impact on those most in need and little carryover educational value from improved feeding of children from local resources. The UPGK program is based on fostering

self-reliance through the use of local resources. There is no role, therefore, for imported foods in the UPGK program, and their continued distribution at the village level to children and/or pregnant and lactating mothers where the UPGK is operating is counterproductive. Programs that depend upon these commodities if modified to include a strong educational component emphasizing local alternatives may have a place in needy areas not yet reached by the UPGK program. In addition, such commodities might be appropriately used in Food for Work Programs, within institutional settings or as inputs into the subsidized production of commercially available processed foods. Before promoted for those purposes, however, the potential should be carefully evaluated for the replacement impact this approach might have on the use of indigenous supplies.

The above comments apply also to the use of donated milk. Milk is not a widely used food in Indonesia. It is not produced in sufficient quantity and at a low enough price to supply the needs nationwide for child feeding. Additionally, except in cases where breastfeeding is not possible due to maternal death or the rare case of lactation failure, it is not essential to young child feeding. Alternates such as soya milk and tahu are indigenous and more suited to the culture and to fostering long-term, sustainable child feeding practices.

b. Appropriate local weaning food

To reinforce the concept that children's diets need special attention when they are not gaining weight, the UPGK program needs access to weaning foods, particularly those that are calorie dense and conveniently added to the usual child's diet as a true supplement. The food(s) should be based on an appropriate combination of cereal or tubers, legume or fish, and where feasible, the addition of oil. The precise mixture should be adapted to those ingredients locally available or whose production could be stimulated through the home gardening component of the UPGK. The mixture(s) must also consider local taste preferences. The NIPP program developed several alternative BMC(processed) mixtures. The spontaneous activities in surrounding non-NIPP village in producing a village-based BMC illustrated community acceptability and feasibility of this approach.

The NIPP-BMC used for rehabilitative feeding was reported to be effective in restoring weight gain after an average two months of use. My questioning PKK involved in the program revealed that they now accepted the concept of BMC (special food for feeding children) as important and would continue to produce a local equivalent after termination of the NIPP-BMC sponsored program in support of the UPGK program. In fact, they preferred their village based BMC because it did not contain the off-flavors that developed in storage of the centrally processed product.

c. Processed versus natural foods

Experience shows that if acceptable to recipients, it makes little difference physiologically at equivalent nutrient density if food used for supplementary feeding is processed or natural. However, it is sometimes easier to achieve adequate nutrient density and constancy in a smaller bulk volume using processed products. It is also easier to target a processed food to the intended child since there is less tendency for processed products to be diluted into the general family food pot. On the other hand, processed products in general cost more and require added technology. To minimize cost and promote community self-reliance, the technology for processing must be simple and relatively maintenance-free to assure against frequent disruptions in availability of the product. Lack of continuity is one of the most significant causes of poor participation in feeding programs.

Just as there are arguments for the use of a processed food for supplementary feeding, there are also strong arguments for the use of natural foods from the long term educational or behavioral change perspective. However, this assumes that the responsible managers at the village level know the appropriate locally available foods that will provide the desired level of calories and nutrients. Most experience including that of NIPP has shown that the equivalent of 300-400 kcal, 10-15 gm protein daily are needed in a home-based program to effectively overcome replacement and dilution effects and, hence, bring about rehabilitation.

The UPGK take-home based rehabilitative feeding does not appear to be effective when based solely on natural foods. The likely reason is dilution into the family pot and/or replacement rather than a net-supplement to the child's usual diet. These constraints seemed to be lessened when a simply processed food BMC which could be conveniently incorporated into usual foods (porridges, snacks, etc.) fed children was made available. The early work guided by the Sayogyo from IPB has shown that a self-sustaining, village-managed feeding program is feasible. Both the IPB and the Nutrition Research

Center in Bogor have developed menus suitable for child feeding. The Sagoyo's work also illustrates that a local version of BMC has broader community acceptance than only rehabilitative feeding, e.g., of commercial value within the village as a convenient child food item.

Very recently in a study of village-based take-home rehabilitative feeding in Northwest Thailand we have similar findings to that of the Sayoga's (Thanangkul and Underwood, unpublished). Our rehabilitative supplementary feeding program was not effective until a mixture of soyabean, mungbean and sesame was produced by a bicycle driven grinder and made available both for rehabilitative feeding and for sale within the village to those who wished. The demand for the product has exceeded the capacity to produce it, and efforts are now underway to convert this to a self-sustaining locally managed cottage industry.

The rehabilitative feeding program in Thailand now consists of the use of local food provided by the family, mainly rice and banana, supplemented by the processed mixture and soyamilk from the subsidized community feeding center. Some but not all of the ingredients for the mixture are grown locally; the others are grown regionally. The particular mixture used was arrived at after testing the village's taste preference for several possible combinations.

In Indonesia, supplementary feeding programs for village children, not only those malnourished, are feasible if based on a primarily self-supporting scheme. There are several possibilities for local production of foods that are suitable for child feeding and that are marketable. These include tempe, tahu and many nutritious snacks. Additionally other food products such as a variety of chips and crackers made from certain local trees or plants can be produced for profit. These income generating endeavors, including the production of a local BMC mixture, and potential women's projects for the PKK or similar groups, or where this is not considered of interest, for other local entrepreneurs. One market for the BMC is the government through the Puskesmas to supply its needs for a rehabilitative food supplement. A scheme for a system incorporating these ideas is given in Appendix 1.

IV. Recommendations

Based on my review, the following recommendations are made to improve the effectiveness of the feeding components of the UPGK program.

1. Develop a unified UPGK program in which the minimal program elements are clearly delineated, the terminology used to describe each element precisely defined, the standardized methodology for monitoring and reporting emphasized in the training materials and the expected outcomes (impact) of each element clearly stated and, where possible, quantified. It may be reasonable to set specific targets for each Ketamatan or Desa (village leaders would then become accountable for program implementation and kader follow-up). I recommend that the minimal elements with respect to nutrition activities include (1) monthly weight monitoring, (2) identification-referral (to Puskesmas)-follow-up (for Puskesmas) village monitoring of sick and gizi buruk children, (3) monthly preparation and feeding of demonstration menus for children and (4) personal counseling and follow-up with mothers of "at risk" children. A rational protocol should be developed and implemented for rehabilitation of gizi buruk.

When the minimal "UPGK package" that the government is willing to support politically and through budget allocation is defined, communities or other private groups should be free to add to "the package" those components they feel are needed to promote their own community development priorities (including nonrestrictive community supplementary child feeding) at their own expense, but not to delete components from "the package".

2. Consolidate the national program under the Ministry of Health and add necessary manpower to the Directorate of Nutrition. Sufficient professional manpower should be added to provide full-time attention to implementation issues and the coordination of nutrition activities within Depkes, BKKBN and agriculture. One professionally trained nutritionist should be delegated from the Directorate of Nutrition to the BKKBN (physically housed there) with sole responsibility for technical advice and monitoring of nutrition activities in the BKKBN and for coordinating these with Depkes.
3. Upgrade the training and thus the capabilities of Puskesmas staff for the medical and dietary management of all ill and gizi buruk referrals from the UPGK program. Training should include how to give appropriate dietary counseling to mothers. Where rehabilitation must be done on an out patient basis and daily monitoring is not feasible, this follow-up should be referred back to and become the responsibility of a specific nutrition kader within the hamlet of the subject (where this is possible). The follow-up should include daily rehabilitative feeding.

Puskemas staff should not be responsible for rehabilitative feeding for "three times no weight gain" children who are not ill. They should provide medical assistance to the UPGK program when this is determined to be needed. (A scheme for dietary management within the village of no weight gain children is proposed in the appendix.)

4. Assign nutrition kader responsibility for a specific group of households to encourage more personalized interaction with mothers between monthly events. More frequent contact should encourage higher coverage and continuity in participation rates, and a more effective personalized follow-up of "at risk" children. These "assignments" will assist in accountability of kader for referrals and follow-up (see recommendation i).
5. Develop a mechanism for an annual refresher-discussion seminar for continuing kader, for distribution of service awards and for the replacement of dropouts by trained new kader. It is critical that additional motivational incentives be built into the volunteer system to sustain it while still allowing for those who choose to move to other activities to do so. Appropriately trained replacements must be provided. Consideration might be given in the future to designating a specific time period for kader to serve with the option at the end of that period for continuation.
6. Improve the capabilities at the community levels to select and utilize low cost locally available foods for child feeding by providing more specific alternative menus (recipes) for use in demonstration feedings. More specific guidance is needed on alternate food items and the amounts appropriately fed infants of 6-12 months still breast fed and children 1-5 years to achieve a daily caloric increment above the usual diet of at least 100 kcal. Since in many instances the PKK leadership is responsible for the delegation of specific kader responsibilities and selection of menus and management of the demonstration feeding sessions, the training materials developed should include attention to how to assign UPGK activities to match individual kader skills to tasks and how to manage and organize demonstration and counseling sessions. For kader, the material should include how to, as well as what to, counsel mothers of "at risk" children in helping them to adapt and adopt information relevant to their personal circumstances.
7. In accord with the preceding recommendation, give the PKK (or its community based equivalent) managerial responsibility including budgetary control for monthly UPGK nutrition demonstration activities. Where there is a shortage of nutrition kader this activity could be carried out by PKK not specifically designated as nutrition kader in order to utilize the trained skills of the latter in weight monitoring, early identification of "at risk" children (below red line and no weight gain) and personal counseling of mothers. The PKK should have technical support from the Puskesmas and, where they exist, an effort should be made to

utilize home economics teachers who have been previously oriented to the nutrition goals of UPGK, for the training and technical support of PKK leadership.

8. Provide closer technical supervision and back-up to kader in utilization of weight monitoring information for managerial decisions. The schematics for what to do with the weighing information is available but the identification and referral system is not functioning well. Closer supervision should be provided by a specifically designated member of the Puskesmas staff in a position parallel to that of the PLKB in the BKKBN program. One alternative for achieving this by Depkes is to create a new level of supervisory workers intermediate between the Kacamatan and desa to provide the interface with the Puskesmas. This alternative is the least desirable. Another alternative is to reevaluate the programs for which current Puskesmas staff are responsible, consolidate or eliminate those programs no longer meeting high priority needs and reassign the manpower released in this process to supervision of UPGK nutrition activities. If this alternative is chosen, provision must also be made for the transportation of this individual apart from the monthly visitation by Puskesmas staff since he/she will be expected to keep closer watch over community activities.
9. Studies should be undertaken on a pilot basis to test the potential for institutionalizing child feeding activities at the community level. A conceptualization of one such approach is found in Appendix 1.
10. A study be undertaken to evaluate the operational and physiological efficacy of dispensing vitamin A by kader in the UPGK program at lower doses more frequently versus the current scheme of dispensing six monthly single high doses.
11. Intensive efforts be applied to identifying regional and community acceptable food mixtures based on a legume/cereal or legume/tuber mixture appropriate to child feeding, capable of simple village level processing and with market potential.
12. Develop a series of modular training materials that truly integrate nutrition and family planning messages and determine the ability of kader to effectively deliver these messages and monitor their effectiveness in changing behaviors of pregnant and lactating mothers.
13. Critically reexamine the concept of "three times no weight gain" as a "trigger" for early identification of children not making satisfactory weight gain. This concept should be evaluated relative to that of a deviation from channelized growth. This could be done by an in depth study of the precision of the weighing procedure within the program context and an evaluation of KMS cards for acceptable weight gain of children under one year and

those 1-5 years of age.

14. Conduct a comprehensive case study in a few chosen villages of the non- and irregular participants in the weighing program to determine if these are a nutritionally "at risk" group.

APPENDIX I

Conceptual Framework for a Study for Institutionalizing Child Feeding Programs Within UPGK at the Community Level

Problem statement:

In general, community based child feeding programs for the children identified as "at risk" have not been successful or sustainable as a community managed and supported activity. There are many possible reasons for failure that vary with the specific circumstances. The operational and philosophical framework of the UPGK provides an unusual opportunity to test innovative approaches toward overcoming constraints to self-sustaining child feeding within a national program.

Communal feeding of children is one means to achieve the objective of the UPGK of every child gaining weight monthly and of providing special help to children who do not gain weight for three consecutive months.

The UPGK approach as currently carried out through rehabilitative PMT for "at risk" children has not been successful for operational as well as technical reasons. It has proved difficult operationally to restrict the program to "at risk" children and, where this has been tried by attaching the PMT to the Puskesmas rather than village operations, it has not been cost effective, i.e., too few children at one time to warrant the staff time and expense. In addition, Puskesmas staff are not trained for this kind of program. Nonetheless there is evidence that communities receiving village-based PMT view this as beneficial. Furthermore, the activity has increased awareness of the health as well as nutrition needs of children. The constraints to success while the program is still largely government financed, however, argue against continuation as currently conceived in the anticipation of future community financing. Removal of the emphasis on rehabilitative feeding would enlarge the potential for community support and, in fact, would be philosophically more in accord with the UPGK theme that a child gaining weight is a healthy child, i.e., emphasizing feeding as health promotion rather than rehabilitation.

Within the UPGK philosophy, communal child feeding activity must be self-supporting. This can be achieved through community donations or through linking the program to income generating activities. Community donations are a common means currently used for financing community development programs. Income generating activities are now receiving more attention and are attractive to many villagers. Activities that are derived from the production and processing of food items, particularly nutrition foods suitable for child feeding, are logically suited to women and particularly to activities designated for the PKK.

Experience gained through NIPP from BMC promotion whereby surrounding non-NIPP villagers spontaneously began emulating the program lend credence to the feasibility of a community operated BMC (or equivalent) approach to

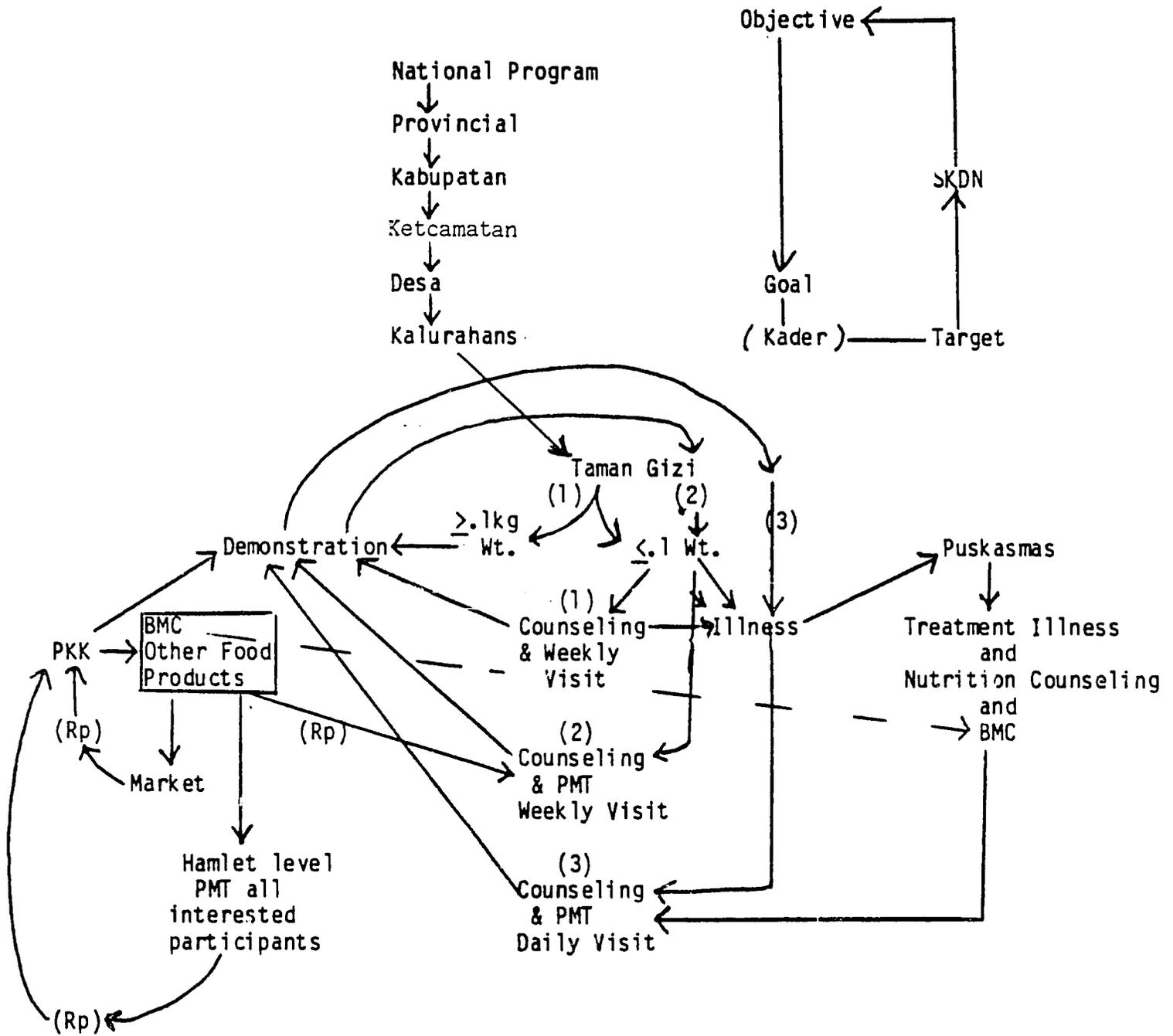
communal child feeding. Several formulations are available from the NIPP Project for BMC adapted to different areas and available food resources. Other indigenous snacks as well as tempe and tahu production are potentials for income generation as well as child feeding. Undoubtedly there will be differing products with potential in different hamlets and in accord with market potentials. It is even conceivable that hamlets could be encouraged to produce different food products and exchange these within Desa to achieve balance in their respective child feeding programs.

As currently defined no weight-gain for three consecutive months (total of four monthly weighing) is the signal for PMT. An examination of typical growth charts reveals that frequently small fluctuations in weight, as little as 0.1 kg which could be due to "noise" in the system, delay early feeding interventions although the child may not be making significant weight progress. These children, particularly between the ages of 1-3 may slowly decline in nutritional status to the point where rehabilitation becomes increasingly difficult.

Program Suggestion

A series of schematic to illustrate a system for earlier detection and responses within the UPGK framework follows:

Program Monitoring



This scheme places greater responsibility on kader for early identification of children failing to gain weight and more frequent interaction with mothers in an attempt to reverse the faltering growth. It would specify the appropriate food alternatives available locally and in the appropriate amounts for PMT and it would place responsibility for generating the economic support (and in part the food) on the larger PKK group as one of their activities. The food production part of the scheme would not be limited to producing only products for PMT, but for child feeding generally (adults too if desired). Income (RP) generated from the sale of products to those not nutritionally at risk would feed back into the PKK system to subsidize the PMT for growth faltering children and to support the cost for the feeding activities. The BMC or special food mixture would be sold to the Puskesmas (government subsidized) for the rehabilitative feeding of all gizi buruk children.

Implicit in the scheme is an increased responsible role for the PKK in managing the non-medical aspects of the program. Consequently PKK leadership would need upgrading of their managerial skills. To accomplish this, the following specific recommendations are made:

1. Provide PKK leaders or their equivalent training in managerial and organizational skills specific to implementation of the UPGK program.
2. Give managerial responsibilities including budgetary autonomy for monthly program implementation to the PKK leadership emphasizing that this activity is one of the 10 they already are mandated to execute.
3. Provide through the PKK to nutrition kader more specific guidelines on alternative menus based on low cost simply prepared locally available foods including appropriate quantities to include in child diets of different ages.
4. Consider encouraging reducing the number of programmatic areas for PKK activities in order to give greater emphasis to that of nutrition and child care. The decision of which activities to deemphasize should be made locally.

APPENDIX II

Suggested Scheme for Improvement of Kader Motivation and Performance an the Responsiveness of the System to Identification and Treatment of "at risk" Children

Problem Statemnt

Currently, in some areas only 50% of kader originally trained are still active after one year. The system now provides neither "refresher" training for older kader nor provides a standard mechanism for replacement of dropouts with newly trained kader. There are few positive rewards for volunteer kader in terms of personal gain, and where there are not occurring obvious improvements in child health e.g., lack of response and/or effective follow-up by the Puskesmas to referrals, there is little evidence that their volunteerism is in fact providing a meaningful community service. Further, supervision of kader does not provide sufficient opportunity for kader-supervisor interaction whereby kader can receive technical assistance in answer to questions they are unable to handle independently or about which they may want further knowledge. My experience with kader revealed most to be highly motivated, anxious to learn and very pleased when offered constructive criticism during joint home visits.

The problem of kader capability in identifying the "at risk" children and providing the appropriate response must be viewed from the perspective of the UPGK program as a whole, i.e., total community coverage, consistency of participaton of individual children in weighing and the effectiveness of response to those referred for help. I was told that on average 40% of the preschoolers in villages covered by UPGK are being weighed. It is not clear what proportion of the average 60% not participating in a given month are consistently not participating and represent a distinct group, perhaps those least well nourished. If this is the case, then the system as now conceived is inefficient in identifying those in need of special assistance. Increased coverage and consistency in participation is crucial to solving this problem. To achieve this goal it is important to determine the primary reasons for non or irregular participation. The reasons are likely to vary among mothers and hence to require different strategies to overcome. Preliminary evaluation of the Depkes/UNICEF case study suggests some bias toward greater coverage of poorer families. A more personal interaction among kader and mothers at the hamlet level might improve coverage and participation rates among the most needy group.

Program Suggestion

The following suggestions are made to be pilot tested for effectiveness in improving the system.

1. Assign kader responsibility for a specific group of households and encourage their interaction with mothers for whom they are responsible at times in addition to the monthly weighings. Kader would be expected to keep a simple participation check list for their families and to identify and seek to relieve causes for non-participation.
2. Provide a "refresher" training/discussion session of 1-2 days duration annually at central locations with participation of officials from Kecamatan/Kabupaten levels. Service awards might also be given at these sessions.
3. Encourage more frequent review of program operations, and of results from referrals and provide for on-site training through joint home visits between kader and supervisors. For the Depkes program this alternative would require training an intermediate level supervisory person equivalent to that of the PLKB and PPL since in most instances current levels of Puskesmas staff are not adequate to provide supervision of the nutrition kader (usually the midwife is the monthly representative at the Taman Gizi and her primary concern is medical).

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APPENDIX III

Integration of Nutrition, MCH and Family Planning

Problem

Nutrition, MCH and family planning are interrelated concerns of women throughout their reproductive years. For many women without family planning, pregnancy and lactation are a continuous process leading to shortened life span and poor life quality. When the interval between births is shortened, the effect on maternal health is exacerbated and leads to an increased risk of mortality and morbidity of her offsprings. High infant mortality rates, in turn, favor high fertility and a disinclination to practice family planning, hence a vicious iterative cycle with adverse consequences for both mothers and their offspring. These relationships are illustrated in Figure 1. On the other hand, improved maternal nutrition has a favorable effect on both maternal and infant survival and health but may shorten the birth interval in the absences of contraceptive practices. One means by which this may occur is through influencing the breastfeeding pattern directly or indirectly. For example, healthier mothers may be more active in work and/or social activities not compatible with frequent breastfeeding. These mothers rely earlier on substantial complementary foods for their infant. The consequence is a shift in hormonal levels that favor earlier return of ovulation. These women, therefore, to avoid an early conception, need to augment the lessened contraceptive influence of breastfeeding by adjunct contraceptive strategies. In the interest of optimizing infant nutrition, however, it is desirable that they continue to breastfeed. Hence, the adjunct contraceptive strategy for the lactating women should be one that does not interfere with lactation. Although these interactions between maternal nutrition through pregnancy and lactation, infant health and survival, and fertility are complex physiologically, the information mothers need to optimize conditions favorable to health and controlled fertility are simple. Critical is the timing of when these message are given beginning during pregnancy and continuing at contact intervals through at least the first 6-12 months of lactation. The UPGK program provides the potential for frequent mother contact throughout this important interval.

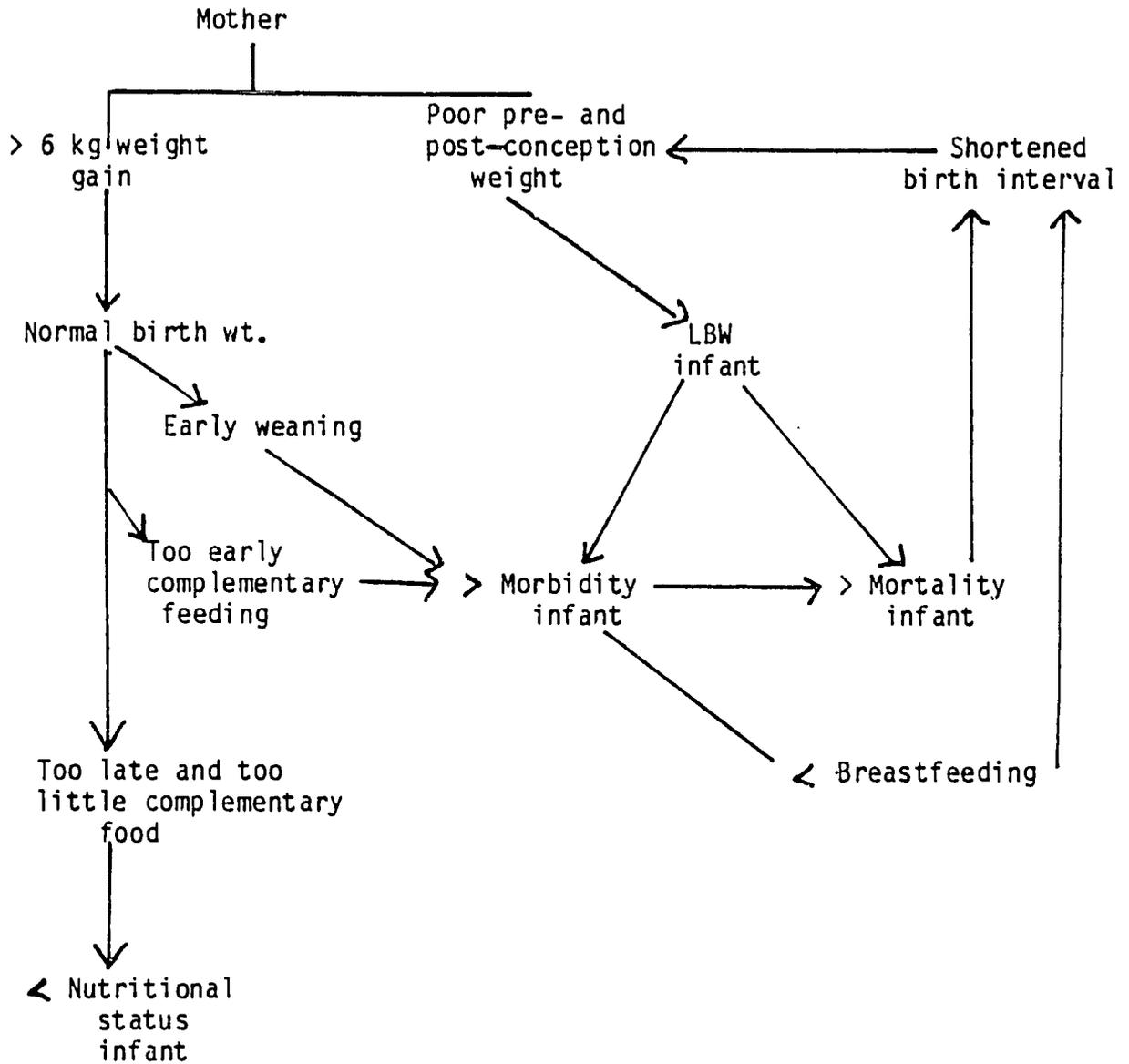
Program Suggestions

It is beyond the scope of this report to develop the substantive details for an integrated nutrition-MCH-family planning approach. The critical activities and messages to be incorporated in such an approach, however should include:

Prepartum

1. The importance of maternal weight gain throughout pregnancy with special attention to assure gain in the second and third trimester, and with special attention to women who enter pregnancy underweight. A total weight gain of a minimum of 6 kg should occur.

Figure 1. Interrelated factors contributing to poor nutrition of mothers and infants



2. Prenatal care including the distribution of iron to redress problems of anemia.
3. Counseling regarding the importance to infant health of feeding colostrum, breastfeeding generally and of the contraceptive effects of frequent suckling of the infant. Obtaining a history of intentions to breastfeed or previous breastfeeding experience and when complementary foods are usually introduced. This information can serve as a guide to when contraceptive adjuncts to breastfeeding are likely to be needed.

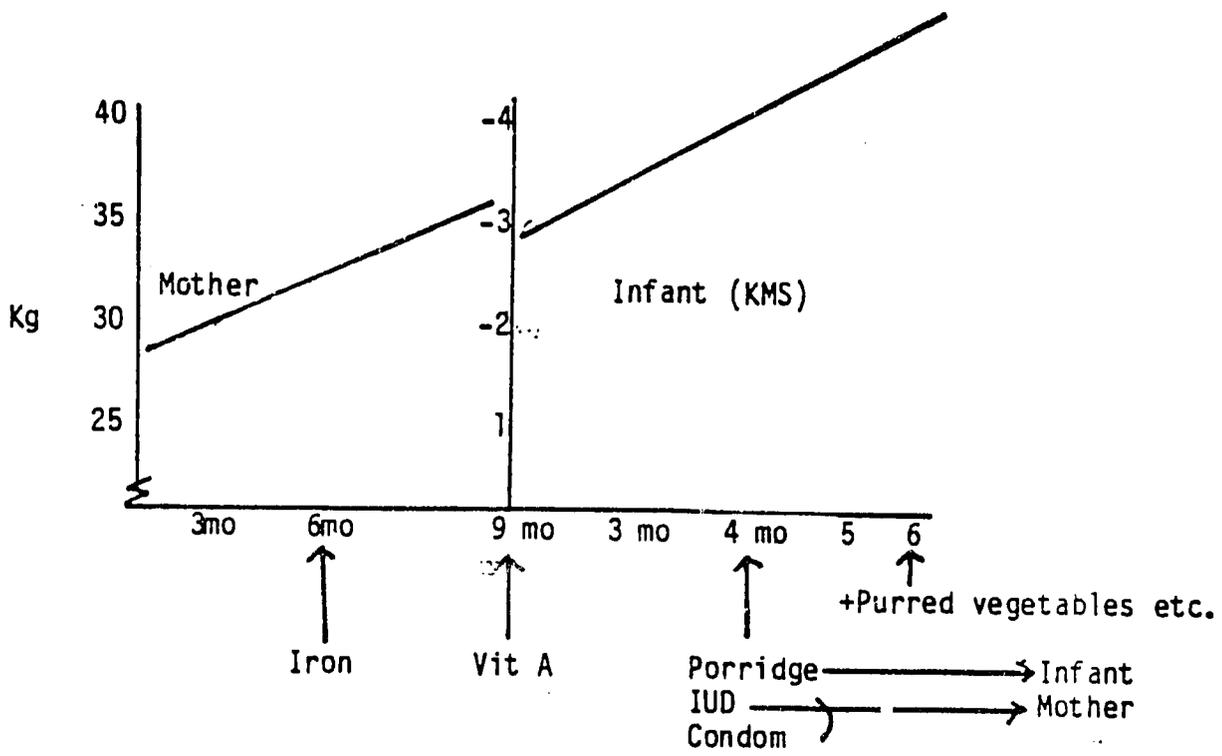
At Conception

1. At the time of birth, administration to the mother of a high dose capsule of vitamin A and, based on the above history, advise as to when she should seek an adjunct contraceptive strategy to delay another conception. Advise also about breast care and sanitation and that the infant needs only breastmilk for about 4 months or as long as he/she is gaining weight (determined at the Taman Gizi after about the third month).

Postpartum

1. At the time when complementary foods begin to be fed (guided by the history of the individual mother) the appropriate contraceptive strategies to provide protection without interference with lactation should be discussed, i.e., use of condoms, IUD's in preference to steroid contraceptives, or progestogen only preparations in preference to estrogen containing-steroids. Advise on appropriate complementary foods-how much, how often and how fed should be given. Breastfeeding should be encouraged to continue at frequent intervals and prior to feeding the complementary food in order to encourage breast emptying, prolong lactation and thus maximize infant nutrition.

These messages might be coded into a maternal version of a KMS type growth chart commencing in pregnancy such as illustrated on the following page.



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