

SOCIAL MARKETING OF MICRONUTRIENTS
IN DEVELOPING COUNTRIES

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EXECUTIVE SUMMARY

Millions of persons in developing countries, most importantly women and young children, are afflicted by the negative health consequences of deficiencies in three essential micronutrients -- vitamin A, iron, and iodine.

While available technologies are far from perfect, program experience demonstrates that if employed well, current interventions can successfully combat these micronutrient deficiencies.

Social marketing is one strategic approach to planning and implementing micronutrient interventions that has shown success. This paper describes the potential and actual role of social marketing in micronutrient programs. It reviews substantial program experience that either employed a full social marketing methodology or at least some social marketing principles.

Based on this review, it can be recommended that all micronutrient programs at a minimum employ basic social marketing principles:

- design products and services carefully to meet the needs of intended beneficiaries;
- promote products and services creatively, based on insights from qualitative research with the beneficiaries themselves;
- take a broad approach to project planning that does not shortchange advocacy, training, and other ways to support and improve services;
- monitor and adjust programs on the basis of regular feedback.

Below is a synopsis of the general effectiveness of the chief interventions to reduce micronutrient deficiencies:

- **Vitamin A:** *Fortified foods* are potentially the most cost-effective approach, but it has been difficult to identify appropriate foods in many developing countries. A social marketing approach can be very useful in developing a product that is attractive to consumers and in marketing and promoting it effectively. *Vitamin A supplementation* (via capsules or liquid) effectively prevents the deficiency in individual children, but governments have been unable to achieve and sustain satisfactory coverage levels in programs aimed at universal supplementation of children. In the case of supplementation, the product is well accepted and easily promoted; the difficulties lie in reliable logistics and service delivery. *Promoting*

***increased consumption* of vitamin A-rich foods can be effective, but the program strategy needs to be designed on the basis of audience research. Messages must overcome many attitudinal barriers as well as effectively motivate mothers to make changes in their daily behavior that have no obvious or immediate benefit.**

- **Iodine:** Iodine injections and oral doses, usually employed only in the highest-risk geographic areas, are well accepted when the public and leaders in the affected areas have been adequately briefed. The benefits are clear and rapid. If there is no competition from noniodized salt and if the program is well planned and managed, the salt fortification approach should be effective. Particularly where iodized salt does not have a monopoly, it must be creatively packaged, priced, distributed, and promoted, just as any other commercial product.
- **Iron:** Distribution of iron tablets can be effective but has encountered a series of problems in the field -- reaching pregnant women or other target groups (service delivery), supply and resupply, and compliance with taking the pills in the home. Few anemia control programs have used social marketing principles to make the product more acceptable or to promote it effectively, yet the potential is great.

INTRODUCTION

Three micronutrient deficiencies, widespread in developing countries, have serious public health consequences. These are:

- *vitamin A deficiency*, which causes xerophthalmia (a range of eye symptoms, including blindness) and which contributes to increased child morbidity and mortality by decreasing the body's ability to fight infection;
- *iron deficiency*, which causes iron deficiency anemia that is associated with low birth weight babies, increased maternal and infant morbidity and mortality, impaired cognitive and learning abilities, and low work productivity; and
- *iodine deficiency*, which causes iodine deficiency disorders, including goiter, cretinism, deaf-mutism, and mental retardation.

This paper examines lessons learned from programs that have utilized a social marketing approach to combat these deficiencies. Social marketing offers and promotes a beneficial product, behavior, or concept, in an acceptable or feasible way, to the appropriate people. In the case of micronutrients, the product is a micronutrient in the form of a natural or fortified food product or a supplement taken orally or by injection; the primary audiences are women of childbearing age and mothers of young children. To be successful, the social marketing process requires substantial participation of target groups (and of other groups that influence them) in formulating and testing products, program strategies and activities, and specific messages and materials.

Although many people associate social marketing with communication activities (particularly mass media), social marketing is really a broader, systematic approach to developing strategies to define acceptable concepts, behaviors, or products, to promote them, and in the case of products, to distribute and price them for the market. A complete social marketing strategy not only develops and promotes a good "product" but also achieves and maintains political support and trains and motivates program implementors (health care providers).

All social marketing programs build from the basic program objectives. For micronutrient programs, the principal objectives are to: have needed micronutrients available to target groups and assure appropriate consumption of the micronutrient.

Chapter 1 of this paper discusses the issues involved in addressing micronutrient deficiencies through a social marketing approach. (This paper examines ways of increasing micronutrient consumption rather than indirect ways of reducing micronutrient deficiencies, such as prevention and treatment of parasites.) Chapter 2 examines experiences and lessons learned in programs that have taken a social marketing approach to reducing iron, iodine, and vitamin A deficiencies in developing countries. Chapter 3 summarizes lessons learned from the application of social marketing in other areas of public health in developing countries.

Chapter 1 MICRONUTRIENT MARKETING DECISIONS

Planners of programs to combat micronutrient deficiencies must make a series of decisions. On the one hand, these are *technical* decisions because they have implications for program costs, management, and effectiveness. On the other hand, they can also be seen as *marketing* decisions because they represent the interplay between the product or idea and how attractive or acceptable the product is to consumers, i.e., how likely the target group is to acquire and consume the micronutrient.

Decision 1: The Product

Form of the Product

The main options for the three micronutrients are as follows:

- iodine - iodized salt, oral or injected iodine, iodized drinking water, fortified foods and avoidance of goiterogens;
- iron - iron tablets or tonics, fortified foods;
- vitamin A - capsules, liquid (given by spoon or dispenser), fortified foods, vitamin A-rich foods.

In general, iodized salt is the preferred approach for mild iodine deficiency, with oral or injected iodine reserved for the highest-risk areas. The latter products have the marketing advantage of dramatically reversing visible goiters and hypothyroidism (lethargy), so that consumers quickly see the intervention's benefit. Promoting consumption of natural food sources of iodine is not likely to be practical, since a lack of iodine in the soil is the main reason for the deficiency in the first place. Programs may, however, discourage consumption of goitrogenic foods such as cabbage and cassava.

Some alternative approaches have been successfully applied. For example:

- Programs in Thailand have successfully utilized simple technologies at the village level to improve iodine status. Drinking water and well water have been "fortified" with iodine solutions put in by dropper. (Suwanik)
- Iodine deficiency was controlled in Tasmania, Australia in the 1960s through fortified bread. Later, when iodine compounds were used to sterilize dairy equipment, "milk alone supplied enough iodine to prevent goitre...." (Beard) Iodized salt was never needed.

Vitamin A is most commonly given in the form of capsules (an exception is the Government of India's large-scale manufacture and use of liquid vitamin A) and iron in the form of tablets. Capsule or tablet distribution, however, presents many logistical challenges and is not considered a desirable long-term solution. Where feasible, fortifying a common foodstuff such as sugar or wheat may be the most practical long-term approach to controlling vitamin A and iron deficiency. The other long-term approach to these deficiencies is to encourage increased consumption of locally available foods rich in these nutrients or decreased consumption of foods that reduce the micronutrients' biological availability.

Although a number of programs taking this food-based approach have shown a measurable impact on consumption, such efforts must overcome many cultural constraints. For example, animal products are the best natural sources of vitamin A and iron but often are available only to the upper classes or traditionally may be consumed by men and boys, not women and young children. Thus, the most feasible foods to promote for vitamin A deficiency are often dark green leafy vegetables (DGLVs), orange and yellow fruits and vegetables (i.e., squash, papaya), and red palm oil. Programs have found that in many cultures, it is thought that infants cannot digest DGLVs or that they cause diarrhea. Once infants become toddlers, it is common to let them eat what they want -- foods that are rarely good sources of vitamin A and iron. A common constraint to increasing pregnant women's consumption of foods rich in vitamin A and iron is women's fear of gaining too much weight and therefore having a big baby and a difficult and dangerous delivery. A final constraint is availability. Where natural sources of vitamin A are not readily available (seasonally in many places, particularly in Africa), programs must promote both the cultivation and the appropriate consumption of vitamin-rich foods.

While there is strong evidence of the effectiveness of a vitamin A-rich diet in reducing vitamin A deficiency, the situation is not so clear for iron. CARE/India has argued that such a small portion of the iron in DGLVs is absorbed for nutrition that they should not be promoted as a way of reducing iron deficiency. Among the reasons for the low absorption are:

- A high cereal diet such as consumed in India contains oxalates in the leaves themselves that combine with iron in the intestines to form insoluble compounds that cannot be broken down;**
- Lack of dietary calcium and ascorbic acid inhibit absorption;**
- Other dietary deficiencies, e.g. of vitamins B12, C, and E, may result in insufficient synthesis of hemoglobin and iron stores in the liver. (Parlato)**

While some of these factors are amenable to change, it is probably more realistic to promote DGLVs to help maintain current iron status than to reduce anemia. Where vitamin C-rich fruits, which assist the absorption of dietary iron, are readily available, programs could encourage their consumption.

Food fortification is widespread in industrialized countries and is a major reason why micronutrient deficiencies are not a common public health problem there. In developing countries, however, it is much more difficult to find a suitable food to fortify: one that can be fortified cheaply, without altering such essential characteristics as color, smell, texture, shelf life; that is manufactured by one or a few companies; and that is consumed in consistent quantities almost daily by the great majority of the poor population, and within that population, by women, infants and young children.

Although iodized salt is the most successful example of a fortified food that has reduced a micronutrient deficiency in developing countries, a number of national salt iodination programs have encountered political, managerial, and technical problems, in part because salt does not always meet all of the above-mentioned requirements for a fortified food (e.g., few producers). Public health officials have been urged to consider alternative foods in order to avoid promoting salt, because of its link to hypertension. (Beard) Similar concerns have been raised by consumer groups in Indonesia and elsewhere concerning fortification of monosodium glutamate with vitamin A.

Sugar fortified with vitamin A has been successfully introduced in Central America, and after a period of setbacks, reintroduced. Vitamin A-fortified monosodium glutamate shows great promise but recently in Indonesia, technical problems have delayed nationwide implementation. On a small scale, iron-fortified salt has been used in India and appears to be technically promising. (Mannar)

While many economic, technical, and managerial considerations enter into the decision on which form of vitamin supplement to employ in a particular program, consumers' preferences should be seriously considered. In Indonesia, liquid remedies ("jamus") are extremely popular yet public health programs distribute iron pills and vitamin A capsules. Likewise, in Thailand, liquids for children are widely marketed by the private sector as "enhancing the blood" (Gillespie, p. 11) but are not distributed by public health programs. In the many countries where injections are the most popular way of receiving medicine, this might be considered among the choices of micronutrient vehicles (along with the dangers of promoting injections).

Product Presentation

A second series of marketing decisions concerns the presentation of micronutrient supplements or fortified foods. This in part depends on *the dose size and frequency of consumption* that a program adapts.

These questions are answered fairly consistently for vitamin A capsules. The recommended dosage and frequency of administration (given by capsule or liquid) are usually 100,000 IU for children six to 12 months and 200,000 IU for children one to six years old, given every four to six months. During the first month after giving birth, women may also receive 200,000 IU. Prophylactic doses may be given as part of treatment plans for measles, severe diarrhea, or other infections. More frequent (i.e., weekly) doses have had good results but are not as practical in most circumstances.

A single dose of iodized oil given by injection or by mouth can correct severe iodine deficiency for several years. Ideally, it should not be given to any pregnant woman and never to a woman in the second half of pregnancy). (Gopalan, p. 348)

Iron, most commonly given in the form of tablets to pregnant women, presents the greatest challenge for determining an appropriate dose and frequency of consumption, first because many pregnant women do not seek prenatal services and are hard to reach, and second, because decisions on iron pill dosages may contribute to poor compliance by the women. Among the many factors that may be important are the size of the individual doses (the larger the dose, the greater the chance of unpleasant side effects), the number of pills to be taken daily (the fewer, the greater the chance of compliance), and the length of treatment regimen (the greater the time, the greater the chance of dropout but the greater the impact on hemoglobin levels). Programs must try to balance such factors, at the same time assuring that the amount of iron consumed is sufficient to raise hemoglobin levels toward the WHO-recommended level (11.0 mg).

There are also a series of decisions concerning the *product's physical characteristics*, for example, its color. For fortified foods, the issue is to assure that the added micronutrient does not modify color or other important food characteristics. For pills, liquids, and injections, color may be an important marketing factor that is ignored. Obviously, what is considered "attractive" varies by culture.

Taste and smell are other qualities that are very culture-specific. What is considered desirable or acceptable in such characteristics very much depends on whether the pill, liquid, natural food, or fortified food is perceived or promoted as a medicine to cure a problem or as a vitamin or food to prevent problems from occurring. Bad taste or smell may even be expected for a medicine. Also, people may be willing to tolerate bad taste or smell for something ingested occasionally, such as prophylactic chloroquine, but not for something taken daily.

Attractive *packaging* may promote acceptance and consumption of micronutrient products. In clinics throughout the world, mothers desire blister packs because they have a high status and last longer, yet this packaging can be a significant cost to public programs. The package size may have to represent a compromise between the difficulty of giving enough pills to last until the next visit and the likely length of time the product will remain potent in the home. Clear instructions on the container can strengthen correct compliance and should be based on extensive research and testing among the target audience. In most developing countries, the instructions should be pictorial, with a minimum use of words.

Storage life and conditions obviously should be reasonable given the climatic conditions and logistical capabilities of a program. Supplies must be designed so that there is a minimum of wastage yet a minimum of stock outages. This is particularly an issue with fortified foods, iodized salt, and iron tablets.

Decision 2: The Market

At the outset, planners must decide on the scope of the program, i.e., will it target the entire country or high-risk areas only. The decision depends on the known distribution of the problem and on the cost and expected effectiveness of feasible interventions. Iodine injection programs are normally targeted at the highest-risk districts or states, while an iodized salt approach is usually implemented nationally, with more careful monitoring in the high-risk districts. Vitamin A capsule distribution or natural food promotion may be undertaken nationally or in the highest risk regions of a country. Program efforts may also be applied seasonally, so that capsules are promoted mainly just before the "hunger" season or during the diarrhea seasons and vitamin A-rich foods at the time of the year when they are planted and harvested. Iron pill programs are normally national in scope but conceivably could emphasize times of the year and geographical areas where malaria, hookworm, and other infections are most prevalent.

Once a decision has been made on the geographical reach of the program, it must be decided whether to target the entire population within that area, all women of childbearing age (particularly for iron), pregnant women, high-risk women, men, or families, and or children (preschoolers and/or schoolchildren). For vitamin A capsules, countries have adopted target groups as specific as children with diarrhea, measles, or pneumonia.

It is most practical to target the main population subgroups at risk of serious consequences due to the micronutrient deficiency. The main criterion is risk, but cost and ease of reaching the group should also enter into the determination of target group(s). It is rarely practical to measure the extent of deficiency in individual women or children, although individual malnourished women and children might be assumed to be deficient in vitamin A, and women or children severely deficient in iodine or iron may well have obvious physical signs.

Programs aimed at reducing micronutrient deficiencies will not be effective and will not be sustained unless health workers remain motivated and capable of carrying out their roles, and unless opinion leaders and policy makers are informed and motivated about the program. An evaluation of the Indian program to combat anemia noted many deficiencies in health workers' knowledge and attitudes. Although Auxiliary Nurse Midwives were relatively well informed, many medical officers had incomplete knowledge of the program objectives or target groups. Training and educating health workers, opinion leaders, and policy makers are likely to form part of all social marketing efforts to reduce micronutrient deficiencies. These "sales agents" are an important part of the market.

Decision 3: Delivery Strategy

For fortified foods, injections, oral doses, and pills/capsules, program planners must decide how the product will reach the consumer. The major decisions concern whether to use private sector sales, public sector delivery, or a combination; and the degree to which public service delivery takes a vertical or integrated approach.

Government programs may employ a vertical approach, distributing the micronutrient at temporary distribution locations, health facilities, house-to-house, or schools. Micronutrients in the form of pills/capsules, liquids, or injections are commonly given through such a campaign approach, since few public health systems reach most of the population on a regular enough basis to assure adequate, ongoing distribution and since the iodine injection and vitamin A capsule allow for infrequent dosing. Iron is the major exception because it must be taken on a regular, sustained basis for effectiveness.

Bangladesh and other countries invest significant of resources into vitamin A capsule distribution campaigns. The obvious drawback of these (or any) campaigns is that they are costly, may divert important human and other resources from other important tasks, and are not easily sustainable. However, in particular circumstances, when the deficiency is very prevalent and contact between the health system and the target group is insufficient, such campaigns may be a logical, although temporary, choice until the longer-term solutions of consumption of natural or fortified foods can be instituted.

There has been a great deal of discussion over the past few years concerning adding vitamin A capsule distribution to immunization programs, since such programs have reached quite high coverage rates in many countries. A limitation to this strategy is that, ideally, EPI programs have only one contact with infants over six months old (at nine months for measles immunization), while the highest-risk ages for vitamin A deficiency are one to three years of age. In Bangladesh, however, the EPI recently began dispensing 50,000 IU of vitamin A to infants of any age during immunization contacts. The safety and effectiveness of this approach has not yet been evaluated.

Distributing vitamin A capsules with immunizations might be most effective where immunizations are given through special outreach sessions or campaigns, since many children who do not routinely contact government health services as well as many older children will be reached. A better micronutrient match for EPI might be iodine injections in high-risk areas; however, there is a need for research to assure that the iodine will not interfere with the effectiveness of the oral polio vaccine.

Public sector facilities may distribute micronutrients daily or on certain days and times as part of routine health services -- an integrated approach. Supplements may be distributed in conjunction with prenatal visits (iron pills), family planning visits (many contraceptive packets contain a week's supply of iron tablets along with three week's supply of contraceptive pills), curative visits, or other routine services in facilities. Distribution during routine home visits or other community-based activities is likely to reach more of the target groups. In Indonesia, community workers (kader) are encouraged to make some home visits every month. Two months of the year these focus on vitamin A capsule distribution and two other months on giving iron pills to pregnant women and teaching them about iron supplements and other relevant health topics.

There are a variety of ways in which private sector providers, companies, and institutions may support goals of public sector micronutrient programs. Fortified foods may be promoted and sold through commercial channels or distributed to high-risk individuals or groups through the health system (e.g., at prenatal and well-baby visits or at schools). Although infrequently tried, government programs could subsidize or promote the sale of micronutrient supplements through a variety of private sector sources, including pharmacies, ambulatory drug sellers, drug sellers in markets or variety stores, community-based contraceptive distributors, or private doctors. At prenatal visits, government health facilities in Nigeria give prescriptions for iron and multivitamin supplements to women that they must fill in private pharmacies.

Although private sector sale of micronutrients (particularly to the poorest families) is fairly limited in most developing countries, it was suggested at a recent international conference on iron deficiency anemia that this approach might be tried, particularly where government health delivery systems are weak: "...in Central America, in areas where little prestige is attached to PHC posts, people would be more inclined to buy iron tablets (particularly if packaged attractively e.g. "blister" packs) than be given them free at a clinic." (Gillespie, p. 11)

The idea of marketing low-dose, inexpensive vitamin A supplements through the private sector has been proposed. (PSI) The model is social marketing of contraceptives through existing commercial outlets (see Chapter 3). Although such an innovative idea is worth testing, it raises several questions. For example, community research has shown that even in countries with high rates of vitamin A deficiency disease, there is little recognition of vitamin A and little concern with blindness or night blindness. Thus, motivating the public to buy could be difficult, particularly the poorest and most needy families who have more limited access to retail outlets in the first place. A second challenge is how to produce, at a reasonable cost, supplements in a form that is palatable to children six months to five years old. Chewable tablets or syrups may be acceptable. A final problem area is correct compliance -- educating the public so that the appropriate target groups, ages, dosage schedule, and treatment intervals are understood and followed.

In the preparation of this paper, a special investigation of private vitamin sales in developing countries was undertaken, both to assess if this is a viable approach and to look for lessons learned. Unfortunately, there is very little available information on marketing of vitamins or other micronutrients in the international market. Companies are reluctant to give information on their specific markets and may even "stick vitamins in 'fine chemicals' or something," since it allows them to bury it in their annual reports. (Morris, p. 35)

International drug companies make approximately 30 percent of their vitamin sales in developing countries. While the international market for vitamins is expected to grow at an annual rate of five percent for the next few years, sales of food additives are expected to grow faster and supplements to be flat or even decline. (Morris) There is some local manufacturing, and some large international firms such as Squibb and Upjohn market imported vitamins in developing countries. One source notes that multinationals have been very cautious to invest in developing countries because of government policies concerning the pharmaceutical industry. (Layman)

According to Jim Sugarman of Multinational Monitor, vitamins are sold individually and as multivitamins in different countries. They may be sold as injections or pills, usually in corner stores or even in small private stands. Profit margins are large. Some vitamins are locally produced, but most are imported. The most common advertising media used are billboards and print, often showing pictures of healthy white Western mothers holding a baby. Free samples are sometimes given to patients as well as to retailers and pharmacists.

In general, it would appear that utilizing private sector products and distribution is most promising in fortified foods. For supplements, sales are likely to be relatively limited and to miss the socioeconomic groups most in need of micronutrients. Selected private sector promotional techniques, however, may be useful for public programs.

Decision 4: Communication Strategy

Effective communication is needed to encourage desirable behaviors by the public, i.e., to seek or accept fortified food or supplementation; grow, eat, and feed more foods rich in micronutrients; comply with instructions for using fortified foods or taking supplements in the home. It is also needed to convince policy makers, media representatives, NGO officials, and the public (the ultimate beneficiaries) that the micronutrient deficiency is a serious problem, worthy of being addressed by a well-planned and financed program, and that the program is cost-effective and will have multiple economic, social, and humanitarian benefits.

In the social marketing approach to communication, activities to achieve these objectives are based on formative research and testing of messages and behaviors with the target groups themselves. Research is designed to understand cultural, attitudinal, economic, and logistical resistances to carrying out the desirable behaviors and to give insights into a combination of program actions (i.e., making services more convenient or pills better tasting) and messages that address the resistances.

Messages are very carefully designed and tested so that they are interesting, believable, motivating, and practical to implement. They convincingly show the importance and feasibility of the following key behaviors: obtain the micronutrient, comply with treatment instructions, how to reduce side effects and what to expect/do, what foods to eat and how, what foods to grow and how to prepare them.

Well designed communications are *creative*, i.e., they do not merely accept a conventional approach to information. Based on formative research, an attractive "image" of fortified or natural foods or of capsules/supplements is portrayed and supported in mass and interpersonal media. Messages contain effective appeals or motivational statements. What is it that is of greatest concern to mothers? Is it their own health, their baby's health, a specific health result of a micronutrient deficiency, or their own or their baby's general health or vigor? Such a creative approach is precisely the manner in which commercial advertisers approach product promotion.

In the United States, the Council for Responsible Nutrition commissioned a qualitative research study on attitudes and practices regarding vitamins (Holtzman). The study found that multivitamins were not attractive except to health fanatics. For most people, the vague promises of multivitamins helping them to feel better were not sufficient to motivate them to take the pills. Other barriers were that the vitamins taste bad and that it is too much trouble to remember to take them every day. The study did find, however, that the public reception was better for specific vitamins whose benefits had recently been publicized, e.g. beta carotene (provitamin A) or fish oil. Americans seem to need a specific link or benefit between the vitamin and preventing a specific illness with which they are

concerned. Clearly, one cannot assume that these findings are valid in developing countries, in each setting, the people's motivations, concerns, and preferences need to be understood if marketing and communications are to be effective.

How easy it is to motivate people (usually women) depends on their personal concern with the health problem, on the perceived ease or difficulty of carrying out the behavior, and on their confidence that the proposed behavior will make a difference. In this respect, some "products" are obviously easier to promote than others.

- Iodine injections, for example, will have a dramatic effect on people with visible goiters or hypothyroid lethargy, and a more subtle, although visible long-term effect on preventing IDD in future offspring. (Thilly)
- Especially where women are extremely anemic, after a week or so of taking iron pills, women will feel noticeably better, so this promise might be incorporated into messages. (Griffiths, Concept Testing..., Moore, Qualitative...) Many women may stop taking the pills, however, once they start to feel better (i.e., feel "cured") but before their hemoglobin has reached safe levels. (DeMaeyer) The creative challenge may be to convince women that they must take the pills for at least two or three months in order to gain significant protection to themselves and their newborn.
- Effectively promoting vitamin A supplements or consumption of vitamin A-rich foods may be difficult since there are no immediate, obvious benefits. In creative ways, individual programs need to go beyond vague promises of preventing possible eye problems to find some more powerful benefit.

Particularly where micronutrient-fortified foods face competition in the marketplace, they must be creatively promoted. In Pakistan, for example, a program successfully promoted iodized salt as a way of enhancing children's ability to gain a good education, since this was a highly esteemed cultural value. (Mull)

The general benefits of preventing iron (and folate) deficiencies are:

- For the mother: improved work capacity, improved mental performance, improved resistance to infection, and safer pregnancy and delivery;
- For the newborn: higher birth weight and improved health. (INACG)

Formative research is needed in specific locations, however, to determine which if any of these or other benefits is most appealing and motivating to the main audiences.

The selection of media (ways of getting messages to target audiences) should also be based on what formative research shows the most appropriate media to be (not on project planners' personal preferences). Which media contact the most people, most often, and are most credible as channels of information on health and nutrition? Some combination of mass media (radio, tv, print materials) and interpersonal media (health workers and others who can counsel or talk to women individually or in small groups) is normally chosen. Where injections or oral doses are given at special times and places in communities, mobilizing community leadership and organizations must be carefully planned and carried out.

Chapter 2 LESSONS LEARNED ON SOCIAL MARKETING OF MICRONUTRIENTS

Well-designed social marketing programs do two things. They invite the participation of program beneficiaries in order to design feasible interventions, and they take a comprehensive and systematic approach to problem analysis and solution. This latter characteristic means that social marketing programs normally implement a broad strategy that encompasses advocacy and program strengthening, as well as communications to promote behavior change. Advocacy involves raising the consciousness of decision-makers at any number of levels -- from officials at WHO, UNICEF, or World Bank headquarters, to national political leaders and health officials, to village chiefs -- regarding the extent and importance of the problem and the potential effectiveness of current or potential solutions. Program strengthening concerns the training, policy changes, managerial and service improvements, and other steps that organizations take to make their services (counseling, diagnosis, treatment, micronutrient product distribution) more effective. Beneficial behaviors include appropriate service utilization and compliance, as well as preventive and curative actions in the home and community. This section provides program examples and lessons learned concerning the variety of components in social marketing programs that address micronutrient deficiencies.

Iodine

Advocacy

On an international level, the International Council for Control of Iodine Deficiency Disorders (ICCID) has been very active in global advocacy, information dissemination, monitoring, research, and generation of resources. Regional working groups have been established, and WHO, UNICEF, the World Bank, and the United Nations Subcommittee on Nutrition, among other groups, are active supporters. The global goal of elimination of IDD as a major public health problem by the year 2000 has been set. (Hetzel, Feb. 1990)

On the national level, the support of politicians and other high-level decision-makers is essential for the initiation and continuation of any program, no matter how cost-effective it may be. As Basil Hetzel has pointed out in many venues, the population that suffers from iodine deficiency live in isolated areas, often far from the centers of political power. Concerted efforts are therefore needed to measure the extent of the iodine deficiency problem and its impact on public health, to form a national coordinating committee, and to integrate the support and action of numerous public and private sector organizations ("broadening the constituency" by involving the ministries of education, labor or industry, as well as health).

Part of the strategy of successful advocacy appears to be to "reposition" iodine deficiency from "goiter" to a wide spectrum of disorders that causes perinatal deaths, mental retardation, reduced school performance, lower labor productivity, as well as ongoing human suffering. The ICCIDD has taken a lead in this repositioning. "Emphasis should be laid on the prevention of the effects on mental development. Iodine deficiency is the most important cause of preventable mental deficiency today. This has been stated by the International Association for the Scientific Study of Mental Disorders. The objective of elimination of the mental deficiency of IDD in the 1990s has been recently accepted by the Joint WHO/UNICEF Health Policy Committee (Geneva, 1989)." ("IDD in... p.5) Decision makers need to understand what "prevention of IDD means in terms of improved perinatal mortality, improved school performance, improved health and well-being of the adults both male and female which might be reflected in increased work output and productivity as well as an improved quality of life...." (Hetzel, The Story...,p. 130)

There are many example of successful advocacy for iodine deficiency reduction:

- **The UNICEF regional office in New Delhi has prepared and used several films on IDD in Asia. Using footage from several countries, the films are designed for policy makers and emphasize the feasibility of preventing the severe disabilities of cretinism. One of these films, "The Stealthy Scourge," was well received at a national advocacy seminar in Ethiopia in 1988 that brought together dozens of high officials from different government departments. (Madinger)**
- **"Both in Bhutan and Indonesia, professional communicators worked for months to produce audio-visual materials for policy makers, which eventually proved to be powerful tools to influence decisions." (Chawla, p. 179)**
- **In Bangladesh, "one-day seminars were held in all universities, medical colleges, scientific institutes and research organizations. They described various aspects of IDD in Bangladesh and the importance of preventive measures, particularly the National Salt Iodination Program." (Ahmed, p. 8)**
- **The Government of Uruguay organized a very successful program to reduce iodine deficiency disease in the late 1950s and 1960s. Sound political support was established through initial meetings with health authorities and teachers, civil and religious authorities, industrial organizations and salt dealers, service organizations such as Rotary and Lions, and the press and other communication media. (Salveraglio)**

- **IDD program supporters in Brazil employed a somewhat different approach. To illustrate the need for salt iodination legislation, they took pictures in the area around Brasilia of people with goiters and showed these to policy makers. (McGuire)**
- **In the Philippines, leaders in one village were so aroused by the discovery of IDD cases that they arranged an audience with the Governor of Cavite Province. Community members who had experienced the problem either directly or indirectly spoke to the Governor. A photo exhibit supplemented their information. The Governor immediately set in motion coordinated planning activities to attack the problem province-wide. (Briones)**

General advocacy activities should be addressed to the population in general in the most affected areas and to local leaders in particular. As Chawla states, "An unaware, undemanding public will resist change and can become a major obstacle to an iodination programme...". (The Need..., p. 11)

Program Support

Communications can play a major role in program support, e.g. in maintaining high awareness and enthusiasm, as well as in increasing the technical capabilities, of the health workers who are implementing the program. Obvious channels for such program support communications include in-service training, development and training in the use of counselling and other educational materials, newsletters, news stories, etc. Dunn points out that health worker training "is particularly important when they are involved with a direct intervention such as iodized oil. They need, of course, specific instructions about the administration technique itself, but in addition they should be taught the justification for the chosen method of iodine supplementation, the procedures for its correct implementation, the risks of inappropriate use, its anticipated effect on communities as well as individuals, and any groups to be excluded from supplementation." (p. 49) Like the public, in order to carry out desirable behaviors, health workers need frequent motivation and reminders of essential information.

Hetzel notes that health professionals, like policy makers, need to appreciate that iodine deficiency leads to far more than visible goiters. "...IDD covers a wide diversity of effects that overlaps a number of special health and health service areas. These include maternal and child health, mental health, family planning, and nutrition."

Another group that must be included in information efforts are workers in the salt trade (managers and supervisors as well as porters, foremen, truck drivers, laboratory analysts, storemen, retailers, shop keepers). In India, assuring sufficient iodine in "iodized salt" has been difficult.

Supporting Health-Promotive Behaviors

Communications can motivate the public to accept iodized oil injections or to purchase and use iodized salt. A review of both limited and extensive educational efforts yields interesting and varied lessons.

Iodized salt was introduced and quickly became well accepted in mountain villages of Chitral District in northwestern Pakistan. Anthropological studies revealed that this and other health-related innovations were accepted despite the fact that they did not make sense in terms of indigenous explanations of the health problems. In the case of goiter, the local people considered it a manifestation of "worries and tensions engendered by frustrations, interpersonal conflict, and/or sadness that were 'swallowed' until they collected in the throat." (Mull, p. 686).

**Flip charts on goiter from Pakistan.
(Aga Khan Health Services)**

The key to acceptance appears to be the fact that most of the villagers were Ismaili Muslims and that the innovations were introduced by local health workers who were also Ismailis. Moreover, "iodized salt was personally endorsed by the Aga Khan and was recommended by an Ismaili organization as representing advancement through 'new

knowledge'." In social marketing terms, the product was positioned as representing education, a very esteemed cultural value, and it was introduced by trusted and respected sources. Also, the price of the iodized salt was subsidized to be less than that of the local noniodized salt. (A lower price for iodized salt may or may not be desirable. In many place, if people can afford a slightly higher price, this could give more prestige to iodized salt.)

Chawla notes the importance of conducting "market research" in an example from India. Posters in health facilities or markets promote iodized salt as preventing goiter, yet in some parts of India, villagers consider goiter to be a sign of prosperity and may consider a women with goiter to be attractive and "have a tradition of designing special ornament for goitrous necks." (p. 13)

Dunn reports that "in Ecuador and Peru schoolchildren and other members of the target community are encouraged to develop and perform short plays or skits promoting the benefits of iodine supplementation. The performances are videotaped and played back to a highly attentive local audience, creating great interest in the correction of iodine deficiency. In Bolivia workers from the IDD Control program regularly set up booths and loudspeakers at regional fairs, dispensing information, iodized salt and iodized oil, and carry out goiter examinations...." (p. 50)

In Uttar Pradesh, India, a major media program is under way that is taking the consumer "seriously for the first time in India." (Hetzl, p. 133) Because television coverage is limited, mobile vans showing videos, posters, cinema, radio, and press are being used. Traditional song and drama formats are being developed.

Case Study: Social Marketing of Iodized Salt

The best documented case of the use of social marketing to combat iodine deficiency was a program in Ecuador. (Manoff in Hetzel) The key material in this campaign to promote the acceptance of iodized salt in two mostly indigenous provinces of the Sierra was the following carefully developed mini-drama broadcast by local radio in Quechua in 1973:

MUSIC: *THEME IN UP AND UNDER*

ANNOUNCER: *Better mothers raise better children. A story about a little thing like salt.*

MUSIC: *UP AND UNDER*

MOTHER: *Doctor, why is my new baby not normal?*

DOCTOR: *Because of your coto.*

MOTHER: *Coto is nothing. Many people in my village have coto.*

DOCTOR: *Coto is a sickness. In a woman, coto can damage her unborn child. It is caused by not enough iodine in your food.*

MOTHER: *What is iodine?*

DOCTOR: *A secret element of foods like fish and iodized salt. Every one must have iodine to be healthy -- to prevent coto.*

MOTHER: *We eat fish sometimes. And I use salt all the time.*

DOCTOR: *Not just salt. Iodized salt.*

MOTHER: *Yes -- the sal en grano.*

DOCTOR: ***NO. SAL YODADO. THE WHITE SALT IN THE PLASTIC PACKAGE.***

MOTHER: *Ah ... (sadly) Salt ... such a little thing. Sal yodado... such an important thing.*

MUSIC: *UP AND OUT*

ANNOUNCER: *You can prevent coto. Always use sal yodado, the white salt in the plastic package for the whole family. It costs a little more. But it does so much more.*

This message, with variations, was broadcast several times a day for the better part of a year. It was based on many months of planning and preparation by Ecuadorian health and nutrition authorities, supported by consultants from Manoff International who had been brought in by USAID to assist with the entire Better Mother program.

The clear intent of the initial exchange between mother and doctor is to change the popular perception of "coto" (Quechua for goiter) as a normal condition to an awareness that it is evidence of a serious disease. Evidence gathered in field visits showed little reason to believe that the indigenous people were likely to purchase and consume iodized salt, rather than the usual noniodized salt, because the condition the new product was meant to alleviate was not generally viewed as a problem. This "resistance point" had to be dealt with and resolved if the audience were to be made receptive to the new notion. Without this resistance "resolution," the educational/promotional effort and the product was handicapped if not doomed, from the start.

Identifying "resistance points" in target populations requires sensitive insights into current beliefs, practices, and perceptions. The social marketing discipline stresses special techniques like focus group interviews for uncovering these essential insights, before message and media decisions can be meaningfully made. Without it, message design is left to chance or to the beliefs, perceptions, and whims of officials. These are frequently irrelevant to those for whom the messages are intended.

Once the Ecuadorian mother in the message comprehends the true nature of coto, she is ready to accept some advice as to what should be done about it. So the message proceeds to inform her that "it is caused by not enough iodine in your food." It is natural for the audience to wonder at this point what iodine is, so the mother does the natural thing. She asks: "What is iodine?", and the doctor explains that it is a "secret element of foods like fish and iodized salt. Everyone must have iodine to be healthy -- to prevent coto."

"Sal yodado" is a new idea and must be distinguished from the old salt. So the mother says, "We eat fish sometimes. And I use salt all the time." This gives the doctor the opportunity to say, "not just salt. Iodized salt," and the opportunity to make clear to her that this is not the salt she may be talking about but "the white salt in the plastic package."

The emotional environment is enriched by the reflection of the mother, a little sadly, when she says: "Ah ... salt ... such a little thing. Sal yodado ... such an important thing." These words and her reflective attitude are designed to provoke a reflective reaction on the part of the audience. The announcer's final words are meant to re-emphasize the singular idea of the message.

Through offering extensive free "advertising," the project convinced Ecusal the Morton Salt, subsidiary to sell its salt in the project area for the first time. The company also provided 5,000 sample packages.

Before this effort, five percent of mestizos in the project provinces had used iodized salt. After the intervention, 98 percent of those aware, or more than 20 percent of the mestizo population, were using iodized salt. Among the Indian population, 54 percent, or almost 12 percent of the total Indian population, had been converted to iodized salt consumption.

Iron

Advocacy

Although anemia among mothers and children is widespread throughout the developing world, and many government health services include anemia programs, there are no national programs in such large countries as Colombia and Nigeria. The lack of such programs probably reflects a general neglect of maternal health services. Clearly, advocacy to establish national anemia control programs and to provide sufficient funding to existing programs is needed.

The June 1990 ACC/SCN Workshop on Iron Deficiency Control Programmes in Dublin, Ireland hopefully contributed to much-needed global advocacy for anemia control. Certainly much work remains in this area.

Such work was planned in August 1986 at an International Nutritional Anemia Consultative Group (INACG)-sponsored a workshop on social marketing of iron deficiency. It was proposed that INACG undertake an international advocacy effort to include:

- preparing a *set of materials with a consolidated image* for iron deficiency anemia appropriate for donor agencies, targeted country officials, and the media;
- devising a *communications strategy* for the marketing effort;
- establishing a *bureau for identifying and placing speakers* on the problem;
- selecting and recruiting *spokespersons* for the donor agencies;
- planning *an international conference*;
- publicizing *iron deficiency through significant media channels*; and
- establishing an active *industry council* with plans for targeting three countries for intensive private sector efforts.

Unfortunately, these interesting proposals have not yet been implemented.

Although distribution of iron pills is the most common approach to anemia being followed, food fortification is of growing interest. Salt and bread are the most commonly fortified foods, but many others might be considered in particular countries. In December 1990, INACG held a workshop on "Combating Iron Deficiency Anemia Through Food

Fortification Technology." (INACG) Presentations covered current and experimental iron fortification systems, safety, cost, marketing, and policy. Multidisciplinary working groups developed guidelines for action plans for economically sustainable and effective iron fortification. These included definitions of appropriate roles for industry (multinational and national), donor agencies (multilateral, bilateral, and nongovernmental), and country leadership (at all levels).

Program Support

As shown in several program evaluations, health workers' lack of knowledge, capabilities, and motivation harm anemia programs. Clearly, special efforts are needed to help health workers become more capable and supportive. In the Indonesian case study below, not only are iron pill distributors being trained but they are also being supported through messages aimed to increase their prestige as sources of the valuable pills.

A second area of program performance that is critical to iron supplementation programs is that of supply and resupply of pills to the distribution points and to the target group. Because it is difficult to separate supply issues from compliance issues, these topics are discussed together in the following section.

Supporting Health-Promotive Behaviors

Iron pills . The most common approach to anemia control is distribution of iron or iron-folate tablets to specific target groups (pregnant women, other subgroups of women and children, and occasionally, agricultural laborers). At the ACC/SCN workshop in Dublin, there was general consensus that the major constraint to iron pills not having a greater impact on anemia was supply problems. This occurs first because in most countries fewer than half of the primary target population, pregnant women, visit a health facility at an appropriate point in pregnancy to receive a supply of iron tablets. Second, many eligible women who contact the health system still do not receive tablets because of supply problems.

- **In Ubon Province, Thailand, although 89 percent of health officers oversaw iron supplementation programs, only 22 percent reported adequate supply at the health center at all times. Supply in specific provinces depends on budgetary priority of each provincial health officer. Some tablets are donated by drug companies, politicians, and other private organizations, and others must be purchased from the Government Pharmaceutical Department in Bangkok. (Valyasevi, Gillespie)**

- **The National Nutritional Anaemia Programme in India relies on home distribution by Family Health Workers (FHWs), but a recent evaluation of the program in Gujarat State indicated major problems in regular and adequate supply as well as difficulties for FHWs to reach distant and inaccessible villages for which they are responsible. At the field level, only 8.2 percent of target groups received any supplements. (Dasgupta, Ministry)**

In programs that deliver vitamin A capsules, iodine injections, or oral iodine, health workers give the supplement directly to the person in need or at risk, and the supplements' effects are relatively long-lasting. In iron supplementation programs, achieving an initial contact with a woman to give her a month's supply of pills is only the first challenge, since the woman must then take the pills daily at home. Thus, for iron pill distribution, instructing mothers and motivating *compliance* become major issues.

Once a woman has a supply of iron pills in hand, there are many reasons why she might not take all of them. The one most frequently mentioned is the side effects of the pills (abdominal discomfort, nausea, vomiting, dizziness, belching, diarrhea/constipation and black stools). Although side effects are a common cause of poor compliance, studies indicate that many women who experience side effects still comply. Other factors that may lead to low compliance include women's lack of trust of health care providers; poor or nonexistent counseling by providers, who do not warn women that side effects will probably occur and advise them what to do (e.g., take pills with a little food, particularly vitamin C-rich food); a lack of motivation on the woman's part (i.e., preventing "anemia" or feeling tired may not be worth the effort to take pills or obtain more pills); and confusion over when and how to take the pills. The first monitoring study in the Indramayu, Indonesia iron pill project (see below) discovered that the pills begin to deteriorate in the hot, humid climate after only a week or two. A Caribbean Food and Nutrition Institute (CFNI) project in Jamaica found that women did not take all of their tablets because of forgetfulness, dislike of taking pills, side effects, and tablet size (too big).

Because pregnant women are supposed to take iron pills for at least three months, *resupply* becomes critical so that women do not drop out, i.e., stop taking the supplements before they have effectively raised their hemoglobin levels. Resupply is a challenge because home or community-based resupply does not occur, women do not return to pick up more pills, or facilities run out of tablets. A 1986 evaluation of the national anemia program in India indicated that 57.7 percent of women or children who began taking iron supplements discontinued -- 45.4 percent because of supply problems, 10.8 percent because of lack of awareness, and 1.5 percent due to side effects.

A recent World Health Organization annotated bibliography on compliance with iron supplementation describes dozens of programs that report compliance problems. While some of these programs analyzed causes of poor compliance, very few actually modified the program in order to improve compliance. This is unfortunate, as the exceptions among programs show that numerous steps can be taken.

A slow-release iron preparation has recently been tested successfully in Jamaica. The capsule has major advantages in terms of increased iron absorption and reduced side effects. Such a product improvement could potentially facilitate both initial acceptance and long-term compliance. It might be used by public sector programs or sold through private sector outlets.

Among the general suggestions offered at the ACC/SCN Workshop to improve the impact of iron pill coverage and compliance were to examine the possibility of distribution through liquid iron ("tonic") preparations, where many women already consumed them, and to consider using midwives, local contraceptive distributors, and other community-based individuals for supply or resupply. It has been noted that shared cultural beliefs between the distributor and the recipient of pills greatly favors good compliance. (Morrow, pp. 4-5) Improved provider counselling skills, modification of treatment regimen to conform with patient beliefs or preferences, and improving the ability of providers to elicit and consider patients' feelings when prescribing medications have also been suggested as means of improving compliance. An analysis of iron compliance studies concluded that "By targeting supplementation to the most anemic, providing advance notice of side-effects, involving the patient in the therapeutic strategy, or providing reminders (posters, calendars, etc.)...it is possible to enhance compliance significantly." (Galloway, p. 20)

Local research can discover what form of supplementation women will most readily accept. "In India, for example, women from low socio-economic groups seldom take tablets with any regularity, yet will readily accept injections (Prema et al. 1982); in South Kanara, pills are thought to be inappropriate for illnesses involving digestive disorders and liquid medicines are the preferred treatment for most ailments experienced by pregnant women (Nichter, 1980)...iron pills are thought to be appropriate for vomiting, fever and fits but not for weakness or bloodlessness." (Morrow, p. 2)

Such insights illustrate the need to design specific strategies for initial delivery, compliance, and resupply on local formative research with mothers, health providers, and groups that influence mothers. In order to devise appropriate motivational elements in messages, programs must understand "pregnant women's feelings, beliefs and understanding of her own body and her perception of her own state of health as critical factors influencing her medication utilization." (Morrow, p. 1)

In countries as diverse as Brazil, Nigeria, Bahrain, India, and Thailand, women restrict their eating during pregnancy in order to avoid having big babies and difficult deliveries. (Brems) Where this practice is prevalent, messages must not state or imply that

iron will help them have "bigger" babies ("stronger" or "healthier" might be acceptable but should be tested). In societies influenced by humoral medical theories, iron might be considered as having "heating" or "toxic" qualities (Morrow, p. 3); research needs to reveal ways to design a product and the messages that can overcome this resistance.

Talking to women can reveal how the chosen product, i.e., usually tablets, can be made more attractive to women and children. For example:

- **Women in many places report that the pill's taste is a deterrent to their taking tablets. In recent trials in Indonesia, the pills' "fishy" taste and smell were found to be a major deterrent to compliance. The Indonesian national program reports that sugar-coated tablets are better accepted than regular ones. In Burma women said they expected medicine to taste bad, so this was no problem. In Malawi, research with women found that a major reasons why malaria tablets were not well accepted by women was that their bitter taste reminded women of a preparation they took to induce abortions. In Sierra Leone, the Mende prefer bitter medicines to treat fever, so sugar-coated iron pills might be more readily accepted in that setting. And in parts of India, pregnant women like to eat a bread flavored with a bitter herb and therefore may accept a more bitter tasting pill.**
- **For consumers, color is an important characteristic, yet most programs use whatever standard color pills their supplier offers (often green). In Sierra Leone and probably other countries, red foods and medications are used to purify or strengthen the blood, so red is probably a good color for iron pills. An evaluation of the Indian anemia program recommended that "the colour of tablets should be attractive - orange / red / dark pink." In Burma, after tablet color was changed from dark green (called "iron rust color" in Burmese) to light green and were made resistant to moisture with less smell of rust, compliance improved. The Burmese program believes that using a bright color such as red and sugar coating would further increase acceptability.**
- **Packaging is another factor to consider. In Zimbabwe, as in most countries, women are given a month's supply of tablets in an envelope or paper. The program acknowledges that using more attractive plastic packaging may enhance acceptability, while the national program in India is considering moving to packaging pills in strips of aluminum foil and the program in Indonesia is considering using blister packs.**

Top portion of an "action poster" from ICDS to remind pregnant women to take their iron-folate pills daily and to eat well at home and to go to their community center for food.

Promotion of iron tablets can be based on traditional beliefs and practices. Many cultures recognize fatigue, tired blood, or dizziness during pregnancy and take some preventive or curative steps (in Nigeria, a black ring, obtained from traditional practitioners, worn on the middle finger and rubbed on the face when dizziness occurred; in many countries, elixirs or potions). Iron supplementation can be promoted in ways that build on such common beliefs and practices. The anemia program in Burma has found it helpful to promote iron tablets as similar to the traditional use by pregnant women of local herbs and medicine to "help new blood regeneration" and "give strength to blood."

In a pilot project to improve the nutrition and health education component of India's Integrated Child Development Services Program, focus was placed on improving the nutrition of pregnant women, including their taking iron-folate pills during the last trimester. A special counselling card was designed for the community worker to use when talking to women about taking the pill, and a reminder sheet (below) was given to the women to take home. The counselling card stressed that taking the iron pill would make the woman feel better because it would strengthen her blood. This uses a concept that emerged from the consumer research.

The CFNI project in Jamaica was able to improve compliance mainly by urging women to take tablets with food, but also by having them switch to another iron preparation or to liquid iron, or by counselling and trying to explain the importance of taking iron tablets. Other possible strategies for side effects include warning women to expect problems but advising that they will decrease over time, explaining that discomfort indicates that the iron is helping the body, and starting out with small doses and gradually increasing the size.

In the Ubon Province, Thailand project, midwives were trained to give information and motivation during home visits in the first three days of the regimen and twice a month afterwards. They advised that side effects would soon decrease and that women should take tablets with meals. Women were given a calendar to mark after they took their daily iron pill. The calendar messages stating that the iron pills will make delivery easier, lower risks during delivery, and makes mothers and babies stronger and healthier were very important to mothers' compliance. Reasons for the ten to 15 percent dropout included inconvenience or inaccessibility of resupply, mostly due to agricultural duties; transportation problems due to floods, etc.; abortion or premature delivery; and fear of blood drawing. The program found that by decreasing the dosage from 120 mg iron to 60 mg, it could significantly reduce side effects yet achieve almost the same hemoglobin response. For women on large doses, continuation was strengthened by temporarily halving the dosage and doubling the frequency of ingestion.

Case Study: Social Marketing of Iron Pills

The Center for Child Survival, University of Indonesia, is currently undertaking an operations research project to improve access and awareness of pregnant women to iron supplementation in rural West Java. Because this is one of the most thorough examples of qualitative research aimed at informing the strategy for iron pill distribution, the results are summarized in some detail. The research consisted of in-depth interviews with mothers, family influentials, and health workers, as well as an intervention trial, in which a small number of mothers were asked to try out the intervention (iron pills) for a short time so that program planners could learn what women did or did not do, why, and how they felt about the experience.

Among the important research findings are the following:

- *Pregnancy and related problems do not normally disrupt women's routines and are not widely discussed.*
- *Maternal anemia is not perceived as a health priority by any category of respondents.*
- *Factual knowledge is extremely low concerning a clear definition of anemia, its causes, and the relationship between anemia and maternal and neonatal health. Husbands' knowledge is lowest, but even trained midwives (bidans), do not understand key concepts clearly.*
- *Although husbands' knowledge of maternal anemia is lowest, they have great influence on health-seeking behavior of pregnant women.*
- *Pregnant women's major resistances to use of iron tablets are related to tablet characteristics ("fishy" taste and smell) and side effects (constipation, metallic taste, nausea). Many of these might be minimized by taking the tablets with food.*
- *Perceived benefits of tablet use (some women report "feeling better") and motivation by respected influentials to continue use appear to be able to overcome these resistances in many cases.*
- *Fears and myths related primarily to producing a bigger baby and producing "too much blood" after taking iron tablets are common among women.*
- *"Convenience" of the proposed distribution of iron by TBAs (dukun bayi) is one of its biggest perceived benefits, by both pregnant women and elder women in the family.*

- *Concerns about the "acceptability" -- legitimacy and authority -- of the TBA as a provider of modern medicine to pregnant women are widespread among pregnant women, elder women and to some extent, TBAs themselves.*

On the basis of such insights from formative research, the project formulated a strategy that included the following:

- *TBAs will begin distributing iron pills the first time they see a pregnant women. The TBA's home will become a depot for iron pills.*
- *Radio and person-to-person messages will address concerns about acceptability, legitimacy, an authority of TBAs to distribute iron.*
- *Education and general awareness creation about the problem of maternal anemia will be targeted at all levels of the community, with special attention on husbands.*
- *Education and factual information will be provided to formal and nonformal health providers.*
- *Convenience and perceived benefits such as "stronger mother" and "healthier baby" will be highlighted and concepts of "produces bigger babies" and "gives more blood" avoided.*
- *Negative perceptions about taste and side effects will be addressed by suggesting tablet use instructions which minimize their occurrence.*

Increasing dietary iron . Relatively few social marketing or other educational programs have aimed to increase consumption of dark green leafy vegetables (DGLVs) by mothers and young children have been concerned with increasing iron consumption. From a marketing point of view, however, the health objective of the behavior is not necessarily central to achieving the behavior change itself. In other words, the marketing challenge is the same regardless of whether the objective of eating DGLVs is to combat anemia or vitamin A deficiency. A number of DGLV-promotion projects are discussed in the next section on vitamin A.

Besides promoting the consumption of iron-rich foods, food-related messages can encourage people to increase consumption of iron absorption enhancers (such as fresh fruit and raw vegetables), reduce intake of inhibitors (such as tannins in legumes and tea and phytates in some cereals), and promote germination, malting, and fermentation that may enhance iron absorption. (DeMaeyer) Messages can also address the general lack of support for improved diet or decreased workload during pregnancy. To enhance infant

iron status, messages can promote immediate and exclusive breastfeeding until the infant reaches four to six months of age, along with good weaning practices.

Anemia control programs may also either directly advocate or seek the collaboration of health activities not related to diet but which will enhance iron status. These include the entire range of preventive and curative actions to reduce the prevalence of malaria, hookworm, and other infections. It could also be helpful, where the IUD is a popular form of birth control, to advocate the substitution of contraceptive pills. Whereas IUDs can increase menstrual bleeding by more than 100 percent, the pills decrease menstrual bleeding by some 50 percent.

One well-evaluated program that promoted DGLVs in order to increase dietary iron consumption was CARE's Nutrition Mass Communication Project in rural areas and small towns in Uttar Pradesh and Andhra Pradesh, India in 1972. Twelve separate media, including films, radio, press, wall paintings, billboards, and posters were used to transmit key nutrition messages, including ones that promoted DGLV consumption by pregnant women. The messages were designed on the basis of a KAP study on selected nutritional topics. Among the many important findings of this formative research were the facts that:

- DGLVs were readily available and affordable;
- Although women prepared the foods, husbands had the final say as to what was eaten and also frequently did the shopping. Thus, males were a very important target group for communications;
- Parents' strongest motivation was that their sons receive a good education. This aspiration could easily be incorporated into messages.
- Although there were no strong food taboos against eating DGLVs, there was a strong belief that pregnant women should eat less than a normal diet in order to have a small baby and an easy childbirth.

While the experience yielded several lessons regarding communications (the value of a multimedia approach; a higher effectiveness of negative over positive motivations in messages; the effectiveness of mass media in reaching all audiences, including rural women; the ineffectiveness of pantomime because it was too abstract), it did not attempt to measure actual changes in consumption in DGLVs or in iron status. A composite score of awareness of the key messages on nutrition during pregnancy rose from 58 to 90 percent. All people in the campaign area responded equally well to the nutrition messages, irrespective of age, education, occupation, incomes, caste, etc. A year later, CARE/India appears to have had "second thoughts" about trying to increase dietary iron consumption because so much of the iron originally in the vegetables was lost through cooking or not

absorbed by the body because of "certain physiological and metabolic processes." (Parlato, p. 5)

In contrast, it is possible that the use of iron cooking pots in Africa and elsewhere help improve the entire family's iron status.

Vitamin A

Advocacy

On an international level, WHO, FAO, the International Vitamin A Consultative Group (IVACG), Helen Keller International (HKI), the Hoffmann-LaRoche "Sight and Life" program, the Xerophthalmia Club, and a number of other groups have promoted vitamin A deficiency control programs. In 1987 and 1988, A.I.D. funded a Vitamin A Public Information Project, that organized press briefings and international radio and television broadcasts on the vitamin A deficiency problem and solutions. International consciousness of and interest in vitamin A control has grown substantially over the past five years, fostered by the growing evidence of vitamin A's role in combatting infection. (Manoff International)

In general, awareness and organized national control programs, as well as controversy, came much earlier in Asia (particularly in India, Indonesia, and Bangladesh) than in other parts of the world. In the late 1970s, a Philippines Nutrition Program successfully raised awareness of vitamin A and other nutrition issues among policy makers, health professionals, and the public in general. Nutritional awareness increased to the point where "even commercial firms have now frequently adopted the nutrition appeal in their marketing messages." (M. Solon, pp. 300-307)

- *Policy makers* were reached through conferences, guided tours, slide briefings, films, exhibits; newsletters, fact sheets, and information folders from the National Nutrition Council and the Nutrition Center of the Philippines (NCP); national newspapers and magazines, radio and television programs.
- *Health professionals* were reached through seminars, refresher courses, a multimedia education project, a monograph series, revision of the medical curriculum, and work through the professional societies.
- *Teachers* oriented through a distance study project in turn taught students nutrition messages to take back to their families.
- The Barangay Nutrition Scholar program trained local young people to carry out a variety of nutrition activities at the community level.

- The public was reached through the Nutri-bus, a communications project using mobile vans equipped video players, other mass media, comics, posters, doctor's prescription pads with illustrated instructions on proper eating habits, etc.

In the mid-1980s, a proposed trial of alternative doses of vitamin A capsules in the Philippines turned into a major political and mass media controversy that derailed the trials as well as progress toward a national program. In Indonesia, agitation by the Indonesian Consumer Protection Agency and other groups against fortifying MSG with vitamin A likewise created problems for the program. (Asia Week)

HKI and other groups have worked with governments to conduct specific vitamin A advocacy activities on a country level. For example, Project ORBIS, in collaboration with Cameroon's Ministry of Public Health, organized the First National Symposium on the Prevention of Blindness in January 1991; and HKI collaborated with the Federal Ministry of Health of Nigeria to organize a national-level workshop on vitamin A deficiency and child survival in October-November 1990. (Vitamin A News Notes, Spring 1991)

Program Support/Supporting Health-Promotive Behaviors

Social marketing and other IE&C approaches have been utilized in a good number of programs aimed at improving the vitamin A status of women and children. The main avenues for achieving this objective are through food fortification, supplementation by capsules or liquid, and increasing consumption of vitamin A-rich foods (foods already available or, if necessary, foods grown in home orchards or gardens that the program promotes).

Marketing principles are extremely important for food fortification -- to assure that the food is as acceptable as possible to consumers. The importance of "advertising" the fortified food depends on whether it is already consumed sufficiently by the target group and if it competes with a similar non-fortified food.

Vitamin A capsules . On the basis of limited experience in supplementation programs, acceptability of capsules or liquid vitamin does not appear to be a significant problem; i.e., if the supplement is conveniently available for children and modest public information efforts are instituted, mothers and children are willing to cooperate. (It is reported that a number of programs withhold capsules from children with diarrhea or other serious illness, in order not to have the capsule blamed if the child worsens or dies. This is probably a short-sighted approach, since a careful explanation to parents should handle the potential problem, and such an approach misses the children at highest risk for vitamin A deficiency [West, p. 67-68].)

The major constraints to supplementation appear to be in achieving reliable supply and service delivery as close to the family as possible. In the social marketing of vitamin A

project in West Sumatra (described below), the percentage of under fives receiving capsules increased from approximately 20 to 68 percent after limited promotion and when the kader (local health volunteers) distributed supplements door-to-door instead of requiring mothers to bring their children to a distribution site.

Several large-scale capsule distribution programs have encountered declining coverage over time. Health officials must look at the full range of supply, services delivery, and public information to understand why. Where house-to-house distribution is not feasible, a well-designed communications effort can certainly increase the number of women and children willing to travel in order to receive vitamin A supplementation, although it is not easy to convince women to travel just to receive a vaguely preventive measure. Combining capsules with other health services is particularly desirable in such circumstances. In Indonesia, the government has instituted national publicity for vitamin A capsule distribution through health facilities and village health posts during two special months each year.

Vitamin A-Rich Foods . Particularly where food fortification is not practical (e.g., in most of Africa), the preferred long-term approach to reducing vitamin A deficiency is to encourage women and children to consume more vitamin A-rich foods. In practical terms in most developing-country situations, this means promoting the consumption of dark green leafy vegetables (DGLVs), fruits that are dark yellow and orange inside, or red palm oil (and colostrum and breast milk exclusively for infants under four to six months old). There is a fair amount of program experience in this area, some utilizing a social marketing approach, but not yet in national-level projects.

Several small-scale efforts in India produced good results. Nutrition education given to 80 mothers of preschool children over a 12-month period resulted in them and their children consuming DGLVs much more frequently. Among the children, notable improvements were measured in carotene consumption and physical signs of deficiency. In another study, 40 specially trained Multipurpose Health Workers gave nutrition education in 67 villages in Nallur Block, Tamil Nadu. Within three months, signs of xerophthalmia had decreased significantly. (Devadas in West, pp. 97-104)

Case Study: Social Marketing of Vitamin A-Rich Foods

One well-documented and successful social marketing effort occurred in Pariaman District, West Sumatra, Indonesia (population 420,000) from 1987-1989. (Pollard, The West Sumatra...) The Directorate of Nutrition and HKI collaborated in managing the project, with social marketing technical assistance provided by The Manoff Group. Funding support was from A.I.D. Below is a brief description of project activities by phase.

An Indonesian research firm and a local university conducted focus group discussions and in-depth interviews with mothers and other groups in the community and with health workers. The several stages of formative research revealed many insights for planning the project's educational efforts. For example, it was learned that:

- ***Mothers placed a high value on vitamins as important for their children's health. Although DGLVs did not have a prestigious image as a food, they were considered sources of vitamins.***
- ***Consumption of DGLVs took place but at insufficient levels, and there was virtually no consumption other than in breast milk for five to 12 month olds.***
- ***Mothers did not know about vitamin A specifically.***
- ***Although they knew of eye problems, mothers did not consider blindness to be a significant threat to their own children.***
- ***DGLVs were already available in markets, gardens and even growing wild, yet there were a number of attitudinal resistances to young children eating more of them. For example, mothers thought young children could not digest DGLVs easily and that they caused diarrhea. Once children were old enough to walk, mothers let them choose their own foods, and these rarely included DGLVs. Mothers thought feeding DGLVs every day that would be monotonous.***

In the household trials phase of the research, mothers were requested to try out the behavioral advice advocated in draft project messages. This test yielded good results among pregnant mothers and children 12 to 60 months old. The advice had less success among mothers of five to twelve month olds, because of mothers' strong belief that these infants could not digest DGLVs.

Strategy formulation and development. Based on the many insights from the qualitative research with mothers and people who influence their feeding and food purchasing behavior, the project developed a unique communications strategy. The essential approach was to promote increased consumption of DGLVs because they are full of health-promoting vitamins. Because the research had revealed that preventing eye disease or vitamin A deficiency were weak appeals, they were not an essential part of the approach. The main project messages urged mothers to feed their young children a small amount of DGLVs with every meal, every day.

The media plan featured:

- *radio spots and a jingle sung by a famous local singer to raise the image of vegetables;*
- *radio spots in the form of mini-dramas that addressed the resistances of mothers. Each spot was targeted to a particular segment of mothers (e.g., mothers of five to twelve month olds);*
- *promotions in markets through posters, medicine sellers using speakers, and specially printed plastic bags at vegetable stalls that reminded mothers to take home vegetables for the entire family;*
- *counselling materials and posters for health personnel to promote both DGLVs and capsules;*
- *an action booklet -- a guide to the project -- that described the role of all organizations and individuals in the project, including those at the local level (community leaders, women's group leaders, religious leaders, and kader).*

The authority figure of a doctor and the image of the folk singer (a mother of young children) were unifying elements in all media. Some of the resistances were addressed through the dialogue in radio spots, while the motivational statements were expected to overcome others. Messages were carefully crafted to build on mothers' positive motivations, and the suggested behaviors had all proved feasible in the household trials.

Implementation and monitoring. In October 1987 the project was officially launched when the head of the regency issued a vitamin A proclamation. A monitoring study conducted several months later showed less than optimal implementation of planned activities.

- *Although the first round of capsule distribution improved coverage from 20 to 68 percent, it was difficult to maintain the coverage due to a high dropout rate of kader, who were the main distributors;*

- *Kader were also reluctant to counsel mothers about eating vitamin A-rich foods during their home visits for capsule distribution because of the additional time required;*
- *Medicine sellers' were found to be unwilling to continue their promotions over time and were dropped from the project. Instead, loudspeaker broadcasts in markets from district health vehicles were used.*
- *Initially, only about one-third of the booked radio spots were aired.*

Evaluation findings. A 1989 evaluation study conducted two years after the baseline survey set out to quantify the attitudinal and behavioral shifts what this level of effort had accomplished. The results showed no significant increase in the relatively high baseline awareness of vegetables and their health value. This finding confirmed findings from periodic project monitoring studies of the need for stronger and more consistent project communications. However, among those who heard radio spots (42 percent of mothers) which were designed to overcome specific resistances, considerable attitudinal changes occurred; for example, the number of pregnant women who felt that eating DGLVs would cause a difficult delivery fell by over 50 percent (from 35 to 14 percent), and the number of mothers who felt that 13-60 month old children do not like vegetables fell from 20 to nine percent. Most importantly, based on 24-hour recall, the following increases in daily consumption of DGLVs were measured: pregnant mothers, 19 to 32 percent; nursing mothers, 14 to 33 percent; five to 12 month old children, ten to 21 percent; and 13-60 month old children, 17 to 27 percent.

The findings are less clear as to how many non-consumers became consumers. Significant increases were seen in the number of mothers who increased consumption above 50 grams and children who increased consumption above 20 grams of DGLVs per day (the highest from ten to 36 percent by pregnant mothers, the lowest from 14 percent to 24 percent by five to 12 months old children).

The in-country cost of the project was \$210,000 and the Directorate of Nutrition calculated that if the project were implemented throughout West Sumatra, the cost per mother/child who increased DGLV consumption to sufficient levels would be \$0.28 each.

Lessons Learned. Despite the imperfect implementation of this project, those involved felt the project indicated that the social marketing process can significantly influence attitudinal and behavioral change. Key components are:

- *the development of intervention and message strategies based entirely on consumer attitudes, practices, and behavior;*

- *the use in messages of the commercial advertising experience of brand-image definition and repositioning (expanded the value of DGLVs from eye health to general health);*
- *adding creative solutions to overcome defined and targeted resistance points; and*
- *using a media mix of mass and interpersonal media, with some emphasis on point-of-sale (e.g., the markets where most women buy their DGLVs).*

HKI, The Manoff Group, and the national governments also implemented social marketing of vitamin A projects in regions of Bangladesh (Comilla District) and the Philippines (Region VI). Research findings, strategies, and results were remarkably similar in the three projects and probably represent a general approach (that naturally should be tested and adapted locally) for Asian countries in which availability of DGLVs and vitamin-A rich fruit is not a constraint. (Pollard and Favin)

In all three countries, DGLVs were the most readily available and affordable sources of vitamin A intake (although local fruits were also promoted in the Philippines and Bangladesh).

Generally, DGLVs were accepted as food good for one's health. Lack of adequate consumption among pregnant and lactating mothers was due mostly to not perceiving a tangible benefit of more frequent consumption. Children over a year old disliked DGLVs, and mothers felt no particular need to feed them. Among infants, fear of indigestibility existed in all countries and fear of diarrhea in Indonesia and Bangladesh.

Vitamins were well known. However, only in the Philippines did many people purchase vitamins. Vitamin A specifically was not well known.

The idea that DGLVs "cured" night blindness and prevented blindness was not too well understood in any of the three Asian countries, although perhaps better understood in Indonesia. However, in this country neither night blindness nor blindness were regarded as sufficiently prevalent to warrant any significant effort to overcome the situation. Concern with acting to improve eye health was strongest in Bangladesh.

Intervention strategies were quite similar, targeting pregnant and lactating women and children from five to six to 60-83 months. The primary message was aimed to ensure regular intake of vitamin A-rich foods through adding them, suitably prepared with oil, to the rice porridge of the younger children and the regular diet of older children and pregnant and lactating women. This would require building up the image of DGLVs from a "useful" to an "essential" ingredient in the diet every day and overcoming specific attitudinal resistances.

Promoting precise quantities to consume was found to be complicated. Spoonfuls and bowlfuls of DGLVs are not easy volumes to express reliably. In general, the idea was to ensure consumption every day was felt to be an adequate aim, particular for radio messages.

The manner of addressing the attitudinal resistances was quite similar in the three countries:

- *Lack of digestibility* was addressed through advice to chop or mash well-cooked DGLVs well.
- *The fear that DGLVs cause diarrhea* was readily overcome if a doctor noted that boiling DGLVs well will eliminate this problem.
- *The feeling that children will not eat DGLVs* was addressed with the advice to start feeding DGLVs to children at age 4-6 months and to persevere until the child gets used to the new taste sensation. It was suggested that mothers give older children a variety of DGLVs to learn which ones they might like.
- *Unavailability*. In all three countries DGLVs were readily available yet mothers still perceived this as a problem. This feeling probably disguised a lack of perception of need or a resistance or fear. Once these other resistances were overcome, mothers found the effort to obtain DGLVs to be feasible.
- *Fears of a difficult delivery by pregnant mothers* represented a general fear of overeating and thus of having a large baby rather than any specific problem with DGLVs. In this case, it was necessary to play down quantity and concentrate on the need for quality intake.

In general, a doctor was seen as the most credible source of information, although in reality mothers rarely saw doctors. Village health workers in the Philippines were also regarded as reliable informants. In Indonesia, a popular singer was employed to give nutrition messages. Pretests showed that although she raised considerable interest, her advice was found credible only if confirmed by a doctor.

In all countries the household trials yielded quite positive results. All media strategies combined mass media and person-to-person contact. Outdoor activities included posters, with the addition of billboards in Indonesia and Bangladesh. Loudspeaker broadcasting was utilized at market areas in Indonesia and Bangladesh, and in Indonesia vegetable sellers distributed plastic bags with vitamin A messages. Stickers and comics were employed in the Philippines, along with a wide range of localized initiatives including fairs, recipe contests, and radio quiz shows. In all countries, radio was the main electronic media, although television was employed in Bangladesh, primarily to address policy makers.

Regular contact with village-based health workers varied from a relatively high level in the Philippines to some 30 percent in Indonesia and a very low level in Bangladesh. This led to extensive training programs and provision of counselling materials in the Philippines and Indonesia. In Bangladesh, no formal training of health workers was contemplated, although NGOs active in the intervention area were encouraged to support the program and were given support leaflets and other materials.

These projects demonstrate the value of mass media yet also the essential need to complement them with interpersonal communication. The problem is that there must already be a reliable cadre of local health workers or other potential communicators that the project can train or support. If there are too few community-level workers (as in Bangladesh) or the system is weak (as in the area of Indonesia where the project was implemented), a vitamin A project alone cannot remedy the situation. Either the project will have to rely on innovative cadres of local communicators, or the interpersonal communication will be weak.

Preliminary evaluation results are just in from the Bangladesh project. They show a significant increase from 24 to 42 percent of children six to 72 months old who consumed vitamin A-rich food daily. The compliance remained low in the six to 12 month old children (11 percent) but was 65.7 percent in children 12-72 months old. (Pollard)

The Institute of Nutrition, Mahidol University and the Ministry of Public Health are implementing a social marketing of public health project in Northeast Thailand. (Smitasiri) The strategy promotes vitamin A-rich fruits and vegetables and in particular the cultivation of the ivy gourd and its consumption by mothers and young children. The project was planned on the basis of formative research, with formal and informal groups (including Buddhist monks) participating and then discussing the results. Health workers, TBAs, agricultural workers, school teachers, and other have been trained in relevant skills. Mass media and numerous interpersonal and local media are used, including mobile drama groups that present day-long food and nutrition shows. Among many spinoffs from the project are poultry-raising projects in a number of schools. This project provides an excellent illustration of the fact that social marketing principles are not adverse to more traditional forms of community participation.

Formative research conducted in a joint Save the Children Federation/ Ministry of Health/HKI project in Kolondieba Circle, Mali yielded some similar findings to those in the Asian projects. Affordable vitamin A-rich foods were found to be available year round. There is a local term for night blindness, which is well known and commonly associated with pregnant women and young children.

The Academy for Educational Development, through an A.I.D.-funded project, sponsored ethnographic research in Tahoua Department, Niger, from 1987 to 1989. (Keith) This research found that "meats and vegetables, although both eaten alone as snacks, are valued for the way in which they contribute to the sauce" for the staple millet dish. "Fruits are viewed as snacks, and for those who do not have the money to buy them, a luxury." (Keith, p. 4) "Meat, including liver, is higher valued as a prestige food throughout Niger." (p. 5) For families that can afford it, liver is eaten, particularly by men but occasionally by small children. Liver is recognized as a dietary cure for night blindness. Perhaps even more than in the Asian countries, mothers in Tahoua do not try to encourage their young child to eat anything s/he does not appear to want to eat. In general, people eat to "get full" and do not consider that certain foods are good to eat because they are more "nutritious" than others.

Based on the initial research, some potential messages were suggested that incorporate traditional Hausa concepts. For example:

- **Mothers should serve more liver because it "increases the blood."**
- **Eating fruits and vegetables daily increases one's appetite and helps one eat and get full.**
- **Mothers should serve more butter and add oil to greens to help make children fat.**

In 1985-1986, a Worldview International Foundation vitamin A project in Bangladesh conducted research to understand barriers to increased vitamin A consumption. (Fishman, p 3). Research findings included the following:

Concerning blindness

- **Children's blindness is the result of parents' sins and is a curse from God.**
- **Blindness is inherited.**
- **Children become blind if the birthing hut is not cleansed of evil spirits.**

Concerning consumption of DGLVs

- **DGLVs are cheap food and cheap food cannot be good food.**
- **DGLVs are hard to digest and children do not like the taste; children get diarrhea from DGLVs.**
- **Pregnant and lactating women should not eat DGLVs (probably due to humoral medical beliefs).**
- **Ancestors never ate carrots and they were not blind.**

Such insights could have formed the basis for an effective message strategy in the hands of experienced social marketing planners, yet the initial strategy used emphasized the relationship between vitamin A and blindness and the importance of eating DGLVs to prevent blindness. Awareness of DGLV feeding rose to 97 percent in the target area, but actual feeding of DGLVs to young children remained very low.

Home gardens . Where vitamin A-rich foods are not available or affordable, programs may need to stimulate the cultivation of vegetables or fruits and the consumption of the harvest by pregnant and lactating women and young children. Garden projects obviously have many technical requirements (e.g., available land and water), but behavioral aspects are likewise crucial. Projects will fail unless they make a major effort to carefully promote the desired consumption patterns and reduce barriers (e.g., intrafamily food distribution, propensity to sell garden produce for cash, and beliefs and practices regarding infant and child feeding) to consuming the vitamin A-rich foods grown. One obvious strategy to address this is to "encourage the involvement of women to ensure their access to garden foods, control over garden income, and education." (Soleri, p. 3) Education must also address inappropriate processing, storage, and cooking techniques that reduce the vitamin-A nutrient values of the foods grown and consumed.

A recent review (Peduzzi) of dozens of home and community garden projects describes a series of constraints to their successful implementation, including: environmental (soil, water, etc.); operational (lack of background studies, project funding, community participation); governmental (understaffing, weak government systems or lack of government support); material (seed quality, pests, fertilizers); extension (selection of extensionists and other human factors); human nature (motivation, conflicting activities, attrition, local perceptions); and post-operational concerns (evaluations, information sharing). Among the acceptability issues, motivating participation, particularly among the families most in need, appears to be difficult; and achieving acceptability of the foods grown may also be difficult, particularly if the food "is considered suitable only for animals or babies or old people with no teeth." (p. 12)

Among the major recommendations based on the review of project experience is that projects should promote one vitamin A-rich fruit or vegetable rather than many. "Introducing one fruit and/or vegetable rich in vitamin A, and concentrating on the promotion of that one fruit and/or vegetable appears, from the evidence, to be an excellent idea. Not only is the work of the extensionists and the labor of the participants greatly simplified, but operational aspects of the program are also made easier." (p. 15) It is also noted that because poor people in developing countries usually have a monotonous diet, introducing only one addition is much more feasible than introducing many.

From a social marketing point of view, the idea of limiting the number of new foods certainly makes sense, yet the decision on how many foods to grow and promote should be based on formative research that indicates what is required to have an impact on the "market" of pregnant and lactating women and young children. The "consumers" must have a major say in the nature of the product.

Chapter 3 LESSONS LEARNED FROM OTHER SOCIAL MARKETING EXPERIENCES

Weaning Practices

Improved weaning practices encompass the timing of introduction of weaning foods, frequency of feeding, and quantity and hygiene of foods fed, in addition to the food itself -- its nutrient composition and consistency. Improving the micronutrient content of the young child's diet is among the myriad of the important feeding practices related to child growth. (Gibbons, Griffiths, The Weaning...)

To improve the quality of food consumed, pilot projects have ranged from the marketing of formulated commercial foods (Incaparina, Triposha), to marketing of packets of ingredients to enhance the traditional food (Nutripak), to advocating community-made and distributed mixes of local foods (Sarbottam Pitho), to improving homemade, traditional weaning foods (bubur campur, nasi tim bayi, improved ogi, etc.) Success of many of these foods was limited, primarily because of the same supply and distribution problems that plague iron tablet and other programs, and because many of these pilot projects have had multiple goals such as income generation and alleviation of malnutrition.

Those projects that seem to be most effective in achieving sustainable nutritionally beneficial changes in diet have limited objectives and work to help mothers improve the food they give their young children using foods available at home. Generally, this has meant that ingredients must be limited, often making it difficult to fulfill all of the child's nutrient requirements and therefore, by some professionals' standards, making them undesirable. Adding micronutrients has been among the most challenging improvements (see the discussion of DGLVs for infants).

What is emerging as an appropriate strategy for improving weaning foods is a segmented product: a simple two- or three- ingredient food for everyone that enhances caloric intake; a more complex recipe that might involve a special ingredient for those who can afford this, addressing both caloric and other nutrient shortfalls, and either packaged ingredients or a packaged food for families who feel they want this option.

In addition to weaning foods, social marketing has been used successfully to promote improved practices that have been associated with improvements in nutritional status (for example, in the Nutrition Education Behavior Change project in Indonesia and in The Weaning Project in Indonesia and Cameroon). It seems clear from early experiences promoting weaning foods that nutritional status improvement seldom occurs when the food is promoted in isolation from promoting improved practices. Some of the features of the successful weaning improvement programs are:

- ***Carefully targeted behaviors:*** Because there are numerous ideal young child feeding practices, it has been critical to conduct formative research, including household trials, to prioritize the practices, to determine which are the most amenable to change and which are the most difficult, and to better understand a family's motivations or resistances to changing other ones.
- ***A general media promotion program on good weaning, supported by intensive counselling*** that allows the information to be delivered to many people with good frequency and for the details to be tailored and delivered when most appropriate.
- ***Involvement of the private sector,*** whether it is local food vendors or major commercial shops. This practice has helped improve coverage, in part through improving the image of the food if it were considered as being for undernourished children.
- ***Careful monitoring and mid-course correction:*** Too often, not enough time or money is allowed for this step, yet within six months of project launch it is possible to find and correct program weaknesses.

Oral Rehydration Therapy

Similar to various micronutrient strategies, oral rehydration therapy (ORT) encompasses the sale or distribution of a product (oral rehydration salts), promotion of particular feeding habits (continued feeding, drinking, and breastfeeding during diarrhea episodes), and instructions for home preparation or home mixing and administration (similar to iron pill instructions, only much more complex). Although most "social marketing of ORT" projects have been efforts to sell oral rehydration salts through pharmacies and other private sector outlets, the use of social marketing in ORT programs certainly need not be limited to this one approach. A workshop on social marketing of ORT reviewed lessons learned, some of which are the following (Furst, pp. 24-25):

- ***Potential target markets and market research.*** Market segments must include health workers, policy makers, and potential distributors, as well as mothers and families. Research and promotion may well have to be carried out regionally within a country. The fact that ORT does not cure diarrhea is a major marketing drawback. Also, in many countries the product is fixed, so that it may be difficult or impossible to modify it to become more acceptable to consumers.

- ***Products and packaging.*** Participants did not reach consensus over the desirability to promote one product or to advocate a range of products for different market segments.
- ***Distribution and sales.*** A variety of possible distribution points were mentioned (pharmacists, grocery stores, traditional healers). Some principles were that the distributor had to feel that cooperating was worthwhile, and that local study was needed to see to whom mothers turned first in the case of child diarrhea, and therefore, who had the best potential as distributors.
- ***Pricing.*** Many thorny issues were raised, including the need to make OR salts profitable to distributors yet cheap to the (poor) segment of the public most in need, the question of one or a range of products and prices, and the need to pretest price, product, and promotion.
- ***Project sites.*** A strong recommendation, based on contraceptive social marketing experience, was to establish programs, particularly initially, in countries that had the best conditions for success, not necessarily the greatest need.

A recent paper on commercial sales of rehydration salts discusses many similar lessons learned and makes a number of recommendations for programs that utilize sale of a product through commercial channels. (Rasmuson) Constraints are noted to many programs from restrictive regulatory environments and from restrictions to their adjusting the traditional marketing tools of price and product to optimize sales and utilization. The challenge of effectively positioning OR salts is discussed, given the fact that ORT does not stop diarrhea and that it competes with well-established antidiarrheals that people believe *do* stop diarrhea.

Immunization

Although few projects have taken a thorough social marketing approach to promoting immunization, many projects have utilized some social marketing principles or techniques. The A.I.D.-funded Resources for Child Health (REACH) Project has assisted EPI programs in developing countries with anthropological and market research, strategy formulation, social mobilization, and channeling (following up and referring eligible infants). REACH recently analyzed lessons learned from its own experiences and that of other projects in promoting acceptability of immunization as indicated by improved coverage of infants and women, reduced dropout rates, and progress towards making immunization a social norm. Many of these lessons learned are relevant to micronutrient programs that utilize a supplementation approach, since the success both types of programs is very dependent on health service effectiveness as well as promotion of those services. Among the important lessons REACH lists are the following:

1. **Excellent communication work alone cannot sustain immunization service utilization. Efforts to increase public demand for immunization should form part of a coordinated strategy to improve coverage that also addresses service availability and quality.**
2. **Major determinants of acceptability in general appear to be parents' trust in health workers, convenience of services, the congeniality of providers, influence of local leaders, fear of side effects, and parents' understanding of when and where to bring their children. Investigations in specific locations are needed to learn the local barriers to utilization of services.**
3. **Many mothers are willing to have their children immunized even though they know little about how immunization works.**
4. **Research on acceptability should be as simple and practically oriented as possible. It should be planned and implemented with maximum participation of EPI staff. It should reveal positive motivations as well as barriers to acceptance.**
5. **More care is needed in message design. Good messages provide the essential logistical information, combat attitudinal resistances, and employ effective motivations.**
6. **To supplement general awareness messages, specific messages should be designed for specific groups, defined according to their immunization utilization status. In some places, messages should be targeted at men.**
7. **Messages should emphasize finishing immunization, not merely starting.**
8. **Health workers' actions are a major determinant of whether parents or guardians of infants return with them for the full series of immunizations. Health workers not only play technical roles but also essential communication roles in transmitting crucial information and motivating return visits. Health workers need training, support, and incentives to carry out their roles well.**

Contraceptive Social Marketing

An issue of Population Reports and a major worldwide evaluation of A.I.D.-funded programs (POPTECH) have summarized lessons learned from the many experiences in developing countries in contraceptive social marketing. The POPTECH evaluation concludes that in general CSM programs have been successful in meeting their prime social objective of "providing quality family planning methods at affordable prices and increasing availability and access through retail outlets." (p. i) They have been less successful in their economic objective of recovering operating expenses.

1. Because the *potential customers* of most CSM programs are people with little cash but who prefer to buy at a retail store, CSM programs target their programs to this limited segment of the total population. Some programs "segment" potential customers into smaller groups and appeal to the specific interest of each.
2. *Prices* should be set low enough for potential customers to afford them but high enough that buyers think the products are of good quality. Prices must also afford adequate markups to commercial distributors, wholesalers, and retailers. Meeting all of these criteria obviously requires compromise. Government price controls may limit flexibility in setting prices.
3. *Market research* can supply information about consumers that guides initial planning, monitors the short-term effects of program operations, and evaluates progress toward long-term goals. The POPTECH evaluation considers that "the most important lesson learned has been that a CSM program, like any commercial marketing enterprise, must base its advertising and promotion strategy on extensive research and planning. In practice, this means that more effort is needed to identify the potential clients' knowledge, attitudes and practice with respect to contraceptive use, and to test messages carefully" (p. iii)
4. For the *distribution* of contraceptives, some countries have been able to use existing networks but others have to set up their own sales forces to distribute and promote adequately to wholesalers and/or retailers. Most distribution networks have worked best in urban areas.
5. *Product promotion* is essential. Some programs have utilized mass media but others have spent little on paid advertising, generating considerable publicity in other ways. CSM programs promote their products not only to potential customers, but also to doctors, pharmacists, and policy-makers, since the attitudes of these decision makers can make or break a program.

The article summarizes the successes of CSM as follows: "Through social marketing, the skills of the private, commercial sector and the principles of marketing have been applied to increase public awareness of family planning and to reach a large market. Government or donor support has kept the price affordable. Moreover, by emphasizing the role of the user as an independent consumer who makes his or her own choices of products, social marketing has demonstrated new ways to reach and serve the public." (J774)

Water Supply and Sanitation

In 1990, the A.I.D.-funded Water and Sanitation for Health (WASH) Project published a document on ten years of lessons learned from providing technical assistance in developing countries. Although WASH and other projects employ more of a community development than a social marketing approach, they do address several common behavioral issues. WASH describes three general lessons learned in this area:

- ***Water supply projects do not achieve their full impact unless they are linked first to hygiene education and then to sanitation. "It is more important for materials to reflect an understanding of the crucial role hygiene education and community participation than for them to be costly or sophisticated. The materials need to be related to potential health improvements, encourage changes in user behaviors, and promote full participation of the affected groups....there should be studies of the attitudes, beliefs, practices, and past experience of the target audiences with water supply and sanitation so that the materials can be tailored to the context in which they will be used." For several reasons, women make the best hygiene educators. (pp. 31-32)***
- ***Behavioral changes combined with greater access to facilities are the basis for health benefits through improved water supply and sanitation.***
- ***A participatory approach to planning helps ensure linkages and cooperation in implementation. "...the most effective way to ensure that linkages occur and that cooperation is elicited from the widest possible range of agencies and institutions is to take an inclusive, participatory approach to the planning process." (pp. 43-44)***