

FINAL DRAFT

**SOCIAL MARKETING OF VITAMIN A
IN THREE ASIAN COUNTRIES**

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Vitamin A Deficiency

Vitamin A deficiency (VAD) makes a significant contribution to death, illness, and disability among children under six years old in developing countries. It can cause partial or complete blindness and lead to the death of up to two-thirds of the children who become blind. WHO estimates that 2.8 to 3 million preschool-age children have clinical vitamin A deficiency (xerophthalmia) and that 251 million more have severe or moderate subclinical deficiency [WHO].

Even mild VAD is associated with increased infant and child illness and deaths, particularly from diarrhea, respiratory diseases, and measles [Beaton]. Because the deficiency impairs the body's ability to fight infection, it may also contribute to arrested growth.

VAD is commonly found in famine victims, malnourished children, children of poor families, infants who are not optimally breastfed and weaned, and children under six who eat insufficient amounts of vitamin A-rich foods. Children who have common childhood infections and diarrhea are at special risk because these conditions limit their ability to absorb and utilize the nutrients they consume. Measles commonly precipitates VAD.

WHO classifies 60 countries as having VAD of public health significance and an additional 13 countries as likely to have similar problems. VAD is a serious problem among the large preschool populations of India and most southeast Asian countries. Children in many African countries, particularly in the Sahel and East Africa, are also affected. The main areas of VAD in the Western Hemisphere are northeast Brazil, El Salvador, Haiti, and southern Mexico, but subclinical VAD is of concern in any poor area with high infant mortality and malnutrition rates. Recent research has also raised consciousness of significant VAD among pregnant mothers in developing countries.

Actions to Control Vitamin A Deficiency

Eye symptoms of VAD may be treated by administering vitamin A in capsule or liquid form. Appropriate treatment halts eye deterioration but cannot reverse complete blindness that has occurred in one or both eyes. For pregnant women, treatment must be substantially modified, since the standard treatment may be dangerous to the unborn child.

There are three basic approaches to prevention [Gillespie and Mason; Favin and Griffiths]:

- *Supplementation:* Distribution of a large dose of vitamin A solution via capsules or directly from a bottle every four to six months to children from 9 or 12 months through five years of age is effective in preventing VAD, because vitamin A, unlike most vitamins, is stored in the liver. Giving vitamin A to children with measles, serious malnutrition, diarrhea, or other illnesses protects against death and blindness. A single capsule costs only about US\$0.02.
- *Fortification:* Fortification of foods commonly consumed by children is a viable strategy in some developing countries and is widely practiced in developed countries. Margarine, dairy products, sugar, tea, wheat flour, and monosodium glutamate (MSG) have been fortified with vitamin A in different countries.
- *Vitamin A-Rich Foods:* The final major approach is to encourage mothers to breastfeed their infants optimally and to feed their young children enough food with vitamin A, starting with the first semi-solid food. Efforts to encourage or support home or village cultivation of vitamin A-rich foods may be necessary where such foods are not readily available.

Breastmilk contains sufficient vitamin A for an infant's first several months, as long as the mother herself is not deficient. Liver, eggs, meat, poultry, dairy products, small fish eaten whole, and other animal products are rich food sources but are often not available or affordable to poor families. Other sources are dark green leafy vegetables (DGLVs); fruits and vegetables that are deep orange or yellow inside (such as carrots, pumpkins, ripe mangoes, papaya), and red palm oil. A minimal amount of dietary fat is required to enhance bioavailability of the beta carotene ("pro-vitamin A") from these sources.

In countries with a known VAD problem, the first action has generally been to introduce capsule supplementation on a targeted and/or biannual basis. However, because capsule distribution depends on supply and delivery systems functioning indefinitely into the future, it is generally felt that, on a national level, capsules should be gradually replaced by fortified or natural food sources. Fortifying common foods such as sugar is a cost-effective approach in many situations, yet in few developing countries will the fortified foods reach all or nearly all needy families. So clearly a dietary approach should play a part in most comprehensive control strategies.

Until the late 1980s, few programs had assessed at-risk populations' knowledge, attitudes, and practices regarding consumption of vitamin A-rich foods or discovered the most practical and economical ways of changing attitudes and behaviors that were unfavorable to adequate consumption. Then, several well-documented projects, all with funding from the U.S. Agency for International Development, sought to alleviate VAD by increasing consumption of vitamin A-rich foods. Three were managed by Helen Keller International (HKI) in Indonesia (with the Ministry of Health), the Philippines (with the Department of Health), and Bangladesh (with the Ministry and Health and Family Welfare); and one, in Thailand, by Mahidol

University's Institute of Nutrition. All received some technical assistance from The Manoff Group.

This article analyzes the experiences and lessons learned from 1986-1991 in these projects, all of which employed the same social marketing methodology. Unexpectedly, the actual formative research findings, messages, and communication strategies turned out to be quite similar. Many, today, are "common wisdom" among persons implementing similar projects.

Country Background

In Indonesia, Bangladesh, and the Philippines, HKI and relevant ministries documented a significant prevalence of VAD and designed and launched priority programs to combat the deficiency. In the mid-1980s, an estimated 60,000 suffered nutritional blindness each year in Indonesia and in Bangladesh, 30,000; a 1987 HKI survey in the Philippines found that 3% of children had night blindness and 0.7% Bitot's spots.

Indonesia. Indonesia's Ministry of Health developed a three-track, national strategy to combat vitamin A deficiency:

- A capsule distribution program for children one to five years old started in 1974. Coverage by 1986 had reached 15%-50% in various service areas. Delivery since 1984 has been through *posyandu*, integrated community health posts operated by volunteer mothers and supported by local health centers. Average attendance at *posyandu* nationally was estimated at 30 percent of all one to five year olds. There had been little demand creation until the recent establishment of a national *posyandu* promotion program in the late 1980s. Promotion and distribution of capsules then became concentrated in two vitamin A months.

- Consumption of vitamin A-rich foods was encouraged as a component of the National Family Nutrition Improvement Program. On a national level, the primary education effort was made through counseling of mothers at posyandu sessions. Counseling materials highlighted the risk of blindness in children and the warning signs of night blindness. The use of expanded communications through mass media and community development had been employed only in small pilot projects. Aside from these project areas, nutrition counseling at posyandu was of limited effectiveness.
- The third approach was fortification of MSG with vitamin A. Attempts to establish this component were frustrated, however, first by political and then by technological problems (color and storage life of the fortified MSG).

Bangladesh. Vitamin A capsule distribution to 6-60 month old children commenced in 1973 through house-to-house calls by health assistants twice a year [Chowdhury]. By 1986, coverage had reached an estimated 35 percent. In a situation where no fixed supply sites existed, efforts to increase coverage concentrated on improving the supply system rather than on creating demand.

Health assistants, and subsequently (family planning) family welfare assistants, gave nutrition education on the benefits of consuming vitamin A-rich foods but with only marginal success. A number of NGOs that were undertaking significant mass media and community development programs that encouraged family vegetable plots and greater consumption of vitamin A-rich foods. A review of these programs indicated a need for further, more in-depth studies into the target audiences' attitudes, practices, and resistances to desired behaviors.

Philippines. At the time the social marketing project began, there was no national program to control vitamin A deficiency, although several local efforts had begun. HKI and the

Department of Health (DOH) had completed a first round of capsule distribution, and capsules were to be given in health facilities to children with signs of xerophthalmia, diarrhea, measles, or serious malnutrition. Nutrition education efforts mentioned consuming vitamin A-rich foods, but this had never been the topic of a special promotional campaign.

The Social Marketing Methodology

All three programs employed a social marketing approach in planning, managing, monitoring, and evaluation. The steps in this process are the following:

Conduct Formative Research. Qualitative research establishes a clear understanding of present attitudes, behavior, and practices of mothers and foods, also providing a perspective into the attitudinal and practical obstacles (resistances) that target audiences face in undertaking consumption of vitamin A-rich foods at needed levels. Existing communication channels are also probed, including contact with village-based health workers and the health system, as well as other development, cultural, or religious groups. Research methods include in-depth interviews, household observation, and focus group discussions, as well as 24-hour dietary recalls.

Test the strategy. Once the likely behaviors and messages are developed, they are tested in household trials (today called trials of improved practices, or TIPs). Researchers visit a small number of mothers and, by giving the motivations and information the project itself expects to use, encourage them to undertake the proposed new practices for a week. The mothers are then revisited. The interviewer probes the extent to which mothers carried out or modified the tasks, as well as their reasons why and attitudes and feelings about the experience.

Formulate Intervention Strategies. Based on the research results, planners define the specific behaviors that are feasible for the target audience to undertake and to agree on what appeals and information can overcome attitudinal resistances of mothers (or persons who strongly influence their relevant practices). Research also reveals the most acceptable and persuasive authority to convince mothers to take the desired actions. By this point it should be clear if the project can limit itself to a communications intervention or if it must also address problems of availability of vitamin A-rich foods. Many projects organize a "strategy formulation workshop" to involve key players in project implementation in formulating the project strategy.

Produce Draft Messages, Materials, and Media Plan. Usually, an experienced social marketer writes a creative and media brief that outlines the target audiences, the precise behaviors to be promoted, authority figures, media, etc. This is turned over to an advertising agency, which takes the exact words used successfully in the household trials and adapts them to each medium of communication in exciting, culturally relevant, practical, believable, and convincing ways that should ensure real behavioral change, if they reach target audiences sufficiently from credible sources.

Prepare Materials. All materials are drafted, then pretested, and fine-tuned on the basis of the pretest results. Pretesting aims to gauge the extent to which that target groups find materials to be attractive, understandable, directed to people like them, memorable, and would dispose them to action, and if not, why not, and what suggestions intended audiences might have for improving them.

Finalize the Program. The program plan is now finalized. It includes plans for media and materials, training of interpersonal communicators or service providers, information and

advocacy for the health system and beyond, monitoring, and evaluation. The materials are then produced in final form and the media plan and budgets approved.

Conduct a baseline survey. A quantitative survey is necessary if program organizers desire a precise evaluation. It is repeated after the program has run for some time, ideally at least two years.

Orientation. This includes training relevant health workers and orienting the health system and support agencies to the project.

Project Launch and Implementation. It is desirable to organize a "launch event" to involve local political authorities and to increase public awareness of the upcoming activities. Actual project activities, of course, must be well-managed. The project manager(s) should be experienced and should have sufficient time for managing the social marketing project.

Monitoring. There should be both routine monitoring to assure that activities are proceeding as planned (e.g., that radio spots are broadcast as scheduled), as well as special monitoring studies every six months or so to gauge the extent to which the project appears to be affecting knowledge, attitudes, and practices, and what modifications, in messages and media or beyond communication, appear to be necessary.

Objectives

The primary objectives of all three pilot projects were to develop the most economical and practical methodology for segmenting target audiences and improving their consumption of vitamin A-rich foods; to define the level of attitudinal and behavioral change that project interventions achieved; to integrate the result into national programs to the extent possible; and to disseminate results and lessons learned in order to contribute to improved programs

worldwide. An additional objective in Indonesia and Bangladesh was to increase demand for and improve the availability of vitamin A capsules.

Description of the Three Projects

Project Sites. The following sites were selected for these pilot projects [Favin and Griffiths; Klemm; Mahboob, Bloem, and Pollard; and Pollard]:

- Indonesia - the district of Pariaman (population 424,000) in West Sumatra Province,
- The Philippines - Western Visayas Region (population 4.5 million), and
- Bangladesh - Comilla District (population 4.2 million).

Formative Research. Formative research was undertaken in Indonesia in 1986 and 1987, initially comprising 140 in-depth interviews and 10 focus group discussions; in 1988 in Bangladesh, with 210 in-depth interviews and 16 focused group discussions; and the Philippines in 1988 covering 480 in-depth interviews. In Indonesia and Bangladesh the research was conducted by market or social research firms and university students, and in the Philippines it was conducted by DOH provincial or district staff. The quality was satisfactory although not optimal; research groups appear to feel more comfortable with quantitative surveys than with more unstructured qualitative probing.

Considerable similarities existed across countries in mothers' attitudes and practices regarding feeding themselves and their children vitamin A-rich foods as well as in the fears and resistances that impeded this. In general, DGLVs were the most readily available and affordable dietary source of vitamin A, and most DGLVs were accepted as health promoting. Lack of adequate consumption among pregnant and lactating mothers was due mostly to their not perceiving a tangible benefit of more frequent consumption. There was a relatively low perception of the need to feed vitamin A-rich foods to young children, plus children's dislike of

DGLVs, and mothers' feeling that children a year or older should decide for themselves what they wanted to eat. In all countries, mothers feared that children under one could not digest DGLVs and that they caused diarrhea.

Interestingly, the West Sumatra research indicated that where mothers understood that DGLVs prevented blindness and night blindness, this seemed to reinforce their limited value. Although mothers were familiar with these problems, they did not consider them to be a significant threat to their own children. Also, mothers did not consider night blindness to be particularly serious. These findings indicated that the standard messages used to "educate" mothers about vitamin A deficiency were not very likely to motivate them to change their practices.

Intervention Strategies. Target groups were defined as pregnant and lactating mothers in all countries and as mothers of 5 - 60 month old children in Indonesia, 6 - 72 month old children in Bangladesh, and 6 - 83 month old children in the Philippines.

With some local variation, message strategies developed along similar lines in all three countries. Messages advised that at six months of age infants should be eating semi-solids in addition to breastmilk and that older children should be entirely on adult diets. The primary aim was to ensure regular intake of vitamin A-rich foods through adding them, suitably prepared, to the rice porridge of the younger children and to the regular diet of older children as well as of pregnant and lactating mothers. This would require *building up the image of DGLVs from a "useful" to an "essential" ingredient in the daily diet, as well as overcoming specific resistances, notably fears of indigestibility and diarrhea for younger children and dislike of DGLVs among older children.*

Testing the Strategies. In all three countries, small samples of the target audiences were approached and asked, using the words and phrases developed, to add DGLVs to diets for a week. In every case considerable success was achieved, and all targets were able to increase DGLV consumption on a daily basis (although less for 5-12 month olds). Some improvements were then made to the precise messages.

Media Strategy. In all countries the basic communications strategy comprised the use of mass media, direct contact through village-based health workers, and general encouragement of community participation. An additional, important wrinkle in Indonesia was to transmit messages at "point of sale," the weekly markets where most women bought their family's vegetables.

Radio was the most effective mass media, although ownership was relatively low (25 percent in Indonesia and Bangladesh, 40 percent in the Philippines). Comic books were also used in the Philippines and television was employed effectively in Bangladesh, primarily to address policy makers.

Existing, regular contact with village-based health workers varied from a relatively high level in the Philippines to some 30 percent in Indonesia and very infrequently in Bangladesh. This led to extensive training programs and provision of counseling aids in the Philippines and Indonesia. In Bangladesh, the project did not formally train health workers, although NGOs active in the intervention area were encouraged to support the program and were given leaflets and other materials. (A more recent Worldview International Foundation project in Rangapur District, Bangladesh, has had good success in training volunteer mothers to go house-to-house in their communities to promote the cultivation and consumption of vitamin A-rich foods.)

In all three countries, extensive coordination workshops were conducted to orient health personnel and support groups about the programs. Support brochures and leaflets explaining the project and different persons' respective roles were produced and distributed.

Outdoor activities included posters and billboards. Loudspeaker broadcasting was utilized at market areas in Indonesia and Bangladesh, and also in Indonesia vegetable sellers distributed plastic bags with vitamin A messages to customers. Stickers, handbills, and comic books were employed in the Philippines, along with a wide range of localized initiatives, including participation in fairs, recipe contests, and radio quiz shows.

Community participation was not a strong suit of these projects, because of the time-consuming nature of stimulating and maintaining it, as well as the relatively short periods of donor funding, as well as the large coverage area (over four million people) given the small budget. However, a project in Thailand that following the same social marketing steps, developed extensive, effective community participation [Smitasiri]. That project strategy promoted vitamin A-rich fruits and vegetables, in particular the ivy gourd and its consumption by mothers and young children. The strategy was planned on the basis of formative research, with formal and informal groups (including Buddhist monks) participating and then discussing the findings. Health workers, TBAs, agricultural workers, school teachers, and others were trained in relevant skills. Mass media and numerous interpersonal and local media were used, including mobile drama groups that presented day-long food and nutrition shows. Among the many spin-offs of the project were poultry-raising projects in a number of schools.

Results. The Philippines program was launched in late 1988 and evaluated in April 1990 [Klemm]. Pre-and post-intervention surveys in Antique Province, where interventions were most intense, found that all active signs of xerophthalmia, except for corneal ulcers (which

increased from one to two), among target-age children had decreased significantly. The overall prevalence of xerophthalmia decreased from 3.7% to 1.0%. There was an increase in the number of high-risk children having received a vitamin A capsule in the last six months from 3% to 30%. Still, it was observed that many opportunities were being lost in health facilities to supplement children with diarrhea or respiratory infection.

Mothers' knowledge related to vitamin A deficiency increased very significantly also, but most importantly, the average number of times per week children or families consumed vitamin A-rich foods increased by 28% for families and 65% for children. The three foods whose consumption increased the most were those specifically recommended in messages: *malunggay*, *kamote* tops, and other green leafy vegetables. Most significantly, the project was able to measure a 70% decrease in the ratio of frequency of family consumption of vitamin A-rich foods to young children's consumption.

In the wider Philippines project area, significant improvements were measured in exposure to vitamin A information, knowledge, and attitudes, and in the practice of feeding more oil to children, but not in the key practice of feeding more vitamin A-rich food to children. To achieve a to a better impact, the evaluation suggested that improvements were needed in supervision, clarifying health workers' roles, and interpersonal communication. Rural poverty and absence of food was also a factor.

The Bangladesh program was launched in March 1990 and evaluated after slightly more than a year [Mahboob, Bloem, and Pollard]. Findings showed a significant increase from 24% - 42% of children 6 to 72 months old who consumed vitamin A-rich foods daily. Compliance remained low among children 6 - 11 months old (11%), but was 65.7% among children 12 to 72 months old.

The Indonesia program was completed and evaluated in June 1989, after 20 months of activity [Pollard]. This program demonstrated the value of mass media, radio and outdoor promotions in shifting attitudes and behavior, although the "reach" and "frequency" of communications (percentage of target groups reached frequently by messages) was disappointing. The interpersonal component, primarily through the village-based volunteers (*kader*), failed to generate any significant delivery of messages owing to the high dropout rate of trained kader (79%) and low attendance at health posts (the posyandu system operates more effectively on Java). These problems were identified early in the program through monitoring, but, owing to budgetary constraints and to the desire to maintain a program that was affordable on a national basis, no additional resources were put in to resolve it.

In the evaluation survey, 42% of mothers claimed to have heard the radio spots, 70% observed posters, and 44% the billboards (compared to 10% who had been counseled by a kader). The results of this somewhat minimal communications effort was, however, positive. Among the 42% of mothers who heard the radio spots:

- Pregnant mothers' belief that if they eating DGLVs can cause problems in delivery fell from 35% - 14%.
- Nursing mothers' belief that if they ate DGLVs, their children would get diarrhea fell from 23% to 10%.
- The percentage of mothers who agreed that if they prepared DGLVs, their children would eat them increased from 22% to 52%. The percentage who believed that DGLVs were difficult for a child to digest fell from 20% - 7%.

There attitudinal changes were consistent with the following increases in daily consumption of DGLVs: pregnant mothers from 19% to 32%, nursing mothers from 14% to 33%, 5 to 12 month old children from 10% to 21%, and 13 to 60 month old children from 17% to 27%.

Lessons Learned

Communications Channels. The West Sumatra project demonstrates the value of mass media, although its full potential is impossible to know because of its limited reach. Clearly, interpersonal communication must also be emphasized if significant shifts in behavior are to occur and be sustained. Yet all three projects faced similar challenges in developing and supporting good interpersonal communication:

- *Cost:* all projects could have trained, monitored, and supported health workers as communicators, but the cost could not be replicated on a national scale.
- *Training requirements:* The development of effective counseling skills takes intensive training and supervision, and cannot be accomplished in most cases by a one-time training. Moreover, since many community-based workers are volunteers, a mechanism for continuing education and initial training of new volunteers is necessary.
- *Time:* Particularly facility-based health workers may lack the time to provide quality counseling. Most primary health care workers are tasked with multiple programs, and counseling and education may be given the least priority and resources.

Creative Strategy. These programs yield a number of important lessons concerning message development to encourage DGLV consumption. By and large, the motivation to action, as seen from the supply side, revolved around eye care. Formative research demonstrated, however, that from the consumer viewpoint, this idea in general lacked sufficient appeal to

ensure action. It is a credit to the management of these projects that consumer attitudes dominated the decision on message strategy. This reinforces the essential need for the consumer-oriented approach to program development. However, without the dramatic impact that preventing blindness would allow in the creative approach, all three projects had some difficulty in producing truly dynamic messages to promote DGLVs for general health.

The commercial advertising agency resources being employed could have been more thoroughly utilized for creative image-building track, but effectiveness was limited due to budgetary and time constraints, as well as the fact that commercial advertising firms lack experience in the specific requirements of promoting products that, intrinsically, consumers may not wish to buy. More permanent relationships need to be developed with commercial advertising firms committed to social marketing programs so that project managers gain more experience in the briefing process and the agencies in the creative process. Budgets also need to take into account the essential need for these relationships to be developed. Program management was, perhaps, well able to conceive of creative messages relative to eye care, but once this issue was set aside or made only a component of the creative requirements, experienced creative resources were needed to devise strong motivational rationales for action.

Specific Messages. Aside from a general lack of perception that vitamin A-rich foods are essential to the daily diet, specific resistances existed which had to be addressed and overcome. They existed, to slightly differing degrees, in all three counties.

- *Lack of digestibility* was readily overcome through advice to chop or mash 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 get 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 counties, DGLVs were readily available, yet mothers still perceived availability to be a problem. This feeling probably disguised lack of perception of need or a resistance or fear. Once these other resistances were reduced, 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 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.

Other creative issues included the issues of how to express quantity and of authority figures. Promoting the precise quantity to consume was unexpectedly complex. Spoonfuls and bowlfuls of DGLVs are not easy volumes to express reliably. In general, the idea to ensure consumption every day was felt to be an adequate aim for the communications effort, particularly in mass media.

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 regional singer was employed to give nutrition messages, but pretests showed that although she raised considerable interest, her advice was found credible only if confirmed by a doctor.

Integration into National Programs. Lessons from the pilot in Indonesia were integrated into the national nutrition education program through the Posyandu Promotion Project

(1987-1991). The pilot produced eight 60-90 second radio spots, most addressing a specific resistance point to a specific target audience, as well as image-building spots. The addition of these eight spots into a program already using some 16 spots on other nutrition issues, plus immunization, diarrhea, weighing, etc. was felt to overload media scheduling. This was partially resolved by monthly phasing of the whole effort, giving vitamin A two months a year and reducing the spots to only the most at-risk under-one year olds. To a degree, the DGLV messages were incorporated into spots addressing infant feeding in general. Thus, the precise DGLV spots developed, tested, and proven effective were not used in the expanded national context, although the experience gained in their development has been incorporated into the creative strategy for the national campaign.

The posters developed for the pilot program have been reproduced for distribution nationally. However, without corporate sponsorship, budgets and practical limitations meant that the coverage obtainable was very low and ruled out effective use of this material beyond select contact points such as health centers or health posts. The use of billboards has experienced similar constraints.

The direction, at this time, is to regard the vitamin A pilot project as a component of the overall nutrition education program. As a result, it is unlikely that the specific training modules and counseling materials developed for the DGLV program will be replicated. However, the lessons learned will likely be incorporated into the ongoing development of the nutrition program.

Both the formative research findings and lessons learned from the West Sumatra project were used by the national SOMAVITA Project (1992-1994), a major component of which was to promote consumption of vitamin A-rich foods. This effort decided to promote one specific

vitamin A-rich food per province, and in West Sumatra, this chosen food was amaranth. In both Bangladesh and the Philippines, HKI and its governmental counterparts have continued to focus on improving dietary consumption of vitamin A-rich foods.

Monitoring. Some important lessons were learned regarding monitoring. All three countries experienced the usual implementation difficulties and delays, and without effective feedback from the intervention sites, rectifications would have been impossible. It was considered to be essential to regularly monitor impact and compliance in order to track both the positive and negative results of message delivery and to adjust message content as a result of changes caused by the program.

Tracking studies in all three counties, however, were somewhat limited, because of both budgetary and time constraints; there was insufficient time to undertake, analyze, and rectify the messages and produce new materials in the relatively short life of each program. More informal, continuous feedback developed through contact with health personnel in the field, who have insights into program effectiveness, was just as valid and useful as formal monitoring studies.

Evaluation. The formal, quantitative evaluations produced many headaches and problems. There were delays and problems in data analysis, internally inconsistent findings, and control areas that ended up not being useful because radio messages were also heard there. The essential lesson is to make evaluation as simple as possible by choosing only a few key indicators and a simple study design. Every program does not have to prove its precise impact on knowledge, attitudes, and behavior, and most programs that attempt to will find somewhat ambiguous results.

Conclusions

The three programs fulfilled their primary objectives to design and implement an educational program that had a significant impact on key attitudes and the consumption of vitamin A-rich foods among key target groups. As many of the existing attitudes and practices, as well as resistances to undertaking the selected behaviors, were found to be similar in all three countries, it may well be that similar conditions apply in other countries.

The intervention and creative and media strategies employed give useful guides to programs in other countries and may, with care, allow for reductions in research time and expenditures. At a minimum, planners should have some guidelines on areas of inquiry that should be probed in new formative research on consumption of vitamin A-rich foods. Based on local knowledge and experience, planners may decide that they can move directly into the intervention testing (trials) phase or to careful testing of materials based on results from the three projects described.