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THE REACH Experience



ACCEPTABILITY OF IMMUNIZATION

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Other technical reports in this series are available from REACH and include the following:
Computerized EPI Information Systems (CEIS)
Urban EPI
Missed Opportunities for Immunization
Neonatal Tetanus
Cost and Financing of EPI.

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ACRONYMS

A.I.D.	(United States) Agency for International Development
COSAS	Coverage Survey Analysis System
DPT	Diphtheria/Pertussis/Tetanus vaccine
EPI	Expanded Program on Immunization
FGD	Focus Group Discussion
KAP	Knowledge, Attitudes, and Practices
KEPI	Kenya EPI
MOH	Ministry of Health
MOI	Missed Opportunity for Immunization
MORA	Ministry of Religious Affairs (Indonesia)
NGO	Non-governmental Organization
NNT	Neonatal Tetanus
OPV	Oral Polio Vaccine
REACH	Resources for Child Health
SRI	Survey Research Indonesia
TT	Tetanus Toxoid
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development, country mission
WHO	World Health Organization

EXECUTIVE SUMMARY

This paper examines the work of the Resources for Child Health (REACH) Project in assisting immunization programs to analyze and overcome behavior-related constraints to utilization of immunization services -- what is commonly referred to as acceptability of immunization. In this area, REACH collaborated actively with the national Expanded Programs on Immunization (EPIs) in Bangladesh, Haiti, Kenya, and Indonesia. REACH staff and consultants have undertaken the following types of activities aimed at improving the acceptability of immunization services: anthropological and market research, strategy formulation, social mobilization, and channeling (following up and referring eligible infants). Among the important lessons REACH has learned 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 the Expanded Program on Immunization (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.

WHAT IS ACCEPTABILITY AND WHY IS IT IMPORTANT?

When the World Health Organization (WHO) established the Expanded Program on Immunization (EPI) in 1974, less than five percent of infants in developing countries were fully immunized against the basic vaccine-preventable diseases: measles, tetanus, pertussis, diphtheria, polio, and tuberculosis. Thanks to concerted efforts of governments and health workers, and important technical and financial assistance from international and bilateral organizations, today approximately two-thirds of infants in developing countries receive their basic series of immunizations. EPI is preventing some two and a half million infant deaths caused by these diseases each year, although nearly three million still occur.

Acceptability of immunization concerns the behavioral aspects of the utilization of immunization services. Until recently, EPI officials have had little concern with acceptability. To achieve rising coverage levels, most national EPIs have merely increased the supply of services, an effort bolstered by "social mobilization" in support of special immunization campaigns and days. In the past few years, however, there has been a growing awareness among EPI specialists, international organizations, and a number of governments of the needs to make immunization services more acceptable and to sustain demand for immunization. Evidence of this concern is found in:

- recent publications of WHO, the University of London School of Tropical Medicine and Hygiene, and United States Agency for International Development (A.I.D.) summarizing anthropological and other social science studies on immunization acceptability (Heggenhougen, 1987; Pillsbury, 1989);
- the WHO/United Nations Children's Fund (UNICEF)/Red Cross/Red Crescent project since 1988 comparing various methods of analyzing low acceptability and testing and assessing the impact of interventions based on research findings (WHO/EPI, 1988);
- efforts in Indonesia, Bangladesh, Turkey, and other countries that are trying to expand and sustain demand for routine immunization in health facilities, rather than mobilize demand solely for special days or campaigns.

The reasons for this interest in raising and sustaining demand are manifold:

- Over the years, EPIs have achieved rapid increases in coverage by immunizing the easily reachable – the more educated families that live near health facilities. Today, many programs have reached coverage plateaus (usually between 60% and 80%) because there is a lack of utilization by population subgroups such as the poorest families, migrants, urban slum dwellers, and certain ethnic groups.
- In many countries, dropout rates of 25% or more from DPT1 (the first diphtheria/pertussis/tetanus immunization) to DPT3 and from OPV1 (the first oral polio vaccine) to OPV3 indicate that large numbers of infants have access to services but are not completing the series. They fail to return to receive the subsequent injections necessary for protection.

- Despite the significant gains made through immunization campaigns, there is increasing interest today in strengthening routine services. This is because (1) coverage levels in many countries have fallen following increases during intense acceleration efforts, (2) campaigns can disrupt routine health services, and (3) there is concern that the special political interest and financial resources that have been made available for campaigns will not be available indefinitely.

Today, EPI specialists are becoming more aware of the clients' perspective – that to achieve and maintain high coverage requires not only making services available and making people aware of those services, but also making immunization services attractive and convenient (acceptable) to the public and promoting them effectively.

The purpose of this paper is to examine the work of the Resources for Child Health (REACH) Project in the area of acceptability of immunization and to analyze what has been learned from the experience of REACH and others to guide REACH's direction in the future. The next section summarizes REACH's experience. It is followed by sections on what REACH and other researchers have learned regarding how to analyze behavioral factors and how to take actions that will make immunization more attractive to the public, so that bringing one's children for immunization will become standard behavior.

REACH WORK ON ACCEPTABILITY

Since 1986, the REACH Project, funded by A.I.D.'s Office of Health, has worked with a number of national EPIs to improve and promote immunization services. This work has concentrated on the following activities:

- **Investigating acceptability.** In Bolivia and Bangladesh, REACH consultants conducted anthropological research on cultural perceptions of vaccine-preventable diseases and immunization services. In Bangladesh and Indonesia, REACH staff and consultants worked on quantitative market research that correlated immunization status (whether children were completely, partially, or not at all immunized) with parents' knowledge, attitudes, and practices (KAP).
- **Strategy formulation.** In Bangladesh and Kenya, long-term REACH advisors assisted in the preparation and implementation of communications strategies in support of EPI. The Kenya strategy includes both national-level activities and support for decentralized, district-level social mobilization activities. The Bangladesh strategy has entailed a series of highly visible public awareness activities that have stimulated public demand to keep pace with a rapid increase in the number of service-delivery sites in urban areas.
- **Social mobilization.** A REACH resident advisor in Haiti played a major role in planning and overseeing promotional activities for three national immunization days in the fall of 1988. Communication activities in Bangladesh have included films, videos, highly publicized public events, banners, signs, local information pamphlets, and a proposed seal of safety to be stamped on the cards of infants who have completed their basic immunization series. Particularly in Bangladesh

and Haiti, REACH advisors have played an important role in organizing and motivating coordinated actions through inter-agency communication committees.

- **Channeling.** In Kenya, the REACH communication advisor has overseen an apparently successful effort in one district to have school children refer infants in their communities for immunization. The program is now expanding to six other low-coverage districts. There are plans for a similar activity in Bangladesh.

A detailed description of REACH's work in various countries on behavioral aspects of EPI is found in Appendix A. Appendix C lists REACH documents by country.

THE ROLE OF ACCEPTABILITY

There are several basic reasons for less than optimal immunization coverage:

- **Service availability.** Services are not reasonably available to everyone,
- **Missed opportunities for immunization (MOIs).** Women and children who are due for one or more immunizations are present at a location where immunizations are being given but do not receive them, and
- **Acceptability.** Women and children do not seek or accept immunization services that are available.

As a first step in improving immunization coverage, EPI planners and managers should ferret out the role of acceptability problems relative to other causes of low coverage. In a particular country, one must first consider to what extent unsatisfactory coverage is due to lack of accessibility to immunization and to MOIs. To gauge the need to promote immunization and improve its acceptability to the public, planners and managers can examine the following types of information:

Information on Accessibility. How accessible are immunization services throughout the country; in rural and urban areas; in each province or district? What percentage of the population has easy access to facilities or other vaccination points? How frequently are immunizations offered at these locations (only during special campaign days, one or two days a week, or whenever the facility is open)? Do groups such as nomads, refugees, and inhabitants of remote rural areas have significantly less access to immunization? Are special strategies used or needed to make services available for these populations?

In Kenya, coverage surveys indicate that 95% of the population has access to a health facility, as measured by coverage with Bacillus Calmette-Guerin tuberculosis vaccine and DPT1/OPV1. In that country, therefore, improving service quality and immunization acceptability, rather than increasing the number of service delivery points, would seem to be the most logical strategies for increasing coverage. Of course, even where access to immunization is high, improvements may be needed in the convenience of hours and days when immunization is offered.

In many other countries, where accessibility is lower, increases in numbers of service

points should be carefully coordinated with efforts to increase demand. It is important to remember that demand creation can be too successful or at least premature. There have been many instances, particularly during immunization campaigns, in which demand has outstripped supply so that not everyone who showed up for immunization was immunized because of shortages in vaccine, equipment, or staff.

Dropouts. On the basis of surveys or record reviews, dropout rates can be calculated for every reporting level. High dropout rates are an important indicator of service quality. Today, dropout rates of 25% or more from DPT1 to DPT3 and OPV1 to OPV3 are occurring in many countries. (Dropout rates may be artificially inflated because of poor immunization card retention or recordkeeping at health facilities, which may result in infants unnecessarily repeating immunizations.)

A high dropout rate indicates service quality problems (unreliable provision of vaccine or equipment, health workers' manner of treating people and failure to give essential and clear information on follow-up immunizations and side effects, high rates of MOIs, etc.). Efforts to reduce dropouts should begin systematically documenting and monitoring dropouts at the periphery, followed by qualitative research to learn the causes. Further steps should include training and supervision to improve health workers' treatment of people, helping health workers give parents essential information (e.g., through training, supervision, and the provision of counseling cards and appointment slips), giving health workers appropriate drugs to treat mild side effects, and public education efforts (through schools, local organizations, mass media, etc.) on the importance of each child completing the full series of immunizations. One potentially effective idea is the concept of the seal of safety placed on the cards of infants who have completed their basic immunization series. The careful redesign of the take-home immunization card, to make it easier for mothers to understand, may reduce dropouts (Booth, 1985).

Good Access/Poor Coverage. Analysis of coverage and population statistics should enable planners to identify geographical or ethnic subgroups that have good access to immunization services but poor coverage. If groups with good access but poor coverage can be identified, there is clearly a need to investigate why and to take remedial steps. The identification of problems of this nature should lead to improvements in the convenience and quality of services, along with targeted efforts to motivate utilization among the group(s) in question.

Local coverage reporting may need to be confirmed, however. For example, in one major urban area where REACH has worked, official EPI statistics indicated that immunization coverage was lowest in the middle- and upper-class areas. An investigation suggested that this was not really the case, because many people in these areas (25% citywide) receive their immunizations from private physicians, whose reporting is much less complete than reporting from government health facilities. Also, district population estimates, extrapolated from the latest census figures, did not take into account the widely different rates of population increase or decrease in different parts of the city.

Missed Opportunities for Immunization (during vaccination sessions). REACH usually defines MOIs as instances when a woman or child who is due for immunization, is at a vaccination site, and does not have any contraindication as stated in the official EPI policy but is not immunized (Grabowsky, 1991). A broader definition would include instances of MOIs

secondary to official EPI policies that are at variance with WHO recommendations, e.g., a country policy to immunize pregnant women only in their fifth and seventh months of pregnancy, rather than any time before the last two weeks of pregnancy as long as there is a four-week interval between doses. The role of policies should be analyzed in any study of MOIs.

MOIs typically occur when health workers:

- do not know or understand, or are not willing, to enforce policies regarding minimum contraindications;
- refuse to give multiple injections during one visit; or
- refuse to open vials for only one or two children.

Other causes include:

- poor clinic organization, so that the woman or child is not identified as eligible for immunization;
- lack of vaccine, essential supplies, or of a health worker who does not show up when s/he is supposed to immunize; or
- alternate days for antigens.

Although MOIs are essentially health system problems, they may be worsened by parents' attitudes, for example, that a sick child should not be immunized. Analysis of the MOI problem should gauge the extent to which parents' attitudes reinforce MOIs, and solutions should include efforts to modify these attitudes.

Planners and managers should examine existing MOI studies and/or conduct new ones to analyze the causes of coverage shortfalls. The standard WHO methodology is to conduct exit interviews with parents at health facilities, but the problem may also be assessed through observational studies and record reviews at immunization sites. (Observers must make every effort to be unobtrusive and non-threatening, so that they do not bias the behavior observed.) Also, REACH has modified the coverage survey analysis system (COSAS) to calculate uncorrected and corrected MOIs (i.e., when opportunities were missed to immunize infants, but the same children later received the missed immunizations).

Age of Immunization. WHO has defined optimal ages for all essential immunization doses, so that immunization will have a maximum impact on preventing disease. Most national EPIs follow these recommendations in their standard schedule. The percentage of immunizations given within a certain number of months after the appropriate age could serve as an indicator of a program's quality and its likely impact on reducing disease. REACH's version of COSAS can make such calculations, and the information may also be gathered from clinic records. Major time lags in immunizations indicate the need to emphasize the importance of timing and age of immunization in health worker training and supervision as well as in public information activities.

ANALYZING ACCEPTABILITY

Once program staff have identified poor immunization acceptability as an important cause of unsatisfactory coverage levels, they can employ one or more research methods to define the specific causes of the problem and guide the design of solutions. The following pages describe some of these methods, REACH's experience with them, and their appropriate use.

Quantitative Surveys. Dozens of quantitative surveys have been conducted to correlate the characteristics of families and children with their immunization status (fully immunized, partially immunized, or not immunized at all). Such studies generally find that better immunization status correlates well with family income, mother's education, such signs of modernism as ownership of a radio or bicycle, and, often but not consistently, with knowledge of immunization and vaccine-preventable diseases (Heggenhougen, 1987; Pillsbury, 1989). To be useful for program managers, it is essential to know such information by geographical area. This might enable a program to target certain areas for more services, closer supervision, and better public promotion.

Another type of survey that quantifies reasons for non-immunization is the standard WHO coverage survey methodology, which for many years has included a series of questions on reasons for non-immunization (see page seven). While the results are certainly of interest, this method has a clear limitation because the questioner must categorize each response in only one of some 20 choices and s/he cannot probe for the reasons and attitudes behind the immediate responses. It does not appear that national EPIs have made any significant use of responses to these questions.

There are also systematic observational studies. The Primary Health Care Operations Research Project has studied immunization sessions in Peru and other countries by breaking down essential health worker duties into minute tasks and then quantifying the extent to which each is carried out (PRISM, 1989). This information can identify technical areas requiring additional skills training and special attention in supervision.

Qualitative Research. Qualitative research can complement systematic observation and other quantitative studies by exploring of health workers' attitudes to learn why health workers may not be more effective in their EPI roles. Health workers have good reasons for behaving as they do. They may be poorly trained, or at least receive minimal inservice training; non-physicians may have low status and little positive recognition in the community; they may be poorly and irregularly paid; they may need supplies, equipment, and supervision; and they may feel overwhelmed by the public's demand or need for services and their inability to meet them. From their own point of view, what health workers do and do not do regarding their EPI tasks are perfectly logical. For example,

- They may not open a new vial for one or a few children because they know from experience that they will probably run out of vaccine prematurely and may be criticized by their supervisor for this.

**EVALUATION FORM
REASONS FOR IMMUNIZATION FAILURE**

Area: _____

Age group evaluated: _____

Date of first interview: _____

Date of last interview: _____

	TOTAL	PERCENTAGE
Partially/not immunized	_____	
<i>Lack of information</i>		
a. Unaware of need for immunization	_____	_____
b. Unaware of need to return for 2nd and 3rd dose	_____	_____
c. Place and/or time of immunization unknown	_____	_____
d. Fear of side reactions	_____	_____
e. Wrong ideas about contraindications	_____	_____
f. Other:	_____	_____
Subtotal	_____	_____
<i>Lack of motivation</i>		
g. Postponed until another time	_____	_____
h. No faith in immunization	_____	_____
i. Rumors	_____	_____
j. Other:	_____	_____
Subtotal	_____	_____
<i>Obstacles</i>		
k. Place of immunization too far to go	_____	_____
l. Time of immunization inconvenient	_____	_____
m. Vaccinator absent	_____	_____
n. Vaccine not available	_____	_____
o. Mother too busy	_____	_____
p. Family problem, including illness of mother	_____	_____
q. Child ill - not brought	_____	_____
r. Child ill - brought but not given immunization	_____	_____
s. Long waiting time	_____	_____
t. Other:	_____	_____
Subtotal	_____	_____

- They may not immunize slightly ill children because they are not truly convinced that this is harmless or because they fear being blamed if the child worsens or stays sick.

Significant improvements are more likely when qualitative research identifies these underlying attitudes and they are addressed. Such improvements in the quality of services should, in turn, enhance immunization acceptability.

In general, qualitative research has the advantage of being able to probe, to get clarifications and further explanations, and to delve into respondents' attitudes. These insights are essential for developing a creative, effective communications strategy. There are also some disadvantages, however.

- To yield valid and useful results, information collection must be performed by highly trained interviewers or moderators.
- Interpretation is subjective, and it is difficult to generalize findings.
- Getting physicians, who often hold the key positions in EPIs, to accept the results of non-statistical studies may be difficult – especially if such studies are perceived to be performed by critical outsiders seeking fault. Physicians may also claim that they "already knew" what the studies find. REACH's anthropological studies in Bolivia and Bangladesh have not been readily accepted or utilized for these reasons.

Focus group discussions (FGDs) have been used in many countries to learn the client's perspectives on child survival problems, services, and educational materials. FGDs are ideal for probing attitudes toward topics (such as immunization) that participants are willing to discuss in a group. They are used in formative (planning) research as well as in pretesting messages and materials, but are not appropriate for baseline or follow-up surveys (Debus, 1988; Griffiths, 1988; Manoff, 1985; Scrimshaw).

FGDs are discussions led by a trained moderator among 6 to 12 participants with similar key characteristics. Focus group research on acceptability of immunization might be conducted among such groups as mothers of children with complete immunization, mothers of children 12 to 23 months old who started but failed to complete their immunization series, and mothers of children 6 to 23 or 12 to 23 months who received no immunizations. Groups might be further broken down by urban and rural dwellers, by age of mothers, or by ethnic groups if these factors were believed to be associated with significant differences. FGDs with fathers, mothers-in-law, or community officials might also be held, if these groups are believed to have an important impact on the decision to seek immunization.

Anthropological studies have examined cultural perceptions of vaccine-preventable diseases and immunization (Nichter, 1990; Augustin; Bastien, 1988; Blanchet, 1989). These studies, in which anthropologists carry out in-depth observations and interviews with mothers and persons who influence their immunization-related behavior, may divulge critical information for understanding reasons for the public's resistances to immunization. Such studies may

identify potentially important beliefs and practices that can be further evaluated through focus group or survey research.

Their limitation is that they may not discriminate between interesting, in-depth descriptive information and practical information that is essential for a strategy to improve acceptability. Studies consistently find that despite a lack of congruence between people's traditional beliefs and the practice of immunization, people are willing to avail themselves of convenient, high-quality immunization services from health workers whom they trust. If this is so, identifying information essential to improving immunization acceptability may not require research as detailed as most anthropological studies.

In-depth interviews and observations are additional qualitative methods that may be incorporated into formative research on acceptability. In in-depth interviews, as used in social marketing research, the interviewer covers a pre-determined list of topics but allows the respondent to steer the conversation as much as s/he is willing. The interviewer's job is to probe for feelings and explanations, eventually covering all key questions. Observations of immunization sessions should form essential background for any study of acceptability. Detailed checklists may be used, or an experienced observer may simply observe and then follow up observations through FGDs or in-depth interviews with mothers and health workers.

Generally, a combination of quantitative and qualitative methods is recommended, with qualitative work essential to identify and probe the depth of feelings, motivations, and barriers to acceptance; and quantitative methods important to determine acceptability problems by geographical or cultural areas. In Indonesia, REACH consultants first held FGDs with parents and health workers to learn the issues in immunization acceptability and then further refined them through a quantitative survey that characterized types of urban subdistricts by these factors.

CAUSES OF LOW ACCEPTABILITY

Studies that have analyzed the causes of low acceptability of immunization services have found the following reasons:

- **parents' lack of correct information** on which child needs to be brought for immunization, when and where. This is a very important cause of low acceptability in many places, particularly where immunization sites function only certain days and hours.
- **practical barriers to parents** such as lack of free time to bring their children to an immunization site, lack of child care for siblings of the child needing immunization, and lack of transportation or money to pay for it. Such barriers are obviously very closely related to service barriers and some might be eliminated by modifying the location and time of services. (In practice, however, it is extremely difficult for immunization services to be made available before or after work hours for salaried women in urban areas or made convenient for rural women during the seasons of their heaviest agricultural responsibilities.) It is possible that special immunization days (usually held Sundays or on the equivalent day of rest, and when immunizations are available in numerous,

convenient sites) may reinforce the attitude of families and providers to "just wait for the campaign."

- **parents' attitudes can play a major role:** e.g., husbands' prohibition of wives' traveling to the immunization site, no belief in vaccine effectiveness, mistrust or dislike of the health facility or health staff due to bad experiences in the past (long waits, insulting or unresponsive treatment, etc.), fear of history of side effects or abscesses, and fear of sick children or pregnant women receiving an injection. A REACH study in Dhaka found that some middle- or upper-class fathers objected to their children being vaccinated at free clinics, arguing that they could afford to see a doctor and get food and medicine in case of illness. "Buying medicine and paying doctors' fees is a matter of prestige, a consideration which motivates much of . . . men's behavior." (Blanchet, 1989)

In REACH-supported market research in urban Indonesia, mothers' main reasons for not getting their babies completely immunized were: "the shot gives baby fever" (33%), "have to wait too long" (19%), "feel angry when they bring baby for immunization and find out the vaccinator or vaccine is not available" (16%) (Survey Research Indonesia, 1990). In similar research in urban Bangladesh, the major reasons were "unaware of need for immunization" (48.6% of male respondents, 36.0% of females), "child ill - not brought" (11.2% of males, 16.9% of females), "postponed until another time" (13.1% of males, 10.1% of females), and "place and/or time of immunization unknown" (8.4% of males, 6.9% of females) (Khan, 1990).

One notable finding from a number of studies on immunization acceptability as well as on health service utilization in general concerns the role of belief systems. Utilization studies show that in developing countries many people "shop around" when they are ill, seeking effective cures from traditional doctors or healers and from purveyors of Western, "scientific" medicine simultaneously (Molzan, 1987). Similarly, a number of studies on acceptability of immunization have found that although the concept of immunization does not fit or even contradicts people's folk beliefs, many of these same parents are willing to bring their children to be immunized, particularly when services are convenient and providers congenial. For example:

- The REACH anthropological study in the slums of Dhaka found that mothers had a number of folk beliefs about the causes and treatment of vaccine-preventable diseases, yet "mothers vaccinate their children even though they cannot identify the individual diseases against which they are meant to gain protection and do not know how a vaccine works inside the body." Moreover, "the perception of vaccination as beneficial has much to do with the prestige of allopathy which is also the medicine of the rich and educated and is patronized by the state. It depends on the relationship of trust which client-mothers have established with a particular institution and its staff over the past years." (Blanchet, 1989) The REACH study in Bolivia found a similar phenomenon among the Aymara (Bastien, 1988).
- An anthropological study in Togo noted a plurality of beliefs concerning immunization and vaccine-preventable diseases: "vaccination is an acceptable approach to preventing illness but only one of many, and not necessarily the best." (Cook, 1989)

- A study in the Chitral District of northwestern Pakistan found that Ismaili Muslim villagers were receptive to health messages concerning substituting talcum powder for cow dung to treat umbilical cords and having mothers immunized with TT, even though such practices made no sense in terms of traditional beliefs. The key to success was that the people trusted the Ismaili health workers who gave these messages. The researchers concluded that "when people adopt innovative health practices, this does not necessarily imply acceptance, understanding, or even awareness of the biomedical underpinnings of those practices." (Mull, 1990)
- In Bhutan, 48% of respondents to a coverage survey stated that they had received information about immunization from village leaders, yet 67% of those interviewed did not know the names of any of the diseases preventable by immunization (WHO/SEARO, 1989). Likewise, in a study in Indonesia, people brought their children to be immunized mainly because their local leaders told them to do so (Streatfield, 1988). This may well be an important factor in many locations, and certainly any comprehensive strategy to improve coverage should include motivating leaders (WHO/SEARO, 1987).
- Studies that correlate people's knowledge of immunization with their acceptance yield various results. A surprising number of studies find that, as in Haiti, "mothers get their children vaccinated in spite of the fact that they have a poor understanding of what vaccines do...." (Augustin) This study found that the main reasons for non-acceptance were mothers' insufficient time and competing priorities and dissatisfaction with the way in which they had been received or treated by the health system.

It thus appears important to study not only the barriers to acceptance of immunization but also the positive motivations. In many settings, the most important of these motivators appear to be trust in the health workers and health system and strong endorsement by respected local figures, either traditional leaders or government officials (e.g., Streatfield, 1988; Mull, 1990; Bender, 1988). Certainly in the United States and other developed countries, many women routinely have their children immunized not because they have good knowledge of the vaccines and diseases but because their physicians tell them to do so at the appropriate times.

The ultimate goal is to "socialize" the behavior, to make getting immunized a natural thing that everyone does without a major debate about whether it is worth the effort. Achieving this requires both the dissolution of barriers and the reinforcement of positive motivations. How to plan for this long-term goal is discussed below.

SYSTEMATICALLY ADDRESSING LOW ACCEPTABILITY

In many countries, there has been extensive communication support of immunization goals, particularly in conjunction with UNICEF-assisted accelerated immunization activities. Social mobilization – public communication, advocacy, and coalition-building efforts – aims to stimulate enthusiasm for immunization among the public and support for immunization services among public and private groups not traditionally involved. Messages, materials, and strategies have infrequently been based on qualitative research and have often been aimed at essentially a one-time behavior – bringing a child for immunization on a particular day.

Social marketing, a systematic approach to achieving beneficial behavior change, has been used fairly extensively in developing countries to promote contraceptive use and improved child nutrition practices but rarely for immunization. From a marketing point of view, "selling" immunization is an interesting challenge. On the one hand, the basic behavior being promoted is simple – bring your child to be immunized; but on the other hand, it is a behavior that must be repeated at intervals of a month or more and to which there may be a number of potentially powerful obstacles. While achieving a high one-time turnout for an immunization day may be relatively easy, even among populations not used to taking modern preventive health measures, socializing the concept of complete childhood immunization, so that parents bring in all of their infants for all of their immunizations as a routine behavior, is clearly more difficult.

Borrowing techniques from both the social sciences and commercial marketing, social marketing advocates the use of a systems approach – a logical series of steps – to define social problems and to develop and implement behavior-oriented solutions. For immunization, social marketing should be able to help modify services to make them more acceptable (improving the product) and help in designing factual and motivational communication that will lead to more parents bringing their children for immunizations (stimulating demand). Social marketing can assist in achieving the following general behaviors that define mothers' or other guardians' acceptance of immunization: bringing their appropriate-age children to the correct place at the correct time for their immunizations, returning at the appropriate times for the full series; expecting and appropriately managing mild side effects. To improve the immunization "product," efforts must be made to have health workers treat mothers or guardians and children with respect; give mothers or guardians essential information regarding when to return and about side effects; give mothers or guardians an opportunity to ask questions, express concerns; take advantage of all practical opportunities to immunize; maintain the cold chain; and use sterile techniques.

Several important characteristics distinguish social marketing from other approaches to health education or health improvement.

Social marketing systematically incorporates the clients perspective. Formative (program design) research is used to understand the problems and practices in the cultural and social setting of the persons involved. Decisions regarding the specific behavioral changes desired, messages, media, and materials are determined through a dialogue with the persons involved, not predetermined by health professionals. Involving the public in this way reduces the chance of undertaking inappropriate and ineffective health improvement activities.

The objective of social marketing is to change behavior. While traditional health education focuses on changes in knowledge regarding health matters (usually defined from the health professional's point of view), social marketing communication focuses on concrete changes in practices. For example, a conventional health education message may say, "come to the health post to immunize your child. This will save your child from many serious diseases." The result is that although mothers may understand the message, many do not bring their children because they have not been sufficiently motivated and assisted in overcoming their many concerns and fears, time constraints, etc.

In social marketing, formative research provides the background information for developing a comprehensive strategy for behavior change. The research allows planners to

consider all viable behavioral options for tackling priority problems before singling out key activities for attention. The resulting strategy carefully targets audiences to ensure that the right messages are being delivered to the right people at the right time. This stands in contrast to many health education messages, which are too general to motivate immediate action, which do not contain effective and creative motivations, and which are not easily doable for many people.

Social marketing adopts commercial marketing's techniques for appealing to consumers. By carefully researching the life-style, aspirations, and hopes of target audiences, marketing experts can then create effective appeals. As in commercial marketing and advertising, research findings are translated into creative intervention strategies that constitute a fresh approach to motivating behavior change. For this reason, for example, a social marketing effort in Indonesia to combat vitamin A deficiency was designed as a promotion of green leafy vegetables. The appeal was the vegetables' health-giving vitamins, not their specific ability to prevent xerophthalmia. In encouraging mothers to feed their children more green leafy vegetables, the messages addressed important issues of resistance. For example, in mass media messages, a doctor stated that infants can easily digest the vegetables, particularly if they are finely chopped.

Formative research should identify the major appeal of immunization messages. It might be that "good" parents have their children completely immunized against a number of dangerous diseases. Messages in a successful communication campaign in Metro Manila used fear of measles to motivate parents to bring their children for all EPI immunizations (Cabanero-Verzosa et al., 1989). Mass media messages may or may not name all the specific diseases or give the immunization schedule. Locally organized home visits, fliers, or reminder slips might well be responsible for providing such essential information as what children should be brought when and where for immunization.

Social marketing addresses both the supply and demand side of problems. The protection afforded by immunization can only be obtained by parents and caretakers bringing children to receive their vaccinations. A major reason for non-acceptance of immunization is dissatisfaction with a previous immunization or with a health service experience, because of problems with service convenience, organization, or manner of treatment. Social marketing research examines these areas of concern from both the users' and providers' perspectives. The process yields suggestions both for making services more acceptable and for promoting them more effectively.

Characteristics of Social Marketing

De facto objective	to change behavior, not necessarily to increase knowledge
Planning	jointly with public and health workers, not top-down
Strategy	creative, not straight-forward
Message content	motivational and logistical information, not necessarily background knowledge

Message specificity	specific messages for each target subgroup
Resistances	messages either defuse or give practical ways of overcoming barriers
Media	always mixed, selected on basis of research

The basic steps in a social marketing process, adapted for immunization, are described in Appendix B.

LESSONS LEARNED

This section recaps some of the issues in immunization communication discussed in this paper and highlights what has been learned by REACH and groups working to improve acceptability of immunization.

The Role of Acceptability. Efforts to increase public demand for immunization should form part of a coordinated EPI strategy to improve coverage that also addresses service availability and quality. Health system efforts to reduce MOIs and to make services more available, convenient, and "pleasant" to the public should complement communication activities.

Analyzing Low Acceptability. The experience of REACH and others suggests a number of basic lessons regarding research on acceptability.

- EPIs are active, field-oriented programs that deliver services daily. While research certainly has an acceptable role, the simpler it is and the more readily applicable its recommendations, the more likely its results will be used.
- Qualitative methods should form a part of any research on acceptability; however, a combination of qualitative and quantitative methods is likely to be most appropriate. There is no universal approach for all settings. Understanding human behavior and figuring out how to modify it in positive directions is at least as much an art as a science.
- Research on health workers' KAP is critical and should go beyond problem identification into uncovering and testing innovative ways to motivate and support health workers more effectively.
- New research should be conducted only if EPI officials truly support it and intend to use the results. Whether or not the EPI has used past research results should be considered. The participation of EPI staff in planning and carrying out the research should facilitate their subsequent acceptance and use of research results. Otherwise, the research will be perceived as external and invalid.
- The answers to research questions should potentially be able to feed into action decisions. Information should not be collected merely because it is interesting. There is a major need to strengthen the link between research and actions taken to improve EPI programs and communication support.

Causes of Low Acceptability. Causes may be grouped as service barriers, parents' lack of correct logistical information, practical barriers to parents, and parents' attitudes. Causes of low acceptability are by no means mutually exclusive, and any strategy to address them should be multi-faceted. Major determinants of acceptability in general appear to be parents' trust in health workers, convenience of services, manner in which parents and children are treated, influence of local leaders, fear of side effects, and parents' understanding of when and where to bring their children. However, the causes in particular locations should be investigated locally.

Communicating Effectively. Most communication support to EPI has emphasized the broadcasting, through as many channels as possible, of basic messages about the purpose and importance of immunization. This may be appropriate for promoting campaigns and special immunization days but may not be satisfactory as a sustainable approach to promoting demand for routine immunization.

For promoting immunization in a sustained manner, as for any communications task, it is important to use good communications principles: segment audiences, use multiple media, develop careful behavior-oriented messages that address major resistances and contain effective appeals, etc. Effective promotion of immunization means:

- **giving people essential information on who needs to be immunized, when, and where;**
- **reducing practical and attitudinal resistances to immunization by modifying services (hours and days, for example) and by reassuring parents that mild side effects are normal and can be easily treated;**
- **employing locally appropriate and effective motivations for parents to bring their children for immunization, moving beyond "immunization is good for your child's health" to such creative approaches as "having a fully immunized child is a mark of responsible parenthood," or "immunization will prevent the inconvenience of your child being ill with a number of common diseases."**

These principles imply that:

- **Media should not be selected merely because of the preference of health or communications professionals but rather on the basis of what formative research reveals about each medium's reach (number of persons in the target groups it reaches), frequency (frequency with which people receive each medium), and credibility.**
- **Much more emphasis is needed on message content. One frequent error in immunization messages is that they promise too much. Immunizations will not make children healthy nor will they prevent children from getting all serious diseases, yet some messages promise this. Messages that incorporate the specific names of the EPI diseases need to be pretested to ascertain that listeners understand the terms used, or if they do not, that the message nonetheless motivates them to action. Messages should emphasize the requirement of receiving the entire series of immunizations for full protection. One of many**

interesting comments of Swazi mothers regarding immunization was that it did not work very well because they knew of children who had received a shot but who still got the disease it was supposed to protect against (Freimuth, 1987). As coverage levels increase, this will become more common.

- The purpose of immunization communications is to motivate parents to bring their young children of certain ages to receive a complete series of immunizations (and to motivate women to receive TT). Motivational content will often have priority, yet basic logistical information is essential if motivated parents are going to be able to act. In many cases, only general logistical information should be given through mass media (i.e., children under one, at these types of facilities). Particularly where the days, hours, and locations of immunizations vary, specific logistical information must be transmitted locally, by posters, appointment slips, reminder visits, and careful health worker counseling.
- Immunization should be presented as a package of eight doses; failure to complete all eight shots means the child is not protected. This concept has been used in Zambia and Togo and has been proposed through the seal of safety stamp in Bangladesh. One potentially effective approach would be to design a culturally appropriate illustration in eight parts that is not complete until all the parts are present. A new piece of the figure would be added with each injection.
- Promoting immunization in a straight-forward manner simply on the basis of facts may be much more difficult than expected. After all, what EPIs offer to parents is, "if you bring your child to the right place at the right time on the right number of occasions, your child will probably not get several serious illnesses. After each shot, your child may well cry, be sore, and run a fever!" Immunization is not an enticing proposition stated this way, which is why creative approaches are needed. Particularly in short-term promotional efforts, the role of public education about immunization depends very much on cultural factors. The point for health communicators is that they should not assume that people must know all about the diseases, symptoms, vaccines, etc. to decide to get their children immunized.

Immunization Promotion vs. Long-Term Socialization. Communications strategies should be based on clear objectives. If the objective is to promote immunization days or campaigns, mass media are likely to be emphasized and careful formative research may not be essential for designing promotional activities and materials. If the objective is to make the concept of assuring complete childhood immunization a normal part of parents' responsibilities, a two-tier strategy should incorporate "product improvement" and careful "marketing" as well as long-term educational efforts through schools, mothers' club members, and other organized groups. Such a long-term strategy will not be successful if it is associated with a particular public figure or political party.

In recent years, UNICEF has become a major collaborator with national EPIs for social mobilization in support of accelerated efforts (often campaigns and special immunization days) to increase coverage. Social mobilization "seeks to obtain political commitment, develop alliances and partnerships for common goals, generate resources, [and] create and sustain demand" (Kessler, 1990). A series of evaluations of social mobilization for EPI in a number of countries

has identified a number of lessons learned that should be considered in designing and implementing future activities:

- Social mobilization has often been equated with the use of mass media for a campaign.
- Despite short-term success in motivating families to seek immunization, there has been a failure to focus on long-term, sustained attitudinal and behavioral change.
- Communications have often been top-down.
- Strategies are often not well planned, lack budget allocations, and do not draw on all potential resources.
- Efforts often neglect the private sector and traditional health practitioners.
- Messages are not usually targeted at specific audiences, pretested, or evaluated.

GENERAL RECOMMENDATIONS

On the basis of the above analysis, what appears to be needed are efforts that go beyond well-designed educational messages (used on the assumption that knowledge will translate into behavior) and flashy short-term promotion of special campaigns and days. While many national EPIs may not have the time, resources, or patience to institute a full social marketing approach, some of its guiding principles (a comprehensive approach, improving supply and demand simultaneously, incorporating the client perspective in planning, an emphasis on message content) are essential for any effective effort to improve immunization acceptability and coverage.

It is also recommended that REACH, WHO, and other groups make every effort to disseminate lessons learned regarding research methods and findings, intervention strategies, and their success in improving immunization acceptability and coverage.

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APPENDIX A

DESCRIPTION OF REACH COUNTRY ACTIVITIES

The following pages describe REACH's major country activities in the area of acceptability. In considering these efforts, it is important to remember that REACH has attempted to assume an appropriate role in varying country situations. In Bolivia and Indonesia, the national EPI and the United States Agency for International Development mission (USAID) asked REACH to perform specific communications-related tasks, while in Kenya, Bangladesh, and Haiti, REACH has had more leeway to determine activities through its role in formulating EPI communication strategies.

BOLIVIA

At the request of USAID/La Paz and the Bolivian Ministry of Health (MOH), REACH designed and carried out a study of cultural perceptions of neonatal tetanus (NNT) in Bolivia's three major ecological-cultural regions: Aymara, Quechua, and Tupi-Guarani. To perform this study, a U.S. anthropologist who has studied cultural aspects of health and health care in the Andean region for 20 years, and two Bolivian physicians conducted in-depth interviews with doctors, auxiliary nurses, traditional birth attendants, folk healers, and mothers.

The investigators found that the Tupi-Guarani ethnic group of Santa Cruz are familiar with NNT and consider it to be the result of bad air which enters the body through the umbilicus at the time of delivery. Women reported that they oppose vaccinations because they feared reactions, lacked confidence in health personnel, and thought they would be sterilized.

The Quechua are less familiar with NNT and attribute its manifestations to a broad complex of symptoms caused by bewitchment. Because they do not consider it a physical disease, they do not take babies suffering from NNT to health facilities. Mothers had the same barriers to immunization as in the Tupi-Guarani area. They also complained that health workers did not always inoculate properly.

The Aymara have little familiarity with NNT, although the team documented two indigenous cases. The Aymara consider the disease a type of "jinchukaño," a broad type of spirit possession which strikes the child to punish the parents. Therefore, they do not like to talk about cases – especially since community calamities are attributed to "jinchukaño" in an unbaptized child. Mothers who did accept immunization did so because there was agreement between vaccinators and community leaders on preferred times of vaccination, they knew of neighboring communities where immunization had prevented cases, they had confidence in the local auxiliary nurse, and they had received education from community health workers.

Many practical recommendations emanated from these and additional findings. The MOH was encouraged to tailor health education messages concerning NNT and tetanus toxoid (TT) vaccinations to people in each distinct cultural area. Messages need to focus on the specific symptoms of tetanus identified by each culture to avoid perceptions that all of the symptoms of the culturally defined syndromes would be prevented by TT vaccination. A number of recommendations were aimed at improving the technical and cross-cultural communication skills of health workers.

This anthropological research is rich in insights that could nurture program decisions. Unfortunately, it has not been well received nor used by the MOH (although a REACH staff member also presented the study findings and programming implications to many private voluntary organization staff members, who may possibly be using them). Ostensibly, the problem is in the qualitative, "non-scientific," non-medical nature of the study methodology, but the underlying issues may be the perception of this as a study done by outsiders and one that noted technical and cross-cultural shortcomings in health services.

INDONESIA

Since September 1989, REACH has provided technical assistance in two aspects of increasing acceptability in Indonesia's EPI. Despite good increases in immunization coverage in recent years, to more than 60% for DPT3 and OPV3, Indonesia's EPI has recorded lagging coverage rates in urban areas. As a step toward improving urban EPI coverage, the MOH is undertaking intensive immunization strategy development and implementation projects in Jakarta and Surabaya, the nation's two largest cities. Lessons learned from this process are expected to stimulate similar steps in other urban EPI initiatives throughout Indonesia.

As part of this process, the MOH and USAID/Jakarta requested REACH's technical assistance in planning and analyzing research for social marketing of childhood and maternal immunizations in Jakarta and Surabaya. A team consisting of a market researcher and an anthropologist carried out three assignments between September 1989 and June 1990. Another REACH consultant, an urban EPI planner, began work in May 1990 with local officials to incorporate research findings and revise urban EPI strategies and plans.

During their first assignment, the research team analyzed existing data and research studies and then developed the rationale and plan for supplementary study. They found that existing data do not provide the information and insights needed for planning social marketing strategies. The routine reporting system used to determine vaccination coverage had deficiencies, particularly underreporting by private physicians. Moreover, existing information on social or attitudinal variables was too sparse to explain lack of acceptability. Information was needed on consumers that would permit an understanding of immunization behavior (of complete, partial, and no immunization groups), attitudes about immunization, and channels of communication. Primary information was also needed on the extent and causes of partial immunization, e.g., what portion was due to strict adherence to program guidelines that cut off childhood immunizations at 12 months of age and what portion was the result of problems in health staff's knowledge, attitudes, and practices?

To help plan systematic research, the REACH team interviewed and oversaw FGDs with mothers and health staff in various subdistricts. It was found that there is a difficult-to-reach group characterized by low education, low income, many children, and transience. These mothers feel alienated from government services and resent being told to plan their families, get their children immunized, etc. An important point that emerged was that the very poor constantly have sick children and feel more in need of curative services than immunization. Mothers explained that they did not always bring their children back for follow-up immunizations because of vaccination side effects. Service hours appear to be a major barrier preventing working mothers from bringing their infants for immunization. Also, fathers and grandmothers tend to discourage acceptance, for varying reasons. Local health volunteers

described a number of strategies to improve coverage, including visits by the wife of the local government official, distribution of donated sample products, and invitations to attend the health post. Health workers suggested that mass media promotion and realistic portrayals of the risks to children were excellent ways to increase coverage.

To supplement these initial insights and quantify findings among important population subgroups and groups classified by immunization status, the REACH team developed a research plan to conduct sample surveys in Jakarta and Surabaya among mothers of children 10 to 24 months old. The sample would include 600 mothers in each city, supplementing that number as necessary, so that partial and no immunization groups contain at least 200 respondents. Furthermore, in each market, 50 interviews were to be conducted in squatter communities that were not enumerated in the census or in other city mapping. The REACH team provided technical assistance in survey design and analysis to a local research firm, Survey Research Indonesia (SRI), which conducted the fieldwork in March and April 1990.

In May 1990, the REACH research team worked with SRI in analyzing the survey data and with the REACH urban EPI planner and EPI officials in incorporating findings into Jakarta and Surabaya's EPI activities. The preliminary survey analysis reveals distinct profiles of families in the three immunization categories.

In the summer of 1990, the REACH urban EPI planner worked with the EPI and respective cities' EPI committees to help plan a strategy for improving urban EPI coverage. The strategies included:

- **Service improvement.** Particularly for the priority group of partially vaccinated children, many of the barriers to better utilization were service-related. It was decided that refresher training was indicated for vaccinators so that sick infants would be immunized (40-50% of the reason that children were partially rather than fully immunized is because either they were turned away at health facilities when they were sick or mothers did not bring their sick children to be immunized). In addition, the market research identified other areas (side effects, poor attendance by vaccinators, growth cards, measles, etc.) that need attention during refresher training.
- **Social marketing.** While refresher training is proceeding with vaccinators, messages will be developed for the public to reinforce the upgraded skills of the vaccinators. These include encouraging mothers to bring their infants for vaccinations even if ill, informing mothers that fevers from vaccinations are not harmful to their infants, and the need to vaccinate for measles.

These ongoing activities in Indonesia constitute one of few systematic efforts to take a comprehensive approach to the challenge of locating, understanding, and reaching the unimmunized in urban areas.

In September and October 1989, a REACH consultant assisted Indonesia's innovative national program to immunize brides-to-be. She worked closely with the intersectoral team from the MOH and the Ministry of Religious Affairs (MORA) to develop a training video and plans for its implementation. She worked with private sector video producers to ensure that the video

was both technically sound and completed on schedule. The REACH consultant also assisted in developing an orientation pamphlet on the program, as well as a supervision checklist for use in the program. She also collaborated with UNICEF and a market research firm to develop recommendations for mass media promotion of tetanus immunization in East Java.

The video story tells of a future bride who does not want to receive her TT immunization because she does not understand its importance. By the end of the drama, because of persuasive explanations from the doctor and a local religious official, she receives both shots before her wedding. A second video provides technical details on NNT and TT and explains the program details to service providers from the MOH and MORA.

As of June 1990, 366 copies of the video had been made and 257 had been distributed within the central MOH and to all provinces. The REACH assessment team recommended that the video be converted to 16 mm prints and shown via mobile projection units in hard-to-reach areas.

BANGLADESH

For a year and a half, beginning in late 1988, REACH had a long-term communication advisor, as part of its two-person team, working with Bangladesh's urban EPI intensification efforts. REACH has orchestrated numerous activities to keep public demand in step with the rapid increase in urban vaccination sites.

To achieve maximum publicity for EPI, REACH distributed 150,000 "Moni" (the EPI symbol) stickers which were affixed on all modes of transportation: buses, rickshaws, trains, and government vehicles. Large wall designs were painted on municipality-owned walls in areas of heavy traffic, and 245 metal signs were erected in Chittagong and Dhaka. REACH established a relationship with family planning officials that resulted in the joint production of a 25-minute docudrama. REACH also developed an audio tape to promote TT immunization to women working in garment factories, a major employer of women in Dhaka.

A milestone was reached on August 12, 1989, when First Lady Rausan Ershad officially inaugurated the municipal EPI at a massive outdoor rally, which received extensive media coverage. On the same night, a special half-hour program was aired on national radio to announce the launching of EPI in Dhaka and to promote the availability of vaccination services throughout all city wards. Bangladesh TV aired a 20-minute discussion program on the role of urban EPI in achieving EPI goals. The following evening an EPI promotional film was aired. In addition to these programs, REACH-produced radio and TV spots were played with increased frequency.

Prior to this inauguration, a considerable amount of work was necessary to put the implementation plan into action. An assessment of the vaccination services already in operation in Dhaka was undertaken, and the exact locations, dates, and organizations providing services were listed by city wards. This directory was compiled and the information verified by site visits from medical officers of the national EPI. A series of coordination meetings were held with non-governmental organizations (NGOs), the Rotary Club, journalists, and ward commissioners. All participants were provided with packets containing communication materials such as posters, stickers, brochures, and handouts for distribution at the grassroots level.

REACH has encouraged regular monthly meetings of the Communications Subcommittee chaired by the EPI Director and including REACH, UNICEF, CARE, an NGO coordinating group, Rotary, and the MOH Department of Health Education. The REACH communication advisor prepared a preliminary communication strategy, supported development and implementation of a social mobilization package for city managers in four municipalities and 84 towns, and participated in preparation of materials and planning for 220 upazila (subdistrict)-level meetings in rural areas.

To encourage communication outreach from immunization centers, REACH developed a "Come In" leaflet giving the location and hours of local immunization services. Further plans include the use of loudspeaker rickshaws and the involvement of social welfare clubs and NGO support.

A potentially important REACH contribution is the seal of safety, signifying that a child has completed the basic immunization series and hence is fully protected against the target diseases. REACH has recommended that the seal be stamped on the child's immunization card when s/he receives the final immunization. It is hoped that having the seal stamped on a child's card will be seen by mothers as a sign of responsible motherhood. It is believed that the seal will help reduce dropout rates and thus serve as an incentive to receive the immunization for measles, the most dangerous of the vaccine-preventable diseases.

Among other activities designed in conjunction with World Health Day in 1989, REACH arranged a TV spot and other promotions for the visit of a famous Pakistani cricket player who promoted EPI.

A REACH consultant conducted an anthropological study in Dhaka's slums. The study uncovered useful insights about mothers' KAP regarding immunization and vaccine-preventable diseases, providing a number of insights that could be refined and quantified in follow-up research. Mothers' KAP regarding the individual diseases varies greatly. Measles, for example, is generally attributed to the goddess of epidemics and caring for a child with this disease reenacts a powerful and valorizing role for mothers. It was learned that many mothers have their children vaccinated even though they cannot identify the individual diseases against which they are meant to gain protection and do not know how a vaccine works inside the body. The major reasons they seek vaccination appear to be the prestige of "scientific" medicine and trust in local health workers. Many practical and service-related barriers were noted. Unfortunately, as in the case of the Bolivian study, the EPI has challenged the validity of the study methodology and findings.

Given the low coverage rates in Bangladesh until very recently, the EPI emphasized rapid expansion of service availability and public awareness. Until now, messages and media use have been designed with little research input. "Supply" or "product" problems have also persisted. Different immunization schedules and target age groups have been used by various NGOs, and also by the EPI itself in different districts. This has made it extremely difficult to give the public essential information via mass media. Now that coverage is approaching acceptable levels, the challenge is to go beyond mere promotion to trying to map out coverage by subdistrict, to analyze and correct problems in quality of services, and to analyze resistances by subgroups and institute communications and service modifications that can overcome these resistances. KAP research currently being conducted in urban areas should contribute to this process.

KENYA

Since May 1989, REACH has employed a Kenyan communication specialist who is based in the KEPI (Kenyan EPI) Management Unit. She is responsible for coordinating inter-agency efforts in print and broadcast media to raise demand for immunization, and for the development, testing, production, and impact evaluation of the needed materials.

KEPI's National Social Mobilization Committee, consisting of representatives from UNICEF, KEPI other MOH departments, various ministries and NGO's, has met several times in 1989 and 1990. It is supposed to meet monthly to guide and facilitate efforts in social mobilization.

After she underwent in-country mid-level management training in EPI so as to have a technical grasp on EPI, the REACH advisor set about conducting a series of provincial and district workshops for respective health management teams. One workshop aimed to assist provincial and district health education officers to make their own local plans for social mobilization for 1989-1990. As a result, operational funds for this were forwarded to the participating districts. Reports that the funded districts were to send to KEPI headquarters in return have not been regularly received.

Another workshop for district public health nurses and provincial matrons resulted in the participants conducting a MOI survey in Nakuru District. Plans were drawn up for 1989-1990 in each district to conduct MOI surveys and to intensify social mobilization. A workshop for Provincial and District Health Management Teams then served as the forum to sanction the workplans elaborated at the previous workshops.

The REACH advisor prepared, in conjunction with UNICEF, educational and publicity materials and media activities to celebrate Universal Children's Week in October 1989. A newspaper supplement appeared in all national and district newspapers throughout Kenya.

The communications advisor has worked with KEPI staff to develop other health education materials that are designed in such a way that they can be printed in various languages spoken in the KEPI priority districts. Scripting for radio programs has also begun.

Another major focus of activity has been the child-to-child school program. KEPI has developed what promises to be an effective, systematic effort to mobilize school children to raise immunization coverage in selected low-coverage priority districts. UNICEF has provided funds for this activity. The KEPI health education officer and the REACH social mobilization officer have developed a variety of materials and posters for headteachers and teachers to use in educating school children in standard six and seven classes about the importance of immunization. Each child then gives appointment slips to up to four mothers of eligible children aged 0-23 months. The plan is to harness the natural competitiveness of children by having them compete, by schools, for the highest number of referrals. Winning schools in each zone, division and district will be given prizes. The entire process relies on normal service delivery points to minimize disruption and increase the likelihood that this activity can be sustained.

The initial child-to-child school program was conducted in Siaya District, and is already being expanded to other low-coverage districts. Early analysis indicates that coverage jumped

dramatically during the month the program was running. Monthly baseline figures for the past 12 months will be analyzed to ensure that this increase was not due to seasonal factors and coverage figures for future months will be analyzed to see if the program's effects persist.

A detailed social mobilization and communication plan for January to June 1990 was prepared. UNICEF will provide \$230,000 to cover costs for the identified activities. The plan is a thorough but rather ambitious document. It includes a child-to-child program in 10 low-coverage districts.

An emphasis on printed materials may need to be supplemented by ways that target the message more effectively and couple it with concrete behavior (e.g., referrals to immunization sites). Radio programs are also potentially effective.

More attention on message content would be useful. Through formative research, such as the 1988 Kitui KAP and coverage survey, lessons have already been learned as to the resistances of parents. But more is known than is applied. Communications should address these resistances. For example, it was found in Kitui that more than one-third of mothers felt that children with fever, cough, and diarrhea should not be immunized. Messages could be directed both at mothers and health workers to reverse this way of thinking. There is a plan to do this on radio.

Health workers themselves need to have their knowledge upgraded. An excellent 1989 study done by fourth-year pediatric medicine students found that one-half of health care providers who were interviewed at immunization service delivery points in Nairobi, believed that children with a parents' verbal history of measles should not be immunized. A message to all health workers stressing the unreliability of parental self-diagnosis and the danger of denying measles immunization could be very effective. As with qualitative data as mentioned above, existing quantitative data are also not being fully used to focus activities. For example, dropout rates could be monitored by district to identify areas where immunization acceptability and MOIs may be a relatively greater problem.

In Kenya, as in most countries, a greater focus of communication and mobilization efforts should be directed at health care providers. Their lack of information, knowledge, and motivation in many countries is a powerful deterrent to raising immunization coverage. Results of MOI studies, conducted and planned, should be fed back to peripheral health staff for improved action. Examples include reports (1988 Kitui KAP report, Siaya child-to-child briefings of headmasters, etc.) that some health staff treat mothers rudely, especially if cards are lost.

Positive developments include the emphasis on decentralized communications planning and implementation, the interest in printing materials in local languages, and increasing appreciation of the need for formative research. To collect and review results from existing formative research to extract and use relevant findings would seem to be the first step. KEPI plans an information, education and communication evaluation in 1991 to review the results of all efforts and to provide guidance for the future. Activities planned for 1991-1995 appear in the draft plan of operations, now undergoing finalization.

HAITI

The REACH communication advisor helped design and implement a communication strategy for three national vaccination days in the fall of 1988. REACH prepared a request for proposal for selecting an advertising agency, actively participated in the selection process, and provided valuable input into the strategy. Activities included the use of such conventional media as television, radio, banners, and posters, as well as innovative steps such as working with female market vendors to disseminate messages to their remote villages, and placing immunization messages on cassettes to be played on tap taps (colorful buses that are a popular form of public transportation).

In 1989, the REACH advisor played a key role in the reformulation of the proposed communication strategy. He prepared a document for the Inter-Agency Coordinating Committee that focused on target group segmentation, redefining the communication objectives, and the need for evaluation. A communication questionnaire, prepared by the REACH coordinator and administered to vaccination acceptors during the national vaccination days, provided the only objective indications of media effectiveness. The document also stressed the need to adopt a policy of stronger promotion of routine immunization activities.

Over the long term, REACH has played an important role in coordination among the various donor groups and the MOH. REACH has been instrumental in the strengthening of the Communication and Public Relations Subcommittee of the Inter-Agency Coordinating Committee, which coordinated all major organizations involved in EPI.

REACH has been persistent in calling for qualitative research regarding the KAP of parents and health personnel, as well as for evaluation of the impact of the communication campaigns. It is hoped that these activities will take place under the REACH II Project.

APPENDIX B

STEPS IN A SOCIAL MARKETING APPROACH FOR IMMUNIZATION

1. Conduct formative (planning) research.

Existing attitudes, perceptions, and practices are studied using qualitative techniques such as focus group discussions, in-depth interviews with health workers and parents, and observation of immunization sessions. The research uncovers cultural, psychological, economic, and logistical resistances (barriers) to the preferred behaviors as well as positive attitudes and practices that can be used to overcome resistances. Mothers and persons such as local health providers, fathers and mothers-in-law who are likely to influence their immunization-related behavior are consulted in this phase.

The initial research is likely to uncover such barriers as confusion regarding the purpose of immunization; difficult accessibility because of time, cost, or convenience; poor or incorrect information regarding which children and women need immunizations and when and where they should go for them; fear of side effects; and mistrust of or unpleasant experiences with the health system. The formative research should reveal both the strength of these resistances and insights into how they might be overcome through communication and/or modifications in services. Research should also uncover potential motivating appeals to mothers, where mothers get their information, their trust in different sources of information, whom they seek advice from in the community, etc.

2. Identify a series of behavioral changes based on formative research findings that are likely to result in improved immunization coverage.

Systematic analysis of the formative research leads to identification of problems and resources needed to alleviate them. In the case of immunization, the likely behavioral changes for mothers would be: bring your children, healthy or sick, at the appropriate times and places for immunizations; expect and do not be upset by mild side effects; get full protection with TT for yourself and your newborns. For health workers, the likely behavioral changes would be: always maintain the cold chain and use only sterilized needles, do not miss opportunities to immunize, give mothers adequate and understandable information on reasons for immunizations, expected side effects, the need, time, and place to return for additional immunizations; and treat mothers with respect.

3. Test the essential behaviors with a small group of beneficiaries and program implementors.

Because of the long-term, repetitious nature of the desired behaviors, there is no practical way to quickly test the full course of the desired behavior (mothers bringing their children for the full series of immunizations). However, a pilot test of the communication to parents and guardians, and of modifications in immunization services in each major geographical or cultural area could be done.

4. Design an intervention strategy to overcome resistances to adopting new behaviors.

The intervention strategy would normally contain three major components: communication, training, and service-delivery improvements. The **communication strategy** defines the specific behavior changes that will be promoted in different geographical areas and among different target groups (i.e., mothers of infants 12-23 months old who have no immunizations and mothers of infants 12-23 months old who have some but not all basic immunizations; either pregnant women or all women of childbearing age, depending on the TT target group; and husbands and others, if found to have a major influence on the action of taking a child for immunization). It describes the creative approach for overcoming resistances to change, detailing what motivations will be used for each target group. (WHO/EPI, March 1989).

An essential aspect of the creative strategy that will emerge from the formative research is how much information about the target diseases is necessary to motivate mothers to bring their children. Should the diseases and their symptoms be specifically mentioned? (Formative research may show that mothers do not know some of the diseases, do know others specifically, and consider others as part of a broader syndrome of disease.) Should immunizations be promoted as a special preventive injection, just as people get vitamin injections? Should doctors or mothers-in-law be used in messages to negate resistances? Only local research can answer such questions.

The **training component** supports the communication strategy. Which people need what training, when and how, to fulfill their roles as communicators of important information? Additionally, what retraining do health workers need to overcome what is perceived by the public as problems in their performance? There should also be plans to convince and train influential community or local government officials to promote immunization.

The **service-improvement component** includes recommendations for modifying service hours, locations, or organization that research show to be important for making services more convenient and therefore more acceptable. It gives plans for supporting health workers so they in turn will treat the public more supportively and competently. It might also outline new incentives that the health services could institute to motivate performance from health workers.

Since the long-term objective is to socialize the basic concept of immunization, the strategy should include plans for working through such community institutions as schools, mothers' clubs, and health centers and health posts to encourage immunizations on an ongoing basis. Some rapid social mobilizations for national immunization days have not sufficiently incorporated the regular health system for promotion and immunization, a major mistake in terms of long-term EPI sustainability.

5. Develop an implementation plan for the strategy.

This operational plan details all the technical inputs and resources required to execute the intervention strategy. For education and communications interventions, it also describes the details on media production, distribution, and use, and the numbers and types of people to be trained and supervised. This strategy is based on information gathered during formative

research. The interventions should be implemented on an empirical seasonal schedule so that the timing and content of communications take into account both the peak risk of the health problem and days or periods of intensive immunization.

6. Pretest and revise all messages and materials.

Educational and promotional messages and materials are designed and circulated among program staff and key decision-makers for feedback. Pretesting among the target audience groups is usually done using in-depth interviews and/or FGDs. After revision, all educational and promotional materials should be approved by the appropriate authorities prior to production.

7. Produce all materials and confirm the acquisition of all supplies.

Ample time should be left for this activity to avoid unnecessary and costly delays that may arise in the production process.

8. Design a program monitoring and evaluation plan.

Program monitoring and supervision should be designed to answer questions about how the program is operating, whether it is having its anticipated effect, and what adjustments need to be made. Monitoring and supervising information should feed into program operations to ensure that it is working effectively. Monitoring should discover whether communication activities are being implemented as planned, target audiences are receiving and understanding the messages, and messages are successfully motivating the target group to action.

Evaluation, on the other hand, is usually focused on measuring the impact of the intervention strategy. In the case of immunization, the impact of the program on coverage, on dropout rates, and on the percentage of one-year-olds who are fully immunized are examples of useful indicators of project impact. It may or may not be feasible to design an evaluation plan to distinguish the contributions of each of the major components of the social marketing plan (training, service improvement, and service promotion).

9. Launch the intervention effort.

Materials and supplies are distributed. Required personnel are trained to implement the intervention strategy.

Careful attention to management of project communications is essential. The best messages and media plan in the world will have little effect if health workers who are supposed to talk to mothers are not well trained and supported, if radio spots are not broadcast as planned, or if print materials remain in a warehouse. Likewise, good management is essential to the supply side of the equation. Unsatisfactory services, e.g., a lack of drugs or vaccine, can quickly negate effective demand-building.

10. Conduct monitoring studies and make necessary program adjustments.

The need for in-service training, more materials, or revised educational messages may be uncovered here. The necessary steps to improve the program are taken at this time.

11. Evaluate the program.

After at least a year of full program operation, program impact is evaluated either through available routine coverage or survey data or through a follow-up survey.

If the social marketing effort has received extensive external technical assistance, institutionalization and building local capabilities should take place throughout program implementation. Training and project seminars should be conducted at several points in the process, to leave behind trained individuals and to help maintain an understanding of the project at the policy level.

APPENDIX C

REACH DOCUMENTS ON ACCEPTABILITY OF IMMUNIZATION

GENERAL

Behavioral Aspects of TT Immunization
Michael Favin
December 1989

The Human Behavior Element in Child Survival Interventions
Adrian Pointer
October 1988

The REACH Experience: Missed Opportunities for Immunization
Mark Grabowsky
September 1990

BANGLADESH

Bangladesh: Social Mobilization
Outreach
Jean Paul Chaine
Spring 1990:2-3

Internal Review of REACH Activities in Bangladesh
Rebecca Fields, Richard Pollard, Yassin Hazza
March 1990

Monthly reports, communications section
Mrudula Amin
Beginning October 1988

Perceptions of Childhood Diseases and Attitudes toward Immunization among Slum Dwellers
in Dhaka, Bangladesh
Therese Blanchet
June 1989

BOLIVIA

Cultural Perceptions of Neonatal Tetanus and Programming Implications
Joseph Bastien
August 1988

Participation in the Workshop for Technical Cooperation in EPI, ARI and in the Inter-Agency
Coordination Committee Meeting
Robert Steinglass
August 1988

HAITI

An Assessment of REACH EPI Assistance in Haiti
Harry Godfrey, Mary Carnell, John Mobarak
May 1990

Monthly reports
Luca Spinelli
Beginning 1988

INDONESIA

Assessment of REACH EPI Assistance in Indonesia
Alasdair Wylie, Mrudula Amin
June 1990

Assistance in Planning Urban EPI Activities in Indonesia
Kenneth Olivola
May-August 1990

Executive Summary to SRI Report
Elaine Maran, Mayling Simpson-Hebert
May 1990

Follow-up Visit, Social Marketing Strategy for Urban EPI
Elaine Maran, Mayling Simpson-Hebert
December 1989

Immunizing Prospective Brides in Indonesia
Outreach
Lonna Shaffritz, Michael Favin
Spring 1990

Social Marketing of Tetanus Toxoid Immunization Program for Brides-to-Be in Indonesia
Lonna Shaffritz
October-November 1989

Social Marketing Strategy Operations Plan, Implementation Step I for EPI in Jakarta and Surabaya
Elaine Maran, Mayling Simpson-Hebert
October 1989

Two Urban EPI Planning Assignments to Indonesia
Kenneth Olivola
May-August 1990

Urban EPI Social Marketing Study (REACH Project)
Survey Research Indonesia, REACH
July 1990

KENYA

Battling the Six Immunizable Diseases. A District Strategy for Accelerated Immunization 1988-1990

**KEPI Management Unit/UNICEF
1988**

Monthly reports on communications/social mobilization

**Grace Kagondu
Beginning 1988**

Participation as USAID/REACH Observer in DANIDA Review of Kenyan Expanded Programme on Immunization (KEPI)

**Adrian Pointer
June 1989**