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#### BEHAVIORAL ASPECTS OF CHILD SURVIVAL:

# PRELIMINARY BIBLIOGRAPHY OF BEHAVIORAL RESEARCH AND IDENTIFICATION OF MAJOR ISSUES

#### Prepared by

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"Behavioral Aspects of Child Survival: Literature Review and Consultations Project"

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#### INTRODUCTION

#### SUMMARY

The material presented here was compiled as phase one of the "Behavioral Aspects of Child Survival: Literature Review and Consultations Project" funded by S&T/Health. The purpose of this project is to bring together reports and publications of research and studies conducted on behavioral aspects of child survival (including both work funded by A.I.D. and by other sources). Presented here are preliminary bibliographies and issues papers concerning behavioral aspects of each of the four major interventions of A.I.D.'s Child Survival program: oral rehydration therapy, immunization, birth spacing, and nutrition improvement. Included in the bibliographies are published and unpublished reports of research and studies conducted using qualitative, behavioral science methodologies. The issues papers are based on preliminary review of material contained in the bibliographies.

In phase two of this activity, a synthesis of this research will be prepared along with an annotated bibliography and recommendations for A.I.D.

#### BACKGROUND

A large volume of research has been undertaken during the 1980s on topics related to A.I.D.'s Child Survival program. Research has been funded not only by AID/Washington but also through USAID bilateral projects in all regions as well as by UNICEF, WHO, and other organizations, public and private. In addition to basic biomedical research, much of this research is qualitative field-based research designed to provide answers on how to adapt technology, delivery systems, and promotional approaches to individual countries and cultures.

The findings and conclusions of this body of qualitative research promise to be extremely valuable for A.I.D. project design and implementation. These research results are not easily available, however, to either AID/Washington or mission personnel outside the countries where individual studies were initiated. Many of these studies have not been published. Moreover, many of the research findings remain inaccessible to A.I.D. policy-makers and project personnel because of the bulky nature of the reports or the fact that some of the reports are still in rough form or in languages other than English. There is not even a comprehensive listing of A.I.D.-funded research on Child Survival.

#### THE PURPOSE OF THIS WORK

The present activity was undertaken therefore to bring together the major findings, conclusions, and recommendations of this far-flung body of qualitiative research into a single report and format easy for use in AID/Washington and for distribution to USAID missions and, as desired, host country counterparts and A.I.D. contractors engaged in child survival activities.

#### THE PRODUCTS

This work is being carried out in two phases. Presented here are the products of phase one. These are a preliminary bibliography and issues paper on each of the four interventions that are the focus of A.I.D.'s Child Survival program: immunization, oral rehydration therapy (ORT), birth spacing, and nutrition improvement. The final products will be:

- \* an annotated bibliography;
- \* an analytic synthesis of research findings, conclusions, and recommendations;
- \* an analytic overview of the qualitative methodologies used for conducting the research summarized; and
- \* recommendations to A.I.D.

#### METHODOLOGY

The four preliminary bibliographies and issues papers presented here were compiled following: (1) consultation with researchers and research sponsors in the U.S., Egypt, Jordan, and Yemen; and (2) computerized and other searches of the published literature and unpublished reports on child survival. Computerized searches were performed by or accessed collections of the following organizations: A.I.D., UNICEF, Popline, the APHA Clearinghouse on Infant Feeding and Maternal Nutrition, and the International Development Research Centre (IDRC). Copies were acquired of publications and reports that appeared germane. These were entered, grouped according to research sponsor, into a "master list of documents acquired." Documents were then divided according to child survival intervention and cursorily reviewed. Compilation of the preliminary bibliographies and the preliminary identification of issues was based on this cursory review.

Detailed analysis of the materials collected will be the focus of phase two of this activity. At that time, the bibliographies will be further refined through general edition and by the deletion of materials that do not prove pertinent and the addition of other relevant materials not yet included but that are anticipated during phase two.

#### SELECTION CRITERIA AND PRIORITIES

The literature relating to behavioral aspects of child survival is enormous. In deciding what to include, the following criteria and priorities were therefore adopted:

#### 1. Child survival interventions:

\* First priority was placed on <u>immunization</u> and <u>ORT</u>; here the goal was to be as comprehensive as possible.

With <u>birth spacing</u>, given the enormity of the family planning literature, the decision was made to focus on materials that explicitly discuss the use of family planning to increase birth intervals for purposes of maternal and child health.

With <u>nutrition improvement</u> (including breastfeeding, growth monitoring, weaning, and other infant and young child nutrition) on which an enormous amount of research has also been conducted, only the most relevant and useful materials of this voluminous literature were sought.

Some items were also collected on other interventions as they relate to child survival—for example, water and sanitation, malaria control, and ARI (acute respiratory infection) control, as well as on cross-cutting topics such as factors in maternal care of children. Only an illustrative few of these materials have been included in the preliminary bibliographies.

- \* Priority was placed on project-related studies and studies of intervention-related behavior (in contrast to research focused more exclusively on traditional behavior--e.g., on mothers' use or non-use of ORT as opposed to traditional handling of children with diarrhea).
- 2. Research methodologies: Research and studies included are those that are characterized as behavioral or behavioral science research, in contrast to biomedical research. Priority was placed on qualitative, as opposed to quantitative, studies. The dividing line is thin, however, as many quantitative studies (e.g. KAP surveys) seek to understand the same types of behavior as do the more clearly qualitative studies. The goal was to seek studies that researched people's motivations and behavior in an indepth manner; some research on socio-economic characteristics has been included, but only when it appears to look in depth at related behavior.

Methodologies examined included those identified as:

<sup>\*</sup> ethnographic research, \* anthropological research,

<sup>\*</sup> in-depth interviewing, \* key-informant interviewing,

\* observation, \* participant observation, \* detailed activity studies, \* focus group studies, \* household studies, \* community studies, \* community diagnosis, \* social marketing research, \* formative research, \* motivational research, \* practice studies, \* participatory research/evaluation, and \* action research.

Also included, especially when they attempted an in-depth examination of beneficiary behavior, are:

\* KAP (knowledge, attitudes and practice) studies, \* baseline studies, \* household surveys, \* case studies, \* situation analyses, \*feasibility studies, \* operations research, \* pilot studies and surveys, \* message testing and product preference trials, and \* evaluation research based on longitudinal or other in-depth studies.

Project evaluations are also a rich source of information about behavior. Evaluations of the "rapid appraisal" type that are most commonly conducted on A.I.D. projects have not been included in this present activity, however, on the grounds that they are the subject of other A.I.D.-sponsored activities and analyses.

- 3. <u>Behavior</u>: Whose behavior is included? The focus is on behavior of intended beneficiaries and also of service providers in relationship to beneficiaries, along with organizational factors that directly affect beneficiaries (e.g., hospital policies on rooming in as they influence breastfeeding mothers). Other research on organizational behavior and systems has not been included (e.g., no research on management information systems, health care financing arrangments, or Ministry of Health re-organizations).
- 4. Research sponsor: Priority was given to studies funded by A.I.D., especially in the 22 child-survival "target countries." (Further effort, however, will be required during phase two of this activity to collect reports of mission-supported studies.)
- 5. <u>Time frame</u>: A 1980-to-present time-frame was adopted. Research conducted before 1980 but reported on after 1980 is also included. Earlier items are included only when exceptionally important for the topic.
- 6. Availablity and accessibility: Highest priority was given to collecting, at least initially, the more easily accessible materials—chiefly those that could be acquired in the U.S. (a decision made necessary by the short time period provided for this work). Efforts have been made to collect reports and publications from developing countries, but these are only beginning to come in. Interim and draft reports are included when they appear especially germane.

7. Other. A small number of more general items are also included in the bibliographies. Among these are literature reviews, topical overviews, and methodological materials.

#### SPECIAL SYMBOLS AND NOTATIONS APPEARING IN THE BIBLIOGRAPHIES

- \* indicates a study or research funded, partially or in full, by A.I.D.
- + indicates item yet to be acquired for analysis.
- [ ] indicates a collection in which a document is held.

[AID] = A.I.D./CDIE collection

[UNICEF] = UNICEF, New York

[IDRC] = International Development Research Centre

[Wellstart] = Wellstart, San Diego

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#### Behavioral Aspects of Child Survival: Preliminary Identification of Issues

#### ORAL REHYDRATION THERAPY

#### I. <u>INTRODUCTION</u>

It is estimated that about 30 percent of infant deaths in developing nations today are due to diarrhea-related problems (Health Com, 1985). The purpose of oral rehydration therapy (ORT) is to save lives by replenishing the water and salt lost during episodes of diarrhea. A mainstay of ORT are oral rehydration salts (ORS) which produce a glucose-electrolyte fluid that, if used properly, could save the lives of many children. ORT also emphasizes feeding/breastfeeding during and after bouts of diarrhea to reduce the incidence of malnutrition. Other preventive measures associated with ORT, such as hand washing, personal hygiene and sanitation, are also important.

The transfer of ORT technology has proven to be complex in situations where different cultural, environmental and socioeconomic factors interface with a modern bio-medical product. At one cultural level, the mixing and administering of ORS might be a simple procedure; however, at another level, complications often occur because of lack of product acceptability, environmental problems, or inability to learn the proper way to mix ORS.

As the child survival initiative is implemented in different cultures, it becomes evident that there is a great deal of variation in the ways individuals learn and administer ORT. Ethnographic studies provide a wealth of data about these diverse experiences in developing countries where ORT has been introduced to the public. Ethnographic findings are most useful in the following areas:

- Identifying the cultural setting in which diarrheal diseases occur, as well as current treatment practices;
- 2. Clarifying the cultural constraints and opportunities associated with ORT use in a particular cultural context;
- 3. Providing guidance about the appropriateness of communication messages via the news media; and
- 4. Demonstrating behavioral changes as a result of health education campaigns in the news media.

A basic theme that runs through almost all qualitative studies is that successful experiences in one cultural setting cannot be transplanted and have the same degree of success in another cultural environment. The ORT experience is unique, complex and is not directly replicable from one country or culture to another.

This preliminary issues paper focuses on a few major behavioral topics discussed in the qualitative literature in relationship to the treatment and prevention of childhood diarrhea. No attempt is

made here to include all relevant research issues. A more thorough and detailed analysis of research findings will be part of Phase II of this project (which will include institutional issues for introducing ORT and the use of the health system to deliver the product).

The data presented here are based on interviews with researchers (see list of individuals contacted) and cursory review of a small sample of the publications and reports on behavioral aspects of ORT included in the following bibliography. The issues presented here are not meant to be mutually exclusive of each other.

#### II. BASELINE DATA: THE CULTURAL CONTEXT OF DIARRHEA

#### A. Local Perceptions About Diarrhea

How is diarrhea perceived by mothers? How are the symptoms recognized? Are there personalistic/naturalistic local explanations for diarrhea? Are behaviors like purging, withholding of foods, or using traditional medicine known or practiced in the community? What words are used to refer to diarrhea and dehydration? Is diarrhea perceived by mothers to be a serious health problem? What are the different types of fold diagnoses of diarrhea?

There are numerous studies that deal with the cultural context of diarrhea (e.g., El-Sayyad, Hassouna and Taylor, 1984; Daulaire, etc.) This baseline data helps project implementors design culturally appropriate campaigns for introducing ORS to the public.

El-Sayyad's study reported that mothers recognize diarrhea as being dangerous and a killer of infants and young children. In Pakistan, Mirza's study stated that 67% of the sample recognized diarrhea as being a serious disease. The seriousness stems from "water drains away from the body" (Mirza, 1987). Most studies show that mothers believe diarrhea is caused by "eating wrong food," "too much milk," "teething" or the "evil eye."

In Honduras, mothers believed that diarrhea is caused by "La bolsa," a sack thought to exist in everyone and to contain worms, which leave the sack after becoming agitated. The concept of dehydration was totally unknown in Honduras prior to ORS campaigns (Meyer, et al, 1983). Rural Gambian mothers attribute diarrhea to natural causes such as dirt, wind or supernatural causes (Shimp and Delozier, 1986).

reople categorize varieties of diarrheal diseases differently, hence local traditional treatments vary according to perceived types and causes. In Nepal, common diarrhea, disaa Pakhalaa, is not treated for four to five days. This can ben extremely dangerous to an infant or a young child (Daulaire).

# B. <u>Cultural Determinants of Feeding Practices During and After an Episode of Diarrhea</u>

Do mothers stop breastfeeding when they notice that their infants are suffering from diarrhea? What liquids or solids are given to infants/children suffering from diarrhea? What liquids or solids are culturally perceived as dangerous for children with diarrhea? How long do mothers withhold food? What are the culturally appropriate foods for sick children? Is breastmilk considered dangerous for an infant with diarrhea?

Understanding the principles underlying the cultural classifications of foods and the beliefs about foods for sick children is important for designing successful social marketing strategies and promoting feeding during and after diarrhea. In Egypt, traditional mothers consider breastmilk dangerous for infants when they are sick (Stolba, 1987). In a 1984 study conducted in Egypt by El-Sayyad, Hassouna and Taylor, the researchers reported that mothers treated diarrhea by giving their infants/children herbal teas, rice and water, cumin and caraway tea. Breastfeeding is discontinued during diarrhea.

Hoyle, Yunus and Chen reported in their study at Matlab, Bangladesh, that continued breastfeeding during acute episodes of diarrhea clearly protects a child against overall reduction of caloric and protein consumption during sickness and should be encouraged in health education campaigns (1984). Qualitative research findings provide useful insights about feeding practices during and after diarrhea. Phase II of this project will deal with the most significant findings and how they influence communicative messages to mothers.

#### C. Water, Sanitation & Hygiene

What is the environmental context of diarrhea? Is polluted water a problem in the community? Do flies constitute a health problem? What are the traditional methods of disposing of refuse? How is water procured? Is clean water available for use in mixing ORS?

In developing nations, environmental problems related to polluted sources of water and waste-disposal constitute major problems influencing the spread of diseases like diarrhea.

Linda Oldham stated in her study of a poor Egyptian neighborhood that disposal of "grey water is a problem for households lacking sewerage connections" (Oldham, 1984).

Preventive health messages can be effective if they are a realistic assessment of environmental problems.

#### D. <u>Cultural Acceptability of ORS</u>

Are some tastes, colors or packaging techniques more culturally acceptable than others? Do mothers believe that certain kinds of

medications are harmful to their children? If so, which ones? Would mothers' doubt the effectiveness of ORS? Why?

Research indicates that some mothers do not like the taste of ORS, hence, they do not give it to their children (Loza, 1987). Some mothers doubt the effectiveness of ORS because they mistakenly think it will stop the diarrhea (Loza, 1987). In rural Egypt, people believe that injections are more potent than powdery or liquid medications (Stolba, 1983). This belief negatively impacts the use of ORS.

Shimp and Delozier reported that in the Gambia, mothers seemed to prefer a modern medicine for treating diarrhea rather than a traditional herbal tea. This finding negates the assumption that mothers would prefer a product which resembles an existing traditional method or herb (Shimp and Delozier, 1986).

#### III. PRODUCT POSITIONING

How should ORS be introduced to mothers? In what form (e.g., liquids/powder)? What containers should be used in home mixing of ORS? What are the constraints on pricing ORS packages? What size can be easily used/stored by mothers? Are there culturally acceptable logos which will make use of the product more attractive to mothers? What name should be given to ORS to make it more appealing?

In order to facilitate the use of ORS, it is important that it be marketed in the most convenient sized packaged possible (Hassouna and Taylor, 1984). In this study, the researchers identified 13 containers most frequently utilized in Egyptian households for drinking. All containers were measured for volume capacity. Glasses used to serve tea were selected as the most appropriate containers for mixing ORS (Hassouna, Taylor, 1984). In Egypt, focus groups and brief interviews in public places were used to determine audience responses to logos (Hirschhorn, 1985). field research showed that rural Egyptian women preferred simple names that conveyed warm feelings or described the purpose of the solution. However, Medical practitioners did not like the name preferred by the public. The name chosen translates into "The solution for the Treatment of Dehydration," known now as "The Solution."

In Honduras, soft drink bottles and bottle tops have been used by mothers to store ORS. The bottles were used to measure water, and the tops to measure salt and sugar.

#### B. Home-made Solution and the Use of ORS:

What are some of the problems encountered in teaching mothers how to mix ORS? Can mothers successfully mix ORS at home and administer it to their infants/children.

The keys to effective ORT is the correct preparation and

administration of ORS and continuing to feed the sick child. Mothers must be taught how to mix the ingredients in exact proportions to avoid dangerous concentrations of salt. The type of household solution to be used and its methods of preparation must vary from one country region to another depending on acceptability, resources, literacy, etc.

In the Gambia, radio programs taught mothers, grandmothers and older female siblings how to mix the formula. Mothers with homes marked with "happy baby" flags acted as resource persons to other mothers needing further instructions. Also, radio programs helped explain printed mixing instructions to mothers.

In Honduras, radio programs taught mothers how to measure a liter, using local bottles (Shimp & Delozier, 1986).

In rural Upper Egypt, Sarah Loza reported that 14 percent of mothers gave ORS after the third day of diarrhea, most probably to treat dehydration rather than to prevent it (Loza, 1987).

#### IV. DISTRIBUTION OF ORS: ACCESSIBILITY OF THE PRODUCT

#### A. Health Care Professionals and ORT

Do doctors support the use of ORT? If not, why? Which health professionals should be trained to mix, administer, sell or distribute ORS?

Health workers and other service providers should be trained before mass media creates a demand for their services and products. The issues of who should be trained and how are crucial to the success of introducing ORT. Support from the medical community for the product gives it the necessary legitimacy for acceptance by the community (Booth, Mata, Downey and Harding, 1985).

In Egypt, private physicians' and pharmacists' support for ORS is crucial for public acceptance of the product (Loza, 1987). Many physicians do not prescribe ORS because they see it as too simple a technology, or because they are used to intravenous and antibiotic treatments. Training physicians, nurses and pharmacists to advise mothers to use ORS is important for child survival projects.

#### B. Traditional Health Professionals and ORT

Can traditional health practitioners (e.g., midwives, health barbers) be utilized to distribute the product? Can traditional health practitioners train mothers in the procedures of mixing ORS?

Tahzib reported in his Nigerian study that "training of traditional practitioners cannot be considered in isolation, but rather their organization and interactions and collaboration with other practitioners, the village health worker and the community, has also to be studied as part of the evolving health strategies and

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aspirations of the individuals and the community." (Tahzib).

# C. <u>Measuring the Impact of Community-Based Distribution Systems</u> <u>vs. Clinically-Based Distribution Systems</u>:

Which outlets should distribute/teach about mixing ORS - clinics, community health workers, depot-holders or flag-holders? Should pharmacists sell ORS? Should pharmacists be involved in training clients how to mix ORS?

Community health workers play a crucial role in disseminating knowledge and skills for the use of ORS. Grandmothers, trusted community leaders and experienced mothers can all promote ORS and teach others how to mix the solution.

Clinic-based distribution may not be effective because of clinic distance, short supplies, busy medical staff or lack of positive attitude on the part of the service providers. Poor quality or inappropriateness of services can be a deterrent to use. (Buvinic, et. al., 1987).

### V. COMMUNICATION, DISSEMINATION OF KNOWLEDGE AND DEMAND CREATION:

### A. Cultural Research & The Identification of The Target Audience:

Who should be targeted for communication messages/health programs promoting ORT? Besides mothers, are there other care-takers of children who should know how to administer ORT?

Successful communication and marketing of health concepts depends primarily on correct targeting of groups or individuals. The communications' programs in both Honduras and The Gambia were directed to mothers, grandmothers, older siblings, and community volunteer health workers called <u>quardians</u>. A secondary audience was identified as physicians, nurses, fathers, schoolteachers and regional health promoters. In rural Egypt, Clark suggested involving rural grandmothers in health education programs (Clark, 1986).

### B. Accessibility of Media Channels & Literacy Rates:

Which media channel reaches the largest segment of the target group? Are people influenced by what they watch on T.V., or hear on the radio? Can fliers be used to explain mixing procedures to mothers?

Terence Shimp and M. Delozier mentioned in their 1986 report entitled "Integrated Marketing Communications and Promotions Program" that the success of the programs in Honduras and Gambia depended on the combination of three communication medication broadcasts, print materials, and person-to-person communications using health workers and community volunteers (Shimp & Delozier, 1986).

When literacy rates are low, printed materials alone are found not to be very effective. Foote and Kendall mentioned that, in the Gambia, pictorial ability was extremely limited. Radio programs and community health workers could be used to explain flyers (Foote, et. al., 1985).

Access to radio in The Gambia was high. A total of 65 percent of women reported that they listened to the radio, either daily or several times a week (Foote, et. al., 1965). In Jordan, ownership of T.V. is widespread; ORS commercials are aired several times a day. Loza reported that among Egyptian rural women, exposure to radio messages was relatively low (15%). However, exposure to T.V. messages was quite high (91%) (Loza, 1987).

#### C. <u>Cultural Compatibility of Media Message</u>:

What language should be used with urban/rural women? Is the message culturally appropriate? Is the message effective? Which media channel is more effective in explaining water volume, quantity of salt/sugar, etc? What messages should the materials relay? Do the messages achieve their educational objectives? How can a media message effectively overcome a cultural barrier?

It is important to relay precise "messages" to the public about ORT. It is also crucial to dispel misconceptions about ORS stopping diarrhea.

#### D. Knowledge vs. Use of ORS:

How many mothers know about ORS? How many mothers use ORS for their children after they learned about it from media campaigns or health education programs? Have utilization rates been raised by media campaigns? Do mothers breastfeed their infants during episodes of diarrhea? Do mothers feed their children during episodes of diarrhea?

In examining the level of learning and behavior change in response to a multi-media campaign introducing a packet-based oral rehydration and a home-made water, sugar and salt solution (WSS) in Honduras and The Gambia, respectively, Foote and McDivitt stated that mothers' knowledge of ORS increased steeply during the campaign. Eighty percent of Honduran mothers knew about litrosol, and between 68 and 89 percent of Gambian mothers were aware of WSS. However, use of ORS trailed behind knowledge. In Honduras, trial of litrosol rose form zero to 62 percent. In the case of The Gambia, trial rates rose from 48 percent to 76 percent by the end of the campaign. (McDivitt & Foote, 1985). This study concludes that different levels of adoption may be due to variations in cultural perceptions about diarrhea and treatment.

Newman, Reyes and Harrison reviewed the results of eleven studies and demonstrated how difficult it can be "to transform knowledge into beliefs and practice" (Newman, Reyes & Harrison, 1987). For example when women in Bangladesh were taught about ORT, 90% learned

about the process of mixing ORS, but only 8% used it (Touchette, 1985).

### E. Continuity of Use of ORS/Feeding During Diarrhea

What messages should be used to emphasize continuity of use of ORS? Why do mothers discontinue using the solution? Is ORS given to children suffering from diarrhea at all ages? Foote and McDivitt found that younger children are more likely to be given ORS than older children in Honduras and The Gambia (McDivitt and Foote, 1985).

#### VI. <u>METHODOLOGICAL</u>, ISSUES

Qualitative research studies have utilized a multitude of research methods in collecting data on ORT topics. Researchers have used focus groups, surveys, case-studies in-depth interviews, product preference trials, behavioral observations, process evaluation techniques and questionnaires. A detailed assessment of the effectiveness of each one of these methods will be included in the phase-II report of this project. Also, a thorough examination of the impact of printed materials, T.V., radio programs, posters, and so on will follow in phase II of this project. Motivating programs like the "Happy Baby" radio contest in The Gambia and the "Competition of the Giants" in Honduras will also be discussed.

Phase II will also look at the use of traditional home-available fluids.

# ORAL REHYDRATION THERAPY

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# <u>Behavioral Aspects of Child Survival:</u> <u>Preliminary Identification of the Issues</u>

### IMMUNIZATION

### INTRODUCTION

Of the four major interventions of A.I.D.'s Child Survival program, immunization is the intervention that has been least studied in terms of behavioral aspects. It appears that fewer studies and research projects have been funded on behavioral aspects of immunization and literature searches produce far fewer entries than for ORT, even though the attempt has been made to be as comprehensive as possible for both immunization and ORT.

#### THE Issue: How to Increase Immunization Coverage

Congress has mandated for A.I.D. the target of 80 percent immunization coverage by 1990--meaning full immunization of 80 percent of all children in all A.I.D.-assisted countries against the six vaccine-preventable diseases: measles, diptheria, pertussis (whooping cough), tetanus, polio, and tuberculosis. Full immunization is defined as: three doses of DPT (against diptheria, pertussis, and tetanus), one dose of BCG (against tuberculosis), one dose of measles vaccine, and two doses of tetanus toxoid for the mother before her child is born. For all six diseases, the vaccines are relatively inexpensive and are of proven effectiveness in saving lives.

Nevertheless, coverage levels in most developing countries remain low, averaging just above 40 percent in A.I.D.-assisted countries as a whole. Although some countries have been more successful, this is far below the 80-percent target (let alone the goal of universal immunization adopted by WHO and UNICEF).

<u>Determinants of immunization coverage</u>. Coverage levels may be analyzed as determined by four main factors:

- 1. The ability of the health and political systems to make effective vaccines available (accessible and affordable) to the public.
- 2. Characteristics of the population that determine beliefs about disease and behavior related to health care.
- 3. The ability of the health and political systems to communicate with the public and make immunization (not pleasant after all) accepted and desired.

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As with all medical interventions, the solution of <u>technical</u> and <u>organizational</u> issues (e.g., determining optimal ages for vaccination; maintaining the cold chain) is one side of the coverage coin. The other side is solution of <u>behavioral</u> issues that determine whether or not people accept the intervention.

<u>Determinants of immunization acceptability</u>. Once immunization is made available to a population, the fundamental <u>behavioral</u> question is: How to improve the <u>acceptability</u> of the immunization services?

What are the reasons for low acceptance rates? Why are many children never presented for any immunizations at all? Why do some parents begin the immunization sequence for a child but not follow through? Why do parents who go to doctors and the formal health system for some services not seek or accept immunizations? Why do parents who take certain preventive health measures not see the value of immunizing their children?

How universal are the answers to these questions? What is the relative importance of these reasons?

Preliminary review of the literature suggests there is no one reason, or definitive set of reasons, that explains low acceptance rates cross-nationally. Even within a single country, culture, or geographic region within a country, multiple factors appear to affect the acceptability of immunization (Heggenhougen and Clements, 1987; Hingson et al., 1976).

Factors that influence acceptance rates—and thus explain low acceptance rates—may be categorized as follows (Brown et al., 1982; Clark, 1983; Friede et al., 1985; Hassouna, 1983; Heggenhougen and Clements, 1987; Henderson, 1984):

- 1. Factors related to the culture and socioeconomic characteristics of the intended beneficiaries.
- 2. Factors related to characteristics of the immunization services:
- 3. Factors related to characteristics of the vaccines;
- 4. Factors related to communication to the public about immunization.

# I. FACTORS RELATED TO THE CULTURE AND SOCIOECONOMIC CHARACTERISTICS OF THE POPULATION

The Cultural Baseline: Culturally Determined Beliefs and Behaviors Relating to Immunization

<u>Disease etiology</u>. Are there any cultural universals regarding the causes of the six diseases (explanations common to all cultures about what causes the disease)?

In the individual country, how does the local culture influence behavior related to immunization? What are the traditional explanations about the causes of the six diseases? How (and how differently) is each perceived? What are the traditional means of treating the disease? Are measures taken to prevent family members and neighbors from becoming sick? How does local religion relate to this? Do parents believe supernatural causes are more powerful than vaccines? What differences exist between ethnic groups?

<u>Health-seeking behavior</u>. What is the local pattern of health-seeking behavior (home-treatment, resort to traditional practitioners, to "modern" or "Western" practitioners)? What are general attitudes about injections? How involved and influential are traditional birth attendants?

Child vs. adult, male vs. female. What differences are there in how illness is perceived, and treated, in a child vs. an adult? A female vs. a male child? What are traditional attitudes about infant death?

<u>Culture in transition</u>. In what ways and to what degree are local people modifying or abandoning traditional beliefs under the influence of "modernization"?

All cultures have traditional beliefs about how disease is caused, and some useful cross-cultural and cross-national generalizations can be made. In many cultures traditional—minded people believe disease to be caused by a supernatural external agent (e.g., jinn, various gods—Hsu 1955). Studies in India and Nigeria show many people reluctant to use immunization or other measures against measles on the grounds that it is supernaturally caused or would anger a local disease—causing goddess (Mather and John, 1972; Odebiyi and Ekong, 1982). Understanding and relating immunization to the local cultural etiology is essential. But what does the current research say about the earlier—advised strategy of using such local traditional beliefs to explain Western germ theory as related to infectious disease?

In many cultures people regard the death of an infant as natural and do not even confer a name until the infant has passed the

first week, month, moon, thirty, or forty days. The persistance of such attitudes, as well as of preferential treatment for male children (Ravindran, 1986; Goldstone, 1984, 1986) is an issue in immunization acceptability.

Traditional social structures have consequences for acceptance of immunization. Studies show that some village leaders have deterred villagers from having their children immunized. Traditional health practitioners also influence local attitudes toward immunization. Numerous studies discuss more creative involvement of traditional birth attendants in promoting tetanus toxoid for mothers and immunizations for children, along with other child survival activities (Janowitz et al., 1985; Mangay-Maglacas, 1986; Simons, 1986; S. Rahman, 1982; Hong, 1987).

# Socioeconomic Determinants of Immunization Acceptance

Within the same culture, are there differences between different socio-economic groups in their acceptance of immunization for their children? What are these differences? How significant are differences between and within neighborhoods? Are there differences between newly-arrived migrants and "local" people? Does acceptance correlate with income? With education? Literacy? The status of women? Are there differences between malnourished and norished children? Are the patterns sufficiently consistent cross-culturally that generalizations can be made for project design?

Several studies point to an association between socioeconomic characteristics of the target population and immunization acceptance levels. The literature is clear that even within the same culture, ethnic, or religious group there are correlations between socioeconomic characteristics of sub-groups and their acceptance of immunization. Precisely how generalizable these differences and patterns are cross-culturally and cross-nationally is less clear.

In general, low socioeconomic status, especially low educational level of mothers, has been associated with low immunization rates (Heggenhougen and Clements, 1987; see Brown et al., 1982; Caldwell, 1981; Streatfield et al 1986; Olugbile, 1974; Bachani et al, 1983; Bhuiya et al, 1987; Markland and Durand, 1976; Rosenstock et al 1959; Selwyn, 1978). Other studies, however, have found few socioeconomic differences between low and high acceptor groups (eg. M. Rahman et al, 1982). Thus it is unlikely that socioeconomic status in itself is the sole determinant of acceptability.

Some researchers (e.g., Odebiyi and Ekong, 1982) suggest that one reason for lower immunization rates among people of lower socio-economic status is that they tend to believe in supernatural

causation of diseases and that it is this etiological perception, rather than socioeconomic status itself, that is the major determinant (see Heggenhougen and Clements, 1987).

As one authoratative analysis concludes: "This allows us to speculate that the probable at-risk population has large families, low educational level, mothers are older and that special attention ought to be directed at efforts to immunize girls. But what is equally clear from these studies is that we must be careful in assigning too much value to any one of these factors" (Heggenhougen and Clements, 1987:20).

# II. FACTORS RELATED TO COMMUNICATION TO THE PUBLIC ABOUT IMMUNIZATION

Researchers in Africa have developed a useful check-list for analyzing reasons for low immunization coverage rates. Concerning parental attitudes toward immunization, this suggests the following questions (Brown et al., 1982):

- 1. Do parents lack scientific information on childhood diseases?
- 2. Do parents lack accurate information about vaccines?
- 3. Do parents lack information about the immunization program?
- 4. Do parents lack information on their children's ages?
- 5. Are influential people opposed to immunization?

How can the health sector best communicate to parents about the value of immunization for their children? How can it overcome resistance in the community? Should emphasis be placed on face-to-face communication or communication through some public medium? Which? How effective is in-school communication to older siblings? Which family members make the decision to have a child immunized? Are social marketing methodologies living up to their promise? What are their strengths and weaknesses? What are alternatives?

Several researchers have discussed the importance of the health belief model which indicates that people most likely to accept immunization services are those who believe that: (1) their children's susceptibility to the disease is high, (2) if acquired the disease could be serious, (3) immunization is effective in preventing the disease, and (4) there are no serious barriers to immunization (see Heggenhougen and Clements 1987).

Especially during the 1980s, a great deal of attention has been given to how to communicate with target populations in ways that are meaningful to them so that they might more easily see the value of, and accept, having their children immunized. There is still relatively little in the literature about actual efforts to communicate more systematically to the public in developing

countries about immunization. Many studies are underway, however, especially with A.I.D. sponsorship, whose preliminary results are beginning to provide useful answers to these important questions.

# III. FACTORS RELATED TO CHARACTERISTICS OF THE IMMUNIZATION SERVICES

To what extent are the immunization services themselves, including behavior or performance of service providers, major reasons for low acceptability of immunization?

Here the check-list developed by Brown and his colleaguer (Brown et al., 1982) for investigating reasons for low coverage rates poses the following questions:

- 1. Are immunization sites inconvenient?
- 2. Are immunization sessions held irregularly?
- 3. Do immunization services cost too much?
- 4. Are the procedures too complicated/too time consuming?
- 5. Does staff's language or culture differ from users!?
- 6. Do parents suffer indignities?
- 7. Does the immunization team lack methods for finding non-immunized children?

A health practice study in Ecuador concluded: "It was common to find that health personnel had no systematic way of determining whether a mother had in fact understood the instructions given about when to come back for the next vaccination, if in fact any instructions were given at all. No positive reinforcement pattern was observed between the health personnel and mothers, either with words or with gestures; harsh criticism of errors committed was more the rule. The health personnel complained that they did not receive central provincial support, rewards, or constructive supervision" (HealthCom Semiannual Report 3, 1987).

This study is by no means unique, nor comprehensive in its identification of problems, but illustrates very common phenomena. Other studies describe solutions or partial solutions for overcoming such obstacles. But can the solutions be sustained or applied in other settings?

## IV. FACTORS RELATED TO CHARACTERISTICS OF THE VACCINES

Are the vaccines effective? Have parents, or their neighbors, had past experience with poor outcomes? Are false rumors or fears about side-effects keeping people away from immunization?

Several studies reveal that reasons mothers did not take their children to be immunized had little to do with indigenous cultural beliefs, nor with behavior of service providers, but with the fact that children in the family or local community who had been vaccinated against a disease got the disease anyway.

Researchers in Cameroon, for example, were told about children who received measles vaccine which was ineffective because of careless handling. One study found that only 40% of children vaccinated against measles actually developed antibodies against measles (Brown et al., 1982).

As in family planning programs, fears about side-effects, real or imagined, are often the reason for non-acceptance. A study in Bangladesh, for example, revealed how women resisted tetanus toxoid in the belief it would hurt the fetus (Rahman et al., 1982). How can rumors and fears about side-effects be handled?

### V. SUSTAINABILITY OF COVERAGE

A.I.D. objectives include developing the capacity to sustain the 80-percent coverage level into the future. Research reports are beginning to discuss this issue, particular in terms of ongoing services versus immunization campaigns and it appears that some useful findings may emerge on this issue from careful analysis of this body of literature.

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A philosophical footnote. The problem of low coverage rates is sometimes expressed by medical and technical personnel as: "How to improve compliance." This is a very medical-centered articulation of the problem, which misses the realities of developing countries. In the U.S., the requirement that children must have had all their immunizations before entering school is a legalistic measure that has to do with enforcing compliance—and that has been effective. But in developing countries, especially in rural areas, "compliance" is an inappropriate way of looking at the problem. Neither health nor educational systems can force rural villagers "to comply." The focus must be on acceptability and how to make the services both more comprehendible and acceptable so that parents will desire and seek them out.

## Behavioral Aspects of Child Survival

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## Behavioral Aspects of Child Survival: Preliminary Identification of Issues

#### BIRTH SPACING

The Agency for International Development's Child Survival strategy aims at reducing both infant and maternal mortality in developing nations. Through a coordinated effort to promote interventions such as the use of ORT, immunization against childhood diseases, better nutrition and birth spacing, it is hoped that there will be a significant drop in both infant and maternal mortality rates.

Birth spacing for the specific purpose of reducing infant and maternal mortality (as distinct from family planning with broader objectives) is recognized as an important child survival intervention. So far, however, birth spacing (or efforts to increase intervals between births for child survival purposes) has received little attention from social scientists. It is true that there is an extensive body of literature on family planning topics which focuses on the various behavioral and cultural aspects of reproduction. However, one has to conceptually differentiate between "traditional family planning studies" with emphasis placed on reducing overall levels of fertility, and the concept of birth spacing with its focus on the health impact of birth intervals on infant mortality and morbidity.

There are several assumptions implied in promoting birth spacing in third world countries. The assumptions are identified as follows:

- 1. Longer birth intervals reduce infant mortality;
- 2. Longer birth intervals reduce infant morbidity; and
- 3. Longer birth intervals reduce maternal mortality.

These assumptions are currently being researched by demographers but there are very few qualitative studies on the subject. Conversations with researchers confirmed the fact that there are very few qualitative studies on the subject. However, international agencies are beginning to fund qualitative studies on the topic of birth spacing and its health impact on mothers and children (e.g. the Population Council will start a qualitative study in Bangladesh in November of this year.)

In examining the available literature, one becomes aware of the following:

- 1. Currently, there are very few published qualitative studies that focus on the behavioral aspects of birth spacing and child survival factors. The socio-cultural dynamics of birth spacing have not been fully explored yet.
- 2. There are several demographic studies that examine the relationship between infant mortality and birth intervals. The selected bibliography which accompanies this issues paper includes

some of these demographic studies.

3. The issue of the relationship between birth intervals and infant and maternal mortality is still being debated by demographers. Hence, this paper will only identify basic issues being researched, and raise questions about birth intervals rather than report on qualitative research findings. It should also be noted that the issues identified here are the result of a cursory review of the documents reviewed by the researcher and preliminary interviews conducted with researchers (see contact list).

This paper does not claim to be comprehensive in its coverage of issues. The relationship between breastfeeding and birth spacing will be covered in the breastfeeding section of this report. Also, issues related to contraceptive prevalence and use are not discussed here. Phase II of this project will include a more detailed analysis of research findings.

# I. <u>CULTURAL ACCEPTABILITY OF BIRTH SPACING; TRADITIONAL CONCEPTS</u> OF SPACING

Do individuals accept cross-culturally the idea of long birth intervals as having positive health impact on both mother and infants? More specifically, do people perceive a linkage between infants' chances of survival and long birth intervals? Culturally what is meant by "long birth intervals?" Do males use the term in the same way women do?

Although we do not know of a qualitative study that has specifically explored these questions, yet there are numerous statements that exist in the literature about birth spacing as having a better chance of being accepted as an idea than the notion of limiting the number of children (Stolba, 1986). In Islamic cultures where individuals have difficulty accepting ideas of limiting the number of children, birth spacing seems to be more welcomed.

Therese McGinn's study in Burkina Faso (1987) indicates that men accept birth spacing for economic reasons, while women accept the concept for health reasons. This is an important finding because it means that the grounds on which acceptability is based is possibly different from males to females. Motivational and social marketing campaigns should not overlook these subtle but important differences in the utilization of the term "birth spacing."

In cultures where birth spacing is normatively well-established, like Zimbabwe implementors of the USAID Zimbabwe Child Spacing and Fertility Project apparently had no problem promoting spacing for child survival purposes (Gillespie and Danart, 1987). Also in Bangladesh where birth intervals tend to be long because of breastfeeding practices (Phillips, 1985), project implementors did not experience difficulty explaining the health value of spacing.

#### II. <u>BIRTH SPACING</u>; KNOWLEDGE vs. PRACTICES

Do women learn the values of birth spacing in their cultures? How? From whom? Do women try to maintain long/short intervals between births? How does a health ideology affect spacing behavior in a culture?

In many of the studies that focused on this issue of knowledge vs. practice, the findings point out that individuals might verbally indicate that long intervals are desirable; however, short intervals between births were noted by researchers (Nichter and Nichter, 1987). The World Fertility Survey has demonstrated that the majority of women surveyed often express a desire for either having no more children, or having longer birth intervals than they actually have in reality (Lightbourne and Macdonald, 1982). This incongruity between knowledge and practice has been demonstrated in many family planning studies where women know about contraceptives and desire no more children, but continue to have children.

The discrepancy between expressed attitudes and behavior has been termed the "KAP Gap" by demographics and social scientist. Researchers continue to study the supply side of contraceptives as being an important variable in sustained contraceptive use. The Matlab studies in Bangladesh showed that changes in the quality, intensity and legitimacy of family planning services favorably influenced use (Phillips et at, 1982, 1984, 1985).

# III. THE CULTURAL DYNAMICS OF BIRTH INTERVALS; FERTILITY

Are there cultural reasons for short intervals/long intervals? Do women space their children according to a set pattern, "e.g. short intervals between the first and second child but longer intervals after the birth of the second child? What are the cultural dynamics of birth intervals? What is the cultural value of children? Why do individuals want more children? Why do people change birth intervals? What are some of the patterns of spacing in particular cultures and ethnic groups?

Unfortunately, the current qualitative literature is silent on these important issues. Demographers have discussed birth intervals in terms of duration and their linkage to fertility rates (Gwatkin, 1983). Demographic studies show that the countries known for long birth intervals (e.g. Jordan, Mexico, and Bangladesh) have high fertility rates. However, the cultural questions asked here are very different from the questions demographers have been able to answer. It is hoped that some of the qualitative studies that are presently being conducted will shed light on these questions.

The literature shows that birth intervals might change as a result of seasonal variations (e.g. the Matlab, Bangladesh study) showed variation in coitus associated with temperature changes, work related separation, and nutritional status associated with the harvest season (Phillips et al, 1982). Moreover, Rindfuss and

Morgan suggested that the decrease in the first birth interval in many Southeast Asian cultures might be the result of an increase in the frequency of sexual intercourse in the early part of the marriage (Rindfuss and Morgan, 1983). Cultural pressures about proving one's fertility especially for women might also play an important part in determining the first birth interval.

Hence, one can summarize this part by saying that there are both cultural as well as individual constraints that influence birth intervals. This tremendous diversity is yet to be explained by social scientist, and translated into meaningful policies regarding birth spacing.

# IV. BIRTH SPACING AND MATERNAL HEALTH

Are there perceived cultural values associated with healthier mothers and long birth intervals? Do women see repeated pregnancies and birth as risky to their health?

Demographic studies show that maternal mortality is marginally lowered by fertility reduction of birth spacing (Winikoff and Sullivan, 1985). In North Yemen Republic, Stolba learned in family welfare workshops that males are less likely to accept contraceptives on the grounds of improving maternal health. However, improving childrens' health was a culturally more acceptable reason for using contraceptives to space birth. For women, maternal health factors represented strong reasons for using contraceptives to space birth (Stolba, 1986). Caldwell and Caldwell (1981) in a child spacing study in Nigeria stated that spacing is perceived by rural women to be important for an infant's health, meanwhile urban women viewed spacing as being useful for mothers' health.

# V. COMMUNICATING BIRTH SPACING MESSAGES TO THE PUBLIC

What are the best channels of communication to use for diffusing birth spacing messages? To which target populations? Are media channels always the best ways to diffuse birth-spacing concepts? Are clinical settings or face-to-face encounters effective in changing behavior? What contributions can social marketing make to birth spacing efforts?

Diffusion is an important element in spreading information about birth spacing issues. However, there are often restrictions placed on media channels when it comes to birth spacing programs because of the cultural and political sensitivity of the topic. Countries which have utilized T.V. (e.g., Zimbabwe) have been successful in reaching a large segment of the public. The use of the media confers a sense of legitimacy to spacing efforts.

Focus group discussions to check on the quality and content of family planning or birth spacing programs seem to greatly enhance

the programs success (Knodel et al 1984 and McGinn, 1987). McGinn's pre-survey focus group discussions led to a better understanding of birth spacing and health issues in Burkina Faso.

An anthropological study of cultural functions affecting the acceptability of community based contraceptive distribution in a Mexican project suggested that culturally acceptable personnel and community leaders' support are crucial elements for acceptance of contraceptives. The study concluded that knowledge of cultural factors and perceived community needs can assist in planning programs and predicting their acceptability (Shedlin, 1978).

## VI. MATERNAL EDUCATION AND IMPACT ON CHILD MORTALITY

Does the educational level of mothers influence child mortality? What educational level brings behavior changes? Does education mean literacy or other culturally perceived notions?

An anthropological study conducted in Bangladesh suggested that maternal education is a determinant of child survival as it traverses both social and biological domains. Education raises a woman's age at marriage and it also raises social mobility (Lindenbaum et al, 1985). Lindenbaum recommended that further investigation concerning education and nutrition status, personal hygiene, survival rates and access to health care should be conducted in order to fully understand the significance of maternal education on infant mortality.

# VII. RESIDENCE AND BIRTH INTERVALS

Are rural women more likely than urban women to have closely spaced births? Are short birth intervals more dangerous for rural than for urban women?

Based on an analysis of demographic data of five countries, Mexico, Cameroon, Ghana, Kenya and Indonesia, Deborah Maine and Regina McNamara reported that urban women in four of these five countries had higher proportions of short-interval births than did women living in the countryside (Maine and McNamara, 1985). The same report stated that short birth intervals seem to be more dangerous for rural women than for urban women in general. However, a study by Moustafa et al (1981) stated that in Egypt more rural than urban women believed in birth intervals of less than 24 months.

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# Behavioral Aspects of Child Survival: Preliminary Identification of Issues

#### NUTRITION IMPROVEMENT

### A GENERAL OVERVIEW:

Policy statements by the Agency for International Development on the Child Survival Strategy suggest that a number of interventions are important to consider in the area of nutrition improvement, including those related to:

- breastfeeding
- weaning and introduction of solid foods
- feeding during diarrhea
- growth monitoring
- vitamin A supplementation
- targeted supplementary feeding programs

(See "A.I.D. Child Survival Strategy", 1986)

Since the literature related to behavioral issues in this field is quite massive, four separate preliminary bibliographies have been developed, covering (1) breastfeeding; (2) infant and child feeding, weaning and nutrition; (3) growth monitoring and promotion; and (4) vitamin A supplementation. Documents related exclusively to breastfeeding have been presented separately since the literature on this topic itself is so large. The material on other topics related to infant feeding, weaning and nutrition and the literature on breastfeeding at times overlaps, so some articles in the second bibliography address breastfeeding issues as well. Material related to feeding during diarrheal episodes has been presented in the biblicgraphy on oral rehydration therapy (ORT). Due to time constraints little emphasis has been placed up to this point on identification of the vitamin A related literature. While many evaluations of the effectiveness and even impact of targeted supplementary feeding programs under PL 480 Title II have been produced, often with social scientist participation, it does not appear that there has been much qualitative research conducted on these programs. Therefore during phase one of this project this topic was not emphasized.

Two <u>issues papers</u> have been produced, outlining the preliminary issues identified in the nutrition improvement area. The categories of issues that should be examined concerning breastfeeding and other aspects of infant and child feeding were found to be similar, so one issues paper for these topics was

produced, covering "breastfeeding, weaning and nutrition". A separate issues paper was developed on "growth monitoring and promotion", as this more discrete and focused intervention raised a different set of issues and questions.

A decision must be made concerning the range of interventions that should be examined during phase two, as well as the types of findings that should be emphasized, within the extensive literature on behavioral aspects of nutrition improvement.

# Behavioral Aspects of Child Survival: Preliminary Identification of Issues

## BREASTFEEDING, WEANING AND NUTRITION

#### INTRODUCTION.

Breastfeeding, weaning and the introduction of solid foods have been identified within the Agency for International Development's Child Survival Program as an important area of focus in the general area of nutrition improvement.

The literature related to feeding practices and determinants, as well as to the effectiveness of various intervention strategies, is vast. Much of the research is flawed by methodological problems but some studies have produced significant findings of real value to practitioners.

A preliminary list of some of the key issues and questions raised by these studies, as well as a brief discussion of the types of findings that will be explored in the second phase of this project, are presented below.

# I. BELIEFS AND PRACTICES RELATED TO INFANT AND CHILD FEEDING:

What are the most important beliefs and practices within the local community concerning infant and child feeding, including, for example, those related to issues such as:

- whether to breast or bottle feed or use a mixed feeding approach
- whether to give colostrum
- what conditions indicate that breastfeeding should be discontinued (including practices during illness, pregnancy, etc.)
- how to manage various lactation problems
- what weaning foods should be introduced, when, and how they should be prepared
- what foods various family members should receive
- what should be done concerning feeding when a child has diarrhea, appears to be losing weight, is mildly or severely malnourished, etc.

What are the beliefs and practices of health workers (including traditional and modern health practitioners, workers of various disciplines and levels, etc.) concerning infant and child feeding?

How do various practices affect infant and child health and survival? Which practices should be reinforced and which targeted for change during nutrition intervention programs?

The literature on beliefs and practices concerning infant and child feeding is enormous, ranging from large scale multi-country comparative investigations such as the WHO Collaborative Study Breastfeeding (WHO, 1982) or the Population Council's series of infant feeding studies (Winikoff et al) to much less ambitious efforts focused on one culture or a limited range of practices. (See, for example, the study by Lantham et al (1986) on the pattern of early "triple nipple" feeding in Kenya, or Ojofeitimi's observations related to cultural taboos during lactation in Nigeria (1981))

The preliminary bibliography lists a large number of these studies. During the analysis stage a review will be conducted to identify those investigations yielding findings of most potential value to program personnel in the field. An effort will be made to determine what practices appear to be common in a number of countries and why, as well as which are more culturally specific.

Studies of health worker beliefs and practices are important also, because of the influence health personnel may have on feeding outcome. Recent studies on this topic have produced interesting and sometimes surprizing results. A survey of traditional and modern health professionals in the Philippines (Popkin et al, 1984), for example, found that while traditional midwives had been assumed to be the most supportive of breastfeeding, they were generally less knowledgeable and more negative in influence than the modern practitioners studied. Baseline studies of health worker attitudes and practices (as well as those of the community) can be critical to the later design of appropriate interventions.

# II. OTHER FACTORS AFFECTING INFANT AND CHILD FEEDING PRACTICES, NUTRITION AND CHLD SURVIVAL

What factors affect or are associated with various infant and child feeding practices? How do these various factors or "determinants" interact?

Which factors can most realistically be influenced during nutrition interventions?

Simopoulos and Grave (1984) suggest that factors associated with

 $\sim 60$ 

## infant feeding practice include:

- demographic factors (education level attained, social class, parity, etc.)
- sociocultural-economic factors (social networks, women's employment outside the home, marketing of infant formula, etc.)
- psychological variables
- the influence of health care personnel and hospital practice
- biomedical factors

Environmental factors (such as the affect of seasonal differences on behaviors) may also be important in some circumstances.

Certain studies focus purely on the link between factors such as those above and the feeding practices themselves, while others attempt to determine the effects of various variables on infant and child nutritional status and/or morbidity and mortality. Butz et al (1984), for example, explored the interactive effects of breastfeeding, water and sanitation on child survival during a study in Malaysia. A large number of studies have been completed which explore the interactive relationships between breastfeeding, birth spacing, and child survival. (See Brown, 1982, Houston, 1986, Jain & Bongaarts, 1981, etc.)

Many of the findings related to the "determinants" of infant feeding, nutritional status and child survival emerge from statistical analysis of large scale survey results. The review of the findings of qualitative and behavioral research will not focus heavily on the results of these studies, except where findings have important implications for behavior-related intervention strategies.

There have been many problems in the design of infant feeding research, including serious issues related to size and stratification of samples, self-selection and nonrandomization of subjects, problems of self-reporting, recall, inappropriate heaping of data, etc. (Simopoulos & Grave, 1984) Design problems which may affect the validity of results must be seriously considered as findings are analyzed and presented.



## III. INFANT AND CHILD NUTRITION INTERVENTIONS IN THE COMMUNITY:

What has been learned from qualitative and behavioral research that can be useful in the design of various national, regional or community level nutrition interventions?

What do these studies show concerning the effectiveness of alternative approaches to the design of nutrition interventions such as:

- breastfeeding promotional campaigns
- activities to control infant formula advertising and promotion
- efforts to develop and introduce new weaning foods and/or promote good weaning and feeding practices
- programs focused on nutrition rehabilitation and supplementary feeding, targeted food distribution, etc.

Program personnel have experimental with a wide range of intervention strategies in recent years. In the area of breastfeeding promotion alone, for example, practitioners have experimented with the use of radio, TV, booklets, games, puppetry, dances, printing of slogans on pay checks, fotonovellas. (Jelliffe, 1982) Several studies have focused on alternatives for nutrition rehabilitation including the use of mothercraft centers, etc. (Berggren, 1981, etc.)

A number of exciting efforts by Manoff, AED and others have concentrated on the design of programs related to weaning, breastfeeding, and other child survival interventions using mass media and social marketing techniques, at times coupled with face to face contacts. Project assessments have yielded interesting data concerning the steps in developing mass media campaigns, the types of behavioral and organizational research that should precede message development, what types of messages most successfully influence practice, how content can be targeted selectively to various ethnic, social and economic groups, etc.

Results of these efforts and others will be assessed and the significant findings related to behavioral factors highlighted.

# IV. <u>INFANT AND CHILD NUTRITION INTERVENTIONS IN HEALTH</u> INSTITUTIONS

What are the current policies and procedures in health institutions related to infant and child feeding and how do they affect nutrition and survival?

What types of institutional interventions have been attempted to change policies and procedures found to be detrimental? What alternatives have been tested, for example, concerning:

- breastfeeding promotion in the institutional context
- lactation training for health personnel and education concerning appropriate weaning and supplementary feeding practices
- development of rooming-in arrangements
- control of infant formula distribution, policies related to prelacteal feeds, etc.

How can significant findings from these experiences be used to plan more effective interventions?

Much has been written about the importance of demand feeding, rooming-in, the dangers of prelacteal feeds, etc. but a number of studies have documented that current practice in many settings is far from ideal. Detailed observational studies have yielded some of the most interesting data (Laukaran, 1984). Jelliffe (1982) suggests that changes in practice are needed in a wide range of institutions, including prenatal clinics, maternity wards, pediatric wards, MCH clinics, etc.

Institutional interventions have produced quite impressive results. Staged changes in the San Juan de Dios Hospital in Costa Rica which included introduction of rooming-in, a colostrum feeding program, early mother-infant stimulation, etc., produced significant declines in early neonatal morbidity and mortality, increased duration of breastfeeding after discharge, etc. (Mata et al, 1984) Recent assessments of programs in Indonesia (Soetjiningsih, 1986), the Philippines (Relucia-Clavano, 1981), and elsewhere have produced similar results.

Further examination is needed of the cultural and social factors that should affect intervention design, the effectiveness of various approaches to institutional change, and the relative impact of alternative strategies.

# Behavioral Aspects of Child Survival: Preliminary Bibliography

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# Behavioral Aspects of Child Survival: Preliminary Identification of Issues

## GROWTH MONITORING AND PROMOTION

### INTRODUCTION

Growth monitoring has been targeted by the Agency for International Development's Child Survival Program as an important tool for reducing infant mortality. Growth monitoring is not an intervention per se, like oral rehydration therapy (ORT) or immunization, but, as Yee and Zerfas (1987) point out, "the regular measurement, recording and interpretation of a child's growth change in order to counsel, act and follow up results." They and others suggest that this type of activity be termed growth monitoring and promotion (GMP) because "monitoring alone emphasizes assessment rather than action." (See Hendrata & Rohde, 1987, also.)

Although GMP can offer an effective means of integrating nutrition activities with health actions such as vaccination and ORT, GMP has often been disappointing, especially in large scale projects. Research on selected issues related to individual and organizational behavior can help to illuminate the reasons for many of the problems experienced and assist in developing and testing potential solutions.

A preliminary list of some of these key issues and the questions they involve, as well as a brief discussion of the types of findings that will be explored in the second phase of this project, are presented below.

# I. LOCAL BELIEFS AND PRACTICES CONCERNING INFANT AND CHILD GROWTH:

How do mothers and other caretakers assess the growth of their children? What do they normally do to help their children grow and what do they do when their children are not growing well?

How can this knowledge of how mothers view growth and what they do in times of progress and periods of crisis be used to develop more effective GMP programs?

As the design of a GMP program gets underway, it is useful to explore cultural beliefs and practices concerning growth so that the positive or helpful beliefs and behaviors can be encouraged and harmful or unproductive ones discouraged. Recent studies

have produced interesting findings in this area. A study in Ghana, for example, suggests that mothers have many ways of judging if their children are growing well, including signs such as activity level, general appearance, progress toward developmental milestones; symptoms such as appetite and mood changes; and various traditional "anthropometric" measures such as the fit of bead strings and clothes, etc. (Lovel et al, 1984) The researchers suggest that education in GMP programs should acknowledge and link in with what people already do, if possible integrating the use of both traditional and modern approaches.

Other investigators indicate that mothers and community members (as well as health professionals) may tend to focus too heavily on the importance of nutritional status, rather than growth. "Mothers need to understand and appreciate the importance of gaining weight, recognizing that children come in various sizes but that all healthy children must grow." (Hendrata & Rohde, 1987)

An understanding of traditional practices related to breastfeeding, weaning and feeding, including those related to diarrheal episodes, are, of course, important when designing the education and intervention strategies that should follow growth assessment. Studies on these topics have been quite numerous. The review of findings in these areas will explore which beliefs and practices appear to be culturally specific and which seem to be more universal in nature.

# II. <u>HEALTH WORKER BELIEFS AND PRACTICES AFFECTING GMP PROGRAM</u> <u>DEVELOPMENT:</u>

What health worker beliefs and practices may hinder (or assist with) development of an effective GMP program? How can worker effectiveness be increased?

A preliminary review of the literature indicates that there are many problems in current GMP programs, often related to health workers' knowledge and focus of activity. A review of a program in India, for example, showed workers were generally concerned only with the degree of malnutrition rather than the shape of the growth curve. Often dots were not connected and low gain was not seen as cause for alarm. Follow-up action was considered by the authors as the most important but, at present, weakest link. (Gopalan & Chatterjee, 1985)

Certain investigators have suggested that the orientation toward health and education most common in the health professions is not conductive to development of effective programs. For example, health workers, including nutritionists, tend to focus on curative aspects of care, while GMP programs demand a greater emphasis on promotion of good nutritional health. Most workers,

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in addition, "are not well trained in an interactive communication approach", tending to use the lecture method they were subjected to during training, while the key focus in GMP must be on "listening, not telling". (Hendrata & Rohde, 1987)

The review of findings will explore problems such as those above, as well as behavioral and organizational strategies for overcoming them and their effectiveness.

# III. STRATEGIES FOR PROMOTING EFFECTIVE INDIVIDUAL AND COMMUNITY PARTICIPATION:

What roles might most effectively be played by mothers, other family members, community leaders, traditional healers, etc., in GMP programs?

How can GMP programs be designed to better encourage community participation in identifying and monitoring children at risk, as well as in planning, implementing and evaluating action strategies?

What approaches for organizing GMP can capitalize most fully on community structure and resources?

Recent analyses suggest that most GM activities are conducted by health workers either in fixed facilities or during occational community visits, but that it is only when "the community takes the central role in program initiatives (that) growth monitoring becomes a catalyst for action." When self-help action is stimulated, a wide range of programs not only "in supplementary feeding, but to improve water supplies, animal husbandry,... child care creches and other action aimed at restoring growth..." develop. (Hendrata & Rohde, 1987; State of the World's Children, UNICEF, 1987)

Studies have explored methods for increasing the participation of the most disadvantaged in the community (Vibro, 1985), techniques for presenting summary growth results in ways that best encourage community action (Zerfas, NCIH Conference, 1987), strategies that capitalize on the use of community volunteers and the organization of GMP activities in coordination with traditional village meetings (Teller in Child Survival Action News, 1987), etc. Investigations such as these, as well as the recommendations that stem from them, will be explored in detail.

# IV. DESIGN OF GM TECHNOLOGY THAT TAKES ACCOUNT OF BEHAVIORAL FINDINGS:

How can GM technology be designed to be more easily used, accurate and effective, considering cultural and behavioral

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## findings? For example:

- how can weighing techniques be improved?
- how can growth charts be more effectively designed?
- what other alternatives for measuring growth should be considered and how well do they work?

A preliminary survey of the literature suggests that there are many problems with GM technology. For example, weighing scales are seldom standardized and are frequently unsuitable, there is a high percentage of errors in charting weights, and charts are often unsuitable for semi-literates (Gopalan & Chatterjee, 1985) Age misstatement may limit the utility of age-dependent anthropometric indicators of nutritional status (Ediragi, 1987). A number of programs have experimented with creative solutions to problems they have pinpointed. PEM-PAAMI in Ecuador, for example, has experimented with changing growth chart colors to reflect feedback from mothers concerning what colors they associated with wellness and ill health (Mothers and Children 4:3, 1985), a bubble chart has been developed to make plotting of 100 gram increments easier (Griffiths, 1987), etc. Problems and potential solutions such as these will be explored in detail.

## V. DESIGN OF APPROPRIATE HEALTH EDUCATION STRATEGIES:

How can health education activities be better designed, keeping in mind local beliefs and practices related to growth, as well as current knowledge related to communication and behavioral change?

What health education activities should be designed for mothers, fathers, other caretakers, healers, community leaders, etc.?

A recent review of existing programs indicates that only a few have capitalized on the advantages of linking growth monitoring and nutrition education. Griffiths (1987) has analyzed programs in Haiti, Dominican Republic, Equador and India and suggested essential steps and effective strategies for combining the two. Several of the programs have experimented with the use of inexpensive counseling cards that assist the workers in effectively targeting adaptable, simple messages.

Much work has been preformed recently in the area of "social marketing" by groups such as Manoff, AED, etc., experimenting with community involvement in message design and testing, use of focus groups and panels, etc. to design messages that have increased effectiveness because they take account of caretakers' fears, doubts and aspirations. (Griffiths, 1987)

Certain groups are experimenting with more creative targeting of fathers and community members in health education efforts, as well as their more effective involvement in other GMP activities.

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(Danforth et al, NCIH Conference, 1987).

Recent strategies will be presented and their results evaluated.

## VI. BUILDING EFFECTIVE AND SUSTAINABLE ACTION PROGRAMS:

What can be done to strengthen the link between growth monitoring and implementation of effective programs to sustain and improve growth? What individual and organizational practices or behaviors should be taken into account?

How can GMP best be linked and/or integrated with other chi'd survival and PHC activities (with immunization, ORT, breastfeeding, etc.)?

How can effective programs be sustained when donors pull out, or when small scale operations become large?

As mentioned earlier, the link with action and follow-up is often the weakest in GMP programs. A number of groups have explored and evaluated techniques for strengthening these components of their programs.

Many authors have suggested that GMP can provide an effective framework for an entire range of child survival interventions, but others have argued that breastfeeding or immunization, for example, may serve as the most appropriate point of entry. The assets and drawbacks of various combinations and points of entry need further exploration.

Investigators have also found that while small projects oriented toward results and managed with clearly defined objectives in mind have been successful in improving growth and survival, "going to scale" often causes new problems. For example, Pyle (1984) suggests that large programs have tended to spend "an inordinate amount of time considering mechanics" and are often obsessed with coverage figures rather than effective results. He and others describe interesting strategies for improving and sustaining action that will be explored in the second phase of this project.

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### OTHER CHILD SURVIVAL TOPICS

In addition to issues related directly to one of the four major interventions, the following topics (shown in bold face) emerge, explicitly or implicitly, from the child survival literature. Those listed first are other diseases or intervention areas; they are followed by topics that cut across all child survival activities. Both the topics and the materials included under each heading are illustrative rather than comprehensive.

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