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**SOCIAL MARKETING STRATEGY
DEVELOPMENT FOR THE
HEALTH SECTOR FINANCING PROJECT**

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Report No. 36

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LIST OF ACRONYMS

ARI	Acute Respiratory Infection
CCS	Center for Child Survival
DUS	Drug Use Study
FICS	Focused Interventions for Child Survival
HSFP	Health Sector Financing Project
IA	Integrated Analysis
KAP	Knowledge, Attitudes and Practice
MIS	Management Information System
MOH	Ministry of Health
NCDDP	National Control of Diarrheal Disease Program
NJJ	"Noya Jeevan Jal" (New Jeevan Jal)
ORT	Oral Rehydration Therapy
PIO/P	Project Implementation Office for Pharmaceuticals
SRI	Survey Research Indonesia

SECTION 1. BACKGROUND

The Health Sector Financing Project Implementation Office for Pharmaceuticals (PIO/P) will be entering into a contract with the University of Indonesia Center for Child Survival (CCS) to conduct quantitative and qualitative survey research to investigate how drugs are managed, prescribed, and dispensed by public sector health care providers. This KAP study will focus on provider and patient behavior concerning the diagnosis and treatment of diarrhea and ARI.

In addition, the PIO/P is planning to contract with Survey Research Indonesia (SRI) to conduct, as part of their ongoing OMNIBUS Survey, community research on the identification of illness, resulting behaviors during episodes of illness, and related use of drugs. The SRI community KAP survey will be quantitative using a sample of 2,000 urban community mothers with children under five years of age in Jakarta, Surabaya, Medan, and Bandung.

Both of these research studies are intended to build upon previous work completed by the PIO/P, such as the Drug Use Study (DUS) and the Integrated Analysis (IA) without duplicating previous efforts.

At the time of this consultant's field visit, decisions on intervention strategies had not been finalized. PIO/P is interested in the application of social marketing techniques within the pilot intervention strategies. Secondly, there is interest in the use of social marketing techniques for encouraging provider and public acceptance of generic drugs. Although discussions on social marketing have taken place within PIO/P in the past, specific social marketing plans have not been formulated. Social marketing plans will be drafted after the completion of the provider and community KAP research and further PIO/P decision-making on intervention strategies.

The scope of work for this initial visit was to:

1. Review results from the DUS and IA, especially in reference to recommendations for the KAP studies.
2. Review the current KAP research plan for applicability to necessary marketing research and the design of a social marketing plan in support of intervention strategies.
3. Assist in the design of survey instruments and research protocols for the quantitative KAP research on the community to be conducted by SRI.
4. Assist in the design of survey instruments and research protocols for the provider KAP to be conducted by CCS.
5. Assist in developing necessary research and plans for designing, implementing, and evaluating future social marketing campaigns concerning the use of drugs by providers and patients.

During this assignment, the consultant worked closely with the pharmaceuticals staff, long and short-term consultants currently assigned to PIO/P, CCS, and SRI. Appended to this document is a list of persons contacted (Appendix A) and a list of documents reviewed (Appendix B). The consultant would like to thank the PIO/P and USAID for the opportunity to work with this important program. In addition, the consultant would like to thank Dr. Chris Costello of CCS for her assistance in reviewing previous ORT and ARI reports.

SECTION 2.
**CONTEXT OF SOCIAL MARKETING STRATEGY DEVELOPMENT: PIO/P OVERALL
STRATEGY AND FINDINGS OF THE DRUG USE STUDY (DUS) AND THE
INTEGRATED ANALYSIS STUDY (IA)**

The Health Sector Financing Project (HSFP) was established in 1988 and runs until 1995. HSFP's overall purpose is the reduction of public financing of curative health care through capturing private funds (e.g, health insurance, cost-recovery strategies, and improved management efficiencies) and reallocation of public spending toward child survival programs with a target of 35 percent increase in real terms compared to 1987. In support of this overall project purpose, the PIO/P has conducted a series of quantitative and qualitative studies of public sector pharmaceutical budgeting, planning, ordering, distributing, prescribing and use. The results of these studies will be used by PIO/P to design, test, and implement intervention strategies with the overall objective of increasing the availability of pharmaceuticals that impact directly on child survival. A wide range of interventions is possible. Presently under consideration are a variety of policy changes, training of physicians and paramedics in rational prescribing practices, improvements in management and operational efficiencies, management information system (MIS) implementation, and social marketing applications. An excellent review of PIO/P methods and progress is provided in the consultant report by Bert Hirschorn (Report No. 35, November 1, 1990).

At the time of this consultant's visit, PIO/P intervention strategies were under consideration but detailed plans were not formulated. In preparation for intervention strategy development, over the past 18 months a significant body of research into public sector pharmaceuticals has been compiled by the PIO/P and provided to the Ministry of Health and the Health Sector Financing Project. In brief, these were:

- **The Drug Management Study** which researched the processes of budgeting, planning, and distributing pharmaceuticals;
- **The Drug Manpower Study** which researched personnel manpower at various levels involved in the processes of budgeting, planning, and distributing pharmaceuticals.
- **The Drug Use Study (DUS)** which researched actual clinic records in order to analyze prescribing practices.
- **The Secondary Analysis Study** which reviewed government policies, regulations, and procedures in regards to pharmaceuticals.
- **The Integrated Analysis (IA)** which placed the results of this body of research into a concise, comprehensive matrix.

At present, the PIO/P is planning to conduct Knowledge, Attitudes and Practice (KAP) studies with providers and the community in order to gather more in-depth and detailed information about provider-patient interactions, treatment decision-making, and demand for pharmaceuticals. Furthermore, the KAP studies will be designed to gather additional research concerning the major findings of the DUS and other relevant studies. Finally, the PIO/P would like to coordinate KAP research questions with necessary social marketing research questions so as to expedite the process of intervention strategy development and implementation. In this context, the consultant reviewed the major findings of the DUS and IA in order to determine which social marketing questions were answered by the previous PIO/P studies.

MAJOR FINDINGS FROM THE DUS AND IA FOR CHILD SURVIVAL INTERVENTION AND SOCIAL MARKETING STRATEGY DEVELOPMENT

The DUS was a retrospective study of prescription practices in state health centers (Puskesmas) and District II (Kabupaten) hospitals in six Indonesia provinces between April 1987 to March 1988. The districts and provinces chosen were: Tapanuli in North Sumatra, Kabupaten Pasaman in West Sumatra, Kotamadya Gresik and Kabupaten Pasuaran in East Java, Kabupaten Lombok Barat in West Nusa Tenggara, Kotamadya Balikpapan and Kabupaten Bulongan in East Kalimantan, Kotamadya Ujung Pandang and Kabupaten Tana Toraja in South Sulawesi. In all, 18 Puskesmas and Puskesmas pembantu and 11 hospitals were sampled. Of the hospitals, five were Type D; three were Type C; and three were Type B. The authors of the DUS state that the sample is not representative of Indonesia but was chosen to cover a range of geographical and institutional environments in the country. In addition to the quantitative retrospective study, the DUS included a total of six focus discussion groups, of which two were conducted in the following locations: Gresik, Kotamadya Balikpapan, and Kabupaten Tana Toraja. In each location, one focus group discussion was conducted with paramedics and one with physicians.

Key findings of interest for child survival intervention and social marketing strategy development were:

Of all visits to the Puskesmas and Puskesmas Pembantu, 80 percent were by adults and 20 percent were children under five years of age. Since ARI and diarrhea constituted nearly 60 percent of the cases and 60 percent of the cost of drugs, the children under five appear under-represented. However, since the DUS was a retrospective clinic record study, we do not know whether this is attributed to fewer than expected children under five receiving treatment at the clinics or problems in clinic data coding and recordkeeping or both. The planned provider and community KAP studies should help clarify this issue which is very important for communications plan development.

- Paramedics are an important target group for intervention program development since 69 percent of all patients in the Puskesmas and 99 percent of all patients in the Puskesmas pembantu are treated by paramedics. The fact that deviations from the MOH standard treatment protocol for ORT and ARI are similar in the clinics is not surprising considering that paramedics do not have standardized written manuals for diagnostics and treatment. Also, paramedic training in ORT and ARI may be inadequate. As noted in the DUS, an average of nearly four drugs are prescribed per encounter, drugs are prescribed for a three-day course only, and nearly half of the patients receive injections which, in the majority of clinic cases, conflicts with standard treatment protocols.
- For children under five years of age, 80 percent received at least one antibiotic and 25 percent received two antibiotics, usually an injection and an oral. Seventy-five percent of the ARI and diarrhea cases receive one or more antibiotics. Hirschhorn's report estimates that antibiotics could have been reasonably prescribed in perhaps 10 percent of the cases.
- Actual ORS dispensing was 46 percent for the children under five years and 36 percent for children five years of age and older. (Note: the consultant assumes the DUS was measuring diarrheal disease cases in these estimates, though this was not stated) However, MOH standard protocols recommend 100 percent ORS for acute diarrhea. Clearly, less ORS is being dispensed than one would expect if standard protocols were followed. However, the DUS does not ascertain whether this is because of: 1) an inadequate supply of ORS packets at the clinic level, 2) lack of demand for ORS by paramedics and/or physicians resulting in lower dispensing, 3) rejection of ORS by mothers because of low demand and/or low awareness resulting in lower dispensing, or 4) some combination of all or a few of these factors. The objectives and structure of social marketing plans will differ depending on which factor or combination of factors predominates. The KAP study on providers and patients needs to research this issue.
- Although the DUS summarizes the opinions expressed in six focus groups, the consultant believes that the group discussions conducted were too few in number for the complexity of issues under consideration and had some significant methodological problems (i.e., moderator's guide was too broad, discussion domination by higher ranked participants; interview format rather than true focus discussion format used, etc.). As such, some of the focus group participants' opinions expressed and summarized in the DUS should not be accepted

as reliable data which can be generalized for strategic decision-making, nor should focus group data ever be used for this purpose. Specifically, although several focus group participants expressed thoughts that patients expect (or providers think they expect) several drugs and injections, we really do not know, in fact, whether patients demand oral or injectable antibiotics from physicians. We also do not know, in fact, whether antibiotics are dispensed by providers to please patients and help meet pushesmas service volume targets.

- From a social marketing perspective, generalizing these focus group participant's opinions and accepting them as fact could lead us down many expensive, conceptual blind alleys (i.e., Do we really need to develop de-marketing campaigns on antibiotics directed to the public while pharmaceutical companies continue to actively market the use of antibiotics to physicians? Do paramedics and physicians really need communications/education campaigns on techniques for dealing with patient demands for pharmaceuticals?) The consultant cannot determine the answers to these questions from the DUS focus group research conducted but advises caution in jumping to conclusions from the very limited DUS research on these issues. The observational component of the KAP study on providers and patients should help research these issues.
- The major source of drug information available to physicians is provided by drug company representatives. Extremely limited drug information is provided to paramedics on a continuing education basis. Without an adequate social marketing budget, there will be quite limited communications campaigns targeted to physicians and paramedics. Very limited or short-term social marketing communication campaigns are likely to be ineffective given competing, long-term, extensive pharmaceutical company campaigns. An adequate budget for the research, design, implementation, and support of communications campaigns must be an essential component in any PIO/P intervention strategy targeting providers.

SECTION 3.
**BENEFITS OF A SOCIAL MARKETING APPROACH: INTERVENTION PROGRAM
DEVELOPMENT AND GENERIC DRUG ACCEPTANCE**

During this visit, the consultant was asked by PIO/P to identify the benefits of a social marketing approach in terms of two issues:

1. Pilot Intervention Program Development and Implementation, and;
2. Generic Drug Acceptance by Providers.

A synopsis of these benefits follows.

INTERVENTION PROGRAM DEVELOPMENT

By definition, social marketing is:

An approach to societal problems involving the use of innovative and traditional market planning, market strategy, marketing analysis, and marketing management techniques to enhance the individual's and society's well-being.¹

In terms of the intervention program development by PIO/P, the social marketing approach will offer the following benefits:

- Benefits through adopting a marketing and consumer orientation from the very outset of the intervention design process. By a marketing orientation, the consultant means that considerable effort is devoted to the design of intervention programs that will be culturally and conceptually acceptable to providers of clinical care (physicians and paramedics), recipients of primary care (the public and especially mothers of children under five for child survival efforts), and policy makers (MOH officials). In addition, a marketing orientation assumes that time and effort will be allocated to stimulating public demand for and acceptance of the intervention programs through well-organized and researched communications campaigns.

A marketing orientation can be directly contrasted to a production orientation which is far more common and often unsuccessful in public health interventions. A production orientation focuses on the clinical mechanics of producing and delivering quality services coupled with a health education program. A marketing orientation is also interested in production-oriented aspects but considers to the consumers' point of views (i.e., providers, patients, and policy-makers) in designing the intervention program. As such, through a marketing orientation, the intervention program is designed to deliver clinically appropriate, quality services that maximize public and provider acceptance and minimize public and provider opposition.

In terms of effective child survival intervention program development, the consultant has experience with the Egypt National Control of Diarrheal Disease Program (NCDDP) and the Nepal Jumla Acute Respiratory Infection (ARI) Program which took marketing orientations from the outset. Taking a social marketing approach benefitted these programs through strengthening management control, improving program evaluation and patient-provider satisfaction research, stimulating public demand for appropriate treatment regimens, and minimizing opposition as inappropriate treatment regimens were removed.

¹ Wasek, G.K. "The Social Marketing Approach: Concepts and Implications for International Public Health." In R. Cash, G. Keusch, and J. Lamstein (Eds.), *Child Health and Survival: The UNICEF GOBI-FFF Program*, Croom-Helm, London, 1987, pp. 158-172.

The PIO/P leadership should be complimented for considering a social marketing approach even before intervention strategies have been designed. Social marketing techniques are most powerful when incorporated in the intervention program design process. Social marketing techniques are most ineffective when applied in communication campaigns after intervention programs have been designed, as happens in a production orientation.

- Benefits through more cost-effective communication campaign development. Often the insights gained in conducting social marketing research prove essential in designing and implementing communication campaigns. This marketing research is conducted in order to answer key questions such as:
 - What are the preferred delivery channels and communication methods most effective in maximizing the public's awareness of and receptivity to child survival messages?
 - Who should deliver these messages for maximum impact?
 - What media should be used to reach providers and mothers especially considering rural/urban populations and lower income groups?
 - How many messages should be delivered within a specific time period?
 - How should these messages be timed so as to coincide with local availability of new intervention programs and provider/public training (for example, with ORT)?
- Benefits through improved management of intervention program implementation and evaluation. In an effective social marketing program, a series of **Test-Refine-Retest-Refine** cycles are used for program development, marketing plan development, and communications strategy development. This approach will give the PIO/P the opportunity to make programmatic changes through early problem identification, instead of letting problems fester while waiting for an overall, longer-term program evaluation. It may be interesting for the PIO/P to note that in private sector marketing, early problem identification and rapid program changes are often critical, even with very successful programs where there is high public demand.

In sum, the PIO/P has the opportunity to benefit from the social marketing techniques developed and utilized in other effective child survival intervention programs. In this consultant's opinion, the key question is not whether to accept a social marketing approach but how to best integrate a social marketing approach within PIO/P activities and budget. PIO/P will benefit from adopting a marketing orientation from the outset of the intervention development process and allocating a sufficient budget for social marketing research and communication campaign activities. Without a marketing orientation, the risk of child survival intervention program failure is high, especially in this case given the complexity of the provider-patient relationship, strong physician opinions which affect paramedic performance, and the need for public acceptance of standard protocols for ARI and ORT which conflict with existing practices and common beliefs about "appropriate" treatments.

GENERIC DRUG ACCEPTANCE BY PROVIDERS AND THE PUBLIC

During this visit, the consultant primarily was involved in considering social marketing aspects of intervention program development and did not have time to fully assess the present situation regarding generic drug acceptance. However, the generic drug issues can be addressed more fully in a followup visit with the PIO/P.

What is clear is that the MOH would like to increase the acceptance of generic drugs by providers and the public. The bioavailability studies commissioned by the PIO/P are a step in the right direction. However, before social marketing techniques can be applied to this problem, some additional questions will need to be answered by survey research with paramedics and physicians. These questions are:

- What is the availability of generic drugs at the level of primary care clinics, as well as hospitals? If supply is a problem, or an imagined problem, acceptance will be negatively affected.
- What is the actual level of acceptability of generic drugs by providers? In terms of awareness and opinions, what percentage of providers are aware that the MOH is encouraging the use of generics and what percentage of providers actually and regularly dispense generics? When do providers dispense generics, and when do they dispense branded drugs?
- What is the image of generics by providers vs patients? Do they feel that the generic drug quality is poor or unacceptable? In addition to the bioavailability studies, how can generic image be improved (e.g., MOH packaging, quality assurance programs)?
- What incentives, if any, can be created to encourage the use of generics by providers? Can some type of capitation plan at the district level be explored to encourage cost-savings and consequently, increase generic drug acceptance?

In sum, before marketing plans can be developed for generic drug issues, the knowledge, attitudes, and practices of providers (and possibly the public) will need to be determined in a quantitative KAP study along with some carefully conducted focus group research. Owing to the limited nature of intended KAP studies to be conducted by SRI and CCS, it may not be possible to link all research questions to these two studies. Although such a possibility should be discussed with CCS, it would probably be better to conduct generic drug acceptance research through separate studies.

After a generic drug acceptance KAP study is designed and conducted, the consultant can foresee the need for specific social marketing techniques and communication campaigns directed to paramedics, physicians, and the public with the objectives of:

1. Creating awareness of the results of the bioavailability studies;
2. creating awareness of the overall public health cost-savings to using generic drugs;
3. creating personal incentives for providers to dispense generic drugs perhaps through some type of capitation program and/or peer review system, and;
4. educating providers and the public in general about generic drugs and quality assurance mechanisms.

In addition, there will probably be a need to create personal incentives for patients in accepting generic drugs. Financial incentives are often powerful and can include charging drug fees at the primary clinic for branded drugs but not generic drugs. Such pilot cost-recovery programs could incorporate other MOH objectives, such as reducing multiple drug requests. For example, patients could be charged fees only for additional drugs prescribed but not for the first drug prescribed according to standard protocols.

In sum, social marketing has the potential to positively affect the acceptance of generic drugs by providers and the public. However, social marketing will only be effective if:

1. The quality of generic drugs can be documented and assured to providers;
2. adequate budgets can be identified for social marketing communication campaigns over a long-term rather than a one-time basis, and;
3. personal incentives can be identified for both providers and the public in accepting generic drugs.

1

SECTION 4. PRESENT KAP RESEARCH PLANS

During this visit, the consultant reviewed draft "Terms of Reference" documents for a KAP study on providers and patients to be conducted by CCS and a KAP study with the community, limited to 11 questions and OMNIBUS Survey protocols, to be conducted by SRI. In addition, CCS and SRI were visited and discussions were held on research plans. Both organizations are looking for guidance from the PIO/P before finalizing research plans and proceeding with data collection. CCS had produced draft observational instruments which the consultant reviewed for recording provider-patient interactions and dispenser-patient interactions. SRI stated that they are able to incorporate questions into scheduled OMNIBUS Surveys within a two-week period.

The existing, drafted objectives for these two KAP studies were reviewed by the consultant who feels that they are very broad and need more focus to be useful for social marketing. Since timing for intervention strategy development and implementation is quite short (approximately 18 months), it is essential for both studies to provide useful management data which will feed directly into the intervention strategy development process. Given the budget and methodological limitations of both the CCS and SRI contracts, objectives must be streamlined.

Another consideration is that at a minimum, the KAP studies will need to provide a baseline, quantitative measurement of various aspects of the Consumer Behavior Change Cycle (see Figure 1) including aspects of **AWARENESS** (of diarrheal disease, ARI, and proper treatment) **TRIAL** (initial trial of ORS or ARI standard treatment protocols)—**SATISFACTION** (with standard treatment protocols)—and **BEHAVIORAL RETENTION** (or continued usage of appropriate ORS and ARI treatment protocols). This baseline assessment is critical for social marketing plan development as well as overall PIO/P program evaluation and decision-making.

PROPOSED KAP STUDIES OBJECTIVES

With this in mind, the consultant proposes the following focused objectives for the KAP with consumers by SRI and the KAP on providers and patients by CCS.

1. **Providing information from providers (paramedics and physicians) and the community which will facilitate the formulation of implementation strategies for field testing.** Primarily, research should identify the incentives and disincentives for change from the opinions and perspectives of providers and patients. For example: Do providers believe that home-use ORS is effective? Do patients have experience with the ORS product and is the outcome satisfactory or unsatisfactory? Do providers correctly or incorrectly use diagnostic procedures in making a determination of diarrheal disease or ARI? Are patients aware or unaware of the warning signs of dehydration or severe ARI? What factors influence providers to dispense or not dispense ORS? Are providers aware or not aware of standard treatment protocols for diarrheal disease and ARI? Do providers educate patients on the proper mixing and admitting of home-use ORS?
2. **Collecting reliable and valid, quantifiable information on the Consumer Behavior Change Cycle (Figure 1) as part of an overall pre-post evaluation as well as for ongoing market tracking, an important component of a social marketing plan.** Specifically, survey measurement is needed of **AWARENESS** (of diarrheal symptoms, ORS product, ARI symptoms, etc.)—**TRIAL** (of ORS products and standard diagnostic and treatment protocols)—**SATISFACTION LEVEL** (in using standard diagnostic and treatment protocols for diarrheal disease and ARI)—and **BEHAVIORAL RETENTION** (continued usage of standard diagnostic and treatment protocols)
3. **Completing detailed observational descriptions of the provider-patient interaction at the primary clinic including whether any diagnostic procedures were followed, and if so, what type.** What diagnosis was made, what drugs were prescribed, and why, in the opinions of providers, were standard diagnostic and/or treatment protocols not followed? In addition, providers should be interviewed for notation of any essential drug stock-outs at the time of the observations.

Figure 1

MARKET TRACKING MODEL FOR NEW PRODUCTS OR SERVICES

IMPACTING FACTORS

- Media Advertising
- Promotional Events
- Store Displays
- Direct Referrals
- Logos, Attractive Packaging, Slogans, Jingles
- Word of Mouth
- Others

- Discounts
- Special Offers
- Free Trials
- Direct Referrals
- Stimulating "Perceived Need"
- Availability
- Heightened Demand (Epidemics, Seasonality, etc.)
- Word of Mouth
- Others

- Product Features
- Product Quality
- Product Meets Consumer Expectations
- Convenience
- Instructions Clear
- Instructions Followed
- Level of Follow-On Support
- Others

- Availability
- Brand Loyalty
- Stimulating "Perceived Need"
- Competition
- Media Advertising
- Promotional Events
- User Groups
- Product Differentiation
- Product Consistency
- Discounts
- Level of Follow-on Support
- Product Improvements
- Direct Referrals

DESIRED CONSUMER RESPONSE

PRODUCT AWARENESS

PRODUCT TRIAL

SATISFACTION

RETENTION
(With Longer-Term Benefit)



4. **Conducting concept tests using draft, proposed intervention strategies and interviewing key people involved in the actual implementation including patients, providers and policy makers. Advantages/disadvantages of each intervention option and elements from the point of view of these key people should be noted. Incentives/disincentives for implementation should also be determined.**

Given the limitations of methodology and budget with the existing KAP survey contracts with CCS and SRI, the consultant is uncertain about how many of these objectives can be accomplished within the present terms of reference. Discussions with CCS and SRI of this report's conclusions/recommendations will need to take place. It may be necessary for PIO/P to contract for additional studies in order to meet the informational needs of the PIO/P evaluation plan and the social marketing plan.

Proposed marketing objectives and areas for the KAP studies are presented in Appendix E. Examples of two KAP survey instruments on diarrheal disease and ORS are presented in Appendix F.

SECTION 5.
MANAGEMENT PLAN FOR SOCIAL MARKETING ASPECTS
OF CHILD SURVIVAL INTERVENTIONS

NEW TREATMENT AND DIAGNOSTIC TECHNOLOGIES FOR ORT AND ARI.

The Integrated Analysis suggests a general scheme for interventions which includes:

- Training of managers for effective drug management;
- Training of managers in budgeting and costing;
- Training of providers (paramedics and physicians) in diagnosis procedures and prescriptions;
- Management Information System (MIS) implementation for planning and record keeping;
- Providing standard treatment protocols to paramedics;
- Providing scientific data on drug therapy;
- Establishing regional supervisory systems;
- Social marketing for creating awareness of effective drug use.

Interventions will take place in two provinces (West Sumatra and East Java are being discussed) across perhaps four districts and 120-240 Puskesmas. Interventions at the primary care level will focus on key child survival issues of diarrheal disease and acute respiratory infection. At the time of this report, specific decisions on geographic areas and intervention strategies have not been made, and discussions are continuing.

Given previous experience with similar intervention efforts in other countries, the consultant recommends that PIO/P consider designing new diagnostic and treatment packages that can be used to replace the undesirable prescribing practices as indicated in the DUS. From a social marketing perspective, it is much easier to build awareness and acceptance of new technologies which replace old (undesirable) behaviors rather than attempting to remove old (undesirable) behaviors alone. For example, in order to increase acceptance of ORS and maximize proper usage, an ORS kit can be designed to assist in proper home use. Such a kit could consist of a mixing cup, spoon, ORS packet (the present product or a new packet size), and visual instructions with all elements heat-sealed in a clear plastic package. This type of kit may be a more desirable technology for encouraging acceptance and proper usage by both providers and patients. Of course, the advantages of such an approach need to be determined in the context of previous ORS efforts in Indonesia as well as through market research conducted with ORS kit prototypes. However, such an approach has been very beneficial in Egypt; test market results have been very favorable in Nepal.

Another example are ARI diagnostic timers such as those used in the Nepal Jumla ARI project and those currently under further development by the WHO and UNICEF. These simple timers are used by paramedics and village health workers to determine the respiratory rate of a child suffering from respiratory distress. Depending on the rate, a simple treatment decision pathway is followed by the paramedic to indicate whether or not antibiotic treatment is appropriate. This new technology often appeals to both providers and patients, since results are visible and easily determined. Providing this new ARI diagnostic technology may greatly assist PIO/P in gaining acceptance for standard treatment protocols while minimizing resistance to reduced antibiotic prescribing. Appendix C contains a brief description on the Nepal project and diagnostic/treatment diagrams for health workers.

MANAGEMENT PLAN FOR THE SOCIAL MARKETING PROCESS OF NEW PRODUCT OR SERVICE DEVELOPMENT

The sequence of steps necessary in the social marketing process for new technology development is presented in Figure 2. The first step in the process is **Intervention Identification**, or focus on the intervention areas of most importance to PIO/P. The DUS and IA were very helpful in this regard with child survival interventions of ARI and diarrheal disease control identified by the PIO/P.

Step 2 in the process is **Intervention Design** which is a current activity of the PIO/P. In this phase, consumer (physicians, paramedics, and the community) research is conducted in order to make decisions on necessary technology, overall intervention strategy, marketing mix (product/service, place of distribution, promotional requirements, and pricing, if any), and forecasting outcomes. The KAP studies which will be conducted should have as one of their primary objectives the completion of this type of consumer research.

Step 3 is **Concept Testing**. Taking a best, and often rough, guess of an intervention concept, the concept is tested through focus groups or structured interviews with policy makers, physicians, paramedics, and the community. For example, an ORS kit concept is tested before any production takes place allowing time for refinement and strategy assessment. Upon completion of the concept testing phase, a draft marketing plan is generated. The marketing plan is an overall management plan guiding marketing, production, implementation, communications, and marketing evaluation activities. Because the PIO/P benefits from a wealth of previously conducted research, it is hoped that some proposed intervention strategies can be quickly drafted so that some concept testing questions can be added to the CCS KAP study of providers and patients. This will help accelerate the development of new technology for interventions. If this is impossible, an additional concept test study will need to be conducted in the future before proceeding with Step 4.

Step 4 involves two sets of activities in parallel, **Communications Development and Product/Program Formation**. Communications Development involves a host of activities in selecting appropriate media channels, messages, timing, and communications material production in support of an overall marketing plan. Product/Program Formation involves selecting a final intervention strategy and finalized product/technology for diagnostics or treatment delivery (i.e. Timers for ARI interventions, ORS kit for diarrheal disease interventions). Step 4 ends with the production of communication materials and products.

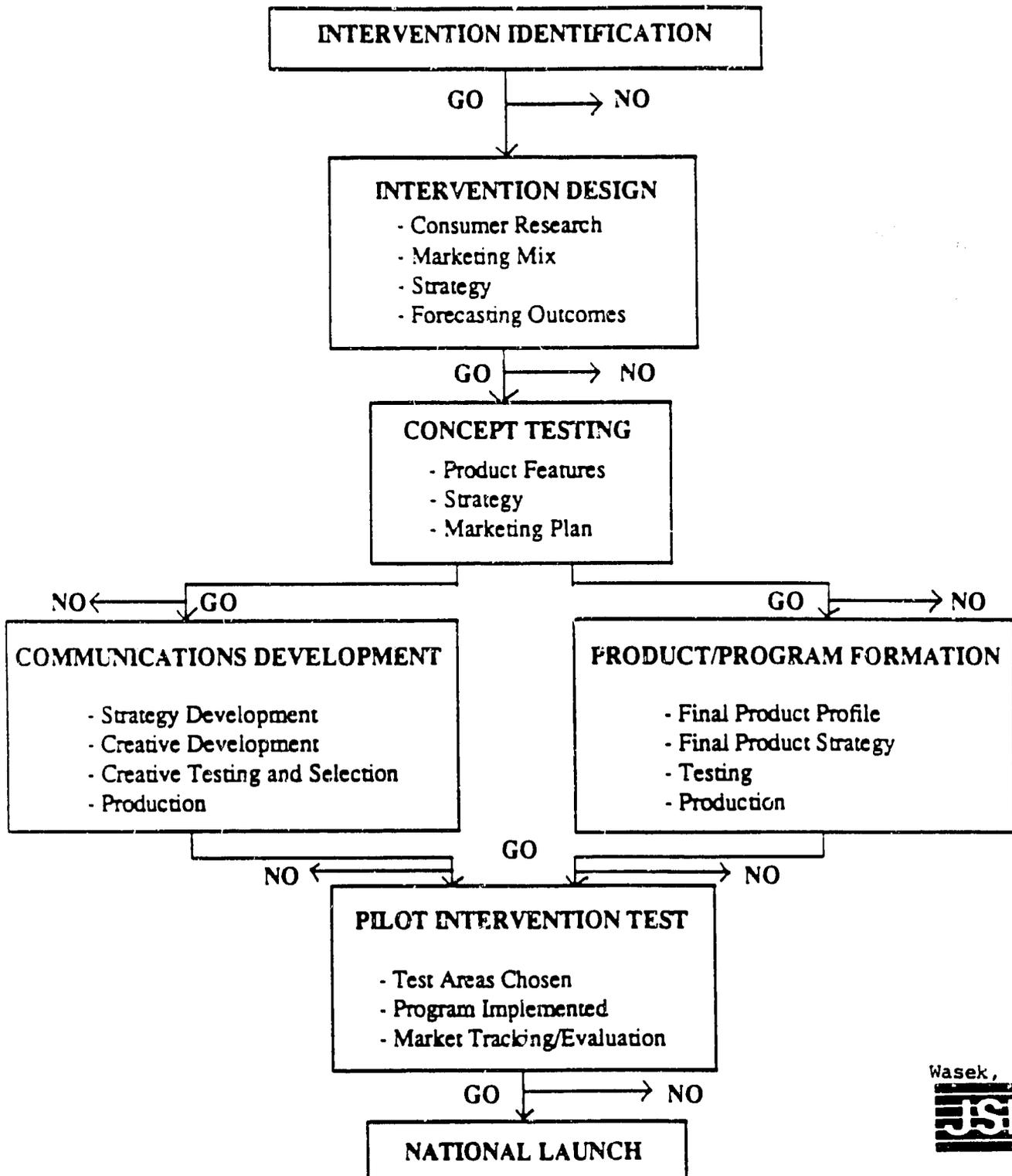
Step 5 is the **Pilot Intervention Test** at the district and Puskesmas level in targeted test areas. The interventions are implemented with associated training in new technology and supporting communications campaigns. After implementation, market tracking and evaluation studies are conducted in order to evaluate the overall program effects. For example, in a new ORS kit program, we are not only interested in the number of kits dispensed but also the level of community awareness of diarrheal symptoms and the ORS product, level of trial of the ORS kit, level of satisfaction with ORS rehydration results, and level of continued use of the ORS kit with additional episodes of diarrhea. The results of the Pilot Intervention Test are used to guide decision-making about whether to launch the new intervention programs on a national basis in Step 6.

Several important advantages for management arise out of this framework. First, at each point in the process GO-NO GO decisions are made. For example, we do not proceed into a production mode until intervention concepts are clarified, consumer research and concept testing is conducted, and incentives and disincentives are identified from the point of view of the consumers and key decision-makers. Secondly, evaluation research and marketing research is conducted throughout the process allowing management the flexibility to make changes in mid-course, if needed, when interventions are not working well for one reason or another. Finally, this framework has a strong advantage for coordinating the many different production aspects of new intervention strategies. For example, communication materials production must be coordinated with program formation for maximum impact. In addition, research is designed to feed directly into the intervention development process.

For illustrative purposes, a management plan developed for the Nepal Diarrheal Disease Control Project involving production of a 500 cc ORT kit is included in Appendix D.

Figure 2

MANAGEMENT PLAN FOR THE SOCIAL MARKETING PROCESS OF NEW PRODUCT OR SERVICE DEVELOPMENT



SOCIAL MARKETING COMMUNICATION PLAN DEVELOPMENT

The following sequence of steps illustrates how social marketing communications plans can be developed for:

1. Support of the PIO/P intervention strategies; and
2. increasing acceptance of generic drugs by providers and the public.

These steps include:

- A. **Audience Segmentation.** In order to be effective, campaign messages and channels of information must be tailored to fit the characteristics of the various target audiences. For each audience, a separate communications plan is developed and followed. For example, the primary audiences for generic drug acceptance messages would be physicians, paramedics, and the public. A secondary audience might be MOH logistics managers, and dispensers. By segmenting the audience, communication messages and educational materials can be tailored to fit the characteristics and needs of each of the different audiences, therefore increasing the impact of the campaign.
- B. **Marketing Strategy.** A well-designed marketing strategy defines and positions the overall intervention strategy in such a way that it is acceptable and consistent with the practices, values, and needs of the target audience. The strategy attempts to maximize acceptability and minimize resistance to the overall objectives of the campaign. Social marketing research, perhaps some through the planned KAP studies is necessary in order to identify current diagnostic and treatment practices, values, and needs of the target audience for better diagnostic methods and treatment plans.
- C. **Message and Creative Strategy.** The message and creative strategy outlines in detail what will be said to different audience segments. The messages should grow directly out of campaign objectives and marketing research on audience segment attitudes and practices. Messages are carefully pre-tested with a sample of the audience segment in order to have the most favorable impact. If a sponsor is used to convey the message (e.g., an MOH official, a health provider, a mother) these sponsors are also tested with a sample of the target audience for acceptability.
- D. **Media Mix Strategy.** The media mix is based on primary or secondary research about media prevalence and preferences among the target audience. The media mix describes the combination of all channels—radio, television, newspapers, printed materials, interpersonal communication—that will deliver program messages. Decisions regarding media mix are based on reach and frequency measures, the impact of each medium, and the relative cost of each medium.
- E. **Implementation Timing.** Communication messages must be timed for communications coordination with intervention implementation efforts. An annual communications plan is written as part of the overall marketing plan to indicate the level and structure of communications activity throughout the year.
- F. **Monitoring Strategy.** No matter how well designed a program may be, mistakes will be made, and important factors external to the project will change during implementation. Monitoring detects strengths, weaknesses, oversights, and changes so that revisions in communications strategies can be made. Monitoring focuses on:
 - Distribution systems for promotional materials;
 - Adherence to the operational timetable and budget;
 - Tracking audience levels of knowledge, acceptance, and practices;
 - Consistency and accuracy of messages delivered.
- G. **Evaluation Strategy.** At the close of the campaign, an evaluation of the impact of the communication campaign is performed in order to review:

- The extent to which the communications campaign achieved its objectives;
- The magnitude of the campaign's impact in terms of levels of awareness, acceptance/trial, satisfaction, and retention;
- The campaigns' unexpected outcomes, positive or negative;
- The most and least successful elements of the program.

There is no doubt that social marketing communication strategies can be very beneficial in supporting overall PIO/P interventions and in gaining acceptance for generic drugs. However, budgets will need to be developed by the PIO/P for support of the communication campaign component. The consultant believes that, given the complexity of issues at hand, long-term, multi-year support for communication campaigns will be necessary in order to positively effect change. In addition, communication campaigns are most likely to be effective, if social marketing processes are incorporated into the intervention design process as detailed previously. In a followup visit with PIO/P, the consultant will be able to provide an estimate of budgetary requirements once intervention strategies have been selected.

SECTION 6. RECOMMENDATIONS AND CONCLUSIONS

1. The DUS and IA provide useful information, in general, on what is happening at the provider-patient level regarding drug dispensing behavior. It will probably not be fruitful for the PIO/P to continue a lengthy, costly, and perhaps impossible research quest for the causal elements leading to already identified inappropriate behavior (i.e., a multivariate approach). Instead, the consultant recommends a shift to a management-oriented approach, rather than a research-driven approach, in designing, conducting, and evaluating implementation strategies.

By adopting a management-oriented approach, PIO/P will benefit from the many available management and marketing techniques refined and utilized in the private sector. The success of the private sector pharmaceutical industry in influencing provider and public opinion and behavior is well documented throughout the world. Although social marketing efforts seldom receive the organizational and financial support to compete with private sector marketing efforts, management-oriented research and strategy development tools will help the PIO/P develop a better implementation effort.

This type of management-oriented approach to intervention strategy design and execution was used effectively in Egypt in designing and implementing the National Diarrheal Disease Control strategy and, in Nepal, designing and implementing innovative ORT and ARI strategies for the Ministry of Health. A model of this approach which integrates management and marketing processes is presented in Figure 2 of this report.

At this point in the PIO/P project, the consultant suggests that the key question is: "What should we do to best design and implement the field testing intervention strategies?" A management-oriented approach has much to contribute in answering this question through appropriate research and planning techniques.

2. A common mistake is to assume that the chief benefit of social marketing is at the tail end of the implementation strategy, such as designing IEC campaigns and promotional efforts. In the end it is often too late for marketing tools to be effective, if there are inherent problems in the intervention program from the point of view of providers or patients. Marketing tools are primarily effective at the front end of the intervention design process by guiding program development and Go-No Go decision-making.

The consultant recommends that the PIO/P utilize the full benefit of marketing research and planning techniques during the intervention strategy development phase. This will involve activities in fitting into the design process consumer research with physicians, paramedics, and the public. In addition, this will involve identifying (through research) and addressing (through strategy) provider and patient incentives and disincentives. In sum, the consultant recommends that the PIO/P take a marketing orientation by providing within the intervention strategy what is needed for better diagnosis technology or treatment delivery as perceived by providers and patients.

3. With the previous points in mind, from a management perspective the consultant recommends that the chief objectives of the proposed KAP studies should be:
 - Compilation of descriptive and opinion information from physicians, paramedics, and the community which will facilitate the formation of implementation strategies for field testing.
 - Collection of reliable and valid quantifiable information on the Consumer Behavior Change Cycle (Figure 1) as part of an overall baseline evaluation as well as for baseline market tracking, an important component of the social marketing plan.
 - Completion of detailed observational descriptions of the provider-patient interaction at the primary care clinic including whether and what type of diagnostic procedures were followed, what diagnosis was

made, what drugs were prescribed, and why, in the opinion of providers, were standard diagnostic and/or treatment protocols not followed?

- If possible, conducting preliminary concept tests. This involves reviewing draft PIO/P intervention strategies with key people involved in making the intervention work. This concept test research should include physicians, paramedics, patients, and policy-makers using methods of structured interview or focus groups.
4. **From a management perspective, at a minimum, the following information is needed from the KAP studies for conduction within targeted intervention and control geographic areas:**
- **Community KAP Survey.** Assessment of the level of knowledge, attitudes, and practices of mothers with children under five on issues of diarrhea, dehydration signs/danger and use and image of the ORS product. In addition, research should assess the level of demand for new treatment strategies and incentives/disincentives for change from the point of view of mothers.
 - **Provider KAP Survey.** An assessment should be made of the knowledge, attitudes and diagnostic practices of paramedics and physicians on dehydration signs/danger, dispensing and image of the ORS product, and standard treatment protocols. In addition, an assessment should be made of knowledge, attitudes, and diagnostic practices of providers on ARI, together with an Assessment of the level of demand for new diagnostic and treatment strategies, incentives/disincentives for change, and new treatments protocols for ARI and diarrheal disease.
 - **Concept Tests.** Reviewing draft PIO/P intervention strategies with key people in making the interventions, including physicians, paramedics, and patients. Methodologies for research can include structured interviews or focus groups.

Appendix E highlights market research objectives and proposed survey topic areas. Appendix F provides two examples of KAP surveys on diarrheal disease and ORT conducted in Egypt and Nepal.

5. Under the present KAP research plan, CCS plans to conduct a field-level observational study of provider behavior and some focus group research. Under a separate SRI contract, 11 questions will be added to the January OMNIBUS survey. **The present research plan is relatively unfocused, and guidance is needed by CCS and SRI before any data are collected. From a management perspective, the consultant recommends the following:**
- The SRI OMNIBUS survey can be used for collecting information described in 4 above and a baseline of the Consumer Behavior Change Cycle of AWARENESS-TRIAL-SATISFACTION-RETENTION, but only if intervention and control areas are covered by the OMNIBUS survey. Otherwise, a specialized survey have to be completed within the targeted areas. Perhaps the OMNIBUS survey can be used for measuring general media usage, level of disease/treatment awareness, and other behavioral effects across a wider geographical area while a separate community-level KAP study could be contracted within intervention and control areas.
 - CCS can be useful in collecting the information described in 4. Assessing objective 4, the consultant does not recommend that focus group discussions be conducted within the scope of work, unless there is re-direction of objectives from the current broad discussion plan to focused concept testing, close supervision of focus group methods, and careful interpretation of results within the limitations of qualitative research, low Ns, and non-random sample selection.

- For collecting information described in objective 4, CCS, SRI, or another organization with strong focus group skills should be contracted to conduct concept test focus groups with:

1. Physicians,
2. paramedics; and
3. patients, using draft PIO/P intervention plans or options as the discussion topic.

Concept tests can be very useful in assisting in the strategy formation process. However, more focus groups will be needed than in the present plan. At a minimum, the consultant recommends a total of at least 10-15 focus groups be held with perhaps three to five groups for physicians, three to five groups for paramedics, and five groups for mothers with children under five. More focus group research will need to be conducted, if results differ across focus groups or across geographical areas. The rule of thumb in marketing is that focus groups on the same research questions are conducted until no new research results are found.

6. A social marketing approach will require additional research to be conducted before, during, and after the intervention process according to an annual market research plan which is part of an overall marketing plan. Specifically, products and communication materials will need reliable quantitative and qualitative testing on issues such as logos, media messages, packaging, and instruction materials. Short-term turnaround of research is essential in a social marketing effort. The PIO/P contracting procedures and budget level should be assessed for adequacy in terms of this issue.
7. Given his previous experience with similar intervention efforts in ORS and ARI in other countries, the consultant recommends the PIO/P consider providing new diagnosis/treatment technologies to replace old, undesirable procedures. For example, an ORS Kit consisting of a mixing cup, spoon, ORS packets, and visual instructions, in a heat-sealed, clear plastic package may be a more desirable technology for marketing, acceptance, and usage by both providers and patients. Similarly, providing new ARI diagnostic technology, such as the simple timers designed for the Nepal Jumla ARI program, assists providers in accepting appropriate, standardized treatment protocols. From a marketing perspective, it is much easier and less costly to build awareness and acceptance of new technologies which replace old (and inappropriate) behaviors rather than attempting to remove old (inappropriate) behavior alone. For example, negative messages which take something away from the provider (i.e., "Reduce prescribing antibiotics for ARI or diarrheal disease") usually do not work.
8. Social marketing has the potential to accelerate the acceptance of generic drugs by providers and the public. However, social marketing will only be effective if:
 1. The quality of generic drugs can be documented and assured to the satisfaction of providers;
 2. adequate communication campaign budgets can be identified over a multi-year period rather than on a short-time basis; and
 3. personal incentives can be identified for both providers and the public in accepting generic drugs.

The consultant recommends that quantitative market research be conducted with providers and the public (e.g., a generic drug KAP, in a separate study. The issues surrounding generic drug acceptance can be more fully addressed in a follow-up visit with PIO/P.

9. The consultant proposes the following timetable for future activities:

January - March 1991: CCS and SRI complete KAP research.

February-March 1991: Follow-up visit for:

1. Reviewing progress of KAP research;
2. completing Social Marketing Plan for Intervention Strategies; and
3. assessment of the issues around generic drug acceptance.

April 1991-March 1992: Plans implementation and evaluation.

After March 1992: Intervention strategy revision and decision making regarding further efforts.

APPENDICIES

APPENDIX A

List of Persons Contacted

PIO/P

Drs. Andayaningsih, Director of Drug Control, POM and Chief, PIO/P
Dr. Reginald Gipson, ISTI's Long-Term Advisor
Drs. Yos Hudyono, Long-Term Management Advisor
Drs. Purwanto Hardjasaputra, PIO/P Advisor
Drs. S.U. Semiring, PIO/P Advisor

Center for Child Survival, University of Indonesia

Dr. Alex Papalaya
Dr. Chris Costello
Dr. E. Achadi

Survey Research International

Mr. Farquhar Stirling

APPENDIX B

List of Documents Reviewed

1. Terms of Reference, Health Sector Financing Project, Pharmaceutical Component (HSFP-P 001, Rev. December 22, 1988.)
2. Commercial Sector ORS Project: Key Research Findings and Recommendations for Developing a Strategy for Social Marketing of Child Survival Concepts in Indonesia, PATH, November 1989.
3. Work Plan, HSHP, PIO/P December 1989 - March 1991.
4. Integrated Analysis of HSHP, PIO/P Drug Use Study, April 1990 (draft).
5. Integrated Analysis of Focussed Assessment Studies, June 1990 (draft).
6. Operations Research Results Report. Center for Child Survival, University of Indonesia, July 1990.
7. Terms of Reference for the Knowledge, Attitude, and Practice Study on Drug Managers, Providers, Dispensers and Patients prepared by the Health Sector Financing Project and the Center for Child Survival, PIO/P, August 1990.
8. Scope of Work for the Knowledge, Attitude and Practice Survey on the Use of Drugs by Urban Community Members. PIO/P, August 1990.
9. HSFP Consultant Report Series, unnumbered, A Review of the Drug Supply Management System to Rural Health Facilities in Indonesia, James A. Maneno, draft, September 1990.
10. Design of Interventions and Evaluation for HSFP, PIO/P, D. Ross-Degnan, J. Zeitlin, October 1990.
11. Design of Interventions Pert Chart, October 24, 1990.
12. Status Report: The Health Sector Financing Project Pharmaceutical Component, October, 1990.
13. Draft Observational Instruments for the Drug Use Study: Prescriber-Patient Interaction and Dispenser-Patient Interaction, Center for Child Survival, University of Indonesia, October 1990.
14. Findings from the Drug Use Study - Prescribing Patterns in Health Centers and Hospitals in Six Indonesian Provinces (YIS, October, 1990).
15. Review of PIO/P Technical Direction and Process. Norbert Hirshhorn, November 1, 1990. (Personal communications and draft.)
16. Media and Marketing Index, 1989/1990, Technical Report, Survey Research Indonesia.
17. SRI Omnibus 1990. SRI Survey Research Indonesia.
18. Literature review of this consultant's personal library on social marketing, child survival intervention, and new product/service development, approximately 15 documents.

APPENDIX C

THE JUMLA FOCUSED INTERVENTIONS FOR CHILD SURVIVAL PROJECTS

THE INTERNATIONAL CENTER FOR THE PREVENTION AND TREATMENT
OF MAJOR CHILDHOOD DISEASES (INTERCEPT)
A DIVISION OF THE JSI RESEARCH AND TRAINING INSTITUTE
PO BOX 168, HANOVER, NEW HAMPSHIRE 03755 USA

PROJECT SUMMARY

The Jumla Focused Interventions for Child Survival Projects will implement a limited set of interventions which are likely to result in a significant reduction in child mortality. These include diarrheal disease control, ARI case management, promotion of immunization, and Vitamin A supplementation. It will also investigate promising strategies to reduce the staggering levels of maternal and neonatal mortality. Program interventions are based on data generated over the past four years through a detailed vital events registration system and on management experience in this remote area. Findings from the proposed program have broad international applicability, since mortality impact as well as related resource and programmatic requirements will be rigorously documented, and since likelihood of confounding is minimal.

BACKGROUND

Jumla District in the mountainous area of western Nepal has a staggering burden of childhood disease and mortality. The documented baseline infant mortality rate is 191 and the cumulative Under Five Mortality Rate is 322 deaths per thousand live births; the maternal mortality rate is 1,100 maternal deaths per 100,000 live births. The district has a population of 80,000, and there are 12,000 children under the age of five. Most of the district's inhabitants work as subsistence farmers in a virtually non-monetized society. The area lacks roads and even the most rudimentary physical infrastructure, and has virtually no health services. Because of the area's extreme physical isolation, societal structures are highly traditional, and women's status is low.

PRECEDING ACTIVITIES

The proposed program described in the following section is an outgrowth of the Jumla Acute Respiratory Infections (ARI) Intervention Trial, carried out from 1986 to 1990 under the technical guidance of JSI with financial support from USAID/Nepal. The purpose of the ARI Intervention Trial was to determine the operational feasibility and the mortality impact of a single community-based intervention: case management of childhood pneumonia with antibiotics provided by trained villagers. This effort was carried out in the total absence of other health interventions in this medically unserved area.

In order to document mortality impact, a detailed vital events registration system was implemented using a separate set of field workers. This included a verbal autopsy conducted on each death which has occurred over the past four years, procedures for verification of accuracy and completeness of reporting, and a custom-designed computer program for analysis. Currently, more than 2,500 childhood deaths have been documented.

The trial proved that this approach is in fact programmatically feasible, and that fully 80 percent of the cases of childhood pneumonia throughout this remote and primitive area were detected and appropriately treated. Most importantly, a significant impact on cumulative child survival has been proven over a three year period a clear trend was established which resulted in 28 percent fewer deaths from all causes combined, despite continuing high levels of malnutrition and infectious disease burden. These findings are currently in preparation for publication.

NEW PROJECT DESCRIPTION

Based on these results and the detailed epidemiological and behavioral data on determinants of child and maternal mortality which have been generated as a part of the Jumla ARI Intervention Trial, a five year follow-on project has been designed to respond to the health needs of the children and mothers of Jumla. This project will extend the range of services offered to the children of Jumla district in order to overcome the cumulative burden of disease responsible for much of the remaining mortality.

The proposed Jumla Focused Interventions for Child Survival (FICS) Project will document what can be accomplished to improve child survival through a community-based program with limited financial and manpower resources. This program has broad international implications, since it will measure mortality impact and resource requirements for a program focused on the principal immediate causes of childhood illness and death in most of the Developing World: acute respiratory infections, diarrhea, Vitamin A deficiency, immunizable diseases and birth related disorders. It also aims to significantly reduce the high rate of maternal mortality and morbidity.

A detailed review of childhood deaths in Jumla has shown diarrhea to be the single leading cause, accounting for 39 percent of childhood mortality, with an additional 5 percent from combined diarrhea and pneumonia. Of note however is the finding that only 25 percent of these diarrhea deaths were associated with acute watery diarrhea; and additional 43 percent of diarrhea deaths were dysenteric (bloody) diarrhea, while the remaining 31 percent were associated with persistent non-bloody diarrhea of duration greater than two weeks.

This will require a diarrhea control strategy which goes considerably beyond the simple promotion of oral rehydration therapy and deals as well with the more complex management of dysentery and persistent diarrhea. Workers will be trained to distinguish between these different types of diarrhea, to treat acute watery diarrhea with ORA, and to manage cases of dysentery with antibiotics. Given their success with antibiotic management of pneumonia cases, this is programmatically feasible at this time. No proven treatment exists for persistent diarrhea, and investigations are continuing into efficacious and feasible strategies which could be tested in this setting.

Pneumonia continues to be the second leading cause of death, alone accounting for 18 percent of mortality, in addition to the five percent in combination with diarrhea. In order to further decrease pneumonia mortality, the project will now focus on finding and treating the most refractory group accounting for nearly half of these deaths: infants under the age of three months. This requires considerable emphasis on the anthropology of care-seeking for the very youngest and on improving the speed of treatment by health workers.

The burden of immunizable diseases also remains high, with evidence that substantial increases in diarrhea and pneumonia mortality have followed localized measles epidemics. Initially, the project will work to motivate mothers of infants to seek out vaccinations through the limited network of government EPI workers; subsequently, direct support of immunization outreach efforts will be considered if necessary arrangements can be made with government health services.

The third leading group of deaths, accounting for 17 percent of the total, were neonatal deaths which resulted from problems in gestation, the birth process, or immediate postnatal care. Major contributors to this early mortality include sepsis, low birth weight, and hypothermia; surprisingly, neonatal tetanus accounted for only a small proportion of deaths. Investigations are underway to establish potentially effective interventions; especially promising are measures to decrease hypothermia through direct body warming and early treatment of sepsis with antibiotics.

As a contributor to many of these problems, significant Vitamin A deficiency has been documented: in a large survey, 8.6 percent of Jumla children under five were found to have clinical signs of xerophthalmia, a level more than sixteen times greater than the WHO standard for defining Vitamin A deficiency as a significant public health problem. Nightblindness during pregnancy is also widely prevalent, affecting 39 percent of mothers, indicating that Vitamin A deficiency may be a problem even during gestation and the first months of life. The

FICS project will administer four-monthly high-dose Vitamin A supplementation for all children in the district, with special emphasis on children in villages with known measles outbreaks; impact on both mortality and morbidity rates will be assessed. In addition, possibilities for supplementation of mothers in their last trimester will be investigated.

The Jumla FICS Project addresses these major issues through a targeted and phased approach. During the first year of this project, the pneumonia case management approach will be expanded to encompass diarrhea case management, periodic dosing of all children with Vitamin A, and community proposition of immunization. It should be noted that these new services have been very much in demand among the population of Jumla, and reflect their own perceived needs as much as they do epidemiologically-based priorities.

During this year, initial investigations will be carried out into interventions which would have the potential for improving maternal and neonatal survival, including a study of neonatal hypothermia, its contributing factors, epidemiology and outcome, as well as birthing practices. Interventions which are found to be potentially effective and programmatically feasible will be phased in over the next two years. In addition to direct maternal and child survival interventions, these may include initial efforts to promote the use of contraceptives for child spacing.

The human infrastructure for carrying out this program is already in place. Locally recruited field workers from the ARI Intervention Trial are undergoing training to expand their skills to include the new focus areas. They will continue to carry out house-to-house visits of all children in the district with their expanded range of services, following the established and proven ARI case detection protocol; cases of diarrhea and pneumonia will be searched out, treated and followed up. Special attention will be paid to high-risk households, particularly those with children under the age of two, those with several closely spaced children, and those in which other child deaths have occurred.

Collection of data on births and deaths, with detailed follow-up of each death, will continue through the on-going vital events reporting system in order to allow objective and detailed determination of the program's mortality impact. In addition, temperatures and weights will be collected at first contact with newborns to establish correlations with outcome, and as a baseline for future activities. Program management information needs have already been determined, and simple appropriate tools developed.

With the supervisory and management structure for this program already in place, the FICS project can get underway immediately with no loss of momentum from the earlier project. Currently only ARI case management activities are possible with limited remaining stocks of antibiotics from the ARI Intervention Trial.

The project will be administered and technically directed by INTERCEPT, which is a division of the JSI Research and Training Institute, a non-profit institution based in the U.S. INTERCEPT will handle all disbursements from a U.S. account, with transfers of funds made as required to the Nepal field office per established accounting procedures. INTERCEPT will work with a recognized Nepali research institution, the Mrigendra Medical Trust, and with other indigenous community service institutions to develop mechanisms for sustainability of program activities following this project.

MANAGEMENT OF THE CHILD WITH COUGH OR DIFFICULT BREATHING

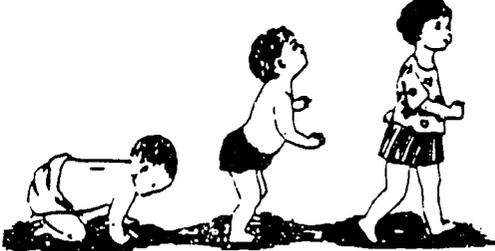
ASSESS	
<p>ASK:</p> <ul style="list-style-type: none">• How old is the child?• Is the child coughing? For how long?• Age 2 months up to 5 years Is the child able to drink?• Age less than 2 months Has the young infant stopped feeding well?• Has the child had fever? For how long?• Has the child had convulsions?	<p>LOOK, LISTEN:</p> <p>(Child must be calm)</p> <ul style="list-style-type: none">• Count the breaths in one minute• Look for chest indrawing• Look and listen for stridor• Look and listen for wheeze Is it recurrent?• See if the child is abnormally sleepy, or difficult to wake• Feel for fever or low body temperature (or measure temperature)• Look for severe undernutrition

THE YOUNG INFANT (AGE LESS THAN 2 MONTHS)

SIGNS:	<ul style="list-style-type: none"> • Stopped feeding well. • Convulsions, • Abnormally sleepy or difficult to wake, • Stridor in calm child, • Wheezing, or • Fever or low body temperature. 	
CLASSIFY AS:	VERY SEVERE DISEASE	
TREATMENT:	<ul style="list-style-type: none"> ▶ Refer URGENTLY to hospital. ▶ Keep young infant warm. ▶ Give first dose of an antibiotic. 	

SIGNS:	<ul style="list-style-type: none"> • Severe chest indrawing, or • Fast breathing (60 per minute or MORE). 	<ul style="list-style-type: none"> • No severe chest indrawing, and • No fast breathing (LESS than 60 per minute).
CLASSIFY AS:	SEVERE PNEUMONIA	NO PNEUMONIA: COUGH OR COLD
TREATMENT:	<ul style="list-style-type: none"> ▶ Refer URGENTLY to hospital. ▶ Keep young infant warm. ▶ Give first dose of an antibiotic. <p>(If referral is not feasible, treat with an antibiotic and follow closely.)</p>	<ul style="list-style-type: none"> ▶ Advise mother to give the following home care: <ul style="list-style-type: none"> ▶ Keep young infant warm. ▶ Breast-feed frequently. ▶ Clear nose if it interferes with feeding. ▶ Return quickly if: <ul style="list-style-type: none"> ▶ Breathing becomes difficult. ▶ Breathing becomes fast. ▶ Feeding becomes a problem. ▶ The young infant becomes sicker.

THE CHILD AGE 2 MONTHS UP TO 5 YEARS

SIGNS:	<ul style="list-style-type: none"> • Not able to drink. • Convulsions. • Abnormally sleepy or difficult to wake. • Stridor in calm child, or • Severe undernutrition. 	
CLASSIFY AS:	VERY SEVERE DISEASE	
TREATMENT:	<ul style="list-style-type: none"> ▶ Refer URGENTLY to hospital. ▶ Give first dose of an antibiotic. ▶ Treat fever, if present. ▶ Treat wheezing, if present. ▶ If cerebral malaria is possible, give an antimalarial. 	

SIGNS:	<ul style="list-style-type: none"> • Chest indrawing. <p>(If also recurrent wheezing, go directly to ▶ Treat Wheezing)</p>	<ul style="list-style-type: none"> • No chest indrawing, and • Fast breathing (50 per minute or more if child 2 months up to 12 months; 40 per minute or more if child 12 months up to 5 years). 	<ul style="list-style-type: none"> • No chest indrawing, and • No fast breathing (Less than 60 per minute if child 2 months up to 12 months; Less than 40 per minute if child 12 months up to 5 years).
CLASSIFY AS:	SEVERE PNEUMONIA	PNEUMONIA	NO PNEUMONIA: COUGH OR COLD
TREATMENT:	<ul style="list-style-type: none"> ▶ Refer URGENTLY to hospital. ▶ Give first dose of an antibiotic. ▶ Treat fever, if present. ▶ Treat wheezing, if present. <p>(If referral is not feasible, treat with an antibiotic and follow closely.)</p>	<ul style="list-style-type: none"> ▶ Advise mother to give home care. ▶ Give antibiotic. ▶ Treat fever, if present. ▶ Treat wheezing, if present. ▶ Advise mother to return with child in 2 days for reassessment, or earlier if the child is getting worse. 	<ul style="list-style-type: none"> ▶ If coughing more than 30 days, refer for assessment. ▶ Assess and treat ear problem or sore throat, if present (see chart). ▶ Assess and treat other problems. ▶ Advise mother to give home care. ▶ Treat fever, if present. ▶ Treat wheezing, if present.

Reassess in 2 days a child who is taking an antibiotic for pneumonia:			
SIGNS:	WORSE	THE SAME	IMPROVING
	<ul style="list-style-type: none"> • Not able to drink. • Has chest indrawing. • Has other danger signs. 		<ul style="list-style-type: none"> • Breathing slower. • Less fever. • Eating better.
TREATMENT:	▶ Refer URGENTLY to hospital.	▶ Change antibiotic or Refer.	▶ Finish 5 days of antibiotic.

► Give an Antibiotic

- Give first dose of antibiotic in clinic.
- Instruct mother on how to give the antibiotic for five days at home (or to return to clinic for daily procaine penicillin injection).

AGE or WEIGHT	COTRIMOXAZOLE trimethoprim + sulphamethoxazole ► Two times daily for 5 days			AMOXICILLIN ► Three times daily for 5 days.		AMPICILLIN ► Four times daily for 5 days.		PROCAINE PENICILLIN ► Once daily for 5 days.
	Adult Tablet single strength (80 mg trimethoprim + 400 mg sulphamethoxazole)	Pediatric Tablet (20 mg trimethoprim + 100 mg sulphamethoxazole)	Syrup (40 mg trimethoprim + 200 mg sulphamethoxazole per 5ml)	Tablet 250 mg	Syrup 125 mg in 5 ml	Tablet 250 mg	Syrup 250 mg in 5 ml	Intramuscular injection
Less than 2 months (< 5 kg)*	1/4*	1*	2.5 ml*	1/4*	2.5 ml	1/2	2.5 ml	200,000 units
2 months up to 12 months (5-9 kg)	1/2	2	5 ml	1/2	5 ml	1	5 ml	400,000 units
12 months up to 5 years (10-19 kg)	1	3	7.5 ml	1	10 ml	1	5 ml	800,000 units

- Give oral antibiotic for 5 days at home only if referral is not feasible.
- If the child is less than 1 month old, give 1/2 pediatric tablet or 1.25 ml syrup twice daily. Avoid cotrimoxazole in infants less than one month of age who are premature or jaundiced.

► Advise Mother to Give Home Care (For the child age 2 months up to 5 years)*

- Feed the child.
 - Feed the child during illness.
 - Increase feeding after illness.
 - Clear the nose if it interferes with feeding.
- Increase fluids.
 - Offer the child extra to drink.
 - Increase breast-feeding.
- Soothe the throat and relieve the cough with a safe remedy.
- Most important: In the child classified as having No Pneumonia: Cough or Cold, watch for the following signs and return quickly if they occur:
 - Breathing becomes difficult.
 - Breathing becomes fast.
 - Child is not able to drink.
 - Child becomes sicker.

This child may have pneumonia.

* See section on young infant for home care instructions for this age group

► Treat Fever

<ul style="list-style-type: none"> • Fever is high (> 38 °C) • Fever is not high (38-39 °C) 	<ul style="list-style-type: none"> • In a life-threatening infectious area. • Any fever or • History of fever 	<ul style="list-style-type: none"> • Fever for more than five days.
<ul style="list-style-type: none"> • Give paracetamol. • Advise mother to give more fluids. 	<ul style="list-style-type: none"> • Give an antiseizure for treat according to your malaria programme recommendations 	<ul style="list-style-type: none"> • Refer for assessment.

PARACETAMOL doses:

→ Every six hours

Age or Weight	100 mg Tablet	500 mg Tablet
2 months up to 12 months (5-9 kg)		1/4
12 months up to 3 years (10-14 kg)		1/2
3 years up to 5 years (15-19 kg)	1/2	1/2

FEVER ALONE IS NOT A REASON TO GIVE AN ANTIBIOTIC EXCEPT IN A YOUNG INFANT (AGE LESS THAN 2 MONTHS)

GIVE FIRST DOSE OF AN ANTIBIOTIC AND REFER URGENTLY TO HOSPITAL

► Treat Wheezing

Children with First Episode of Wheezing

- If in respiratory distress → Give a rapid-acting bronchodilator and refer
- If not in respiratory distress → Give oral salbutamol

Children with Recurrent Wheezing (Asthma)

- Give a rapid-acting bronchodilator
- Assess the child's condition 30 minutes later

IF	THEN:
RESPIRATORY DISTRESS OR ANY DANGER SIGN	Treat for SEVERE PNEUMONIA or VERY SEVERE DISEASE (Refer)
NO RESPIRATORY DISTRESS AND:	
FAST BREATHING	Treat for PNEUMONIA. Give oral salbutamol.
NO FAST BREATHING	Treat for NO PNEUMONIA, COUGH OR COLD. Give oral salbutamol.

RAPID ACTING BRONCHODILATOR		ORAL SALBUTAMOL • Three times daily for five days		
NEBULIZED Salbutamol (5 mg/ml)	0.5 ml Salbutamol plus 2.0 ml sterile water	AGE or WEIGHT	2 mg tablet	4mg tablet
Subcutaneous Epinephrine (adrenaline) (1:1000 = 0.1%)	0.01 ml per kg body weight	2 months up to 12 months (< 10 kg)	1/2	1/4
		12 months up to 5 years (15-19 kg)	1	1/2

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Timer Field Trials

#2 Scale Specifications

I reiterate these specifications from our previous meetings and correspondence.

1. **10,000 30-second Cycles.** This is imperative for two years of operations in the field.
2. **One Year Shelf Life for battery.** I assume this means non-use time, because the logistic pipeline is sometimes one year long. Should this indicate that after one year, there will still be 10,000 cycles or two years of field use?
3. **Droppable.** The unit should be droppable from waist height to packed earth surface and still function accurately, i.e., 30 seconds, +/-ten percent.
4. **Recessed Activating Switch,** as in first sample (diaphragm). We have had a great deal of trouble with the protruding push button type because of real and potential battery drain.
5. **Nylon Neck Cord.** The unit should be equipped with a 30 inch nylon neck string.
6. **The beep** should be audible in a conversational situation and last long enough to attract the users attention. (previous samples easily meet this criteria, if there is a problem with the battery life, (10 k cycles) beep duration and volume could be reduced.)

MANAGEMENT OF THE CHILD WITH COUGH OR DIFFICULT BREATHING

ASSESS

ASK:

- How old is the child?
- Is the child coughing? For how long?
- Age 2 months up to 5 years: Is the child able to drink?
- Age less than 2 months: Has the young infant stopped feeding well?
- Has the child had fever? For how long?
- Has the child had convulsions?

LOOK, LISTEN:

- (Child must be calm)
- Count the breaths in one minute.
 - Look for chest indrawing.
 - Look and listen for stridor.
 - Look and listen for wheeze. Is it recurrent?
 - See if the child is abnormally sleepy, or difficult to wake.
 - Feel for fever, or low body temperature (or measure temperature).
 - Look for severe undernutrition.

CLASSIFY THE ILLNESS

THE CHILD AGE 2 MONTHS UP TO 5 YEARS

Does child have danger signs?

SIGNS	<ul style="list-style-type: none"> • Not able to drink. • Convulsions. • Abnormally sleepy or difficult to wake. • Stridor in calm child, or • Severe undernutrition.
CLASSIFY AS	VERY SEVERE DISEASE
TREATMENT	<ul style="list-style-type: none"> • Refer URGENTLY to hospital. • Give first dose of an antibiotic. • Treat fever, if present. • Treat wheezing, if present. • If available, mother to provide oral amoxicillin.



Does child have pneumonia?

SIGNS	<ul style="list-style-type: none"> • Chest indrawing. • If also recurrent wheezing, go directly to: Treat Wheezing! 	<ul style="list-style-type: none"> • No chest indrawing, and • Fast breathing (60 per minute or more if child 2 months up to 12 months; 40 per minute or more if child 12 months up to 5 years) 	<ul style="list-style-type: none"> • No chest indrawing, and • No fast breathing (Less than 60 per minute if child 2 months up to 12 months; Less than 40 per minute if child 12 months up to 5 years)
CLASSIFY AS	SEVERE PNEUMONIA	PNEUMONIA	NO PNEUMONIA, COUGH OR COLD
TREATMENT	<ul style="list-style-type: none"> • Refer URGENTLY to hospital. • Give first dose of an antibiotic. • Treat fever, if present. • Treat wheezing, if present. (If referred to not hospital, treat with an antibiotic and follow closely.) 	<ul style="list-style-type: none"> • Advise mother to give home care. • Give an antibiotic. • Treat fever, if present. • Treat wheezing, if present. Advise mother to return with child in 2 days for assessment, or earlier if the child is getting worse. 	<ul style="list-style-type: none"> • If coughing more than 10 days, refer for assessment. • Advise child that air pressure or steam from a hot shower or bath may help, if present (see chart). • Advise and treat other problems. • Advise mother to give home care. • Treat fever, if present. • Treat wheezing, if present.

Proceed to 2 days if child were to be taking an antibiotic for pneumonia.

SIGNS	WORSE	THE SAME	IMPROVING
	<ul style="list-style-type: none"> • Not able to drink. • Hot chest indrawing. • Has other danger signs. 		<ul style="list-style-type: none"> • Breathing easier. • Less fever. • Cough better.
TREATMENT	• Refer URGENTLY to hospital.	• Change antibiotic or fever	• Finish 5 days of antibiotic.

THE YOUNG INFANT (AGE LESS THAN 2 MONTHS)

SIGNS	<ul style="list-style-type: none"> • Stopped feeding well. • Convulsions. • Abnormally sleepy or difficult to wake. • Stridor in calm child. • Wheezing, or • Fever or low body temperature.
CLASSIFY AS	VERY SEVERE DISEASE
TREATMENT	<ul style="list-style-type: none"> • Refer URGENTLY to hospital. • Keep young infant warm. • Give first dose of an antibiotic.



SIGNS	<ul style="list-style-type: none"> • Severe chest indrawing, and • Fast breathing (60 per minute or MORE) 	<ul style="list-style-type: none"> • No severe chest indrawing, and • No fast breathing (LESS than 60 per minute)
CLASSIFY AS	SEVERE PNEUMONIA	NO PNEUMONIA, COUGH OR COLD
TREATMENT	<ul style="list-style-type: none"> • Refer URGENTLY to hospital. • Keep young infant warm. • Give first dose of an antibiotic. (If referred to not hospital, treat with an antibiotic and follow closely.) 	<ul style="list-style-type: none"> • Advise mother to give the following home care: <ul style="list-style-type: none"> • Keep young infant warm. • Breast-feed frequently. • Offer sips if it is necessary with feeding. • Return quickly if: <ul style="list-style-type: none"> • Breathing becomes difficult. • Breathing becomes fast. • Feeding becomes a problem. • The young infant becomes irritable.

TREATMENT INSTRUCTIONS

Give an Antibiotic

- Give first dose of antibiotic at home.
- Inform mother on how to give the antibiotic for her child at home (or to refer to clinic for daily supervised injection).

AGE of CHILD	ERYTHROMYCIN (Erythrocin)		AMOXICILLIN		PENICILLIN	
	1-2 years	2-5 years	1-2 years	2-5 years	1-2 years	2-5 years
Less than 1 month to 1 year	100 mg	200 mg	100 mg	200 mg	100 mg	200 mg
1 month up to 12 months	100 mg	200 mg	100 mg	200 mg	100 mg	200 mg
12 months up to 5 years	100 mg	200 mg	100 mg	200 mg	100 mg	200 mg

- Give one antibiotic for 5 days at home only. If refer to clinic, follow.
- If the child is sick then 1 month and give 12 antibiotic tablets or 120 mg liquid (total daily dose) administered in water with food and plenty of rest and protection of sunlight.

Advise Mother to Give Home Care (For the child age 1 month up to 5 years)

- Feed the child
 - Feed the child during illness
 - Increase feeding after illness
 - Offer the sips if it is necessary with feeding
 - Increase fluids
 - Offer the sips to drink
 - Increase breast feeding
 - Soothe the throat and relieve the cough with a safe remedy
 - Steam inhalation in the child identified as having No Pneumonia. Cough or Cold (refer for the following signs) and return quickly if they occur:
 - Breathing becomes difficult
 - Breathing becomes fast
 - Cough or wet sputum to drink
 - Chest becomes tender
- This child may have pneumonia.

Treat Fever

• Fever is high (38.5°C)	• Fever is not high (38.0°C - 38.5°C)	• No fever
• Give paracetamol	• Advise mother to give home care	• Refer to hospital

PARACETAMOL TABLETS

Age of child	How many tablets	How often
1 month up to 12 months	1	4 times
12 months up to 5 years	1-2	4 times
1 year up to 5 years	1-2	4 times

Treat Wheezing

Children with First Episode of Wheezing	<ul style="list-style-type: none"> • 1 or more danger signs: Refer to hospital immediately and refer to hospital clinic • No danger signs: Give home care
Children with Recurrent Wheezing (Asthma)	<ul style="list-style-type: none"> • Give a rapid relief inhaler • Advise the child's doctor 20 minutes later

SAFELY ACTIVE UNDERNUTRIED CHILD	Other Undernutrition
<ul style="list-style-type: none"> • 5-10% weight loss • 5-10% weight loss • 5-10% weight loss 	<ul style="list-style-type: none"> • 10% weight loss • 10% weight loss • 10% weight loss

MANAGEMENT OF THE CHILD WITH AN EAR PROBLEM OR SORE THROAT

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EAR PROBLEM

ASSESS

ASK:

- Does the child have ear pain?
- Does the child have p.a. draining from the ear? For how long?

LOOK, FEEL:

- Look for pus draining from the ear or red, immobile ear drum (by otoscopy).
- Feel for tender swelling behind the ear.

CLASSIFY THE ILLNESS

CLASSIFY AS:	RESPIRATORY	ACUTE EAR INFECTION	CHRONIC EAR INFECTION
SIGNS:	<ul style="list-style-type: none"> Tender swelling behind the ear. 	<ul style="list-style-type: none"> Pus draining from the ear LESS than two weeks, or Ear pain, or Red, immobile ear drum (by otoscopy). 	<ul style="list-style-type: none"> Pus draining from the ear two weeks or MORE.
TREATMENT:	<ul style="list-style-type: none"> Refer URGENTLY to hospital. Give first dose of an antibiotic. Treat fever, if present. Give paracetamol for pain. 	<ul style="list-style-type: none"> Give an oral antibiotic. Dry the ear by wicking. Reassess in five days. Treat fever, if present. Give paracetamol for pain. 	<ul style="list-style-type: none"> Dry the ear by wicking. Treat fever, if present. Give paracetamol for pain.

SORE THROAT

ASSESS

ASK:

- Is the child able to drink?

LOOK, FEEL:

- Feel the front of the neck for nodes.
- Look for exudate on the throat.

CLASSIFY THE ILLNESS

CLASSIFY AS:	THROAT ABSCESS	STREPTOCOCCAL SORE THROAT
SIGNS:	<ul style="list-style-type: none"> Not able to drink. 	<ul style="list-style-type: none"> Tender, enlarged lymph nodes on neck and White exudate on throat.
TREATMENT:	<ul style="list-style-type: none"> Refer to hospital. Give benzathine penicillin (20 for streptococcal sore throat). Treat fever, if present. Give paracetamol for pain. 	<ul style="list-style-type: none"> Give an antibiotic for streptococcal sore throat. Give salt, soothing remedy for sore throat. Treat fever, if present. Give paracetamol for pain.

TREATMENT INSTRUCTIONS

Give an Oral Antibiotic for an Ear Infection

- Give first dose of antibiotic in clinic.
- Instruct mother on how to give the antibiotic for the days at home.

AGE or WEIGHT	COMBINATION (amoxicillin + clavulanic acid) - 7 days only at home			AMICYCLIN - 5 days		ASPICILLIN - 5 days	
	Add tablet strength	Tablet label	Syrup	Tablet	Syrup	Tablet	Syrup
Less than 6 months to 5kg	SP	1	5ml	SP	5ml	SP	5ml
6 months to 5 (adults 60-64kg)	SP	2	5ml	SP	5ml	SP	5ml
6 months to 6 (adults 65-69kg)	SP	2	5ml	SP	5ml	SP	5ml

- Give oral antibiotic for 5 days at home only if advised to not hospital.
- If the child is less than 1 month old, give 10 paracetamol tablets or 10 ml syrup twice daily. Avoid combination in infants less than one month of age who are premature or lowbirth.

Dry the Ear by Wicking

- Dry the ear at least 4 times a day.
- Use clean, absorbent cotton wool or wick.
- Place the wick in the child's ear.
- Remove the wick when wet.
- Repeat the wick with a clean one until the ear is dry.

Treat Fever

TEMPERATURE	16-18°C	18-20°C	20-22°C	22-24°C
Give paracetamol	Yes	Yes	Yes	Yes
Give aspirin	No	No	No	No

Paracetamol/Aspirin doses

Age or Weight	16-18°C	18-20°C	20-22°C	22-24°C
Less than 6 months (4kg)	1	1	1	1
6 months to 6 years (16kg)	1	1	1	1
7 years to 12 years (40kg)	1	1	1	1

Never allow a child to have an aspirin or aspirin containing product in a school or day care centre after 12 years of age.

Give more than one of an analgesic with regular intervals if no response.

Give an Antibiotic for Streptococcal Sore Throat

Give Combinations Penicillin

AGE	250 000 units	500 000 units
1-5 years	250 000 units	500 000 units
6-12 years	500 000 units	750 000 units

OR

Give ampicillin, ampicillin, or penicillin V for 10 days.

Soothe the throat with a salty remedy.

Give paracetamol for pain or high fever.

PROTOTYPE ARI TIMER



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APPENDIX D

Example: Management Plan for ORS Kit for Nepal

**ENDORSEMENT PLAN FOR NEW JEEVAN JAL PRODUCT DEVELOPMENT AND
TEST MARKET PRODUCT LAUNCH**

**Glen Wasek
John Snow, Inc. (JSI)**

November 6-11, 1989

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SECTION 1. SUMMARY AND RECOMMENDATIONS

Problems with the 100 cc Jeevan Jal products have been extensively researched and documented (see Wasek and Sell report, March 1983). In August, 1989, Ministry of Health of the Kingdom of Nepal formally approved a large scale field trial/test market of a 500 cc packet and matching 500 ml container. This test market will be implemented in three districts in 1990. Following this test market, the Ministry of Health will make a formal decision regarding whether to make this new ORS product a national standard.

A draft workplan for the test market was submitted by JCI/Nepal in November 1989 for review by the Nepal National Diarrhoeal Diseases Control Program (NDDCP), the Nepal CRS Company, Ltd. (CRS), Royal Drugs, LTD, (RDL), UNICEF, WHO, and USAID/Nepal. Finalization of this workplan will be completed by Dr. Nils Daulaire in December 1989 based on feedback collected during the field visit of Glenn Wasek between November 6-11, 1989.

The present document is intended to guide the product development and test market launch process from November 1989 to September 1990, as well as to detail the principal parties responsible for completion of each step in the process. Included in the management plan portion of this document are recommendations for guiding product development based on previously conducted research on the use of Jeevan Jal in Nepal as well as the consultant's direct experience with similar ORS and product development processes.

The consultant's overall recommendation is that the Management Plan be followed as closely as is practically possible and all deviations be agreed upon by the principal parties (NDDCP, CRS, RDL, USAID/Nepal, UNICEF, WHO, and JSI). Furthermore, a strict project time table must be followed in order to provide full coverage of the New Jeevan Jal product in the three test market districts during the rainy season of May-September 1990. Delays of any type along the "critical path" of tasks will result in incomplete implementation during the rainy season and an evaluation based on incomplete data on product usage.

SECTION 2. BACKGROUND

The field trial objectives of this three-district test market are:

1. To determine levels of acceptability and appropriate usage for the matched 500 cc packets and containers, and to assess relative advantages/disadvantages compared to the current product.
2. To determine costs and operational issues related to a widescale distribution and promotion of the New Jeevan Jal product through all Ministry of Health and CRS channels in the three test market districts.
3. To determine optimal marketing strategies for the original supply and resupply of the New Jeevan Jal product to households in the three test market districts.
4. To determine production, distribution, pricing, promotion, and product variable options ("marketing mix" strategy) for future NDDCP efforts.

In order to meet these objectives, a prototype product concept and test market strategy has been agreed upon by the NDDCP, CRS, RDL, USAID/Nepal with input and interest in programmatic outcomes by UNICEF and WHO.

The prototype product is an ORS "kit" named "Noya Jeevan Jal" (New Jeevan Jal) including a 500 ml. plastic container in a traditional Nepali design, two (2) 500 cc packets, and a plastic infant feeding spoon with the kit sealed in clear plastic using a heat seal process. The Noya Jeevan Jal (NJJ) packet will be distinguished from the 1000 cc Jeevan Jal packet by color (yellow for NJJ vs blue for JJ), packet size (1 cm less on two sides for NJJ), logo, mixing illustration, mixing instructions, and feeding instructions.

The basic elements of New Jeevan Jal are similar to container/packet products supplied in the Egypt NCDDP program as well as in other countries who have developed home-use ORS container programs. However, NJJ includes several enhancements and customization requirements for Nepal. After a period of time (1-2 years), containers will be prevalent throughout the district households and a differential pricing strategy (NJJ Kit vs NJJ container vs NJJ packet for resupply) may be considered.

In the test market, across the three districts of Gorkha, Jumla, and Bara/Parsa/Nawalparasi (still under discussion), the 1000 cc Jeevan Jal product will be withdrawn from all Ministry of Health Hospitals, Health Posts, and CHV distribution channels and CPS Retail and Rural Social Marketing distribution channels by May 1990. Simultaneously, the NJJ product will replace JJ and be distributed in all channels and pipeline levels. The 1000 cc Jeevan Jal withdrawn from these districts may be transferred to non-test market districts by the Ministry of Health and/or CRS. The test market will continue until September 30, 1990 at which time a 4.5 month program evaluation will be completed by a yet-to-be determined party for review and decision-making by NDDCP. A preliminary market evaluation will be completed by JSI within two months of the product launch.

In parallel to the test market. JSI/Nepal will provide market research technical assistance to refine NJJ product, pricing, distribution, and promotion variables in non-test market districts for incorporation into the NDDCP decision-making process.

**SECTION 3.
MANAGEMENT PLAN FOR NJJ PRODUCT DEVELOPMENT
AND TEST MARKET PRODUCT LAUNCH**

A. PROTOTYPE PRODUCT DESIGN AND TEST MARKET STRATEGY

1. Product Packaging Options Decision

Recommendation: NJJ will consist of a 500ml container, two (2) 500 cc packets and a plastic mixing/infant feeding spoon. All elements of this NJJ kit will be heat-sealed in a clear plastic bag in order to discourage sale of packets without containers. Test market districts will include Gorkhz and Jumla with discussion and a decision reached on Bara/Parsa/Nawalparasi/or other Terai district.

Completion Date: November 17, 1989

Prime Responsibility: Shared by NDDCP, CRS, RDL, USAID, and JSI.

2. Packet Design

Recommendations: The NJJ packet will be distinguished from JJ by name (Noya Jeevan Jal), packet color (yellow vs blue), packet size (1 cm less on two sides), logo (a mother holding an infant and spoon-feeding NJJ from with NJJ cup visible), mixing illustration, sample illustration showing water and full packet contents emptied into NJJ container), mixing instructions, and feeding instructions (emphasizing at least 1 full container of NJJ be fed to the child to replace fluid loss during diarrhoeal disease episode).

The logo will be repeated on both packet sides and all NJJ proportional campaigns. On the packet, the logo need not be as large as the mixing illustration, and in fact, can be smaller depending on available foil space. A simple 1 frame graphic illustration will be on both sides of the packet for mixing instructions. For the illustration, the entire NJJ packet (perhaps fully open and upside down) must be shown being emptied into the NJJ container (identified by form and logo) along with water being poured to the fill line.

Completion date: November 24, 1989

Prime Responsibility: CRS

Review/Approval: NDDCP, USAID, JSI/Nepal, FAX to Wasek

3. Container Design

Recommendations: Container color will be coordinated with packet color (yellow or white). The logo must be printed on the side of the container. Again, the logo need not be as large as the mixing illustration. The mixing illustration must be printed on the container. The exact design of the container including form, color, dimensions, fill-line (shape and printed). Plastic thickness, quality, hardness, and logo and illustrations printing requirements must be written and discussed with plastic container manufacturers in Nepal, Thailand, India, Bangladesh, or other countries.

The shape/form should be similar to the metal container prototype used in the JSI Market Test Cell Study with a more definite (sharp) fill line. Ideally, the fill line will be distinguished by the container form (the lip or flange) and a printed internal or external line. The logo and mixing illustration must be printed on the container. The plastic container must have no chemical/plastic smell characteristics of cheap plastic cups. The plastic used for the container should be of good quality and relatively hard and durable.

Completion Date: November 24, 1989

Prime Responsibility: JSI/Nepal and CRS

Review Approval: NDDCP, RDL, USAID, FAX to Wasek

4. Spoon Design

Recommendations: A small spoon will be used for mixing solution and infant feeding. A metal prototype was identified by JSI. It has a slightly deeper base for holding liquids and fits within the NJJ container. A ½ cm longer handle is needed yet must fit within the container. The color of the spoon should match the container. The plastic manufacturer should emboss the NJJ logo on the spoon at little additional charge. An illustration detailing the exact shape and dimension requirements of the spoon is required.

Completion Date: November 24, 1989

Primary Responsibility: JSI/Nepal and CRS

Review/Approval: NDDCP, RDL, USAID, FAX to Wasek

5. Packing Materials Plan

Recommendations: Heat-seal clear plastic wrapping is required for the NJJ elements. Samples of various technical solutions need to be reviewed. Printing on the clear plastic is possible but may not be necessary since the container logo will show through. The device intended for the use in NJJ wrapping must be decided. A decision must be made about who will be responsible for assembling NJJ components, sealing NJJ in plastic, packing the product for shipment/distribution (RDL or CRS or other) and the lead time necessary for wrapping 250,000 NJJ kits.

Prime Responsibility: CRS and JSI/Nepal

Review/Approval: NDDCP, RDL, USAID, FAX to Wasek

B. PACKET PRODUCTION

1. Foil Order and Acquisition

Recommendations: NJJ foil grade and quality should be comparable or better than JJ. Color and printing instructions/layout must be provided in a written document with illustrations. An initial test packet production run must be completed by RDL and packets reviewed for quality/correctness before the full production run.

Completion Date: November 24, 1989 for order and January 3, 1990 for foil receipt by RDL.

Primary Responsibility: RDL and USAID

Review/Approval: NDDCP, CRS, JSI/Nepal, SEND layout and foil sample to Wasek

2. Chemical Acquisition

Completion Date: November 24, 1989 for order and January 5, 1989 for receipt by RDL.

Primary Responsibility: RDL and USAID

Review: NDDCP, CRS, JSI/Nepal

3. Full Production Run for 500,000 NJJ Packets

Completion Date: Start on January 5, 1990 and finish on March 2, 1990

Prime Responsibility: RDL

Review: NDDCP, CRS, USAID, JSI/Nepal

C. CONTAINER PRODUCTION

1. **Recommendations:** contractor must have a proven track record of meeting production schedules and in producing high quality plastic products. Contractors in Nepal, Bangladesh, Thailand, India, or others should be considered.

Completion Date: November 24, 1989
Prime Responsibility: JSI/Nepal
Review: NDDCP, RDL, USAID

2. **Contract Awarded**

Completion Date: December 22, 1989
Prime Responsibility: USAID
Review: NDDCP, CRS, RDL

3. **Molds Design and Acquisition**

Completion Date: February 23, 1990
Prime Responsibility: Contractor
Review: NDDCP, CRS, USAID, JSI/Nepal

4. **Limited Production Run**

Completion Date: March 2, 1990
Prime Responsibility: Contractor
Review/Approval: NDDCP, CRS, USAID, JSI/Nepal, SEND to Wasek

5. **Full Production Run**

Completion Date: April 6, 1990
Prime Responsibility: Contractor
Review: NDDCP, CRS, USAID, JSI/Nepal

D. NJJ WRAPPING AND BOXING FOR 250,000 UNITS

Completion Date: April 20, 1990
Prime Responsibility: RDL and/or CRS
Review: NDDCP, USAID, JSI/Nepal

E. NJJ DISTRIBUTION AND JJ WITHDRAW

1. **Plan of Action**

Completion Date: December 8, 1989
Prime Responsibility: NDDCP and CRS
Review: USAID, JSI/Nepal

2. **NJJ Distribution**

Completion Date: Start by April 20, 1990 and Finish by May 18, 1990
Prime Responsibility: NDDCP and CRS
Review: USAID, JSI/Nepal

F. NJJ TRAINING PROGRAM

Completion Date: February 23, 1990 for materials and April 20, 1990 for all training
Prime Responsibility: NDDCP and CRS
Review: USAID and JSI/Nepal

G. NJJ PROMOTIONAL STRATEGY

1. **Plan of Action and Communication Strategy**

Recommendation: Promotional Strategy should include Radio, Billboards, Point of Sale Displays and other materials.

Completion Date: December 8, 1989
Prime Responsibility: CRS
Review/Approval: NDDCP, USAID, JSI, FAX to Wasek

2. **Promotional campaign**

Completion Date: Start May, 1990 and Finish September 1990
Prime Responsibility: CRS
Review: NDDCP, USAID, JSI/Nepal

H. NJJ PRELIMINARY MARKET EVALUATION POST-LAUNCH

Completion Date: June 30, 1990 for report
Prime Responsibility: To be determined
Review: NDDCP, CRS, RDL, USAID, UNICEF, WHO

I. NJJ FINAL EVALUATION

Completion Date: September 15, 1990 for report
Prime Responsibility: To be determined
Review: NDDCP, CRS, RDL, USAID, UNICEF, WHO

J. DETAILED PRODUCT, PRICING, DISTRIBUTION, AND PROMOTION MARKET RESEARCH

Recommendation: This survey and focus group research can be conducted in parallel to the test market launch in non-test market districts.

Completion Date: Start March 1990 and finish September 15, 1990
Prime responsibility: JSI/Nepal (Wasek) for design, JSI/Nepal and contractors for research
Review: NDDCP, CRS, RDL, USAID, UNICEF, WHO

APPENDIX B
GANTT CHART appears here

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APPENDIX B: GANTT CHART KEY

EDOP IS 11/3/89 Activity	Earliest Start After EDOP (weeks)	Completion (weeks)	Completion after EDOP (weeks/date)
A1 Product Design	EDOP	1	1 (11/10/89)
A2 Packet Design	1	2	3 (11/24/89)
A3 Container Design	1	2	3 (11/24/89)
A4 Spoon Design	1	2	3 (11/24/89)
A5 Packing Materials Plan	1	2	3 (11/24/89)
B1 Foil Acquisition	3	6	9 (1/5/90)
B2 Chemical Acquisition	3	6	9 (1/5/90)
B3 Full Production	9	8	17 (3/2/90)
C1 Container Options	1	2	3 (11/24/90)
C2 Contract Award	3	4	7 (12/22/90)
C3 Mold Acquisition	7	9	16 (2/23/90)
C4 Limited Run	16	1	17 (3/2/90)
C5 Full Production	17	5	22 (4/6/90)
D NJJ Wrapping	22	2	24 (4/20/90)
E1 NJJ Distrib. Plan	3	2	5 (12/8/89)
E2 NJJ Distribution	24	4	28 (5/18/90)
F NJJ Training Program	3	21	24 (4/20/90)
G1 NJJ Promotion/Plan	3	2	5 (12/8/89)
G2 Promotional Campaign	26	21	47 (9/30/90)
H NJJ Pre Evaluation	31	3	34 (6/29/90)
I NJJ Final Evaluation	42	3	45 (9/15/90)
J Detailed Market Research	17	28	45 (9/15/90)

APPENDIX E.

KAP Surveys: Market Research Objectives and Topic Areas

1. COMMUNITY SURVEY TO BE CONDUCTED BY SRI

The community survey to be conducted by SRI is part of the OMNIBUS Service with some methodological constraints. It is necessary for the Community KAP Survey to provide a baseline for future marketing and intervention efforts occurring within targeted intervention and control areas. Since these areas have not yet been chosen by PIO/P, either the ONIBUS Survey will or will not cover these areas. Assuming that the ONIBUS Survey cannot provide specific data on targeted areas, a separate specialized survey will need to be contracted. In any case, the following information is required specifically on mothers with children under the age of five.

A. OBJECTIVES

- Providing opinion data from the community which will facilitate the formation of implementation strategies for field testing.
- Collecting baseline information on:
 - the level of awareness of diarrheal disease symptoms and perceivable signs acute respiratory infection symptoms and perceivable signs, the ORS product, and procedures for rehydration;
 - the level of trial of the ORS product, and procedures for rehydration (i.e. the percentage of mothers who have used this product/ procedures at least once;
 - the level of satisfaction of mothers with the ORS product, ORS rehydration procedures, and ARI treatments;
 - the level of retention or continued use of the ORS product and rehydration procedures.
- Assessment of the level of demand for better diagnostic and/or treatment techniques in the opinions of mothers regarding ARI and diarrheal disease.
- Recording the actual words used by mothers (in their own languages in the targeted areas) to describe diarrhea and acute respiratory infection.

B. TOPIC AREAS

SRI should review the two KAP survey instruments in Appendix F for question format. Areas of interest includes:

- Demographics on the respondent.
- Any of the interviewee's children who have died within the last year. Age, sex, male, female. What was and who diagnosed the cause of death?
- Has interviewee ever visited primary clinic with a child under the age of 2 for a child health problem; visits with a child under the age of 5?
- Does mother know what diarrhea is? How does she describe it in her own words?
- Incidence of diarrhea: last week, last month, and last season.

- Is child breastfed during diarrhea? Eats normal food? Are fluids or food given? See and incorporate Q.4 and 15.
- Who advised mother on treatment?
- When was the child cured?
- Does mother know what dehydration is?
- How does she describe dehydration? What words are used?
- Does mother know of something mixed with water and given to the child who has diarrhea? Free recall question.
- Does mother know ORS BRANDNAME?
- Where did she hear about it?
- Has she used ORS? Does she regularly use ORS for child's diarrhea?
- When has she used it? Where has she used it? (clinic or home)?
- Who taught her to mix ORS? How does she mix it?
- Does she feel ORS is beneficial? Why?
- Incidence of child respiratory problems: last week, last month, and last season.
- How does the mother describe respiratory problems in her own words? Note symptoms described.
- What did she do when the child had respiratory problem? Where did she go for advice? Where did she go for treatment? What treatment did the child receive?
- Did the treatment for respiratory problems help the child? Was the child cured? How did she know the child was cured?

2. THE PROVIDER KAP TO BE CONDUCTED BY CCS

At present CCS plan to conduct observations of prescriber-patient and dispenser-patient interactions at the clinic level. Although these observations are very valuable, it is necessary for the Provider KAP to provide a baseline for later market tracking and intervention program evaluation similar to the Community KAP. It is also necessary to collect provider-patient observations with mothers with children under the age of five visiting for the young child's problem.

It is unclear to the consultant at this time how much data collection and analysis CCS can perform within the KAP study budget limitations. However, the study needs to be conducted in the target intervention and geographic areas. Given budget limitations, the consultant recommends postponement of provider focus groups with the KAP survey emphasizing quantitative information. In addition, the consultant feels that the dispenser-patient interactions are probably less important at this time, unless dispensers are making prescriber decisions.

At a minimum, the following is necessary from the Provider KAP from a marketing perspective.

A. STUDY OBJECTIVES

- Facilitating the formulation of implementation strategies and sequence of steps (a management plan) for field testing.
- Collecting information on the:
 - level of awareness of providers (separating responses of physicians and paramedics) of standard diagnostic and treatment protocols for ARI and dehydration, and awareness of the ORS product;
 - level of use of standard diagnostic and treatment protocols and ORS in their work (to be collected from actual observations of patient-provider interactions);
 - level of satisfaction with the diagnostic and treatment protocols that are actually used;
 - reasons why (in the opinions of providers) standard diagnostic and/or treatment protocols are not followed.
- Notation of the words for dehydration, diarrhea, respiratory problems, and dehydration and ARI symptoms as used by physicians and paramedics.
- Level of satisfaction or dissatisfaction with standard diagnostic or treatment protocols, supply of ORS and reasons for these opinions.
- OPTIONAL: If possible, reviewing draft PIO/P intervention strategies with providers for feedback on the overall strategy and elements of the strategy. This can be done through structured interviews or focus groups.

B. TOPIC AREAS

CCS should review the two KAP surveys in Appendix F for question format.

The draft observational instrument prepared by CCS in on the right tract, but the consultant recommends adding observational recordings on:

- diagnostic procedures used, whether standard diagnostic procedures were followed, and diagnosis;
- whether standard treatment protocol was followed;
- whether patient asked or demanded specific drugs or types of drugs;
- whether patient asked any questions about the drugs prescribed and what those questions were;
- whether the provider conducted any informational/educational demonstrations on mixing or administering ORS;
- at the time of the observational visit, did the clinic have a stock-out or ORS;
- during the hours of the observational visit, how many total patients visited the clinic, of what ages, and what symptoms/ailments?

The consultant believes the provider-patient observational component of the study can be very useful for intervention strategy and marketing plan development.

Structured interviews need to be conducted with providers to assess KAP of ARI and diarrheal disease symptoms, standard diagnostic protocols, and standard treatment protocols. Questions with providers should include many of the same issues as detailed in the Community KAP above, but focusing on provider's level of awareness of standard diagnostic and treatment protocols, level of use of these protocols, satisfaction with these protocols, and why, in the opinions of providers, deviations from the protocols take place.

What is the provider's opinion of the ORS product? What about of home-use ORS in general? How can the ORS product (or education patients about ORS) be improved?

OPTIONAL Concept Testing: What is the provider's opinion of the draft intervention strategies? Can the provider help the project by suggesting improvements on the draft strategies? What will be the problems in implementing the strategies, from the provider's point of view? How can these problems be solved?

APPENDIX F.

Example: Egypt NCDDP Survey Instrument and Nepal ORT Survey Instrument

MINISTRY OF HEALTH
NATIONAL CONTROL OF DIARRHEAL DISEASES PROJECT

Case No. _____

Evaluation of NCDDP Campaign

- 1) Governorate _____ Markaz _____ Village/Quarter _____
2) Name of Respondent _____
3) Name of Child _____
4) Address of Respondent _____
5) Name of Data Collector _____
6) Name of Desk Revisor _____

Date of Application / /1985
Date of Desk Revision / /1985

THE QUESTIONNAIRE IS CONFIDENTIAL
AND WILL NOT BE USED EXCEPT FOR
SCIENTIFIC RESEARCH PURPOSES

11. Do you think that the child should be breast-fed during diarrhea? () Yes Q12 () No Q13

12. Why do you breastfeed the child during diarrhea? _____

13. Why don't you breastfeed the child during diarrhea? _____

14. During diarrhea, if you neither breastfeed your child nor feed it normal food, what do you give it?

- | | | | |
|--------------------------------------|-----|------------------|-----|
| 0 - Fluids _____ | () | 0 - Carawya | () |
| 1 - Rice | () | 1 - Anise | () |
| 2 - Yoghurt | () | 2 - Mint | () |
| 3 - Previously Manufactured
Foods | () | 3 - Tea | () |
| 4 - Boiled potatoes | () | 4 - Orange Juice | () |
| 5 - Boiled vegetables | () | 5 - Lemon Juice | () |
| 6 - Soup | () | 6 - Helba | () |
| 7 - Does not Know | () | 7 - Rice Water | () |
| 8 - Others | () | 8 - Others | () |

15. What did you do when you noticed that the child was suffering from diarrhea?

- | | |
|----------------------------|-------|
| 1 - Gave it ORS | () |
| 2 - Gave it medication | () |
| 3 - Went to the physician | () |
| 4 - Consulted a pharmacist | () |
| 5 - Folk remedy, Describe: | _____ |
| 6 - Did nothing | () |
| 7 - Gave it fluids | () |
| 8 - Others | () |

16. Who advised you to do so?

- | | |
|-----------------------------------|-----|
| 1 - Myself/my husband | () |
| 2 - Friends, relatives, neighbors | () |
| 3 - Health related personnel | () |
| 4 - Media | () |
| 5 - Depot holder | () |
| 6 - Others | () |

17. Was the child cured? 1 - () Yes 2 - () No 3 - () Died

18. If so, what did you do?

- | | |
|----------------------------|-------|
| 1 - Gave it medication | () |
| 2 - Gave it ORS | () |
| 3 - Went to the physician | () |
| 4 - Consulted a pharmacist | () |
| 5 - Folk remedy, Describe: | _____ |
| 6 - Did nothing | () |
| 7 - Gave it fluids | () |
| 8 - Others | () |

19. Who advised you to do so?

- 1 - Myself/my husband ()
- 2 - Friends, relatives, neighbors ()
- 3 - Health related personnel ()
- 4 - Media ()
- 5 - Depot holder ()
- 6 - Others ()

20. When did you consider that the child was cured?

- 1 - When the diarrhea stopped ()
- 2 - When the child was revived ()
- 3 - When vomiting stopped ()
- 4 - When the child started playing ()
- 5 - When the child began to eat ()
- 6 - When the child's eyes were normal ()
- 7 - When the child's skin became normal ()

21. Did you hear of dehydration? () Yes, Q26 () No, Q40

22. What is dehydration? _____

23. Did it happen that your child suffered from diarrhea and it was associated with:

- 1 - Vomiting ()
- 2 - Sunken eyes ()
- 3 - Color of skin changed ()
- 4 - Lethargic ()
- 5 - Decrease in quantity of urine ()
- 6 - Thirst ()

24. When this happens, what do you do? _____

25. Did you hear of something dissolved in water and given to the child when it has diarrhea?

() Yes, Q26 () No, Q40

26. What do you call this thing?

- 1 - ORS ()
- 2 - Powder ()
- 3 - Glucose ()
- 4 - Milk ()
- 5 - Diarrheal medication ()
- 6 - Don't know ()
- 7 - Others ()

27. From where did you hear of it?

- 1 - Physician, health unit, hospital ()
- 2 - T.V. ()
- 3 - Radio ()
- 4 - Newspapers and magazines ()
- 5 - Posters ()
- 6 - Relatives or neighbors ()
- 7 - Depot holder ()
- 8 - Pharmacist ()
- 9 - Others ()

28. Did you use it for any of your children? () Yes, Q29 () No, Q30

29. Who advised you to use it? _____

30. Do you know how to use it? () Yes, Qs31, 37 () No, Q37

31. Method of mixing ORS: "The data collector should see the cup to know the amount of water"

Quantity of ORS:

- 1 - large Packet ()
- 2 - Small Packet ()
- 3 - Portion of a large packet ()
- 4 - Portion of a small packet ()

Use of ORS:

- 1 - Appropriate ()
- 2 - Concentrated ()
- 3 - Diluted ()
- 4 - Adding sugar and/or lemon ()

Quantity of Water:

- 1 - The project's plastic cup ()
- 2 - Soft drink bottle ()
- 3 - 200 c.c. ()
- 4 - Cup larger than 200 c.c. ()
- 5 - Cup smaller than 200 c.c. ()
- 6 - Spoons ()

32. When was the last time you used it?

- 1 - During the last week ()
- 2 - During the last month ()
- 3 - During this summer ()
- 4 - During this year ()
- 5 - During last year ()

33. Did you use it at home or in the clinic?

- 1 - At home ()
- 2 - In the clinic, the health unit, the hospital ()
- 3 - At home or in the clinic ()

34. When did you start giving it to your child? _____

(If the respondent answers: after going to the doctor" she should be asked when did she go to the doctor)

49. Did you see the advertisements by Karima Mokhtar? () Yes, Q50 () No, Q54

50. Did you like them? () Yes, Q51 () No, Q52

51. What did you like about them? _____

52. What didn't you like about them? _____

53. Do you prefer to hear the dehydration advertisements on radio or to watch it on T.V.?

1 - Radio () 2 - T.V. () 3 - Both ()

D) Questions Related to Newspapers and Magazines:

54. Did you read anything on diarrhea or dehydration in any newspaper or magazine?

() Yes, Q55 () No, Q57

55. Where did you read it?

() Magazines:

() Newspapers:

56. What do these magazines or newspapers say? _____

57. Did you see this brochure?

() Yes, Q58 () No

58. Did you understand it?

() Yes, Q59 () No

59. What did you understand? _____

=====



NEPAL ORT SURVEY INSTRUMENT

Section 1. ORT Awareness and Use

1. Has your child had diarrhea in the last 6 months? () Yes () No (skip to question 3)
2. (If Yes) What did you do to treat him/her? Anything else? (RECORD ALL RESPONSES)
- | First Response | Other Response | |
|----------------|----------------|--|
| () | () | Took to medical practitioner (Health Post, Health worker, Doctor |
| () | () | Took to local faith healer |
| () | () | Gave Jeevan Jal |
| () | () | Gave NCP |
| () | () | Other: _____ |
| () | () | Don't know/Don't remember |
| () | () | Did nothing |

2A. (IF DID NOTHING) Why? _____

3. If a friend or neighbor asked you for advice concerning a child with diarrhea. What would you recommend?
- () Go to a medical practitioner, Health Post, Health worker, Doctor
 - () Go to local faith healer
 - () Give Jeevan Jal
 - () Give NCP
 - () Other: _____
 - () Don't know

4. Have you ever heard of Jeevan Jal? () Yes () No (SKIP TO QUESTION 9)

5. What is Jeevan Jal used for? _____

6. Have you ever used Jeevan Jal? () Yes () No

7. How did you first hear about JJ? Anywhere/anyone else?

- | First | Other | |
|-------|-------|-----------------------------|
| () | () | Training |
| () | () | Radio |
| () | () | Posters/Signs |
| () | () | Medical Shop |
| () | () | Health Worker |
| () | () | Hospital/clinic/Health Post |
| () | () | Dhami/Jhankri |
| () | () | Other: _____ |
| () | () | Friend/Neighbor |
| () | () | Don't Know/Don't Remember |

8. Where near your home is Jeevan Jal available?

- () Shop
- () Health Clinic/Hospital
- () Other: _____
- () Not Available () Don't Know

9. Have you ever heard of NCP? () Yes () No (GO TO SECTION 2)
10. What is NCP used for? _____

11. have you ever used NCP? () Yes () No (GO TO SECTION 2)
12. (IF YES) How many times have you used NCP? () Once () Twice () Three or more () Don't Know/Can't Remember
13. How did you first hear about NCP? Anywhere/anyone else?
First Other
- a () () Training
 - b () () Radio
 - c () () Posters/Signs
 - d () () Medical Shop
 - e () () Health Worker
 - f () () Hospital/clinic/Health Post
 - g () () Dhami/Jhankri
 - h () () Other: _____
 - i () () Friend/Neighbor
 - j () () Don't Know/Don't Remember

14. (IF Q 13 C OR D) What do you remember about the ad? Anything else? _____

15. Method Image
(READ) I'm going to read you some statements about NCP and JJ. As I read each statement, please tell me which one method is best described.

<u>STATEMENT</u>	<u>NCP</u>	<u>JJ</u>	<u>DON'T KNOW</u>
Easiest to prepare	()	()	()
Easiest to obtain	()	()	()
Most effective for treating diarrhea	()	()	()
Least expensive	()	()	()

16. Has anyone ever come to this village to talk about NCP? () Yes () No (GO TO Q18)
17. (IF YES) What office had this person come from? _____
18. Have you ever attended any talks concerning NCP use and preparation? () Yes () No

SECTION 2. EXPOSE ADVERTISING

Now I'd like you to look at this ad. (SHOW POSTER)

19. Have you ever seen this ad before? () Yes () No () Don't know
20. What is the main point of this ad? _____

21. Is there anything confusing or hard to understand about this ad? () Yes () No
22. If yes, What is that? _____

51

SECTION 3. NCP PREPARATION

23. (ASK ALL AWARE OF NCP) When you prepare NCP what ingredients do you use and how much of each ingredient? (DO NOT PROBE!) (Specify Units for Amount)

- Sugar Amount: _____
 Salt Amount: _____
 Water Amount: _____
 Other: _____ Amount: _____

24. (ASK ALL WHO HAVE USED NCP) Would you please show me how you prepare NCP? (COLLECT SAMPLES OF SALT AND SUGAR, MEASURE AMOUNT OF WATER USED) (COMPENSATE FOR ALL SUGAR AND SALT COLLECTED OR SUPPLY SALT AND/OR SUGAR IF RESPONDENT HAS NONE)

Amount of water measured - _____

(EACH PACKET OF SALT AND EACH PACKET OF SUGAR SHOULD HAVE THE SAME ID CODE AS THE CORRESPONDING QUESTIONNAIRE.)

Salt provided by: Respondent Interviewer
Sugar provided by: Respondent Interviewer