

AFRICA CHILD SURVIVAL INITIATIVE
COMBATting CHILDHOOD COMMUNICABLE DISEASES
(ACSI-CCCD)

**STRENGTHENING PATIENT EDUCATION
FOR ORT SERVICES IN THE
CENTRAL AFRICAN REPUBLIC**



TRAINING



UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
Africa Regional Project (698-0421)



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control
and Prevention
International Health Program Office



THIS WORK WAS SUPPORTED AND MADE POSSIBLE BY THE AFRICA BUREAU, OFFICE OF OPERATION AND NEW INITIATIVES (ONI) AND THE OFFICE OF ANALYSIS, RESEARCH AND TECHNICAL SUPPORT (ARTS), UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT (A.I.D.) THROUGH THE AFRICA CHILD SURVIVAL INITIATIVE - COMBATTING CHILDHOOD COMMUNICABLE DISEASES (ACSI-CCCD) PROJECT, AFRICA REGIONAL PROJECT (698-0421) WASHINGTON, D.C.

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ACKNOWLEDGEMENTS

THE AUTHORS WISH TO RECOGNIZE THE SIGNIFICANT CONTRIBUTIONS OF THE STAFF OF THE DEPARTMENT OF PREVENTIVE MEDICINE AND MAJOR ENDEMIC DISEASES, MINISTRY OF HEALTH, CENTRAL AFRICAN REPUBLIC, THE CHIEF MEDICAL OFFICERS AND SUPERVISORS OF THE FIVE HEALTH REGIONS, AND THE U.S. PEACE CORPS TO THE SUCCESS OF THIS PROGRAM. EARLIER VERSIONS OF THE MANUSCRIPT WERE REVIEWED BY DANIELLE M. OLIVOLA, RONALD WALDMAN, STANLEY FOSTER, ANDREW VERNON, JUDY CHWALOW, VIRGINIA STURWOLD AND DAVID GITTELMAN. AN EARLIER VERSION OF THIS PAPER WAS PRESENTED AT THE TRIENNIAL MEETING OF THE INTERNATIONAL UNION FOR HEALTH EDUCATION, HELSINKI, FINLAND, JUNE 1991.

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WORKING PAPER: *Final Report*

STRENGTHENING PATIENT EDUCATION FOR ORT SERVICES IN THE CENTRAL AFRICAN REPUBLIC

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UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

Africa Regional Project (698-0421)

Participating Agency Service Agreement (PASA) No. 0421 PHC 2233

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

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Abstract

This paper describes the effect of a health worker training program in diarrhea case management on patient education in health facilities in the Central African Republic (C.A.R.). In 1989, a facility-based assessment of health worker practices in managing diarrheal disease in children under 5 years of age documented serious deficiencies in patient education. Based on these results, the Ministry of Health (MOH) designed an inservice training program that promoted education as an integral component of curative care. The training program was implemented in all five health regions of the country. An evaluation of the training's impact on the delivery of patient education indicated dramatic increases in the number of messages health workers communicated to mothers. This experience demonstrated that patient education can be improved through inservice training that integrates the teaching of clinical and communication skills. Additional study in C.A.R. is needed to 1) further improve the quality of patient education for diarrhea and other childhood communicable diseases, 2) determine the impact of patient education on the care provided by mothers in the home following a clinic visit, and 3) assess how operational research can be conducted within the limitations of inservice training programs and routine clinical operations.

Introduction

Effective case management is the cornerstone of the World Health Organization's (WHO) global strategy for the control of childhood diarrheal diseases.¹ Case management in the home and the health facility are important components of a comprehensive national diarrheal disease control program.² For facility case management to be effective, health workers must have an adequate and continuous supply of oral rehydration salts (ORS) and other materials and supplies to provide oral rehydration therapy (ORT). Health workers must also correctly diagnose and treat a child with diarrhea, and refer the child for additional care when necessary. Finally, health personnel must educate the child's mother* about caring for the child while at the clinic, upon returning home, and at the onset of the next diarrheal episode. Inservice training and supervision of health workers are important strategies for ensuring effective facility case management.^{3, 4, 5}

Experience from child survival programs in Africa during the past 10 years, however, suggests that training and supervision of health personnel may not have paid sufficient attention to the educational aspect of case management. Field evaluations of health worker practices in numerous African countries indicate that mothers receive little, if any, information, advice, or instructions from clinicians about ORT during a medical consultation.^{5, 6, 7} When health workers do give instructions, they rarely verify mothers' comprehension of the necessary follow-up actions.⁷ As a result, mothers often have neither the knowledge nor the skills to adhere to the recommended treatment or to respond appropriately at the onset of the next diarrhea episode.⁸ We know from experience in developed countries that once back in their home environments, patients need both skills and resources to adopt the behaviors recommended by health workers.³ Little is known about the possible association between these factors and mothers' compliance behavior in Africa.

Despite evidence of documented deficiencies, patient education remains a major weakness of ORT services in many countries.⁷ Possible explanations for this include 1) a lack of information about why communication during medical consultations is inadequate, 2) a lack of awareness among program managers and clinicians of the importance of patient education, 3) a lack of evidence that patient education can result in improved comprehension and compliance among mothers, 4) a lack of conviction among health workers that patients will follow their advice, 5) the absence of guidelines and skills to implement patient education effectively, and 6) the lack of supervisory recognition and reinforcement for health worker efforts in educating patients. This paper will describe the efforts of the Central African Republic (C.A.R.) to develop guidelines and skills to improve patient education for oral rehydration therapy throughout the country.

* "Mother" is used here and throughout the paper to refer to the caregiver who accompanies the child to the clinic and ensures follow-up care in the home.

To strengthen health workers' ability to better educate mothers during a clinical consultation, program managers in C.A.R. designed a training program that promoted patient education as an integral component of curative care. We will describe the four components of the training program, with particular emphasis on patient education. The C.A.R. Ministry of Health (MOH) evaluated the effect of training on the quality of case management, including patient education services, through systematic observations of health worker practices before and six months after training. We will present the results of these surveys. Finally, we will summarize the major findings from the C.A.R. experience, propose several ways of improving the approach, and suggest further areas of study.

The Diarrheal Disease Control Program In C.A.R.

In 1987, C.A.R. established a national policy for controlling diarrheal diseases in children under 5 years of age. The policy promotes the use of ORS in the health facility and in the home. Between 1987 and 1989, a national coordinator for the program was appointed and trained in diarrhea case management. Oral rehydration therapy units were established in four outpatient facilities in Bangui, the capital city, and in five regional hospitals. In November 1989, the MOH organized the first national ORT Symposium for Central African physicians. Following this symposium, many of these physicians, in association with the five regional supervisory teams, implemented an intensive field training program in diarrhea case management. An important tenet of this training was that learning how to communicate effectively with a mother during a medical consultation was as important as learning how to diagnose, treat, and refer the child with diarrhea. Therefore, the teaching of selected communication skills was combined with the teaching of other clinical skills. The MOH expected that immediate improvements in the delivery of patient education would lead to increased knowledge and skills among mothers, resulting in better follow-up care in the home.

The Training Program

The Department of Preventive Medicine and Major Endemic Diseases (DMPGE) organized and managed the training program. The DMPGE applied adult learning theory and the principles of systematic instructional design to the development of a four-component program.^{9,10} The four components were 1) needs assessment, 2) training design, 3) delivery of training, and 4) program evaluation. We will focus primarily on the *patient education* aspects of each of these components.

Identification of Training Needs

In 1989, the DMPGE, in collaboration with the Centers for Disease Control and Prevention (CDC), assessed the training needs of health workers in facilities with regular and adequate supplies of ORS. For each of the five health regions, the DMPGE first categorized these facilities by geographic location (urban, semi-urban, rural) and then selected a 50% random sample from each category. All children presenting with acute diarrhea during one day of observation were included in the sample. The total survey sample included 144 children treated for diarrhea in 79 health facilities.

A panel of physicians, nurses, and other technical staff from the DMPGE and CDC developed an assessment protocol and a standardized behavioral checklist that was based on clinical experience in oral rehydration therapy units in C.A.R., as well as similar observational protocols from other African countries. Using the standardized checklist, central and regional level supervisors conducted structured observations of health workers as they provided care to children with acute diarrhea. At the conclusion of the assessment, supervisors hand tabulated the data in the regions. Central and regional supervisors then discussed the findings and the implications for training.

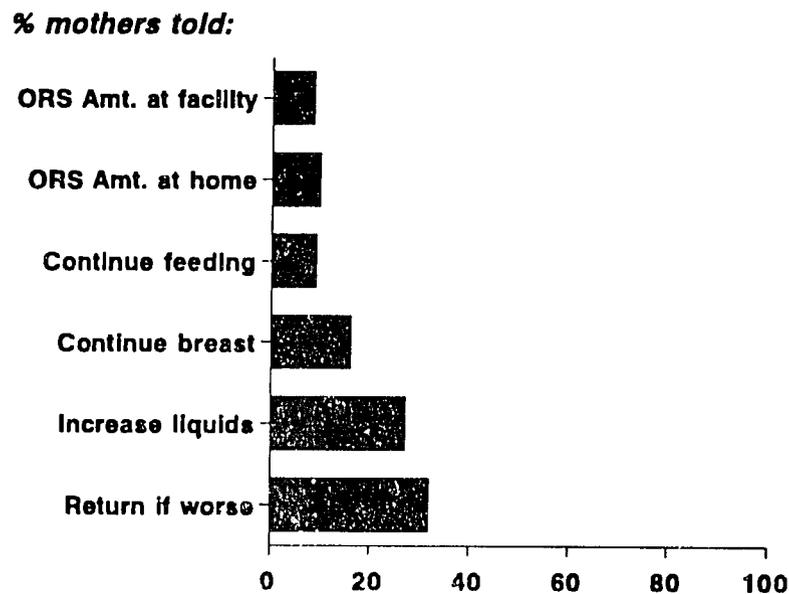
Selected results from this survey (Figure 1) show important deficiencies in health workers' communication of essential ORT instructions to mothers. These instructions include recommended behaviors during and following a medical consultation.

Health providers told approximately 1 of every 10 mothers how much ORS to give their child while under care at the clinic ($12/144$), how much ORS to administer to the child upon returning home ($14/144$), and about the importance of continuing to feed the child ($13/144$). Only 16% ($23/144$) of mothers were told to breastfeed during a child's diarrheal episode, and less than a third ($39/144$) were informed of the need to increase fluids during diarrhea. Providers told approximately one-third ($46/144$) of mothers to return to the health center with the child in the event that the child's general condition worsened.

Design of the Training Program

Following the discussion of survey results in each region, the DMPGE convened an interdisciplinary team of health professionals from the MOH in Bangui and CDC to review

Figure 1
Patient Education Practices Pre-Training Facility-Based Survey
Central African Republic, 1989



N=144 observations in 79 facilities

the data, to highlight important priorities for training and future supervision, and to design the training materials and training schedule. For patient education, the design team reached a consensus on 1) the priority interpersonal skills to be taught to health providers, 2) the specific instructions to be communicated to mothers at different points in time during a medical consultation, and 3) how to incorporate patient education into the training materials. A summary of these activities follows.

Selection of interpersonal skills. The design team gave primary importance to teaching health workers the following five skills: 1) *eliciting* information about the child's illness; 2) *providing* information about the illness and steps to be taken; 3) *demonstrating* treatment skills and explaining their importance; 4) *encouraging* mothers to seek clarification or to ask questions; and 5) *verifying* mothers' comprehension and skill mastery prior to leaving the health facility. While the curriculum emphasized the importance of interpersonal communication with the individual caretaker, trainers also taught health workers how to demonstrate the preparation of ORS solution in a group setting.

Selection of instructions. The behavioral checklist used in the baseline survey guided the training design team in its selection of a limited number of brief messages to be communicated to each mother. Messages addressed three general areas of behavior: 1) care of the child while at the clinic; 2) adherence to recommended treatment regimens following a consultation; and 3) subsequent use of health services. Program

managers and other MOH personnel decided when during the case management process instructions could most likely be communicated by health workers and remembered by mothers. These decisions were based on a review of surveys and training materials from other African countries, extensive discussion, and clinical experience in selected ORT outpatient units in Bangui. The grid in Figure 2 lists the desired clinic and follow-up care practices of mothers and the optimum time in case management when instruction might be most effectively delivered by the health worker to the mother.

Figure 2: Desired Practices Of Mothers

Clinical Phase	Clinic Practice	Home Practice
History	Describe duration, consistency of diarrhea Describe treatment prior to clinic visit Describe other signs associated with diarrhea	Continue positive practices: <ul style="list-style-type: none"> • Use clinic • Give liquids • Breastfeed • Give food
Physical exam	Nothing	Return to clinic if: <ul style="list-style-type: none"> • Loss of consciousness • Sunken eyes • Dry mouth • Skin turgor • Sunken fontanel
Prescription of treatment	Wash hands before preparing ORS Give teaspoons of ORS Administer ORS slowly Continue to breastfeed	Nothing
Surveillance of treatment	Give teaspoons of ORS Administer ORS slowly If child vomits, discontinue momentarily Administer entire cup Continue to breastfeed Stay until health worker concludes observation	Prepare ORS after each stool Give correct quantity of ORS Continue breastfeeding Continue feeding Continue liquids Return to clinic if child: <ul style="list-style-type: none"> • Does not get better • Continues to be tired • Stops eating, loses weight • Continues diarrhea
Exit	Describe preparation, administration of ORS Describe other treatment actions	Nothing

Development of training materials. Selected members of the training design team developed a case management training manual. The manual included nine lesson plans, each designed so that participants would

- discover why they need to master certain competencies
- learn in a variety of ways
- practice what they learned and
- give and receive feedback on their performance.

In the three lesson plans that dealt exclusively with clinical procedures (“Case History and Physical Exam,” “Prescribing Treatment,” and “Monitoring Treatment”), the design team 1) incorporated communication skill objectives into the learning objectives for each lesson, 2) wrote patient education instructions into the technical training aids at the appropriate moments in the clinical flow, and 3) wrote patient education instructions into the peer review checklists used in evaluating the performance of tasks as specified in the training aids.

Implementation of the Training Program

During a three-month period in 1990, regional supervisory teams conducted five regional workshops in diarrhea case management for 325 health workers. Each six-day workshop included supervised practice of skills both in the classroom and in clinics.

Simulations. During three days of simulated clinical care, facilitators led participants through a variety of interactive classroom exercises, including case studies, role plays, demonstrations, and group discussions. These simulations were intended to provide participants with confidence in communicating with mothers while routinely assessing, treating, and evaluating a child with diarrhea before encountering a mother in an Oral Rehydration Therapy Unit (ORTU) at the regional hospital. Peer review and feedback was an integral part of these simulations.

Clinical Practice. There were two opportunities for supervised practice of communication and clinical skills. The first session was conducted in the ORTU midway through the workshop. Following the first practice session, facilitators provided feedback to participants on their communication performance and demonstrated how it could be improved. Encouraging mothers to ask questions and confirming their understanding of instructions were the two areas where the greatest number of deficiencies were observed. The second practice session, which occurred the following day, offered participants an immediate opportunity to practice correctly the communication behaviors they had not mastered the previous day.

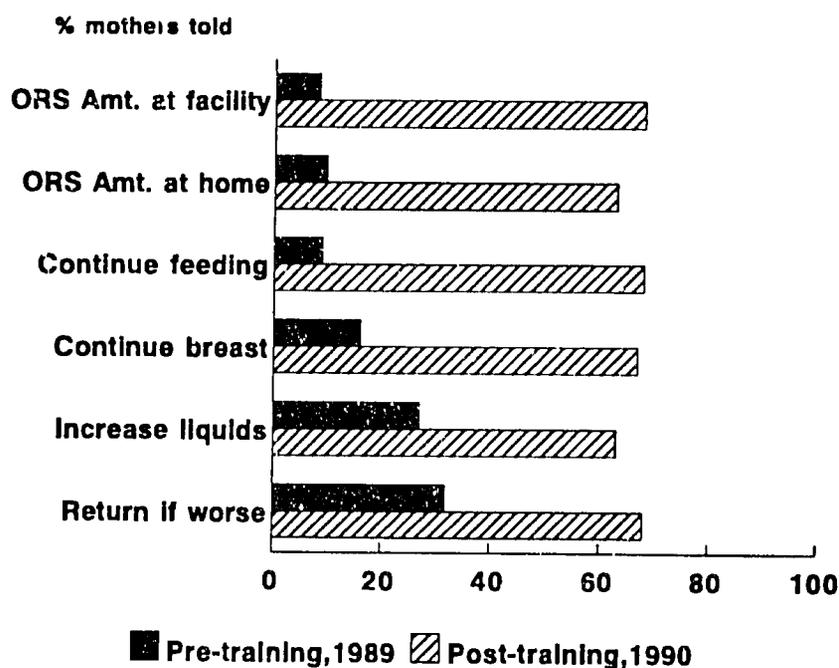
Evaluation of Training Impact

Approximately six months after training, regional supervisors repeated the health facility survey to assess whether training was associated with changes in health worker performance. The follow-up survey used the same instruments and sample selection procedures as the baseline survey, resulting in observations of 138 children at 87 facilities in five health regions.*

The results of the pre- and post-training facility-based assessments for patient education are presented in Figure 3. There were dramatic increases in the number of messages health workers communicated to mothers of children with diarrhea.

Differences from pre- to post-training in the percentage of mothers who received each message averaged 49.2%, with a range from 35.9% to 59.7%. At post-training, each of the six priority messages was delivered to at least 6 out of 10 mothers.

Figure 3
Patient Education Practices Pre/Post-Training Facility-Based Surveys
Central African Republic, 1989 and 1990



1989: N=144 observations in 79 facilities
 1990: N=138 observations in 87 facilities

* The difference in the number of facilities between the baseline and follow-up survey is due to an increase in the total number of facilities with regular adequate supply of ORS at the time of the later survey. Because of this change in the profile of facilities with adequate supply of ORS, new random samples were drawn.

Although the evaluation was based on a before-and-after design with no control group, it seems probable that the dramatic improvements documented in the performance of patient education are largely attributable to the training program. There were no other concurrent training activities involving these health professionals; repeated facility assessments in other African countries have not found improvements in patient education practices in the absence of training programs;⁷ and program participants reported anecdotally that the program had improved their skills.

Findings

While each country is unique and has different needs, there seem to be at least four “findings” of this two-year effort in the Central African Republic that can guide our continuing efforts to improve the quality of patient education in Africa.

- 1) *Decisions about improving the quality of patient education and the design of patient education training programs can and should be informed by data from observational studies of health workers’ practices, both before and after training.*

The experience in C.A.R suggests that observational data can be a powerful tool in helping national program managers recognize discrepancies between desired and actual performance. This recognition can result in informed decisions about the proper place of patient education in a case management training program. The facility-based assessment documented many missed opportunities for educating mothers about ORT during a clinical consultation for diarrhea. As a result, program managers allocated adequate time in the curriculum to patient education and accorded it status equal to the diagnosis, treatment, and referral of the child with diarrhea.

- 2) *Health workers and their clients are well served when training programs select the most important skills to add to a clinician’s repertoire based on documented need and reasonable expectations.*

In her article addressing the elements of quality family planning services, Bruce distinguishes between the “information-giving” role and the “affective or counseling” role of health provider.¹¹ At the same time, she emphasizes the complementary nature of these roles and their importance in ensuring high quality care. Having considered the data from C.A.R. and other countries indicating minimal interaction between health workers and mothers,⁶ the MOH chose to reemphasize the importance of the provider-client relationship and proceed incrementally, starting with strengthening health workers’ “information-giving” role. The first step was to ensure that a health worker developed the skills to share essential information with a mother at opportune moments, and to ask her to repeat the instructions she was expected to follow once she returned home. Of equal importance, and considering the available resources, was that this minimal level of effort be evaluated before addressing the question of whether patient education is associated with changes in mothers’ knowledge, skills, and compliance behaviors.

The patient education component of the case management training program focused on five skills. It was relatively easy to teach, learn, and practice these skills in both classroom and clinical settings. While health worker mastery and application of this limited set of skills is probably necessary but not sufficient to effect behavioral change in mothers, the MOH considered it a minimal expectation of its personnel to bridge the communication gap between providers and clients. Existing cultural norms, beliefs, traditions, and practices in Africa indicate that the health worker, in most cases, will have to take the initiative to

promote more effective communication with mothers.^{12, 13} Experience in developed countries has shown that more effective interaction between health provider and client can improve patient outcomes.³ By keeping things simple, the MOH hoped that health workers would be inclined to apply these essential communication skills in the field immediately following training and to learn a broader range of interpersonal skills at a later point in time.

The training design team's reasonable expectations of health workers and mothers was reflected in the fact that they limited the number of messages about the prevention of diarrhea in the C.A.R. program. Although increasing attention has been given to the inclusion of prevention messages in patient education programs for diarrheal disease control,¹⁴ the MOH believed that the program had reached its absorptive capacity with the case management information alone. The training design team believed that if health workers were asked to provide too many instructions, they would be less likely to do so, and mothers would be less likely to retain them.¹⁵ In the end, the program promoted 1) health workers' reinforcement of positive behaviors reported by mothers at history-taking, such as feeding, breastfeeding, and maintaining or increasing liquids; and 2) modeling of the importance of handwashing during the demonstration of ORS preparation.

- 3) *Every health worker is a potential patient educator; therefore, patient education should be an integral part of health worker training.*

The approach used in the C.A.R. training program demonstrated that health workers can provide simple instructions to mothers as part of routine case management and that health personnel can be brief, clear, and accurate. The C.A.R. "integrated approach" is unlike inservice training in patient education, communication, or counseling in Africa, which may unintentionally reinforce the segregation of education from "essential medical practice." Special courses immediately following or independent of "technical" training require additional time and money, as well as discrete modules or teaching units.^{16, 17} While complementary training with a special focus on education may be better than technical training that excludes it—as measured by quality of care and patient compliance¹⁸—distinct courses and materials are labor- and capital-intensive. These courses may communicate to health workers that education is a separate rather than an essential component of case management. In principle, linkages to the diagnostic, treatment, and referral steps of case management make information and advice more likely to be delivered by health workers and remembered by mothers.

- 4) *Repeated practice and continuous feedback are essential to effective training in patient education.*

An important lesson confirmed in the implementation of the training program in the five health regions of C.A.R. was that repeated practice of communication skills in both classroom and clinical settings, reinforced through timely and effective feedback, is associated with positive practices of health workers. For example, by the close of the classroom simulation phase of training, most trainers agreed that the majority of health workers were demonstrating acceptable proficiency in providing patient education during

role plays. In the clinic, however, these perceived gains quickly disappeared: health workers overlooked completely or paid minimal attention to patient education. Even the majority of trainers focused their attention on correcting health workers' deficiencies in diagnostic, treatment, and referral procedures. The use of observation to ensure transfer of patient education skills from the classroom to the field was a critical milestone for both participants and trainers.

Future Directions

The conduct of patient education will vary among African countries, and across ethnic and cultural lines within countries. Because these realities preclude the use of a standard approach for improving health workers' skills, every diarrheal disease control program manager must carefully plan a practical educational strategy for the health care setting. Unfortunately, health education interventions in both communities and health care facilities in Africa have too often been poorly planned.¹⁹ The predominance of the "health talk" approach to patient education widely used throughout Africa is evidence of the lack of proper planning. When these talks are given during outpatient visits, they are usually conducted in waiting rooms in hospitals or clinics, with groups of mothers before, during, or at the conclusion of treatment. Considerable anecdotal information suggests that these talks 1) are usually scheduled at the convenience of clinic staff, 2) may not be relevant to the needs of mothers with sick children, 3) are rarely linked to the reason for the clinic visit, 4) are of variable quality, and 5) offer little opportunity for useful communication. While the impact of didactic group presentations, such as health talks, on mothers' knowledge, skills, and behavior has not been a focus of operational research in African settings, experience with this kind of education in other clinical settings suggests that a shift to more interactive strategies is warranted.²⁰

In contrast to the "health talk", the C.A.R.'s approach appears to be a promising alternative for patient education. To improve further the quality of patient education services in C.A.R. and to expand our understanding of its potential impact on those using health services, more rigorous study would be necessary in at least four areas.

First, more *formative research* on mothers' behavior and health worker practices, as well as the determinants of these behaviors and practices, would have been useful in guiding the design of the training program in C.A.R. For example, research could have provided data for making informed decisions about 1) the proper questions to ask a mother concerning her knowledge of the child's condition and the treatment given prior to contact with the health worker, 2) whether the advice provided by health workers would be well-received or in conflict with her beliefs and practices, and 3) the most appropriate information to share with a mother, as well as how and when to communicate it. The ability of countries lacking adequate resources to collect these data as part of inservice training programs or routine clinical operations needs further study. One problem is that the MOHs are under considerable pressure (often donor-driven) to provide significant amounts of "catch-up" training in primary health care subjects to large numbers of health workers, without adequate time or resources to design such training.

Second, C.A.R. must identify and apply appropriate, effective, and sustainable strategies for *training program evaluation*. For this program, facility-based assessments were the principal evaluation strategy. The advantages were three-fold: 1) supervisors collected the data at minimum cost and with little, if any, disruption of ongoing services; 2) the data were objective, reasonably representative, and reflected the priorities and concerns of program

managers; and 3) the information from the surveys was extremely specific, readily understandable by the supervisors and other MOH staff, and useful in targeting the training program and assessing its impact on the quality of service delivery. The overall evaluation of the training program would have been strengthened, however, if the evaluation design included a greater variety of methods and measures. An important addition to the evaluation design in future training programs might be the measurement of changes in participants' skill levels from the time they arrive at the training venue to the time they leave at the end of the workshop. These workshop-based skills assessments would allow greater understanding of the facility survey results. For example, why did health workers communicate vital information to only 60% to 70% of mothers after training? Did they lack skills to provide the information (because the skill was never learned), or are there other constraints in their work environment that discourage interpersonal communication of this kind (even though they may be capable of performing adequately)? The measurement of skills acquisition during the workshop was considered in the C.A.R. program, but sufficient time, resources, and personnel were not available to develop the needed activities and instruments. Additional strategies and tools must be developed for detecting problems and improving training with the limited resources at the disposal of the MOH.

Third, the possible reasons why 30% to 40% of mothers in C.A.R. did not receive vital information from a *trained* health provider warrants further *health services research* to improve health worker performance. Further investigation can help identify the potential constraints that health workers may be facing in educating their clients, such as imprecise performance standards and job descriptions, patient overload, inadequate supervision, the absence of merit and reward systems for career enhancement, and demands and opportunities that compete for health workers' time. Possible solutions to these constraints also need to be determined, and small-scale field trials for testing combinations of promising strategies should be attempted.

Fourth, the association between patient education and mothers' comprehension and adoption of behaviors recommended by clinicians remains unproven. Does quality patient education improve a mother's ability to adhere to the recommended treatment once she returns home? What are the skills and resources she needs to comply with medical instructions? What are the barriers? At one month after contact with a trained provider, is she still able to provide appropriate care? Is improved patient education associated with more timely health-seeking behavior at the onset of future episodes of diarrhea? These questions need to be answered by *operational research* to convince program managers and clinicians of the importance of patient education and to improve training guidelines and skill-based training programs.

Conclusion

The training program in C.A.R. successfully met its goal of improving patient education: considerable change was noted from pre- to post-training in the proportion of mothers who received each message. This experience demonstrated that short-term improvements in patient education can be achieved when case management training promotes education as an essential component of a medical consultation. It also demonstrated that inservice training curricula can be made more relevant to health workers when performance is measured, discrepancies between desired and actual practices are analyzed, and the results taken into account in designing training. Furthermore, we learned that new methods for evaluating case management training programs that include the development of skills in patient education must be pursued. Further research is needed to determine what can be done beyond training to motivate health workers to deliver patient education. Patient education's impact on mothers' comprehension and compliance behavior after a medical consultation in C.A.R. is a research question still to be addressed. In this process of continuous improvement, two challenges remain. The first is to design and implement needed operational research that builds the capacities of program managers without diverting limited personnel and resources from the daily business of managing national programs. The second is to continuously encourage and support health workers to sustain achievements through inservice training and supervision.

Acknowledgements

The authors recognize the significant contributions of the staff of the Department of Preventive Medicine and Major Endemic Diseases, Ministry of Health, Central African Republic, the chief medical officers and supervisors of the five health regions, and the U.S. Peace Corps to the success of this program. The work was supported by the United States Agency for International Development through the Africa Child Survival Initiative-Combating Childhood Communicable Diseases Project (Africa Regional Project 698-0421). Earlier versions of the manuscript were reviewed by Judy Chwalow, Stan Foster, David Gittelman, Melinda Moore, Eve Nagler, Maye Olivola, Virginia Sturwold, Andy Vernon, and Ron Waldman. An earlier version of this paper was presented at the triennial meeting of the International Union for Health Education, Helsinki, Finland, June 1991.

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