



# **PRITECH**

*Technologies for Primary Health Care*

## Occasional Operations Papers

Integrating Diarrhea Control Training  
into Nursing School Curricula in the Sahel

*Suzanne Prysor-Jones*

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**INTEGRATING DIARRHEA CONTROL TRAINING  
INTO NURSING SCHOOL CURRICULA  
IN THE SAHEL**

**by Suzanne Prysor-Jones**

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## INTRODUCTION

This Occasional Operations Paper is another in a series that the PRITECH Project, funded by the U.S. Agency for International Development, will be publishing periodically. The papers focus on programmatic experiences in the field and on lessons we have learned. The PRITECH Project has full-time field staff operating in country and regional offices in Africa, Asia, and Latin America. Our field staff, in collaboration with their national colleagues, have operational experiences and ideas to share with their colleagues through these papers. Although the experiences derive from a particular country situation, we hope that lessons learned can be useful to CDD program managers elsewhere.

We believe that, by sharing our experiences working with national CDD programs throughout the world since 1983, we may give you new ideas for your programs. We encourage you to let us know about your experiences. We hope that you find this series interesting and useful — and that you enjoy a sense of sharing in the many struggles and successes of CDD programs throughout the world.

## **THE NEED FOR PRESERVICE TRAINING**

In the Sahel, as elsewhere, nurses working at the community level are frequently in charge of managing health centers and supervising health workers. Acceptance and effective use of oral rehydration therapy (ORT) in national health service ultimately depends on the nurses. Strategies for reaching nurses and other health professionals with information on ORT include preservice training (at the nursing or medical school level) and inservice training (retraining health professionals through workshops or seminars after they have entered practice). Reaching health professionals at the preservice level is a more cost-effective strategy. However, nursing school curricula in the mid-1980s in the Sahel did not cover information on ORT. Changing curricula in the schools of nursing has therefore become an important element of PRITECH's strategy in the Sahel.

PRITECH established the Sahel Regional Office in 1985 to provide sustained supervision and follow-up to countries in the Sahel region that requested PRITECH assistance. Technical and managerial assistance in the development and implementation of national diarrheal disease control (CDD) programs for six Sahelian countries — Burkina Faso, The Gambia, Mali, Mauritania, Niger, and Senegal — is provided by three regional officers based in Dakar.

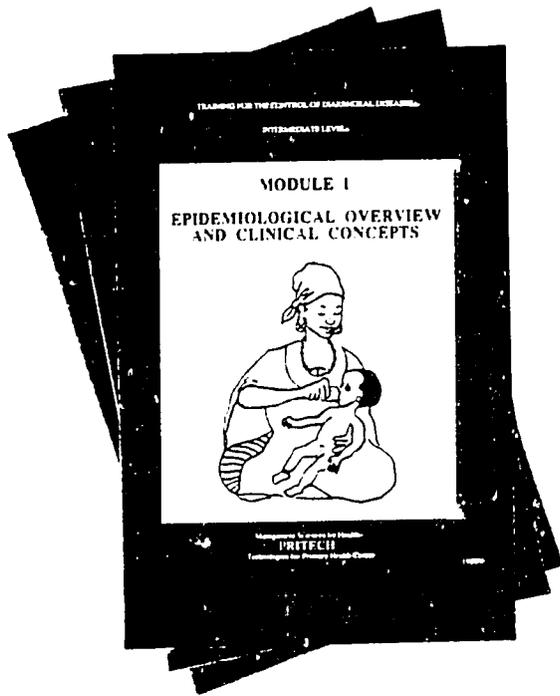
## **DEVELOPMENT AND FOLLOW-UP OF NURSING SCHOOL MODULES**

In 1986, Dr. Suzanne Prysor-Jones, PRITECH regional director for the Sahel, and Dr. Diego Buriot, World Health Organization (WHO)/AFRO Diarrhoeal Disease Programme coordinator, developed a plan for revising curricula at schools of nursing in the Sahel. WHO/AFRO provided about 50 percent of the funding required, including the time and travel costs of an advisor and all the costs pertaining to two regional workshops. PRITECH contributed the time of Dr. Prysor-Jones and Dr. Adama Kone, as well as the printing costs of the training modules developed. PRITECH has also covered the cost of following up the use of the modules by working with 21 nursing schools in the region.

It was agreed that a set of competency-based modules of intermediate level (that is, for workers between the community-health level and physicians) would be appropriate for preservice training, and that schools of nursing in five countries should be approached to participate in the curriculum development and application. The five countries initially involved were Mali, Niger, Senegal, Mauritania, and Burkina Faso. In all but the latter, PRITECH was already involved with national CDD programs.

After a series of discussions on form and content among WHO/Brazzaville, WHO/Sub-Region I, PRITECH, national CDD coordinators, and training school authorities, a small team formed, composed of PRITECH/Sahel staff and a WHO consultant resident in Dakar.

Although the WHO Control of Diarrhoeal Disease Programme had developed a training course for health workers,<sup>1</sup> it was not specifically aimed toward nursing students. The team used the WHO materials as a starting point, adapting them for the Sahel region and revising them to build nursing skills. The team developed a first draft of the following booklets:



*Module 1. Epidemiological Overview and Clinical Concepts*

*Module 2. The Treatment and Prevention of Diarrhoeal Disease*

*Module 2. Appendix: Cholera*

*Module 3. Application of Health Education Techniques to Diarrhoeal Disease Control Programs*

*Module 4. Elements of a National Program to Combat Diarrhoeal Diseases*

*Field Training Workbook*

*Teacher's Guide*

Modules 1 to 4 are used in the classroom, while the training workbook is used during practicums.

An important element of the development of the modules was the participation of key personnel at the nursing schools themselves. During the summer of 1986, the PRITECH/WHO team visited 11 schools in Mali, Niger, Burkina Faso, Mauritania, and Senegal to discuss the current teaching of CDD, introduce the idea of the modules, and propose an outline of their content. Later, PRITECH and WHO invited two representatives from each school and the national CDD coordinator from each participating country to attend a workshop to discuss the first draft of the modules in detail. During the first half of 1987, WHO and PRITECH revised the modules following the workshop recommendations and comments from WHO/Geneva, WHO/Brazzaville, and PRITECH advisors. By August 1987, 6,000 copies of the modules had been printed in French.

The next step involved a second visit to the 11 schools to discuss integration of the new modules into the school curriculum. Many schools have large classes, which make group activities more difficult. PRITECH continued to communicate with the schools through visits and phone calls after use of the modules had begun, to encourage use and help them overcome integration problems.

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<sup>1</sup> Control of Diarrhoeal Disease Programme. *Management of the Patient with Diarrhoea: Supervisory Skills*. Geneva: WHO, 1987 rev. 1990.

Several characteristics made the modules useable in the different Sahel countries. First, the francophone countries have similar school systems, making integration strategies and material to be covered similar across the Sahel. Second, educational materials from the national CDD programs from each country were integrated into the modules. Finally, drawings showing scenes and peoples from the region were used to illustrate the booklets.

In 1988, an Arabic version of the modules became available, and in 1989, the English translation was printed specifically for nursing schools in The Gambia. Over the next few years, 10 more schools expressed interest in incorporating the modules into their curricula, bringing the total count to 21 (see the appendix for the complete list).

The modules are now being used in 16 of the 21 schools in the six Sahel countries in which PRITECH works. The active involvement of the national CDD programs has been an important factor both in adopting and in following up on the modules. The CDD programs in Mali, Niger, Burkina Faso, Mauritania, and The Gambia have played important roles in ensuring the continued adoption of the modules. In Senegal, which did not have an active CDD program from 1988 to 1992, the adoption rate has been poor.

The PRITECH Sahel Regional Office has attempted to follow up on the schools during visits to the different CDD programs. These visits have commonly served as a stimulus for CDD programs to become more involved with the training schools.



## IMPACT OF THE NURSING SCHOOL MODULES

No systematic evaluation of the modules has taken place to date. Such an evaluation would probably show considerable variability in results. Encounters with recent graduates during a health-facility survey, carried out in late 1990 by the Ministry of Health and PRITECH in Burkina Faso, showed that some graduates had a good level of knowledge and practice, whereas others (from the same school) were poor in both. The apparent conclusion is that teaching and learning have been uneven. However, there are several indications that the modules have made a positive impact on nurse training and have also provided a possible model for other public health programs.

First, use of the modules has resulted in the allocation of more time to CDD issues in all participating nursing schools. According to information collected during the initial visits to the schools, CDD issues, including hygiene and cholera, were previously allocated a maximum of eight to 10 hours of teaching time. By current estimates, schools now average at least 30 hours of CDD training, not including workbook use during practicums.

Second, informal interviews with teachers and students have revealed considerable satisfaction with the modules. The modules have been characterized by students in Mali as “easy to follow,” “clearly and concisely presented,” “good for reference,” and “different [positively] from the frequent lecture and note-taking system.” Similarly, teachers have tended to have few criticisms of the modules as far as form and content are concerned.

Third, the existence of the modules has facilitated communication links between national CDD programs and training schools, providing a possible model for other priority public health programs. In all six countries, the modules provided the CDD programs with the first occasion for approaching the training schools.



CDD program coordinators often found to their surprise that teachers had very little awareness of the national CDD program and its implications for the tasks that would be demanded of the students in the field following their training. The coordinators also found that education materials developed or used by the CDD programs (such as local liter containers, posters, flyers, and booklets) were usually not available for teaching. CDD programs have, on the whole, followed up by providing educational materials and other assistance.

Finally, the modules have generated considerable interest from countries outside the region. The CDD program in Chad, for instance, intends to introduce the modules in its

nurse training school. The CDD program in the Comoros has requested 21 sets. And, district medical officers in Burkina Faso have requested large numbers of modules to be used for inservice training. This prompted the development in 1988 of an inservice training manual, *Manuel de recyclage*, based on the modules, using the same format and content.

This inservice manual is more concise than the teaching modules and is published in loose-leaf form, so that it can be easily updated or changed to fit national program needs. So far, the manual has been widely used in Burkina Faso and in Niger. The CDD programs in Niger and Senegal have reprinted their own versions of the manual. It has also been adapted for Mauritania and used there on a small scale.

## COMMON PROBLEMS ENCOUNTERED

**Schools have difficulty finding sufficient time in the curriculum to teach all of the modules. Directors tend to complain that the modules take up too much time in the curriculum, though most have managed to accommodate them in one way or another. Module 3, for instance, which is on educational techniques for CDD, is often taught in health education classes.**

**Some of the auxiliary-level, two-year training courses do not use Modules 3 and 4. In fact, some of the learning objectives of Module 3 and most of the objectives of Module 4 are designed mainly for state registered nurse-level training.**

**The pedagogical ability of the teaching staff is quite uneven in many of the schools and refresher courses within the schools have been difficult to organize. Many of the teachers in the schools are well-qualified and are quite at home with participatory teaching methods and use of materials such as the CDD modules. The part-time teachers have not always benefited from the same level of training in pedagogy, and even some of the permanent staff require refresher training.**

**In almost all of the schools, there are enough skills among the permanent teaching staff to ensure adequate refresher training of their colleagues and part-time staff. This is not easy to organize, however, and assistance from outsiders would probably help. One problem is the expectation that workshops will provide per diems to cover daily expenses, a request that most donors cannot fulfill when the activity takes place in the normal workplace.**

**Many of the teaching staff require training in CDD policy and case management. Many of the teachers have only a sketchy knowledge of CDD program issues and ORT case-management practice. As CDD programs organize more inservice training courses, it would be beneficial to include them as participants.**

**The teaching of the modules by part-time staff jeopardizes the sustainability of the**

**modules' teaching.** The modules are usually taught by permanent school staff, with the help of part-time staff, such as a pediatrician. But when the teaching has been done entirely by a part-time teacher, the use of the modules was discontinued when the teacher concerned terminated his involvement with the school.

**Some of the obstacles to improvements in teaching methods are financial.** Several schools have complained of difficulties doing some of the practical exercises in the community or in health services (outside of practicums) because of lack of transportation. Others have found some creative solutions to this. Means of transport to prepare the staff at rural practicum sites and to follow up the students during their practicums is a problem cited by almost all of the schools.

**Student practicums are often ill-prepared and barely supervised.** Most nursing students in the Sahel must fulfill a one- to three-month practicum requirement in order to graduate. However, students tend to be used mainly as extra hands for miscellaneous routine activities, which limits their opportunities for learning new skills. Most schools do not have clear guidelines for the practicums (except for schools using the CDD field training module). Sometimes there are learning objectives, but these are not translated systematically into *specific learning activities*. The Field Training Workbook is thus a big departure in methodology.

A PRITECH visit to a sample of nursing students from Dakar during their rural practicum showed considerable variation among students. About 50 percent were using the Field Training Workbook, but the exercises requiring case follow-up, community work, and group education sessions tended not to be done. The other 50 percent were completely absorbed by the routine activities of the centers to which they had been assigned. The Senegal school does do a preparatory visit to the health centers, so recommendations for better preparation of the resident health staff during this visit were made to the school.

**Case management is poor in some of the health facilities where students do their urban and rural practicums.** It is usually difficult, if not impossible, for teachers from the schools to intervene in the case-management practices of the health services where the students are placed. It is not always possible to choose services with good case-management practice as practicum sites, as there are many students to place and relatively few services willing to accommodate them.

The national CDD programs have a key role to play here in working to upgrade case-management practice in general, to ensure that there will be some consistency between what the students see in the field and what they have learned in school. PRITECH is assisting with the establishment of oral rehydration units in most of the countries, and practices are slowly improving.

## LESSONS LEARNED

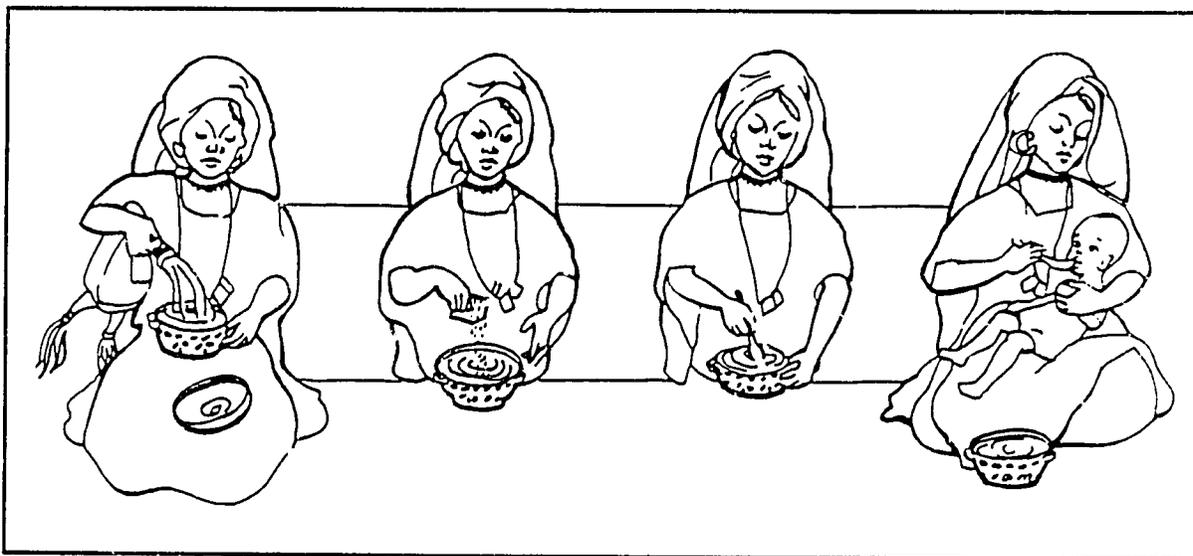
**Participation of schools in the development of the modules was a motivating factor in their subsequent use.** Nine of the 11 schools that participated in the development of the modules are in fact using them. One of the participating schools not using them did use them in the past but, because of personnel changes, discontinued their use. The other school not using them has had a complete change of personnel.

For those schools not involved in developing the modules, a workshop to introduce them can be useful. A three-day workshop on teaching methodology and some CDD content was organized in The Gambia for teachers from the four training schools in May 1989, once the modules had been translated into English. Two of the four schools are now using the modules and a third has asked the national CDD program for assistance in their use.

In the new school in Ouayaguiya, Burkina Faso, a workshop seems to have been unnecessary; the modules are being used there without one. However, this may be because some of the teachers already had experience with them elsewhere and because of a pediatrician who has long championed the cause of ORT teaches in the school.

**The active involvement of the national CDD program is a key factor in adopting the modules.** As mentioned above, the CDD programs in Mali, Niger, Mauritania, and The Gambia have played an important role in ensuring adoption of the modules. The involvement of each CDD program is also necessary for effective problem-solving after initial adoption.

The certified nurses school in Bamako, for example, was distributing the modules to students without actually teaching them. The teachers seemed to have difficulty with their



integration and teaching. Since the two other schools in Bamako were already using them quite well, the Mali CDD program arranged for a teacher from one of these schools to provide assistance. This was apparently well-received by all, and the modules are now integrated into the curriculum.

**The intervention of an outside agency is often necessary to support the follow-up efforts of the CDD program.** The nursing school systems are often not under the Ministry of Health. Thus, national CDD programs may not always have adequate authority or leverage to encourage new teachings. In some countries, CDD program staff prefer to have the participation of PRITECH personnel when contacts with the schools are made. The schools are usually fairly autonomous and the presence of an outsider, working on a regional basis, gives a certain legitimacy and weight to the intervention and can circumvent sensitivities. This has been the case particularly in Mali and Mauritania.

In the absence of a structured CDD program (as in Senegal and in Burkina Faso until late 1990), PRITECH has been alone in working with the schools. This is definitely a sub-optimal situation; the success in changing curricula comes with the strength of cooperation between the national CDD programs and PRITECH.

**It is possible to introduce CDD teaching modules into a curriculum that is not run on a modular basis.** Sixty-six percent of the schools contacted are now using the CDD modules. All but one of them have spread the CDD modules throughout the curriculum, usually over a two-year period. Only one school has run a week-long seminar to go through all of the modules at one time.

**Having enough sets of training materials available for teachers and students alike is an important motivating factor for the introduction of new content.** Students and teachers expressed appreciation that everyone concerned has a set. This allows students to prepare by themselves outside the classroom, and to keep the modules as reference materials.

Although the provision of modules for all students requires resources and organization, the cost of a set of modules at the time was only US\$6.00 (6,000 sets were printed in French to last through 1992). The English version cost US\$14.00 per set (only 600 copies were made, for The Gambia). The Arabic version has only been photocopied so far, because final corrections of the language have not yet been submitted by the Mauritanian school.

**The modules seem to be quite usable in an English school system, judging by the Gambian experience.** Although Gambian school officials did not participate in the drafting of the modules, and although Gambian schools are based on the British system, the state registered and state enrolled nursing schools adopted the modules with little apparent difficulty. Workshops were conducted to introduce the modules to the school staff.

**Improvements in teaching methods require considerable follow-up.** As with attempts to change behavior in any setting, steady and periodic follow-up is required to improve

teaching methods. School authorities in Mauritania, for example, agreed in January 1990 that a meeting on teaching the CDD modules should be held with all the permanent and part-time staff and the national CDD program. It took another PRITECH visit to the school in May, several proddings from the CDD coordinator, indirect messages from Dakar, and a change of directorship at the school before the meeting finally took place.

## PLANS FOR THE FUTURE

The PRITECH Sahel Office plans to take several steps to improve the use of the CDD nursing modules. Specifically, PRITECH plans to:

1. Continue efforts to assist CDD programs to improve general levels of case management, especially in health facilities that receive students for practicums.

2. Review with each school the questions and methods used for evaluating the students' CDD knowledge and practice. PRITECH will also collect evaluative information available from the schools and suggest ways to improve such information, where possible.



3. Encourage national CDD programs and schools to organize workshops on teaching methodology, where this would be useful. PRITECH can offer technical assistance for such workshops.

4. Encourage national CDD programs to organize case-management courses for school teaching staff. WHO/Brazzaville has reserved funds to cover training costs in five countries for this purpose. Mali and Niger have already started this training.

5. Complete and test a new module on nutrition and diarrhea.

6. Update the modules to include the new WHO case-management treatment chart, treatment of dysentery, and other new technical developments.

7. Reprint the modules in French after consultation with the schools on needs for the next five years.

8. Correct and print the Arabic version when corrections are received from the Mauritanian school.

9. Continue to promote CDD program involvement in follow-up and problem-solving through periodic visits to schools, attempting to emphasize improvements in the preparation and evaluation of workbook use and practicums.

While development and implementation of the CDD nursing school curriculum have proven time-consuming and difficult for the PRITECH Sahel staff, preservice training will continue to be an important part of the PRITECH/Sahel strategy. The potential improvements in proper treatment of diarrhea and use of ORT by health center staff, which can result from the training, make the effort worthwhile. In addition, the methodology used to develop and introduce the curriculum in nursing schools can be applied by other public health programs throughout the Sahel.

**APPENDIX**  
**Sahelian Nursing Schools Using the PRITECH Modules**

**Burkina Faso**

Ecole Nationale de Santé Publique, Ouagadougou

Ecole Nationale de Santé Publique, Bobo-Dioulasso

Ecole Nationale de Santé Publique, Ouayaguiya

**The Gambia**

State Registered Nursing School, Banjul

State Enrolled Nursing School, Banjul

Public Health School, Banjul

Community Health Nurses School, Mansakonko

**Mali**

Ecole Secondaire de la Santé, Bamako

Ecole de Point G, Bamako

Centre National de Développement Communautaire, Bamako

Ecole d'Infirmiers, Sikasso

**Mauritania**

Ecole Nationale de Santé Publique, French sections, Nouakchott

Ecole Nationale de Santé Publique, Arabic sections, Nouakchott

**Niger**

Ecole Nationale de Santé Publique, Niamey

Ecole Nationale d'Infirmiers Certifiés et d'Agents Sanitaires, Zinder

**Senegal**

Ecole National d'Infirmiers d'Etat du Sénégal, Dakar

Ecole des Sages Femmes, Dakar

Ecole de l'Association des Oeuvres Privés Catholiques de Santé, Dakar

Ecole des Assistants Sociaux, Dakar

Ecole de Khombole

Ecole de Thies