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**EVALUATION OF THE
BURUNDI
COMBATting CHILDHOOD COMMUNICABLE DISEASES
PROJECT**

October 1987

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LIST OF ACRONYMS USED

ACSI-CCCD	African Child Survival Initiative
CCCD	Combatting Childhood Communicable Diseases
CDC/A	Centers for Disease Control, Atlanta
CDD	Control of diarrheal diseases
CP	Condition Precedent
EPI	Expanded Program on Immunizations (PEV)
EPI/CCCD	Ministry of Health Office of EPI and CCCD Programs
FBU	Burundi francs
GOB	Government of Burundi
HCW	Health care workers
HIS	Health Information System
HPRC	Prince Regent Charles Hospital, Bujumbura
IEC	Information, education, and communication
IMF	International Monetary Fund
IV	Intravenous
KAP	Knowledge, attitudes, and practices
LMTC	Control of Communicable Diseases and Malnutrition Deficiencies (MOH Project)
MCH	Maternal and child health
MCS	Medical Chief of Sector
MIS	Management Information System
MLM	Mid-Level Management Course
MOE	Ministry of Education
MOH	Ministry of Health
NGO	Non-governmental organization
OR	Operations research
ORS	Oral rehydration salts
ORT	Oral rehydration therapy
PASA	Participating agency service agreement
PEV	Programme Elargi de Vaccinations (EPI)
PHC	Primary health care
SILT	Integrated Leprosy and Tuberculosis Service
TA	Technical assistance
TO	Technical Officer
TOT	Training of Trainers course
USAID	United States Agency for International Development
WHO	World Health Organization

ACKNOWLEDGEMENTS

Our warmest appreciation goes to two people whose collaborative efforts have been so important for the effectiveness of the CCCD Project and who made our visit to Burundi a very smooth running experience: Dr. Fidele Bizimana, the Director of the EPI/CCCD Office of the Ministry of Health, and Mr. Cyril Pervilhac, the CDC Technical Officer for the CCCD Project. If we understood the character of the CCCD program in Burundi and have made a fair evaluation, it was because of their tireless efforts to lend logistical and technical support to the evaluation team, to answer our questions, to help us get many different views of the project, to encourage us to be critical, while at the same time allowing us to observe the real progress and achievements for which they both have considerable responsibility.

We must also thank the many other Ministry of Health officials who helped us and worked with us during this evaluation; in particular, our counterpart, Dr. Didace Seruzingo, whose clear analysis of the project was so helpful, and the EPI/CCCD Team, who worked so hard to inform us of their activities. In the field, several Medical Chiefs of Sector assisted our evaluation teams to observe the project at the periphery of the health system.

UNICEF officials, Representative Maria Diamonte and Dr. Zeno Bisoffi, lent advice, information, and logistical support to the evaluation, as they have so crucially to the project itself. Rene Plamondon, who has been advising the MOH on the World Bank supported Health and Population Project, was also extremely helpful. WHO Representative Dr. Kalisa Ruti provided two additional consultants who strengthened our team immeasurably.

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In Washington, Wendy Roseberry and Myra Tucker set us on the right track at the very beginning, encouraging us to be tough, fair, and brief.

Finally, Julie Stagliano and the staff at URC, prepared our team and gave us excellent logistical support from the beginning.

1.0 EXECUTIVE SUMMARY

The evaluation team has been very impressed with the progress made in the first two years of the Burundi CCCD project. This progress has occurred more strikingly in some components of the project -- especially in EPI -- than in others and our recommendations are in part designed to encourage greater success in the less effective components.

1.1 Project Extension

We feel strongly that the level of success of the project is, without doubt, sufficient to merit a 5 year extension. Much has been accomplished and what has been achieved can form an excellent basis for extending the benefits of the project to areas that have not achieved the same levels of effectiveness.

We feel that the commitment of the MOH is sufficiently demonstrated to merit continuation of the project. Extension of the project fits well into the current and anticipated portfolio of AID activities in the country. It also is well coordinated with the current and anticipated health activities of other donors.

The continuation of the CCCD project can be financed in two phases. As will be noted in the section on financing (Section 5), there are ample funds remaining in the project accounts to allow for a one year extension of the current project. Additional funds will have to be provided by CCCD/AID Washington funds for an additional four years.

RECOMMENDATION:

The CCCD project be extended for another five years.

(Responsible Agencies: MOH, AID/Washington, USAID/Burundi. Date: April 1988)

1.2 Project Technical Officer

The current Technical Officer (TO) has been remarkably effective in working with the MOH and other donors to initiate and implement this project. Unfortunately for the project, he is not extending his contract and will be leaving Burundi in March 1988. It is imperative that the gains that have been made during his two years be consolidated with the timely appointment of his replacement.

To consolidate the project and assure its institutionalization, the incoming TO should be experienced in developing administrative skills of the national counterparts.

RECOMMENDATION:

A replacement TO be identified in a timely manner so as to be in-country by February 1, 1988.

Scope of work for TO to include on-the-job training of host country nationals in management and administrative skills.

(Responsible Agency: CDC. Date: December 1987)

1.3 Project Component Recommendations

1.3.1 Training

Training of health workers and supervisors has been a major accomplishment of the project. Through training of trainers and middle level management courses, the project has improved the skills and practices of health workers at the periphery.

However, these initial training activities need to be consolidated and extended to overcome continuing problems and to give renewed emphasis to the weaker sub-components of CDD, malaria, and supervision. In particular the paramedical training schools, which have recently expanded to produce many new health care workers, need to be strengthened in CCCD component activities. Greater emphasis needs to be placed on practical skills and hands-on training. More systematic curriculum needs to be developed and more instructional materials need to be made available for classroom use.

Some essential practices in EPI, CDD, and malaria were found lacking in our observation of health center practices. Training programs should give special emphasis to enhancing knowledge of ORT practices, cold chain maintenance, sterilization procedures, and use of malaria drugs.

RECOMMENDATIONS:

The MOH curriculum commission convene to consider changes in the content and methodology of the current paramedical curriculum, incorporating CCCD objectives along with other changes dictated by new primary health care programs.

MOH and the Ministry of Education collaborate on similar changes needed in the curriculum of the university medical school, incorporating clinical practice in health centers in addition to the current hospital-based practice.

All current paramedical and medical school instructors receive TOT through the CCCD project (with TA provided as needed) and all newly assigned instructors receive TOT by the start of each school year or during the next scheduled TOT.

TA be provided to assess needs and to plan and conduct a follow up TOT to reinforce the training skills of the regional training teams.

(Responsible Agencies: MOH, Division of Personnel Management, MOE, Paramedical and Medical Schools, CCCD. Date: June 1988)

The regional training teams, with two seminars under central-level supervision behind them, should be able to function fairly autonomously as trainers. Still, some central-level coordination of the various teams' proposed training calendars with those of other health programs, as well as facilitation of budgetary and materials requests, is needed. The absence (for long-term training in Canada) of the head of the MOH training unit may remove one of the prime moving forces in the promotion and coordination of decentralized training. Frequent personnel transfers and the consequent shrinking or rearrangement of the regional teams also contribute to the need for some central coordination.

RECOMMENDATION:

Assign responsibility for training coordination for all CCCD components (to include coordination with each training team, paramedical school, MOH training unit, and other PHC programs) to one of the existing CCCD national program coordinators (with the assistance of one of the four CCCD technicians).

(Responsible Agency: EPI/CCCD. Date: December 1987)

1.3.2 Supervision

Real progress has been made in supervision of CCCD project activities. The Medecins Chef du Secteur have received training in supervision and supervision forms have been provided to standardize these activities. EPI/CCCD technicians provide supplementary supervision.

Nevertheless, the evaluation team found that often the supervisory visits by MCS are incomplete and cursory. Supervisory responsibilities are often subordinated to hospital and other curative functions. Most of the supervisory visits involved a simple administrative review of registries and did not include observation of practices or on-the-job training to correct problems.

In the opinion of this evaluation team, improved supervision is a central factor which could contribute to overcoming many of the other problems of the project and assure a more effective institutionalization of project activities. Many of the problems to be discussed below involve the difficulty of changing the behavior of health workers in the health centers. Some of these changes can be encouraged by training programs for these workers. However, this training must be reinforced by strong supervision which involves not only careful and thorough observation of actual practices, but also effective means of motivating health workers and providing on-the-job training.

RECOMMENDATION:

Technical assistance (several short term consultancies) be provided to review the current supervisory system and assist the MOH to:

- 1. Design training programs for MCS and medical students in order to develop capacities for careful evaluation of health center activities and provide on- the-job training of health workers.**
- 2. Redesign supervisory forms to integrate all program activities and to require systematic reporting to the national EPI/CCCD Office and encourage follow up evaluations of problems.**

(Responsible Agencies: CCCD, MOH. Date: April 1988)

1.3.3 Combatting Diarrheal Diseases

The first MOH/CCCD Operations Plan set forth in December 1986, defined the CDD objectives for 1987. The CDD program has been supervised and managed by the EPI/CCCD Office, with logistic support from UNICEF for ORS packets. ORT is

practiced in all health facilities. There is now also an ORT Training and Treatment Unit at the Prince Regent Hospital (HPRC).

Although ORT is practiced in all health facilities, its primary role in the control of diarrheal disease in children does not seem to be fully understood as evidenced by the continuing use of antibiotics and prescribing ORS to adults.

The ORT Unit at HPRC, which was designed to promote ORT use and skills among physicians and other health officials, has yet to become an effective treatment and training center.

RECOMMENDATIONS:

Organize the information of all health care workers, through training, both in-service and seminars, on the following points: 1) the objectives of CDD program, 2) priority for the use of ORT in the treatment of infant and child dehydrating diarrhea, 3) the limited and discrete use of antibiotics and antiparasitic medications, 4) the urgent necessity to limit the waste of ORS packets by not providing them as treatment for adults.

(Responsible Agencies: MOH, CCCD, UNICEF. Date: April 1988)

Provide trained personnel and solve location problems that have inhibited the effectiveness of the promotion and training aspects of the ORT Unit at the HPRC and encourage the creation of other units in other health facilities once the central Unit is fully functional.

(Responsible Agencies: MOH, EPI/CCCD, HPRC, Forami Clinic. Date: June 1988)

1.3.4 EPI

The Expanded Program on Immunizations (EPI) in Burundi is one of the best in Africa in terms of efficacy and impact. It now covers the entire country. The program has reached a turning point where the number of measles deaths prevented equals the number of deaths by measles. All health centers have cold chain equipment and are provided with vaccines and injection and sterilization supplies. Daily vaccination with all antigens theoretically occurs everywhere, and in the sectors where it seems necessary, an Outreach Vaccination Strategy has begun to be developed. Thus, all the necessary conditions exist for EPI in Burundi to be a success. Without question, the program possesses the resources needed to be successful. However, there are still some obstacles to optimal application of EPI.

Vaccines are available everywhere in the country. However, shortages at the national level are relatively frequent, with three shortages -- one two months long -- between May 1986 and May 1987. These shortages may have several causes: poor estimation of needs; too frequent, small deliveries; and more wastage than anticipated. Some of this waste is due to the inappropriately large sized vials that are being ordered. High dosage vials may be inefficient with the current policy of immunizing children regardless of the number to be immunized at one time.

RECOMMENDATIONS:

Appoint one medical technician to be responsible for maintaining stock levels.

Order the smallest available, cost-effective, size of vaccine vials.

(Responsible Agencies: EPI/CCCD, UNICEF. Date: Earliest vaccine order)

Although there is a national level guide for the strategy and the EPI/CCCD Office monitors the programs, often there are inconsistencies in the field implementation. It would be useful to have a much more precise uniform policy for the Outreach Vaccination Strategy at the national level.

RECOMMENDATION:

Review, update and make more specific, the Outreach Vaccination Policy in the national plan, and distribute it to all Medical Chiefs of Sector.

(Responsible Agency: EPI/CCCD. Date: February 1988)

1.3.5 Malaria

Several programs in malaria have been implemented with support from many donors. CCCD activities have encouraged the development of a National Malaria Plan of Activities and the MOH has appointed a National Malaria Coordinator who will assume his position on return from graduate training in September 1988.

It is clear that, although malaria drugs are in abundant supply at the periphery of the health system, our team observed considerable variation in malaria treatment practices in health centers.

In addition, the CCCD malaria program is currently not well coordinated with other malaria activities of the MOH, in particular the Control of Communicable Diseases and Malnutrition Program (LMTC), and the absence of the appointed coordinator has curtailed the coordination and progress of malaria activities.

RECOMMENDATIONS:

An Acting National Malaria Control Program Coordinator be appointed by the MOH to provide guidance for implementing the National Malaria Strategy Plan until the permanent coordinator returns from his training program.

(Responsible Agency: MOH. Date: January 1988)

The malaria unit be transferred to the Department of Hygiene and Prevention to be integrated into the Office of EPI/CCCD.

(Responsible Agency: MOH. Date: June 1988)

1.3.6 Education

Health workers clearly see health education as a priority activity and have made time for it in daily routines. Some workers even conduct community-based group education. CCCD project has supported health education through a variety of methods, including

collaboration of the development of posters for a 1987 social mobilization campaign and the encouragement of an intersectoral conference on health education, and the preparation of a draft Health Education Plan of Activities.

Health education activities have been inhibited, however, by the absence of an approved health education plan of activities, a lack of coordination among technical level personnel in other government and donor agencies and by a lack of knowledge about the effectiveness of health messages. A particular weakness is the lack of pretesting of health messages.

A detailed plan of activities for health education was submitted to MOH for approval by relevant divisions in April 1986. It was never approved. An informal health education working group involving donor agencies and high-level MOH officials meets irregularly to discuss health education issues. The group does not include a member of the MOH/HE Unit, although other MOH officials participate.

RECOMMENDATION:

MOH assign one or more technicians from the MOH/HE unit to the CCCD health education working group, and this group write an updated Health Education Plan of Activities, taking into account the original plan and current program needs.

MOH approve the updated CCCD Health Education Plan of Activities, with revisions as needed.

(Responsible Agency: MOH/HE Unit, MOH. Date: June 1988)

The MOH/HE Unit does not have its own resources to collect data and conduct pretests in the field.

RECOMMENDATION:

CCCD provide funds for locally available technical assistance to HE working group to begin formative data collection, message development, pretesting of messages for the CCCD project activities.

(Responsible Agencies: UNICEF, CCCD, MOH/HE Unit. Date: June 1988)

1.3.7 Operations Research

MOH officials appear to be quite interested in pursuing operations research projects. However, the government has yet to establish priorities for operations research and has not utilized project funds available for these activities.

There is a pressing need for operations research that focuses on administrative, supervisory, and health education issues. Most of the operations research proposals that have been made to date focus instead on disease specific issues. Appropriate technical assistance could demonstrate the variety of operations research topics that would have more direct bearing on the problem areas in the program for such topics as health

education messages, supervision forms and techniques, the effects of daily vs. twice weekly vaccination, etc.

RECOMMENDATION:

Schedule at least one technical assistance seminar which focuses on operations research topics for supervision, administration and health education issues.

(Responsible Agencies: CCCD and MOH. Seminar scheduled before April 1988)

The MOH needs to take a more active role in defining priorities for operations research projects and in actively supporting them. The past committee reviewed operations research projects that were submitted by others. In the future, the committee should review project activities that are in need of research to determine options and strategies that MOH might pursue. The committee should then establish priorities for research and put out requests for proposals.

RECOMMENDATION:

The operations research committee be reconstituted after the CCCD operations research seminar to establish operations research priorities and prepare requests for proposals targeted to these activities.

(Responsible Agency: MOH. Date: June 1988)

1.3.8 Health Information System

A series of major evaluations have concluded that the current MOH Health Information System (HIS) major reorganization and upgrading. EPI/CCCD has developed an effective HIS for vaccinations and reporting for 28 diseases which provides an interim HIS service for the MOH.

The Health and Population Project that is receiving major support from the World Bank, has a HIS component which should be able to develop an integrated, uniform and comprehensive MOH HIS.

RECOMMENDATION:

CCCD request short-term technical assistance every three or four months for approximately three weeks each, to assist the MOH Statistical Services in the development of their new health and management information system.

(Responsible Agencies: EPI/CCCD. Date: January 1988)

2.0 GENERAL INTRODUCTION

2.1 Social, Economic, and Political Context

Burundi is a small, landlocked East African country with one of the highest population densities on the continent. Predominantly rural, its population depends largely on small subsistence farming. Economic development is restricted by dependence on coffee, tea and other tropical products whose world markets continue to be depressed.

The demographic growth and health levels are similar to other Sub-Saharan African nations. The population is growing at about 3% per year, life expectancy is around 47 years and infant mortality is estimated to be around 119 per 1000. Infectious and parasitic diseases are the major causes of mortality and morbidity. Malnutrition is prevalent. Chloroquine resistant malaria is spreading and AIDS incidence is increasing.

The financial resources of the Government of Burundi are extremely limited and have been further restricted by the austerity program adopted in 1983 to comply with IMF conditions. This adjustment policy continues in force and has imposed severe limitations on national financial commitments to the government health services.

In September 1987 there was a bloodless coup which replaced the military government of Jean-Baptiste Bagaza, who had been in office since 1976. The new military government, headed by Pierre Buyoya, ended a policy which had progressively limited the operations of the churches, including their health facilities.

The coup did not result in significant changes in the Ministry of Public Health (MOH) personnel directly associated with the CCCD project. However, it did produce high level personnel changes. The new Minister, who assumed office the day before this evaluation team arrived in country, had been the Director of the Department of Health Services. He is a well-respected public health official who had been involved in early decisions to initiate the CCCD project and had visited CDC/Atlanta while attending a program in health management at Atlanta University in August this year. He, as well as other recently appointed health officials, warmly received the evaluation team and pressed upon us their interest in the CCCD project, the continuing priority they place on its activities and their desire to have the project extended.

2.2 CCCD Project Background and Proposed Extension

The AID-supported CCCD project (CCCD), which is the subject of this evaluation, supports a Burundi government program called the Expanded Program of Immunization/CCCD (EPI/CCCD), which is managed by the EPI/CCCD Office in the Ministry of Health. The government program is also supported by other donors. The major support for this program comes from UNICEF. While our focus is on the AID-supported CCCD project, it must be recognized that the government and other donors hold the major responsibility for the EPI/CCCD program.

As will be evident in the course of the following report, the evaluation team has been very impressed with the progress made in the first two years of the CCCD project. This progress

has occurred more strikingly in some components of the project -- especially in EPI -- than in others and our recommendations are in part designed to encourage greater success in the less effective components.

The reasons for this success are varied. A central reason is that the government of Burundi has remained firmly committed to the goals and objectives of the project, has provided significant and growing financial support to the project, and has established a stable and strong national team to manage the project, which is well integrated into the MOH administrative structure. In addition, the other donors, UNICEF in particular, have provided major technical, financial and logistical support on a continuing basis.

Other reasons for the effectiveness of the first two years of the project include the dynamic talents of the Technical Officer, the strong support from AID/Washington and CDC/Atlanta, and the major efforts of USAID/Burundi over the last year to overcome initial misunderstandings of the role of the CCCD project in the AID portfolio.

This evaluation team was charged with the responsibility not only to make recommendations about the current situation of the CCCD project, but also to recommend whether or not the project should be extended.

We feel strongly that the level of success of the project is without doubt sufficient to merit a 5 year continuation of AID support for the project activities. Much has been accomplished and what has been achieved can form an excellent basis for extending the benefits of the project to areas that have not achieved the same levels of effectiveness.

We feel that the commitment of the MOH is sufficiently demonstrated to merit continuation of the project. Extension of the project fits well into the current and anticipated portfolio of AID activities in the country. It also is well coordinated with the current and anticipated health activities of other donors. Suspension of the project would send the wrong message about AID and U.S. government interest in these health priorities and in the new government of Burundi.

The continuation of the CCCD project can be financed in two phases. As will be noted in the section on financing (Section 5.0), there are ample funds remaining in the project accounts to allow for a one year extension of the current project. Additional funds will have to be provided by reprogramming CCCD Regional Funds for an additional four years.

RECOMMENDATION:

The CCCD Project be continued for another five years. Financing can be provided through an extension of the current project for one year, using unexpended funds in the current project allocation. Additional funding for the remaining four years should come from AID Washington/CCCD funds.

(Responsible Agencies: AID/Washington, USAID/Burundi. Date: April 1988)

3.0 PROJECT PLANNING, ADMINISTRATION AND MANAGEMENT

3.1 Administrative and Management Structures of the Government CCCD Project Activities

3.1.1 Background and Accomplishments

Several important contextual factors are important for analyzing the administrative and management situation of the CCCD project.

First, the MOH is currently implementing an extensive decentralization which was designed with WHO cooperation and was approved in 1986. The decentralization is to create 15 Health Provinces (Figure 1) to replace the current four medical regions at the provincial level. The Health Provinces will administer twenty five Health Sectors which in turn will supervise 114 Health Zones at the commune level (the smallest government territorial administrative unit). The Health Zones will include 211 Health Centers or Dispensaries (see Chart A). While some aspects of the decentralization have been initiated, the major reorganization has yet to occur. The provincial level health officials have not yet been appointed and the reorganization of the Health Sectors has formally created 25 territories but the seven new units are not yet functioning as separate administrative structures.

Part of this reorganization also involved the creation of Commune Socio-Health Committees. These committees have been formed in selected provinces as part of a phased implementation of community participation.

This process of decentralization has created some problems in the implementation of the CCCD project, particularly in the HIS and epidemiological evaluation where the change from 18 to 25 Health Sectors has complicated reporting and analysis. However, the reorganization holds some promise for administrative strengthening -- especially for supervision of health facilities -- which, if implemented, could have a positive impact on the project activities.

Second, the MOH is currently completing a major planning effort, called the Health and Population Project, which will receive significant support from a five year, multi-million dollar project to be funded by a \$11 million loan from the World Bank, and by large grants from other donors. This major project is expected to receive formal approval from the World Bank before the end of 1987. Preliminary programming of activities have already begun for anticipated starting date of January 1988. The Health and Population Project was developed by the Office of the Inspector General and Health Planning, with technical assistance from the World Bank.

This project has multiple interventions throughout the MOH and will focus on administrative reform, institutional strengthening as well as a variety of program areas, including MCH, Family Planning, HIS and MIS, Health Education, Training and infrastructure construction and remodelling. The project anticipates the incorporation of projects from other donors and could be considered as an overall MOH plan to coordinate donor programs. For instance, AID's planned population project will form an integral part of the program, and UNICEF and CCCD are anticipated to continue to be major contributors to their current areas.

REPUBLIQUE DU BURUNDI
MINISTRE DE LA SANTE PUBLIQUE

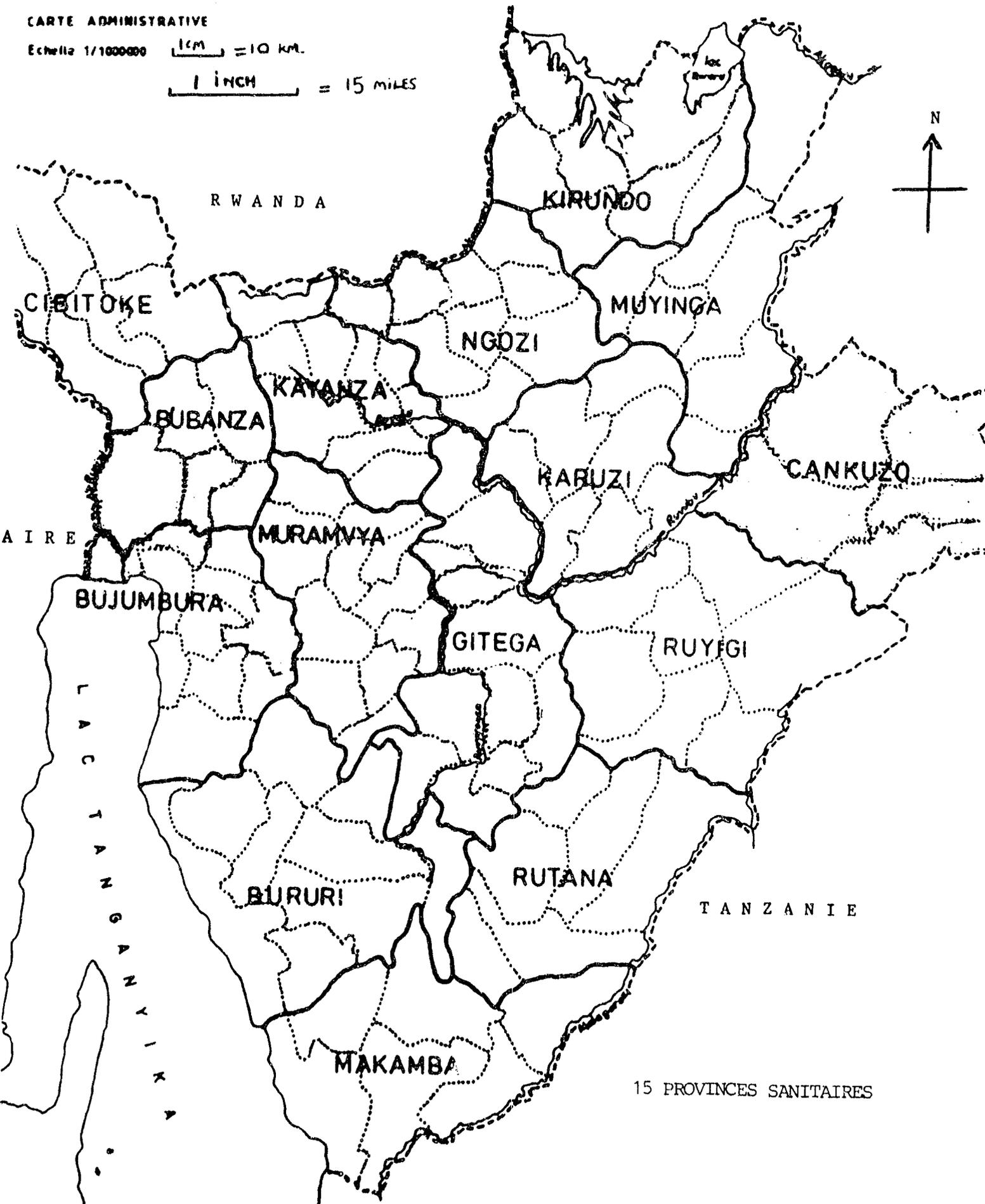
FIGURE 1

CARTE ADMINISTRATIVE

Echelle 1/1000000

1cm = 10 km.

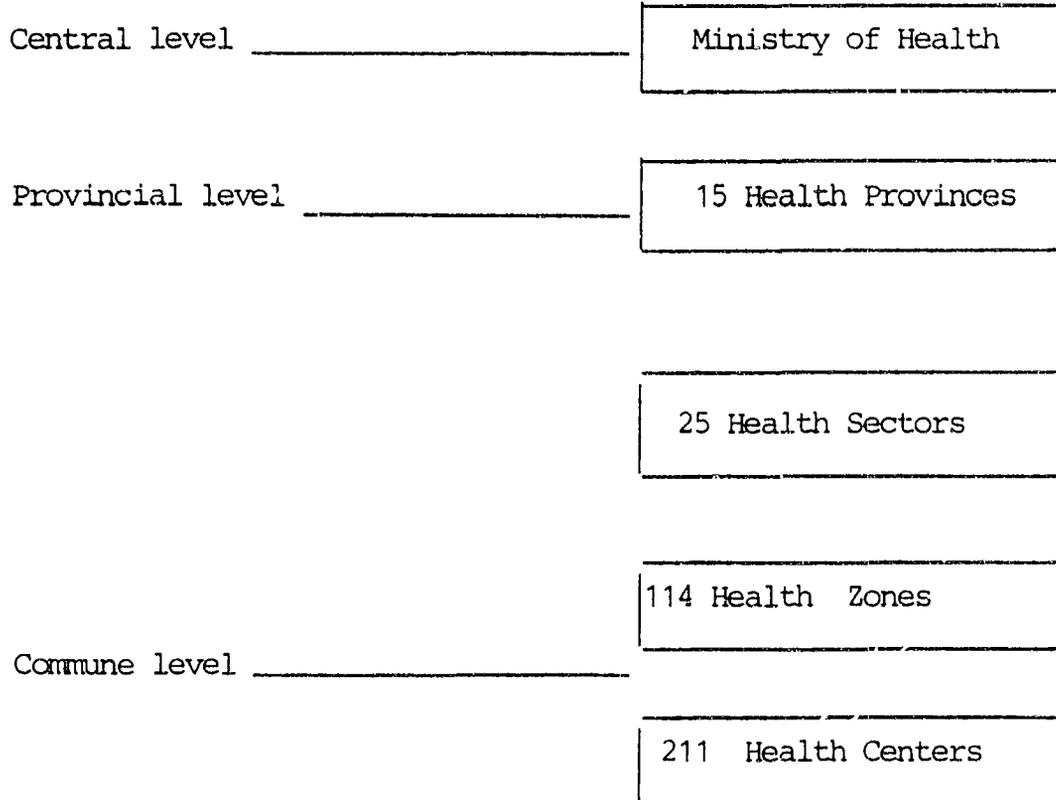
1 INCH = 15 MILES



15 PROVINCES SANITAIRES

CHART A

APPROVED REORGANIZATION OF MINISTRY OF HEALTH.



Most informants were impressed by the process of the development of the project, in which many CCCD team members, as well as other donors participated. While the success of this project is attributed to the effectiveness of the World Bank technical assistance, it is clear that it is fully supported by actively participating members of the MOH and is seen as a MOH project.

It is likely that many of the problems that have been identified in this evaluation can be addressed by the Health and Population Project and that all future CCCD activities must take into account the progressive implementation of this effort.

3.1.2 CCCD Project Administration

The CCCD Project is currently administered as a fully integrated program within the MOH administrative structure. It is implemented by the EPI-CCCD Office which is part of the Department of Hygiene and Prevention. This organizational location is appropriate for the project, and will continue to be appropriate in the anticipated reorganization envisioned in the Health and Population Project (see Chart B).

The CCCD project has profited from the earlier established EPI program which was started by UNICEF and WHO in 1980. The EPI administrative structure formed an established basis for the program and in part explains why the EPI component is further advanced than the other components.

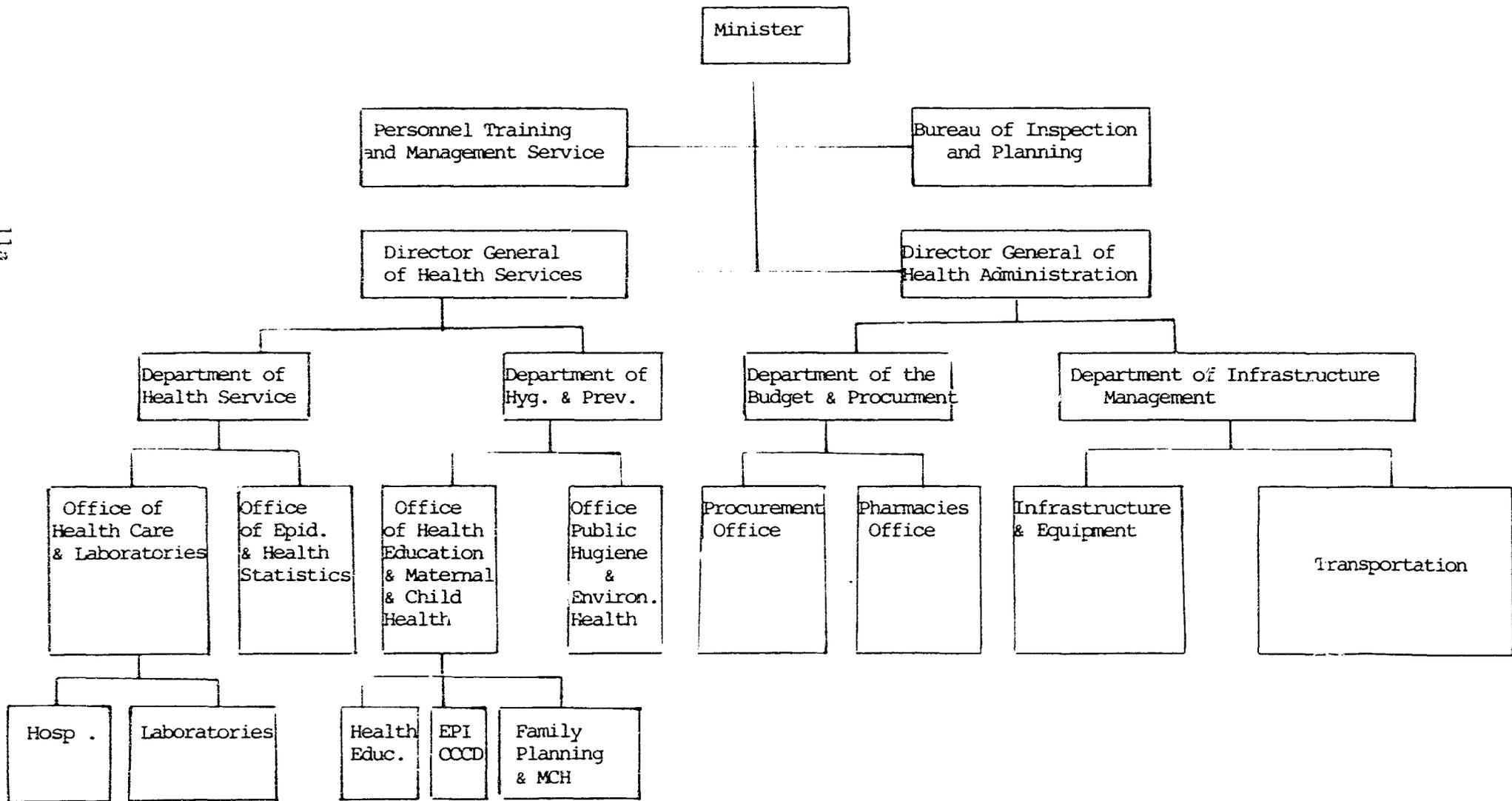
The EPI/CCCD team consists of a Director (public health physician who has had major responsibilities in the MOH for many years), four health technicians, and 3 secretaries, 7 drivers, and 5 others. The CCCD Technical Officer functions as the Director's counterpart. This team sets the norms for the implementation of EPI, CDD, and the malaria program in the health facilities. It also initiates and provides technical assistance to support services which are implemented by other departments in the MOH, such as training, health education, and HIS. Several evaluations and studies have been implemented by the CCCD team. Our evaluation team was impressed with the motivation, cooperation, and competence of the individuals of the EPI/CCCD team.

One of the central efforts of the EPI/CCCD team has been to supervise the EPI, CDD, and malaria efforts at the sectorial level. Each of the four health technicians in the office makes a monthly visit to selected health sectors and participates in the routine supervision activities of the Medical Chief of Sector (MCS). This technician makes a report of his supervision visit to the Director. This central team supervision effort is supplemented by the MCS routine monthly supervision trips to all health facilities in his sector. Each MCS is supposed to fill out a supervision form which was developed by the CCCD project. The MCS then sends in a monthly summary report to the EPI/CCCD Director. A recent internal evaluation of the supervision was made by the CCCD team. Our evaluation field visits confirmed that this supervision system was in place and, despite problems which will be discussed below, was relatively effective in providing some level of supervision in the health centers. We were particularly impressed with the competence of the supervisory visits of the national level supervisors from the EPI/CCCD team. It was clear that considerable progress in supervision has been achieved during the last year.

Chart B

CURRENT ORGANIZATIONAL CHART
Ministry of Public Health

11a



3.1.3 Constraints and Recommendations

Administrative organization of the MOH places some constraints on the operation of CCCD project activities. A few of these constraints are to be expected as part of the normal process of administrative organization which changes the territorial units of administration. These changes make for considerable variation in capabilities of personnel, infrastructure and logistics systems which prevent uniformity in the implementation of norms and create difficulties for HIS reporting systems and for the analysis of HIS. This disruption has had its anticipated effects on the project implementation, but it is not anticipated to have an enduring effect. In some cases, such as the CCCD project HIS, the disruption has already been accommodated.

It should be noted, however, that the lack of a clearly rational organizational structure in the MOH has had, and continues to have a constraining effect on project management.

First, the malaria unit, which is responsible for research and the anti-vector campaign, is located in the Department of Health Services which supervises the hospital system. Since CCCD is also responsible for the implementation of the malaria program at the national level, primarily malaria treatment and the collection of HIS data, this separation has inhibited easy interaction and communication about malaria activities and weakened efforts to coordinate research, preventive and curative program activities.

RECOMMENDATION:

The malaria unit be transferred to the Department of Hygiene and Prevention to be integrated into the Office of EPI/CCCD.

(Responsible Agency: MOH. Date: June 1988)

As will be noted in the evaluation of the CDD and malaria components, the position of coordinator for these project components is crucial to their effectiveness. The CDD coordinator has only recently been appointed and is likely to be very effective in promoting the CDD program which has, so far, not been as effective as the EPI program. The MOH has identified a malaria coordinator who is currently being trained at Tulane University and is not expected to return until July 1988. A temporary acting malaria coordinator is recommended in Section 4.3.2 of this report to fill this major program management need.

3.1.4 Supervision

Despite the real progress that has been made in supervision of CCCD project activities, a variety of constraints continue to restrict its effectiveness.

Supervision at the health sector level is restricted by the limited time that the MCS has to perform effective supervisory visits. The many administrative tasks required and the MCS's responsibilities in the regional hospital leave little time for effective supervision of health center activities.

The evaluation team found that often the supervisory visits by MCS are incomplete and cursory. Seldom do the MCS spend sufficient time to observe actual practices in the health centers and few see their role as involving on-the-job training to correct practices

of health workers. Most of the supervisory visits involve a simple review of the vaccination and consultation registries, and the log books for vaccine stocks and refrigerator temperatures. Their recent supervisory reports, which are supposed to be sent each month to the Director of EPI/CCCD, vary considerably in quality and completeness.

There are a variety of different reasons for the weakness of the MCS supervision. First, the MCS is subordinated in the administrative structure to the Director of the Regional (Provincial) or Sectoral Hospital in his area. Often the MCS is required by the Hospital Director to work in the hospital to supplement the physician staff. The vehicle that CCCD project provided to the MCS is often requisitioned by the Hospital Director for other purposes.

Second, the MCS have not received sufficient training to provide strong on-the-job training as part of their supervisory tasks. Medical school training does not prepare the physicians for the administrative tasks they assume as MCS. Even though supervisory and training techniques are part of some training activities such as the Mid-Level Management (MLM) course, this training needs to be part of the medical education curriculum and should be reinforced with continuing education programs for physician administrators.

Third, many supervisory tasks of different program activities are not integrated into a comprehensive supervisory activity. Each program has a separate supervisory form. Even within the CCCD project each component (EPI, CDD, and malaria) has a separate form.

Fourth, the reporting requirements of the MCS are insufficient to require systematic evaluation of each health center and to encourage a systematic follow up to correct problems that are identified. The MCS only submits a narrative report on each health center. These reports are not systematic and vary considerably in quality.

Fifth, while the national level supervisory team of four health technicians is quite effective in providing periodic administrative supervision (checking registries and equipment) they are basically doing part of the job that the MCS should be doing according to the current supervisory norms. Since few MCS are particularly effective or systematic in this role, the apparent duplication of effort is an effective means of providing supplementary supervision of health centers. In some cases, the MCS probably learns from the example set by these supervisors. It is not clear what role these supervisors would play if the MCS were well trained and effectively doing their jobs. In the anticipated decentralization, these technicians could act as supervisory support for provincial chiefs and their roles defined in such a way as to focus on administrative supervision, allowing the Provincial Chiefs and the MCS to focus on observation of practices and on-the-job training.

Sixth, the rapid rotation of MCS means that few occupy their posts for sufficient time to develop and apply supervisory skills. Many of the MCS are recent medical school graduates with no experience or training in administration.

Seventh, the number of health centers each MCS is responsible for varies considerably. In some cases, the MCS has too many health centers to reasonably supervise -- one is responsible for 23 centers. In others, the MCS has so few that he also does medical consultations in the centers.

In the opinion of this evaluation team, improved supervision is a central factor which could contribute to overcoming many of the other problems of the project and assure a more

In the opinion of this evaluation team, improved supervision is a central factor which could contribute to overcoming many of the other problems of the project and assure a more effective institutionalization of project activities. Many of the problems to be discussed below involve the difficulty of changing the behavior of health workers in the health centers. Some of these changes can be encouraged by training programs for these workers. However, this training must be reinforced by strong supervision which involves not only careful and thorough observation of actual practices, but also effective means of motivating health workers and providing on-the-job training.

It might be most effective for Burundi to take an innovative approach to supervision: replacing the MCS with a public health supervisor who is specially trained in supervision of health center activities. There seems little reason for utilizing scarce physician skills for this type of supervision. Medical school training seldom prepares physicians for the administrative, supervisory and training roles that are necessary for this position. A special training program to train experienced nurses as professional health administrators would be more appropriate and more effective. However, the creation of a new type of human resource in Burundi would require a significant change in the administrative structure, major new resources for training these new types of workers, and a scheduled plan of action to facilitate the transition from the current system. In the current weak financial situation of the country, without national commitment to such a change, and without major donor support, it would be premature to make such a recommendation in this report. The MOH, however, might consider this alternative as an objective for the future.

The Health and Population Project has anticipated the need for reorganizing the supervisory system. Technical assistance, funded by UNICEF, will be provided to the Division of Hygiene and Prevention to develop an action plan to reorganize supervision structures so that MCS are freed from other responsibilities, enabling them to concentrate on supervision.

The CCCD project, however, can contribute to the improvement of the supervisory system by providing specialized short term consultancies in the areas of training and the design of supervisory forms.

RECOMMENDATIONS:

Requests for technical assistance (several short term consultancies) to review the current supervisory system and assist the MOH to:

- a. design training programs for MCS and medical students in order to develop capacities for careful evaluation of health center activities and provide on- the-job training of health workers.**
- b. redesign supervisory forms to integrate all program activities and to require systematic reporting to the national EPI-CCCD Office and encourage follow up evaluations of problems.**

(Responsible Agencies: CCCD, MOH. Technical assistance be provided by April 1988.)

RECOMMENDATION:

In preparation for the anticipated decentralization which is to create provincial health officers, four more medical technicians be trained by EPI/CCCD and other normative units

in the Department of Hygiene and Prevention (Family Planning, TB, MCH) to provide support for integrated supervision at the provincial level.

(Responsible Agency: MOH. Date: April 1988)

3.2 AID and CDC Administrative Support for CCCD Project

AID/Washington and CDC/Atlanta have continuously provided strong support for the implementation of the CCCD project in Burundi. The project managers and other staff members in both Washington and Atlanta have diligently monitored project activity through supervisory visits, careful review of monthly reports and routine telephone contact, provided timely support for the many requests for consultants, and given strong support in-country during the first year internal review. The evaluation team's efforts were well organized and carefully designed to facilitate the evaluation and anticipate potential difficulties. We were impressed with the care and knowledge expressed by all the staff we met in relation to this project. There were no indications from CCCD/Burundi or USAID staff that AID/Washington or CDC were not fully supportive of the project. This kind of consensus is rare.

By all accounts, USAID/Burundi support for CCCD project activities has improved significantly during the last year. Prior to the First Year Internal Review a variety of problems emerged which suggested a misunderstanding of USAID responsibilities for supporting the CCCD project. These misunderstandings placed an unnecessary administrative burden on the CCCD Technical Officer. Once it was made clear that the USAID responsibilities for a PASA required greater administrative support, and once a General Development Officer was assigned to the project many of these AID administrative burdens were relieved and the TO could devote more time to his appropriate tasks. The General Development Officer has shown particular interest in this project and has actively overcome administrative problems.

USAID/Burundi has made a genuine effort to overcome the initial problems and is now strongly supportive of the CCCD project.

It should be noted however that the earlier mistakes in project design have continued to plague the project. The vaguely written Condition Precedent which required a study on financing recurrent costs failed to capture the intent of the condition, making it difficult to demonstrate the clear Government of Burundi (GOB) commitment to project financing because of technical and legalistic interpretations (see section on financing). In addition, failure of the project agreement clearly to define the title and property rights for project vehicles has resulted in a lengthy and time consuming effort by the TO to clarify MOH/USAID responsibilities in obtaining appropriate insurance, license plates, and drivers for project-funded vehicles.

3.2.1 Technical Officer

The current Technical Officer has been praised by his CDC and AID/Washington supervisors and by all our informants in Burundi. He has demonstrated technical competence in all project areas and remarkable administrative skills. His effectiveness in working with the MOH and other donors is clear to all observers and was amply evident during this evaluation visit. His high level of energy and ability to initiate activities and motivate others is rare.

The TO has been particularly effective in his use of frequent and appropriate short-term technical assistance to support training, health education and HIS components of the project.

Unfortunately for the project, he is not extending his contract and will be leaving Burundi in March 1988. It is imperative that the gains that have been made during his two years be consolidated with the timely appointment of his replacement. It would be particularly damaging to the MOH perception of the importance of the project and of AID's commitment to an extension of the project if there was not a continuous TO presence in-country.

In order for the incoming TO to be most effective all efforts should be made to have at least one month overlap so that the current TO can facilitate the transition.

The incoming TO will need basic technical skills but a priority should be placed on administrative skills and experience in administrative and management training. The current TO is an initiator of projects and a motivator. To consolidate the project and assure its institutionalization, the incoming TO should be experienced in developing administrative skills of the national counterparts.

RECOMMENDATION:

A replacement TO be identified in a timely manner so as to be in-country by February 1, 1988.

Scope of work for TO to include on-the-job training of host country nationals in management and administrative skills.

(Responsible Agency: CDC. Date: December 1987)

3.3 Donor Coordination

The strong coordination of other donor activities and the CCCD project has a richly deserved reputation. Project activities of most of the donors are complementary to CCCD goals and objectives. UNICEF, for instance, has provided over \$1 million per year to provide the bulk of the vaccines, ORS packets, other supplies and training activities for the FPI/CCCD Office programs. WHO programs in administrative reorganization and community participation are also complementary.

Many informants suggested that, compared to any other experience in their careers, the coordination of donor activities in Burundi has been excellent. Most donor representatives appear to be on extremely close terms with each other and this constant communication has facilitated cooperation in planning activities, sharing resources, such as project vehicles, and in coordinating support activities. A particularly good example of coordination was the support that UNICEF provided during the six months the local currency funds for CCCD were blocked by the Condition Precedent clause. Many of the donors circulate copies of their yearly programming documents and the CCCD TO circulates his monthly reports to all donors.

The donors and the MOH have made recent efforts to institutionalize donor coordination through the creation of a donor coordinating committee which has held two meetings this year. The first meeting in February was well planned and provided a major means of communication of the different donor plans for the year 1987. The second meeting in September was less well attended and focused on technical issues rather than coordination of programs.

3.3.1 Constraints and Recommendations

There are, nevertheless, some difficulties of donor coordination. A central concern of the evaluation team is that much of the coordination still revolves around donor priorities and there is still a need for the MOH to take a more active role in defining its priorities and in putting donor activities into that context and actively coordinating these activities. Some MOH officials felt that the donors themselves should take responsibility for coordinating their activities. However, unless the MOH takes a more active role, it will continue to be pulled in various directions and the donors themselves will not be as well coordinated as they could be. It is inappropriate for the donors themselves to take the lead in coordination and, thereby in effect set the priorities for the MOH. While the Health and Population Project reflects a significant move in the direction of establishing MOH priorities and coordination, there remain immediate needs for more active MOH efforts to manage donor coordination.

As suggested above, the initial steps in donor coordination by the MOH have been taken in the Donor Coordinating Meetings, however, these meetings have not become routine and have not had consistent participation by representatives of each donor.

RECOMMENDATIONS:

The MOH and donors assign permanent members (and identified substitutes) to a Donor Coordinating Committee, chaired by MOH, and establish routine trimestral meetings at a fixed date each trimester.

MOH establish a detailed priority plan of action for donor activities and present that plan for discussion and approval at the first trimestral meeting in 1988.

(Responsible Agencies: MOH and Donors. Date: February 1988)

A second problem that plagues the donor community is the lack of sufficient sharing of information and coordination of short term consultants. This evaluation team was not as clearly coordinated as it could have been had timely communication been routine. In other cases, coordinated team efforts have failed because of a lack of communication about changes in consultant's schedules. To resolve this problem donors should establish a routine Consultant Letter to circulate each month with updates on plans and changes in consultant schedules.

4.0 PROJECT COMPONENTS

4.1 EPI

4.1.1 Background

The Expanded Program on Immunizations (EPI) began in Burundi in 1979. Initially implemented in the Muramvya sector, the program was expanded into the Bujumbura region in 1980, then progressively throughout the country.

The first plan of operations for five years (1980-85) was followed by a second plan for the years 1986-7. Two program evaluations have been done by international WHO and Burundi government teams -- in 1982 and in December 1984.

The national strategy is clearly defined in the program's 1986-7 operations plan:

- The target population consists of children up to age one (with catching up under certain circumstances for older children) and of women of childbearing age (15-44 years).
- Vaccination is done on all work days in the health centers, no matter how many people need vaccinations.
- The vaccination calendar is the one recommended by WHO.

Although the National EPI Strategy is generally in effect throughout the country, some health centers continue to have vaccination sessions on certain days in addition to daily vaccinations; but this does not seem to contradict the recommended strategy since these sessions allow the vaccination of a wider population. In addition, these sessions can provide the chance to organize actual MCH consultations and especially to do health education. Finally, they reduce the wastage of vaccines.

The EPI program in Burundi is one of the best in Africa in terms of efficacy and impact. It now covers the entire country (see Table 1). The program has reached a turning point where the number of measles deaths prevented equals the number of deaths by measles. All health centers have cold chain equipment and are provided with vaccines and injection and sterilization supplies. Daily vaccination with all antigens theoretically occurs everywhere, and in the sectors where it seems necessary, an Outreach Vaccination Strategy has begun to be developed. Thus, all the necessary conditions exist for EPI in Burundi to be a success. Without question, the program possesses the resources needed to be successful. However, there are still some obstacles to optimal application of EPI which will be examined in the following sections.

EPI has clearly caused a decrease in the incidence of target diseases. In 1981 the incidence of measles was around 1500 per 100,000, while in 1987 it scarcely exceeds 500 per 100,000. For pertussis the incidence has dropped from around 220 per 100,000 to 50 per 100,000. Similar declines can also be seen for polio and tetanus (see Tables 2-6).

4.1.2 Vaccination Coverage

Since the start of the program, several estimates of vaccination coverage have been made. In 1984, several small sample surveys were carried out in six sectors. With one exception, the percentage of children vaccinated exceeded 50% for DPT3 and Polio3 and was greater than 40% for the measles vaccine (regional differences were greater for measles vaccine -- ranging from 33% to 73%). In October 1986 a national coverage survey took place

Table 1

EPI COVERAGE SURVEY

DATE	LIEU	BCG %	DTC I %	DTC II %	DTC III %	POLIO I %	POLIO II %	POLIO III %	ROUGEOLE %	TOTAL VACCINE %	% VAT II Femmes enc.
1984	RUMONGE	80	70	62	57	71	62	52	45		
	MUYINGA	87	31	74	65	81	74	65	73		
	KIRUNDO	82	76	69	53	76	69	53	64		
	NGOZI	82	77	71	62	77	67	57	66		
	MWARO	59	49	44	35	49	45	35	33		
	GITEGA	75	71,3	66	53,7	70	53,5	50,4	60		
1986	NATIONAL	79,5	75	69,5	60	73	70	61	57	46	16,5

Table 2
EPI: BURUNDI
COVERAGE 1978 TO 1987

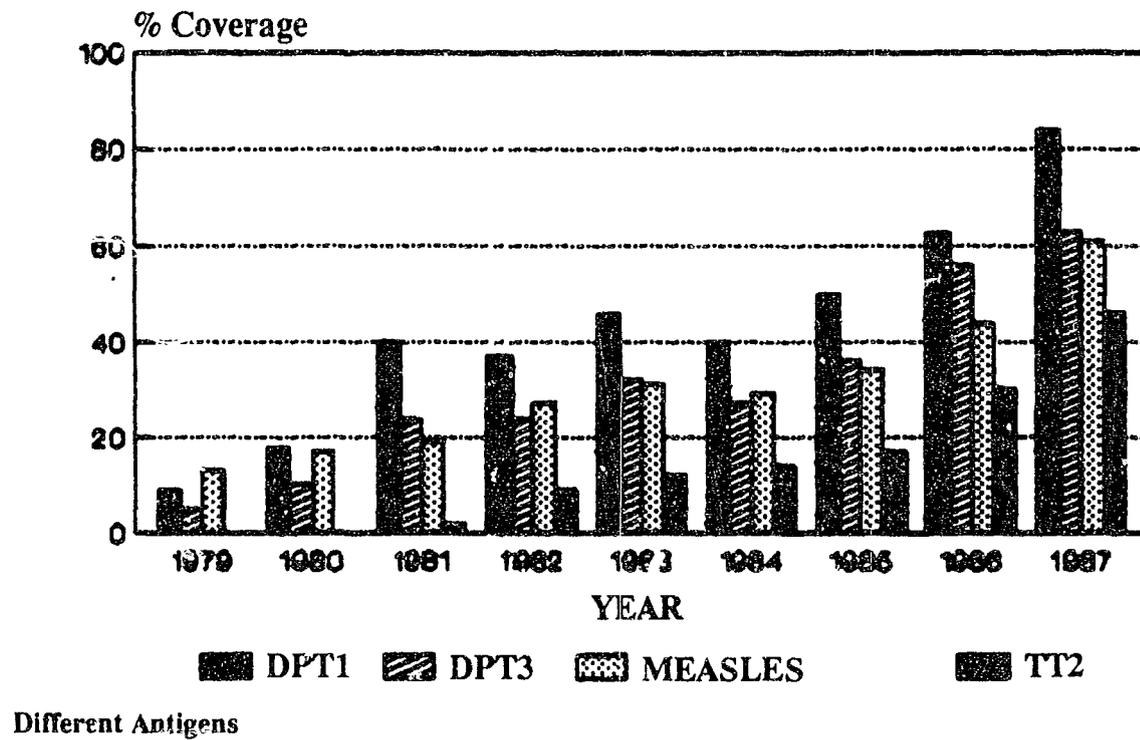
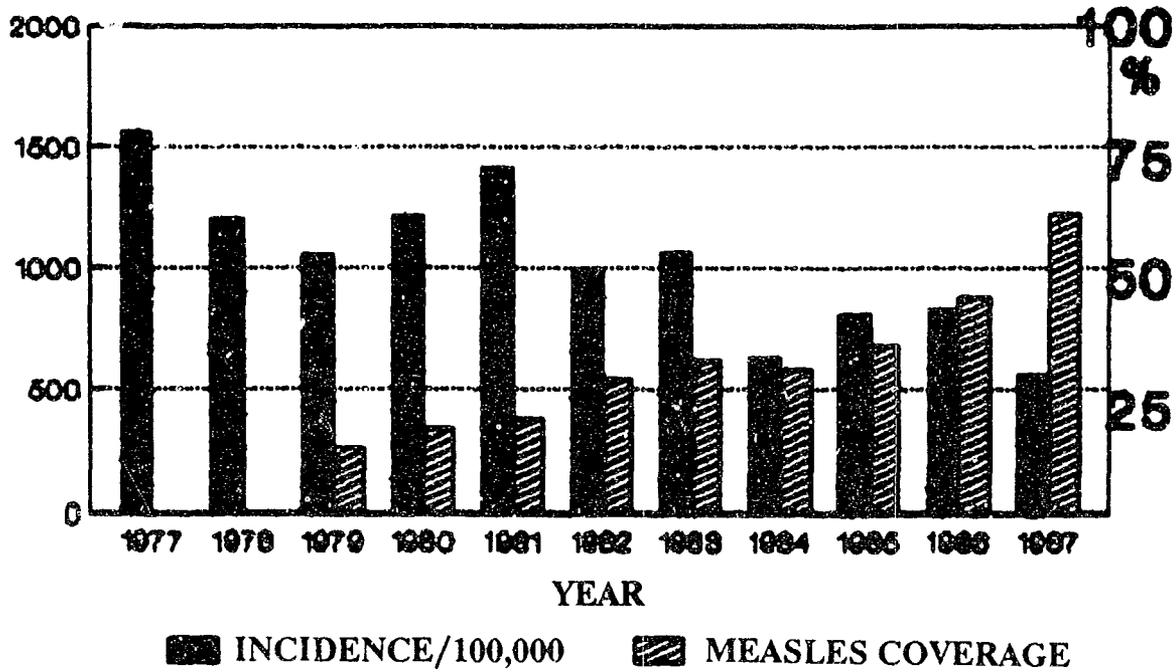


Table 3

MEASLES: BURUNDI

INCIDENCE AND VACCINATION COVERAGE

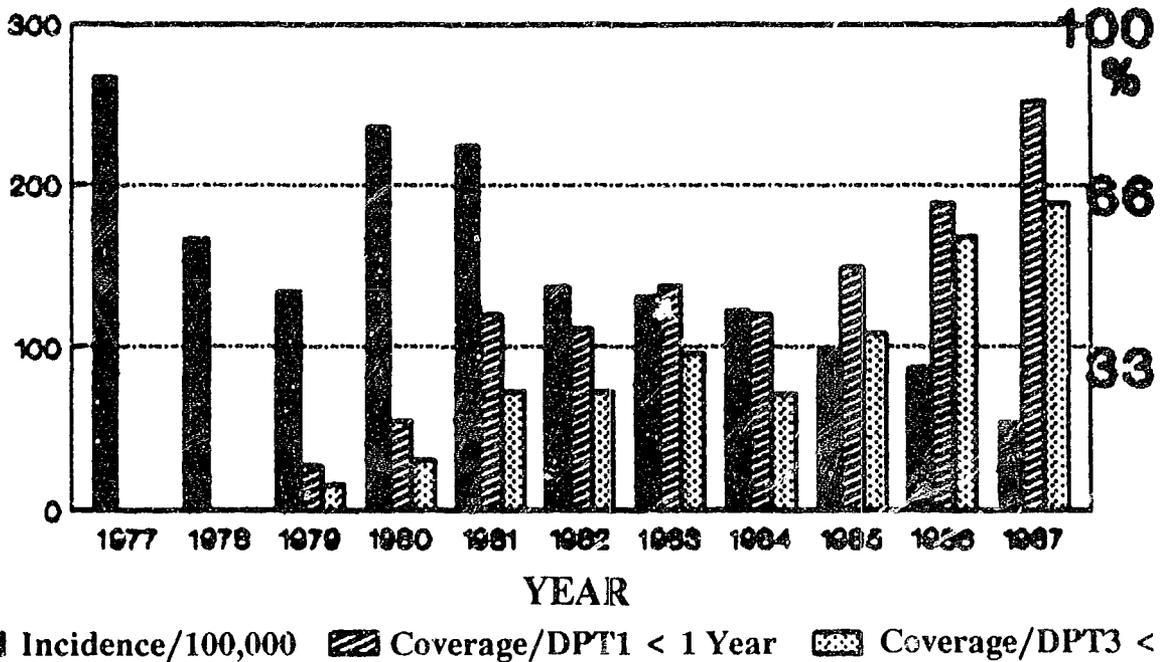


Coverage/Pop. < 1 Year x .9 in %

Table 4

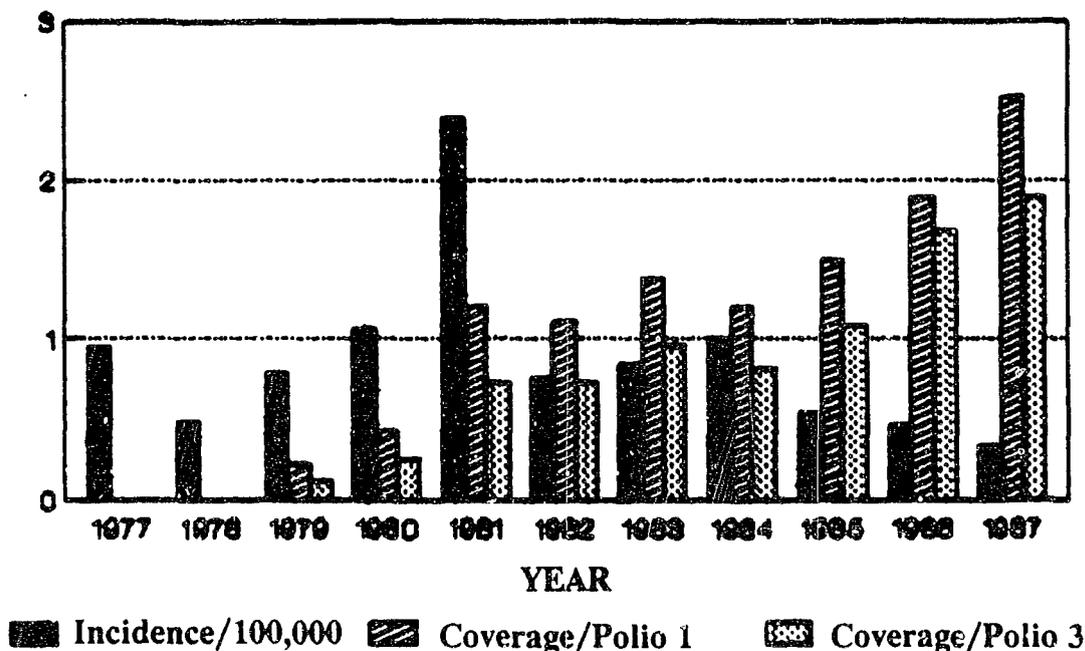
PERTUSSIS: BURUNDI

INCIDENCE AND VACCINATION COVERAGE



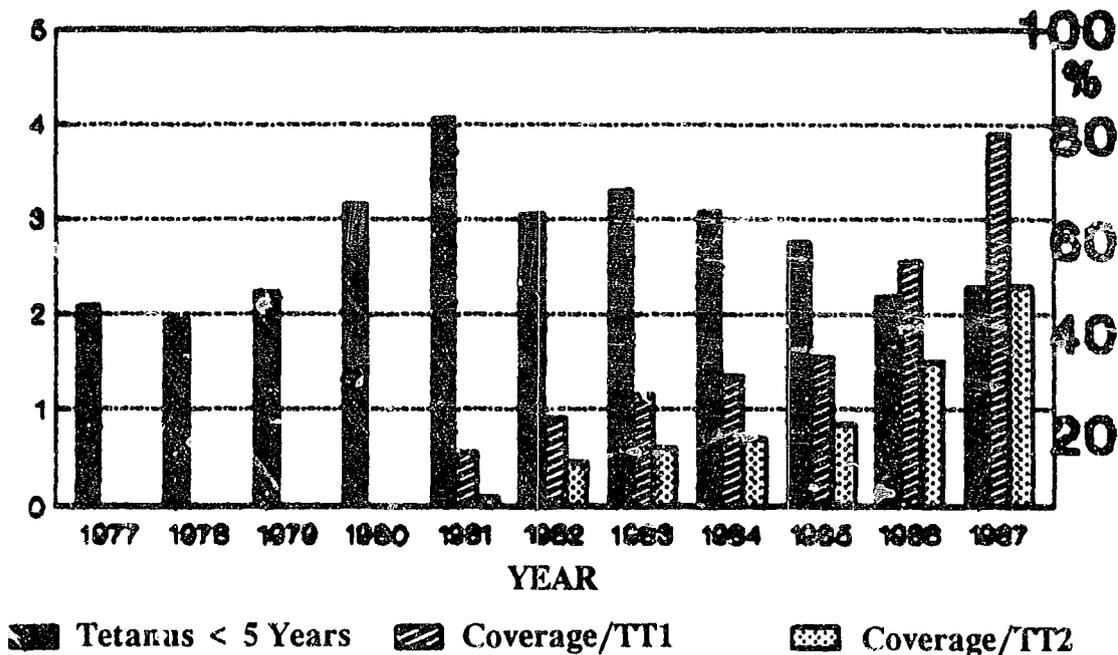
Coverage/Pop. < 1 Year in %

Table 5
POLIO: BURUNDI
INCIDENCE AND VACCINATION COVERAGE



Coverage/Pop. < 1 Year in %

Table 6
TETANUS: BURUNDI
INCIDENCE AND VACCINATION COVERAGE



Coverage TT/Pregnant Women in Incidence/100,000

throughout the country: 46% of the target population of the survey (children aged 12 to 24 months) were completely vaccinated, with 57% vaccinated against measles and 61% with Polio3 and DPT3. Only 16.5% of pregnant women had received two doses of tetanus vaccine.

If one considers these two studies as comparable, it seems that vaccination coverage has made some slight progress in two years, with fairly satisfying rates overall. It is interesting, given the 1986 figures, to note a drop out rate of less than 20% between first and third doses for DPT and Polio (a similar percentage to that of 1984). In addition, if one refers to data on the number of doses given, one notes an increase of 36% (in children under one year) in the total number of doses of DPT and Polio.

However, if one considers the estimations of vaccination coverage, calculated from the number of vaccinations completed as related to the target population, there is a noticeable increase from year to year: thus, in 1987, the vaccination coverage will be greater than 60% for DPT3 and measles vaccine and greater than 45% for tetanus vaccine for women of childbearing age.

4.1.3 Constraints

All these figures show that the program has made very good progress in increasing vaccination coverage, with the exception of coverage levels of tetanus vaccination among women of child bearing age. This last problem should be addressed by an effort to increase tetanus vaccination coverage among women of child bearing age by providing screening and vaccinations daily.

In order to continue to monitor vaccination coverage, however, it would be useful to plan a new national survey of vaccination coverage for mid-1988 to estimate progress over the course of 1987. This could be done by 1) comparing the number of vaccinations given to children less than one year old with the age cohort of children less than one year, and 2) conducting a national coverage survey approximately every two years.

RECOMMENDATION:

Conduct national coverage surveys not more frequently than every two years. Monitor and compare the number of vaccinations given to children less than one year old with the cohort population of under-ones. Pursue epidemiological investigations in case of disease outbreaks. Check the immunization status of children hospitalized for target diseases and monitor closely the morbidity/mortality annual data trends of EPI target diseases by health sector.

(Responsible Agency: EPI/CCCD. Date: January 1988)

4.1.4 Outreach Vaccination Strategy

In some medical sectors where there are problems of accessibility to the health center, an Outreach Vaccination Strategy is being implemented in order to increase vaccination coverage. Although there is a national level guide for the strategy and the EPI/CCCD Office monitors the implementation, often the organization of advanced strategies is entirely under the responsibility of the MCS, aided in this by the communes and in some

cases by the Socio-Health Committees. The MCS chooses the vaccines to administer and the frequency of vaccination sessions: unfortunately, this seems to lead sometimes to certain inconsistencies in the field (example: it is not always feasible, in terms of program efficacy, to vaccinate once a month at a meeting place in order to do only BCG and measles vaccinations among children under age two). It would be useful to have a much more precise uniform policy for the Outreach Vaccination Strategy at the national level. This policy should include a circular which lists the specific choices that MCS should make under certain conditions in his sector.

RECOMMENDATION:

Review, update and make more specific, the Outreach Vaccination Policy in the national plan, and distribute it to all Medical Chiefs of Sector.

(Responsible Agency: EPI/CCCD. Date: February 1988)

4.1.5 Shortages

Vaccines are available everywhere in the country. However, shortages at the national level are relatively frequent, with three shortages -- one two months long -- between May 1986 and May 1987. These shortages may have several causes: poor estimation of needs; too frequent, small deliveries; and more wastage than anticipated.

This last point should be examined more closely. In effect, the recommendation to vaccinate every day, that is to open a vial even to vaccinate just one child, leads to a great degree of waste. Twenty dose vials of vaccines were being used in some vaccination centers when ten dose vials would be more appropriate throughout the country. If the number of vaccinations increases progressively, the number of multidose vials used also increases considerably, which leads some health workers to use more vaccines than would be efficient. It would be helpful to review the problem of multidose vials: the benefits of multidose vials may be lost when balanced against the costs of wastage. In addition, the actual estimation of vaccine needs should be reconsidered.

RECOMMENDATIONS:

Appoint one medical technician to be responsible for maintaining stock levels.

Order the smallest available, cost-effective, size of vaccine vials.

(Responsible Agencies: EPI/CCCD, UNICEF. Date: Earliest vaccine order)

4.1.6 Cold Chain

Major health centers have kerosene refrigerators and seven have solar refrigerators which are functioning. Twice daily temperature checks are conducted scrupulously. However, the maintenance of the refrigerators is not always excellent. For example: the flame is poorly regulated, chimneys are not cleaned frequently, and freezers are not defrosted regularly. It would be useful to have more advanced training on cold chain maintenance for the heads of the health centers, with trained cold chain technicians who work in hospitals serving as trainers.

Vaccine storage is often inefficient. Expired vaccines are mixed in with current vaccines. Vaccines are not kept in order of expiration dates, nor properly placed in the unit, especially in the freezer. It would be useful to include proper storage procedures in cold chain in all training programs for all health care workers and provide closer supervision of the trained personnel.

4.1.7 Sterilization

The new steam sterilizers are available in a majority of health centers. Although sterilization of needles and syringes is, as it appears, always done correctly, the sterilized injection materials are not always subsequently kept in antiseptic conditions. Constant emphasis should be given on the use of one needle, one syringe, per vaccination. This situation requires retraining and better supervision. A first step should be to include the injection-sterilization practice component in the decentralized training needs assessment in November.

4.1.8 Vehicles

A review of vehicle utilization was done for this evaluation by UNICEF, during the team's visit in October. An analysis of ten Suzuki Jeeps and five Toyota Land Cruisers revealed that the Land Cruisers are preferred by a majority of the personnel in the health sectors. The study showed that the Toyotas averaged one accident every five months, or one every 4,650 km. The Suzuki averaged one accident every 24 months, or one every 6,118 km. Down time for the Toyotas was 10 times greater than for the Suzukis. When one chauffeur was assigned to the vehicle accidents were fewer and vehicle maintenance was better than when no single driver was responsible. However, in no cases were vehicle log books maintained. To address this problem we suggest that one chauffeur be assigned to each vehicle, governors be added to limit speed, and vehicle log sheets be maintained for service and utilization of vehicle.

4.1.9 Vaccination Follow up

Health workers know the side-effects of vaccines, especially fever. They seem to warn mothers of these effects and tell them to come back the next day for antipyretics if the child has too high a fever. Since often mothers would have to return to health centers which are several kilometers away from their homes, it would be helpful if health workers could systematically give mothers antipyretics at the time of DPT injections.

4.2 Diarrheal Disease Control (CDD)

4.2.1 Background

The first plan of operations for the CDD program was submitted in December 1986 setting forth the objectives for 1987. This plan covered seven sectors for intervention in the country, with the other sectors to be covered in 1988. The plan is limited to only one aspect of diarrheal disease control for children: oral rehydration therapy (ORT).

The epidemiologic data for diarrheal disease morbidity and mortality come principally from a sample survey completed in 1984 in the Muramvya sector and from the hospital case registers and disease reporting. It would be useful to organize a sample survey on diarrheal

morbidity and mortality, including mortality from other diseases as appropriate, and present home practices, which would provide baseline and implementation data. This survey might be organized at the same time as the recommended vaccination surveys (see above).

The logistic support of the program, principally the provision of oral rehydration salts (ORS), is furnished by UNICEF, which also provides technical assistance. The strategy, coordination and supervision are assured by the EPI/CCCD Office.

The CDD program has only been in existence for less than one year, making it difficult to evaluate its impact.

4.2.2 Accomplishments

Thus far there have been no shortages of ORS packets. Requisitions are made by different services and levels within the MOH (eg. Medical Chiefs of Sector, MCH/Family Planning, EPI/CCCD).

Health care workers regularly use ORT in the treatment of diarrhea. They demonstrate to mothers how to prepare and use the packets at home. They distribute ORS packets widely and sometimes they prepare the mixtures for the mothers. In addition, in certain health centers, the health workers encourage mothers to prepare home mixed rehydration solutions using local products, such as salted rice water, plain water and fruit juices.

The theoretical knowledge of health workers on the diagnosis and treatment of diarrhea seems usually correct. The evaluation team found, through a review of the consultation records in health centers visited, that there was a limited use of IV rehydration and an extensive use of ORS.

A course on ORT was included in the program of the paramedical school of Gitega in 1986. Two doctors attended an in-depth training course on the CDD program in Kinshasa (WHO/CCCD). Two in-service training sessions on the use of ORT were conducted for health care workers in Gitega and Ngozi. Training materials (WHO chart on diagnosis and treatment of diarrhea in children) are being distributed in the health centers. Some centers have microscopes and staff trained to test stool samples.

As part of a major effort by EPI/CCCD to promote the use of ORT through hands-on training an ORT Training and Treatment Unit was established at the Prince Regent Hospital in Bujumbura. The use of this type of unit is recommended by WHO/UNICEF and CDC in their phased strategy for CDD.

4.2.3 Constraints

There is currently no management of the ordering and distribution of ORS packets. Packets are furnished by several MOH offices on demand both to the sectoral and the peripheral levels. Shortages of packets at the peripheral level happen sometimes. There is no control or accountability for the use of packets built into the logistics system of the MOH. Thus it is currently difficult to evaluate the utilization of ORS in quantitative terms.

RECOMMENDATION:

Integrate the various ORS distribution channels into the national drug distribution system -- coordinated by the new CDD coordinator, as needed.

(Responsible Agencies: MOH, CCCD, UNICEF. Date: April 1988)

4.2.4 Use of ORS

In some of the centers visited by the evaluation team, the materials to prepare ORS are insufficient and need to be provided. A look at the consultation registers in certain centers confirmed that the goals and objectives are poorly understood; in effect the distribution is a symptomatic treatment of diarrhea for adults is quite frequent. This use of ORS is useless from a medical point of view and contributes to the waste of a great number of ORS packets. It should not be assumed that ORS will always be distributed free of charge. In addition, distribution to adults could be harmful to the promotion of ORT for the target population since ORT has no anti-diarrheal action.

The WHO treatment charts distributed to the health centers seem complex in their treatment components. It might be useful to redesign the charts to make them simpler to understand.

There is still an excessive use of antibiotics for diarrhea among children. A study done in three hospitals in mid-1987 revealed that 67% of all diarrheal cases received antibiotics with, or without, ORT. Over one-third of the cases had received I.V. fluids. Approximately half of the cases did not specify the degree of dehydration. This data, confirmed by our field visits, suggest confusion about the principles of treatment of diarrhea, with ORT being apparently viewed only as an additional treatment, rather than a replacement. One of the basic principles of the WHO/CCCD program is the reduction in the utilization of antibiotics and other anti-diarrheal drugs. The notion of the viral origin of most childhood diarrheas does not seem to have been grasped. In the cases of bacterial origin, where use of antibiotics can be justified, the efficacy of this treatment is reduced by inadequate therapeutic protocols and by the emergence of resistance linked to the general abuse of antibiotics. Finally, the antibiotics used are costly and not without side effects which sometimes can be serious (bactrim and chloramphenicol). Likewise the abundant use of flagyl, since in those centers with microscopes, stool exams rarely show amoebas or giardia.

RECOMMENDATION:

Organize the information of all health care workers, through training, both in-service and seminars, on the following points: 1) the objectives of CDD program, 2) priority for the use of ORT in the treatment of infant and child dehydrating diarrhea, 3) the limited and discrete use of antibiotics and antiparasitic medications, 4) the urgent necessity to limit the waste of ORS packets by not providing them as treatment for adults.

(Responsible Agencies: MOH, CCCD, UNICEF. Date: April 1988)

4.2.5 ORT Training and Treatment Unit

The ORT Unit at the HPRC is not living up to expectations that it would provide promotion and training, although it is providing treatment services. The staff originally trained to work in the unit has not been maintained. The director has been moved to another clinic and the present staff is not assigned exclusively to the unit.

The Unit also has not been able to attract sufficient numbers of patients due to several factors. One is that the unit is part of a hospital (mothers sent to the unit fear that their children will be hospitalized). In addition, contrary to policy, admission fees for the hospital are applied to patients going only to the ORT unit. Finally there is competition with the Foreami Health Clinic which also practices ORT.

Finally, the facilities are poorly suited to house the expected number of patients and health care workers in training (around 150 persons) and there is currently insufficient supervision of trainees.

RECOMMENDATION:

Provide trained personnel and solve location problems that have inhibited the effectiveness of the promotion and training aspects of the ORT Unit at the HPRC and encourage the creation of other units in other health facilities once the central Unit is fully functional.

(Responsible Agencies: MOH, EPI/CCCD, HPRC, Forami Clinic. Date: June 1988)

4.3 Malaria

4.3.1 Background

Malaria is found throughout Burundi -- hyperendemic in some areas and hypoendemic in others. It is the leading cause of morbidity in the country and one of the top ten causes of death, following diarrheal diseases and measles. Malaria incidence has more than tripled in Burundi since 1978 (see Graph 1).

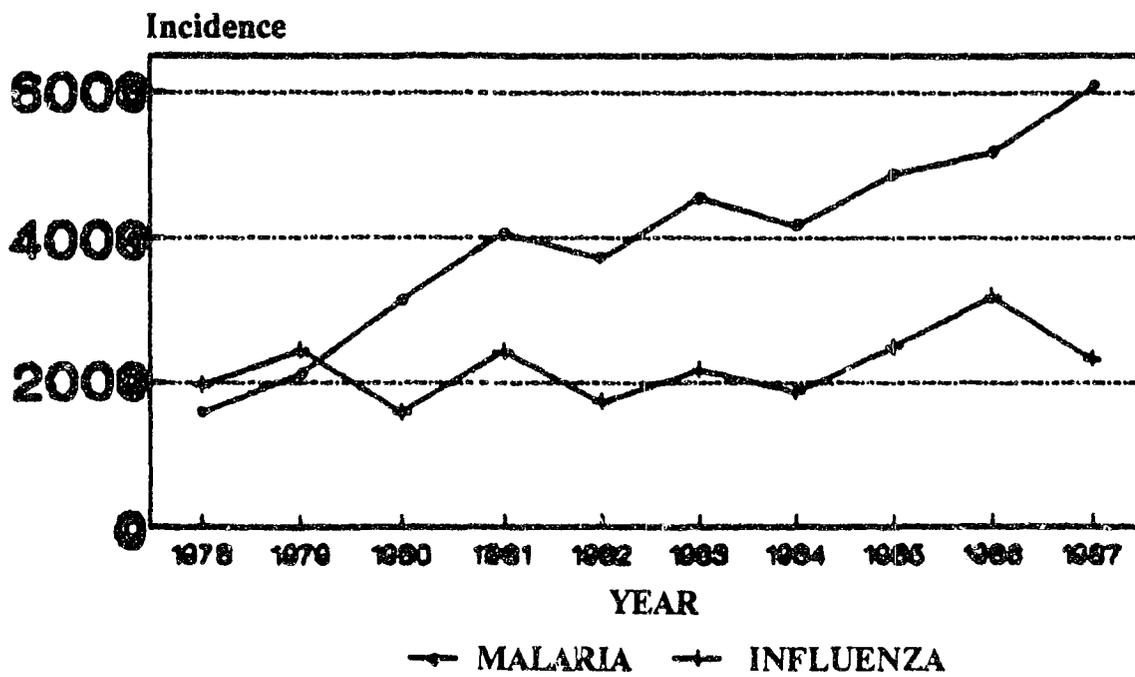
For decades Burundi struggled against malaria employing different phases of control by: 1) passive reporting of cases, 2) treating cases, 3) attacking the vector with DDT, 4) treating mosquito breeding sites with oil, 5) providing chemoprophylaxis for infants, 6) providing chemoprophylaxis for persons migrating from high plateaus to hyperendemic malaria areas.

In 1966, with assistance from the Belgian Cooperation, the malaria control program was reorganized and control efforts were concentrated in a hyperendemic area -- the Ruzizi Plain.

By 1981, with financing from the Belgian Cooperation, WHO and the European Development Fund, another malaria control effort -- Combatting Communicable Diseases (LMTC)--was launched in Imbo Center, an area within the Ruzizi Plain. This project has realized several studies including parasitologic, serologic, chloroquine resistance, and chemoprophylaxis of school children ages 6-14 years.

The malaria component of CCCD, benefitting from Burundi's past experience in zonal malaria control efforts is now assisting the MOH to extend malaria treatment efforts on a

Graph 1
MALARIA, INFLUENZA:
INCIDENCE IN BURUNDI



Incidence/100,000

national scale. As recommended by the internal evaluation team in November 1986, EPI/CCCD Office developed a National Malaria Plan in July 1987 that has not yet been approved by the MOH. The plan was developed with technical assistance from the Belgian Cooperation, CCCD Technical Officer from CCCD/Rwanda, and the Malaria Branch of CDC/Atlanta.

The plan is comprehensive and describes national and regional strategies including provision and/or proposals for malaria treatment, management, training, supervision, logistics, financing, surveillance, operations research, evaluation and feedback. The plan purposefully omits the strategy of chemoprophylaxis for pregnant women and children under five but stresses the importance of timely presumptive treatment. Once the plan is approved it is likely to contribute, as have other plans of action, to enhancing the CCCD activities in this area.

A malaria treatment schedule policy was circulated in April 1987 by the Minister of Health and again in July by the Director General of Public Health.

MALARIA TREATMENT SCHEDULE

First line presumptive treatment (without thick slide):

25 mg/kg chloroquine in three days (10 mg/kg day-one, 10mg/kg day-two, 5 mg/kg day-three.

Second line treatment for those patients whose symptoms persist after 72 hours (microscopic confirmation is indispensable):

25 mg/kg amodiaquine (Flavoquine) in three days; or, one single dose of Fansidar of one tablet per 20 kg.

Treatment of pernicious malaria:

25 mg/kg quinine per day divided into three doses per day for three days, associated with Fansidar (single curative dose) on day-one;

If fansidar is not available, quinine must be administered for five days (25 mg/kg per day) -- in case of vomiting 10 mg/kg (maximum) injectable quinine may be administered intermuscularly or intravenously. Hospitalize patient if possible.

Eight persons responsible for malaria program activities in Burundi participated in the first International Malaria Training Course which was held in Burundi during March and April 1986. The two month course was sponsored by the Tropical Medicine Institute/Antwerp in collaboration with WHO. Field exercises were held in the Ruzizi Plain where the Belgian Cooperation has been conducting applied research in malaria since 1981. In addition, CCCD/Burundi sponsored four microscopists to attend a month long chloroquine sensitivity testing course in Abidjan in September 1986.

In October, 1986 during the MLM course, a malaria observation survey of two health centers in Bujumbura found that mothers recognize the symptoms of malaria and give their children antipyretics and chloroquine at the first signs of malaria. However, treatment schedules and dosages often were not correct. A second study, for the peripheral training needs assessment, examined knowledge and practices in eight health centers and found that health workers failed to give mothers advice on how to administer medicines correctly and on how to take care of their sick children at home.

UNICEF has been providing sufficient first and second line anti-malarial drugs and ample supplies of drugs were observed in all health centers visited by our evaluation team.

4.3.2 Constraints

Compared to the well-established EPI component of the CCCD project, the malaria program has not yet achieved sufficient integration into other health center activities. It suffers from lack of sufficient training for health workers and their supervisors, insufficient diagnostic equipment and training, wide variations in actual treatment schedules and dosages, and inappropriate use of second line drugs.

In our field visits we found that although there were sufficient amounts of chloroquine available, it was not always used as the first line of treatment. Some health workers associated Fansidar with chloroquine as a first line treatment. Injectable quinine was also used in some hospital settings, regardless of the gravity of illness or question of resistance.

A recent study which evaluated treatment practices in three hospitals in 1986 showed that in at least two hospitals I.V. quinine was usually used as a preferential first line treatment.

Despite efforts to improve training in malaria, the differences in levels of knowledge and practices suggest that malaria components in training activities need to be enhanced (see Section 4.4.2). It is essential that microscopy be taught adequately in the medical and paramedical schools.

A supervisory checklist for malaria treatment has been created, but it is not yet in use (see Section 4.5.1).

Even though a treatment schedule was circulated to the MCS, the schedule often did not reach the health centers and dispensaries. As a result treatment schedules and dosages vary from place to place -- Rx schedules should be posted clearly in all health facilities.

A central problem in the program is that, although there is an established position for a national malaria coordinator, the position will be vacant until the appointed coordinator completes his training at Tulane University in July 1988. The malaria coordinator would be an important initiator and supervisor who could provide the essential administrative support to strengthening this program.

RECOMMENDATION:

An Acting National Malaria Coordinator (host country national) be engaged by the MOH before the end of 1987 to provide direction and coordination to the malaria components of CCCD and LMTC.

The National Malaria Plan be reviewed, approved, and implemented by the MOH.

(Responsible Agencies: MOH, CCCD. Date: December 1987)

Despite efforts supported by CCCD and UNICEF to improve diagnostic capabilities, there are still many health posts without trained microscopists to prepare and interpret thick smears. The four microscopists who were trained in chloroquine sensitivity testing in Abidjan have not yet been able to accomplish their principle task of establishing sentinel surveillance sites for chloroquine or Fansidar resistance.

RECOMMENDATION:

Establish sentinel surveillance sites for chloroquine resistance using the personnel trained in Abidjan.

(Responsible Agencies: MOH, CCCD, LMTC, UNICEF. Date: December 1988)

As mentioned above, it is unfortunate that the two major administrative units concerned with malaria -- EPI-CCCD and LMTC -- are not united under the same direction. Both units can complement each other and benefit from the resources, technical expertise, supervisory skills, transport and logistical systems of the other. It is important to consider the recommendation in Section 1.3.5 that the malaria units be administratively united.

4.4 Training

4.4.1 Background

The two-person training unit at the MOH is part of the Training and Personnel Management Service, attached to the Minister's Cabinet. The unit is responsible for coordinating medical and paramedical basic training and continuing education. The head of the unit, universally acknowledged as capable and well-qualified, has been overwhelmed by the competing training needs of various health programs and their donor agencies. The improved coordination between these agencies and programs should resolve this issue; unfortunately, just as coordination is improving and should result in better integration of training objectives across programs, the head of the training unit has been sent to Canada for long-term training. No one has been appointed to fill this important coordinating function.

Burundi has a growing network of training resources, and UNICEF, WHO, along with USAID, and other international agencies, has helped contribute to the development of this network. The University of Burundi has had a medical school since 1982. With an average 15 graduates per year, it is said to be rapidly filling the need for physicians. However, the serious scarcity of paramedical personnel has not yet been resolved. At about the time that CCCD started up, the country's training plan called for a reorganization of the paramedical curricula into three-stepped levels of training, allowing paramedical personnel to move between levels of responsibility with additional training. In addition, recognizing a need to turn out more trained staff each year, the MOH opened two new paramedical schools (at Ngozi and Bururi) in September 1986 to supplement the medical technician (nursing) school in Gitega and the laboratory technician/sanitarian school in Bujumbura. Auxiliary nurses are now trained at the two new schools in two rather than the previous three years. Some 80 auxiliaries will finish the program in May 1988 and become available to staff

health facilities. The new schools hope to graduate as many as 125 trainees yearly in addition to the 80 medical technicians and 15 sanitarians who finish each year.

The following technical assistance, funded both by UNICEF and by CDC/A, has been provided for CCCD training:

- evaluation of previous training and preparation of a training schedule for 1986-88;
- facilitation of Mid-Level Management Course;
- assessment of training needs based on tasks and performance evaluation of peripheral HCWs;
- training of 4 regional training teams, preparation and field-testing of training materials for their use in peripheral training, and facilitation of a first round of peripheral training seminars by these teams.

Based on the MOH's concern for strengthening training activities, and given the financial support provided by UNICEF, the technical assistance requested for training activities has been substantial, involving some four months of total consultant time. However, given the critical role of HCW training in the implementation of CCCD objectives, and given the progress in decentralization and efforts to institutionalize training capacities in the MOH, the level of technical assistance (TA) for training has been an appropriate use of program resources. The continuing use of the same consultant for four consecutive visits made for excellent follow up and linkage between the various training events CCCD has sponsored. What is most needed now is appropriate utilization of the trainers and materials produced through the past year's TA, supported by better coordination of these resources between CCCD and the MOH training unit. Some further TA will be needed to guarantee effective CCCD training in the paramedical schools, and to reinforce the regional training teams in the application of their new skills.

4.4.2 Accomplishments

Table 7 provides a summary of the various training seminars sponsored or organized by CCCD for Burundi's medical and paramedical personnel.

The 1986 MLM course was the first step in strengthening the supervisory and managerial capacities of MOH personnel, notably the Medical Chiefs of Sector. With the frequent turnover of supervisory staff at this level, it appears that regular follow up MLM courses will be required to enhance supervision. A core group of MOH staff were trained to serve as facilitators of the MLM course, so annual repeats should be feasible.

Sponsored in large part by UNICEF, the training and organization of four regional teams of trainers was a major step towards the goal of decentralized training for peripheral paramedical staff. Each team is associated with one of the paramedical schools, where they can take advantage of accommodations and ample space for training activities, particularly during school holidays. Consisting of 5-7 trainers each, drawn from among regional and sector medical chiefs, hospital medical directors, and the directors and instructors of each paramedical school, every team has a coordinator responsible for bringing them together to plan and conduct further peripheral training relating to CCCD as well as other program areas. Thus far, each team has conducted one trial run (in May 1987, under the supervision

Table 7

TRAINING FOR EPI - CCCD

NATURE OF TRAINING	LEVEL OF PERSONNEL	ORIGIN	NUMBER	DATES	LOCATION	TRAINERS
Training of trainers	Medical Chiefs of Sectors	4 Regions	4	2/86	Lomé	CDC/A (Gaye/Leonhardt)
ORS	Paramedical	Muramvya	12	4/86		
ORS Workshop	Hospital MDS	4 Regions	7	8/86		
Chloroquine sensitivity testing	Microscopists	4 Regional Laboratories	4	9/86	Abidjan	CDC/A
ORT Workshop/ Seminar	Paramedical (Hospital)	4 Regions	15	9/86		
Mid-level Management	MCS, MCR, School directors & stage coordinators, HE Unit Social Aff.	23 (all but two) health sectors	45	10/86	Bujumbura	Lomé TOT group Training & HE staff chaponnière Ressource persons
Peripheral training	Auxiliaries, aides & commune administr.	Bujumbura region	37 + 29 Comm. Administrators	3/87	Bujumbura	
Training of trainers	(Same type as MLM)	4 Regions	25	4/87	Bujumbura	Seruzingo EPI team Training Unit Chaponnière
Peripheral training (field test of schedule & materials)	Paramedical	Muyinga/gitega Bujumbura/Makamba	25 28	5/87 5/87	Ngozi Bururi	2 regl. team Training Unit Chaponnière
Peripheral training	Paramedical	Bubanza, Bujumbura, Matana, Bururi, Rutovu, Rumonge. Kayanza, Kirundo Gitega, Ruyigi	21 20 25 28	8/87 8/87 8/87 8/87	Bujumbura Bururi Ngozi Gitega	Regl. team Training Unit

of the MOH training unit and the training consultant who conducted their Training of Trainers [TOT] course) and one peripheral training on their own (July-August 1987).

Another major accomplishment is the preparation and testing of several sets of training materials and technical guides for HCW use. Based on the needs assessment done by observing HCWs' routines, and field-tested to ensure their adaptation to the Burundi situation, these materials are to be used for task-based training in small groups using an active participatory method. The materials include trainers' guides and handouts for trainees. In addition, a set of technical guides for various CCCD activities (e.g. locating injection site, preparing a syringe, mixing of ORS packets, malaria treatment schedule) was prepared, but not yet printed, for use as ready reference modules in the health centers.

CCCD training activities will also benefit from the strengthening of the ORT Unit at the HPRC and Forami Health Center. Though this unit is not yet fully functional as an ORT Training/Demonstration Unit, some trainees from the paramedical schools' basic courses are receiving training there. Recommendations for strengthening this training resource are made under the section on diarrheal disease control.

4.4.3 Constraints

The recent addition of two new paramedical schools nearly doubles the number of paramedical workers who finish basic training each year. Over 700 students are currently enrolled in the four paramedical schools. Unless CCCD theoretical and practical training are integrated into the basic curriculum, in-service training and continuing education will never be able to meet the need for all practicing HCWs to be competent in CCCD-related skills. Staff and faculty of the paramedical schools made up about half of the 25 trainers who formed regional training teams after the April 1987 TOT.

As yet, however, integration of CCCD material into courses at the paramedical schools has been mainly on an individual basis. Those instructors teaching courses into which the materials fit easily, and who were comfortable enough with the new concepts and considered them important enough to merit rearranging their syllabi, have taught the CCCD materials. Several of the TOT-trained instructors teach courses with no clear place for the material. Until the knowledge and skills related to CCCD become part of the official curriculum, are clearly articulated with other elements of the courses in which they are taught, and become part of final examinations, they will continue to be taught on a scattered basis. Revisions of the 1978 curriculum were considered in 1984-85, and proposals were made by both the MOH curriculum revision commission and a WHO consultant, but these have never been acted on officially. Some of those responsible for instruction are still using the 1978 curriculum.

The major problems cited by instructors in these schools are: (1) the total lack of any teaching materials, meaning both texts and reference materials, and (2) the dearth of fulltime training staff, with most instructors being doctors from the regional hospitals, or sector or regional medical directors with other fulltime responsibilities.

Given that one teaches as one was taught, most instructors teach overly theoretical courses, leaving little opportunity for hands-on practice of nursing, health education, or administrative skills. The lack of teaching tools such as models, mannekins and charts contributes to this problem. UNICEF is prepared to provide teaching materials for the paramedical schools, and a request should be forthcoming from the MOH. Technical

assistance from CECI (a Canadian NGO) over the next two years should strengthen the teaching skills of the faculty of these schools. CECI will also be providing technical assistance for the preparation of basic training materials, and working with clinical practice coordinators to plan for reorientation and reinforcement of the clinical practice experience.

The plan to begin conducting clinical experiences in health centers rather than in hospitals should aid in providing practical skills training and orientation more adapted to MOH training needs. However, adequate preparation, careful selection of the sites for clinical practice, and close supervision of trainees will be needed to ensure any benefit from this new approach. A critical need is for official revision of the basic training curriculum for each level of HCW, and communication of this to those responsible for the supervision of clinical experience as well as to instructors.

RECOMMENDATIONS:

The MOH curriculum commission convene to consider changes in the content and methodology of the current paramedical curriculum, incorporating CCCD objectives (EPI, CDD, Malaria) along with other changes dictated by new primary health care programs.

MOH and the Ministry of Education collaborate on similar changes needed in the curriculum of the university medical school, incorporating clinical practice in health centers in addition to the current hospital-based practice.

All current paramedical and medical school instructors receive TOT through the CCCD project (with TA provided as needed) and all newly assigned instructors receive TOT by the start of each school year or during the next scheduled TOT.

TA be provided to assess needs and to plan and conduct a follow up TOT to reinforce the training skills of the regional training teams.

(Responsible Agencies: MOH, Division of Personnel Management, MOE, Paramedical and Medical Schools, UNICEF, CECI, CCCD. Date: June 1988)

The regional training teams, with two seminars under central-level supervision behind them, should be able to function fairly autonomously as trainers. Still, some central-level coordination of the various teams' proposed training calendars with those of other health programs, as well as facilitation of budgetary and materials requests, is needed. The absence (for long-term training in Canada) of the head of the MOH training unit may remove one of the prime moving forces in the promotion and coordination of decentralized training. Frequent personnel transfers and the consequent shrinking or rearrangement of the regional teams also contribute to the need for some central coordination.

RECOMMENDATION:

Assign responsibility for training coordination for all CCCD components (to include coordination with each training team, paramedical school, MOH training unit, and other PHC programs) to one of the existing CCCD national program coordinators (with the assistance of one of the four CCCD technicians).

(Responsible Agency: MOH/CCCD. Date: December 1987)

HCWs in 13 health sectors have received peripheral training in 1986-87. In order to guarantee the integration of their newly-learned skills into their daily routine, two things are needed: adequate equipment and supplies to apply the skills acquired in training, and close follow up supervision by immediate and sector-level supervisors, particularly in the first months after returning from a seminar.

Adequacy of equipment and supplies is dealt with under the sections on each component of CCCD. Supervision is also addressed in a separate section. However, a critical problem, given the frequent reassignment of MOH personnel, arises when newly-assigned supervisors have not been trained in CCCD component areas, but must supervise staff in these areas. At any given time, as many as a third of sector medical chiefs do not have CCCD training background.

It would be useful if the November 1987 training TA included a practice assessment in health facilities survey as part of the planned follow up needs assessment. In addition, the MOH Personnel Management Director should be encouraged regularly to inform the training unit and CCCD training coordinator of reassignments, so that they can ensure early training of any supervisor new to CCCD objectives.

Unfortunately, several of the materials prepared, which should have been distributed in the August 1987 round of peripheral seminars, have not been cleared and printed yet. The materials which were given out in the May and August seminars are being used by those trained, but have not been shared with colleagues at their health centers. There should be a follow up on the approval process for the prepared health education materials and get them printed, then ensure distribution to all peripheral HCWs trained in May and August 1987. In addition, multiple copies of training materials, adequate for all appropriate HCWs at a facility, should be distributed when only one HCW per facility can attend a seminar.

4.5 Health Education

4.5.1 Background

Despite continued efforts by the TO, health education remains the weakest of the CCCD interventions. MOH/Health Education Unit (HE) should support the project's outcome objectives by promoting (1) the appropriate utilization of the support provided by CCCD, and (2) behavior changes in the home and community which will reduce malaria and diarrhea morbidity and mortality. Efforts by the TO have been ongoing since his arrival in early 1986, but a plan of activities for health education, drafted in April 1986, has not been approved by MOH.

The MOH/HE Unit falls under the direction of the Department of Hygiene and Prevention, more specifically in the sub-directorate of Maternal and Child Health, Family Planning, and Health Education. Of the unit's seven staff, three have had out-of-country training in public health and in communications and audiovisual techniques, and four are medical technicians with on-the-job training. The unit's major function is conception and script-writing for weekly radio and television broadcasts, with some responsibility for brochure and poster conception.

Health education unit staff do not consider themselves responsible for pretesting of messages or materials, nor do they have the resources to do so (vehicle, budget). However,

two members of the unit have been involved with UNICEF staff in pretest efforts, and are willing to do pretesting if they are given the means. They admit to a lack of training and skills, and show an interest in technical assistance or study abroad to help them gain the expertise the unit lacks. MOH/HE Unit staff have been involved in the CCCD MLM course, both as participants and as facilitators, and in the October 1986 intersectoral conference on health education.

The USAID-funded HealthCom consultant who visited in April 1986 recommended providing financial assistance, training, and on-the-job experience to turn the MOH/HE Unit into the core of an effective team. Similar recommendations have been made by a number of information, education, and communication (IEC) consultants (both international and local) in recent years. Higher MOH authorities have not agreed to use health education technical assistance and training, asking only for material contributions from donor agencies. Since early 1986, they have stated the desire to depend on local resources rather than outside IEC consultants. However, the Health and Population Project due to begin in 1988 proposes a long-term IEC expert to provide technical assistance to the MOH/HE unit. Unfortunately, the urgent need to develop health education interventions for CCCD means that the project cannot wait for this TA to bear fruit, but must undertake action in the short term.

Given the limited MOH resources available for health education in the past, it has become widely accepted that collaboration and coordination between concerned ministries and donor agencies will be needed to meet the health education needs of all primary health care initiatives. The current strategy calls for the creation of a National Bureau of Health Development under the MOH to coordinate training programs and promote intersectoral collaboration. Under this strategy, the MOH/HE unit would take the lead in setting forth a health education plan, coordinating with other concerned ministries (Women's Affairs, Social Affairs, Information, Education) to ensure consistency of messages, and evaluating the coverage of health education interventions and their impact on knowledge, attitudes and practices (KAP).

With the reorganization into health provinces and the move to increase community participation, Commune Socio-Health Committees have been set up in several provinces to respond to local needs for interministerial collaboration and integrated health and social action. Field visits suggest that these committees are not yet fully effective due to financial and transportation constraints, but that they are undertaking social mobilization efforts in some communities.

In collaboration with MOH officials, a CCCD health education consultant visiting in October 1986 helped conduct an intersectoral conference on health education program planning. Since February 1987 CCCD staff have been a part of donor collaboration meetings, which since mid-1987 have turned more and more around health education issues. Collaboration by EPI/CCCD, the MOH/HE Unit, and UNICEF in April 1987 produced the World Health Day immunization poster and social mobilization effort to increase vaccination coverage. A week-long WHO-sponsored intersectoral workshop on health education is being held in October 1987, with EPI/CCCD representation. These events are encouraging; however, as yet, the MOH/HE Unit has not taken the lead in coordinating the elaboration of consistent messages from all the ministries and donor agencies involved in health education activities.

Group health education activities are carried out regularly in most health centers. Given the high patient load in many facilities, it is noteworthy that staff take the time to conduct group teaching. Factors which hamper the effective delivery of group health education are addressed in the "constraints" section.

The availability of effective health education materials related to CCCD components is quite limited. The 1987 World Health Day immunization poster is one of very few materials which have been pretested to ensure comprehension and impact. Most of the materials prepared for EPI prior to CCCD were not pretested, and their impact is uncertain.

The educational materials (posters and growth/vaccination records) available in centers are not always appropriately used. Posters are often placed in staff areas rather than in full view of the public. Growth/vaccination records are often used only as records, and ORS packet designs are often ignored, though they both were designed as teaching tools. Health workers need to be trained in the effective use of these materials when they are made available.

Based on the evaluation team's field visits to health centers and on observations made during the March 1987 training needs assessment, individual education occurs in about half of HCWs' interactions with patients. HCWs should counsel mothers as to return dates for follow up vaccination, home treatment of diarrhea, the correct mixing of ORS packets, how to care for fever at home, and the prevention of diarrhea. Here again, training on CCCD service component areas should also emphasize the priority messages to be used in counselling mothers.

Health education training has been included in all CCCD-sponsored training courses conducted in Burundi in 1986-87, both for peripheral HCWs, and for trainers (TOT) and supervisors (MLM). This training not only includes health education methods, but also emphasizes the priority messages that should be given to individuals and groups. Follow up evaluation of these training courses by a CDC consultant in November 1987 should give some indication as to the impact of training on the health education practices of HCWs. In the MLM course, participants also learned how to conduct a KAP survey. Health education training, mostly hands-on practice, is a part of the week-long training of paramedical students at the ORT Training/Demonstration Unit at HPRC, where they learn the priority messages to give to mothers, and practice demonstrating the correct preparation and administration of ORS.

If health education is to impact on the achievement of project goals, strategies and messages must be based on a clear definition of the behaviors to be changed. Behavior change depends on changes in the knowledge, attitudinal, and environmental factors influencing behavior. Formative evaluation provides data on these factors for health education programming. Although few formal studies have been conducted, some data are available. A July 1984 study of the impact of social communications on health practices, carried out by the University Social Research Center (CURDES), the Ministry of Social Affairs, and UNICEF, includes findings relating to diarrhea and vaccinations, and the study concludes with suggested interventions. During the 1986 MLM course, the participants did a 20-question KAP survey on diarrhea and fever with small samples of community residents. The March 1987 training needs assessment, conducted by the MOH training unit, CCCD staff and a training consultant, provides data from observation and interviews of health workers and mothers concerning vaccinations and treatment of diarrhea and

malaria. In both of these latter resources, sample sizes were quite small. Preliminary results of a health services and practices study being conducted by the Institute for Resource Development (Westinghouse) should be available in November 1987. UNICEF is currently analyzing the data collected from a second, more comprehensive study of health, KAP and social communications channels, which should be quite helpful in planning for intersectoral collaboration in implementation of health education activities.

4.5.2 Constraints

A detailed plan of activities for health education was submitted to MOH for approval by relevant sections in April 1986. It has not, as yet, been approved. An informal health education working group involving donor agencies and high-level MOH officials meets irregularly to discuss health education issues. The group does not include a member of the MOH/HE Unit, although other MOH officials participate.

RECOMMENDATION:

MOH assign one or more technicians from the MOH/HE unit to the CCCD health education working group, and this group write an updated Health Education Plan of Activities, taking into account the original plan and current program needs.

MOH approve the updated CCCD Health Education Plan of Activities, with revisions as needed.

(Responsible Agency: MOH/HE Unit, MOH. Date: June 1988)

The MOH/HE Unit does not have its own resources to collect data and conduct pretests in the field. They design materials, but leave pretesting to whichever program has requested them. Resources are available in Burundi for technical assistance in pretesting as well as for other stages of design and production. A UNICEF IEC specialist collaborated successfully with a technician from the MOH/HE unit on the pretesting of the EPI poster in 1987. Further collaboration of this sort could provide on-the-job training to strengthen the skills of the MOH/HE Unit staff. In addition, Burundi Media, a private concern has offered its services in all phases of media production. As yet, the MOH has not availed itself of this resource. IEC consultants working in-country with WHO and UNICEF have shown their willingness to collaborate with CCCD as part of a health education working group.

RECOMMENDATION:

The CCCD project provide funds for locally available technical assistance to the CCCD health education working group to begin formative data collection, message development, pretesting of messages for the CCCD project activities.

(Responsible Agencies: UNICEF, CCCD, MOH/HE Unit. Date: June 1988)

Although some facilities (especially church-related) set aside space for group education and have appropriate visual aids, many sites lack an adequate space with good visibility and acoustics. Portable flipcharts are available on several subjects, but none were seen that deal specifically with CCCD project activity objectives such as ORS preparation and use, malaria treatment, or the importance of vaccinations for women and children. Since staff

are teaching on these topics, their effectiveness could be enhanced if relevant field-tested materials were produced and staff were trained to use them along with specific priority messages when conducting group education. The revised Health Education Plan of Activities should include the development, pretesting, and production of portable flipcharts covering CCCD components.

Given the limited amount of KAP data available, it will be difficult to measure the impact of CCCD health education strategies in Burundi. In any case, at this stage in the CCCD project, given the urgent need for health education to promote appropriate service utilization, it may be best to forego extensive formative research in favor of some health education action based on the limited data available. A round of focus groups could supplement what is already known and serve in place of a formal study.

4.6 Health Information System

4.6.1 Background

Seven reporting systems make up the Burundi Health Information system. Three of these systems pertain to the CCCD target diseases and are managed by the EPI/CCCD Office: Monthly Epidemiologic Bulletin Report, Monthly Vaccination Report, and Monthly Sentinel Disease Surveillance Sites Report.

Other reports that are prepared in the MOH are: the Monthly Protection Maternelle et Infantile and Family Planning Activities Report, Monthly Leprosy and Tuberculosis Control Activities Report, and the Quarterly and Annual Activities Report of Medical Care Facilities. This large number of separate and distinct reports has presented difficulties for the creation of a single integrated health information system.

The Monthly Epidemiologic Bulletin Report is the backbone of the Burundi Health Information System. It was initiated in 1980 by the EPI program and it reports on 28 illnesses. Among these illnesses are the eight targeted diseases of CCCD: measles, tetanus, tuberculosis, malaria, pertussis, polio, diphtheria, and diarrheal diseases. This information is collected monthly from the registers of hospitals, health centers, and dispensaries. It is compiled at the health sector level where hospital and non-hospital cases are combined and forwarded, after a delay of one or two months, to the EPI/CCCD Office. Information from the monthly Epidemiologic Bulletin is fed back by letter to the health sector level but not to the facilities which provide the original information.

The EPI/CCCD Reports have significantly improved since the initiation of the CCCD project. Over 90% of the health facilities report to the health sector.

The Monthly Vaccination Report collects the number of vaccinations that have been performed monthly in the 211 vaccination centers and presents this data by age, antigen and series. The reporting forms reflect only the vaccinations administered up to the age of 23 months. It also reflects the dose of polio administered at birth as Polio-1 and reflects the series of polio doses beginning at six weeks as Polio-2, Polio-3, and Polio-4. This information is forwarded from the health sectors to the EPI/CCCD Office in a timely manner and is well accepted at all levels. All vaccination centers submitted monthly reports during the first six months of 1987. Unfortunately, there is little, if any, feedback to the sectors.

The Monthly Sentinel Disease Surveillance Sites Report was initiated in 1984 when 18 medical care centers were chosen to report in detail on measles, neonatal tetanus, non-neonatal tetanus, pertussis and polio. The sites were to report cases and deaths by age and vaccination status. However, the system has never become functional due to insufficient training, motivation and supervision of personnel. The report was often regarded as a duplication of the Epidemiologic Bulletin Report system and not as a special surveillance/alarm system as was intended. In July 1987, medical students were assigned temporarily to the previously designated sentinel reporting sites in a renewed effort to make the system function. One sentinel site report was examined by the evaluation team during field site visits.

The EPI/CCCD Reports, with the exception of the Sentinel Surveillance Reports, have been functioning quite well. Reporting for EPI, malaria and diarrheal diseases occurs and the information is also fed back to the health sector level.

The other reports in the MOH health information system are collected by separate offices. The Monthly PMI and Family Planning Activities Report is sent directly to the Department of Hygiene and Prevention and the Monthly Leprosy and Tuberculosis Control Activities Report is sent to the Leprosy and Tuberculosis Integrated Service (SILT). The quarterly and annual Activities Report of Medical Care Facilities are sent directly from the twenty seven hospitals to the Sub-Directorate of Epidemiology and Health Statistics. The reports include numbers of cases and deaths on over 300 illnesses. During the past seven years the percentage of completed quarterly reports received from the hospitals averaged less than 50%. The data has not been examined since 1984. The Sub-Directorate has a Chief who is assisted by only three statistical clerks and all data is hand tabulated. Currently there is insufficient office space for this activity.

In 1986, the Health Information System was studied twice by World Bank and WHO consultants and was evaluated by a CCCD consultant for the EPI/CCCD information sub-system. These evaluations presented a series of recommendations to allow for the integration and upgrading of the health information system.

Part of the upgrading has included the purchase of three personal computers, the assigning of computer codes to each health sector and health facility, and the preparation of new forms. An attempt is being made to enter data collected for 1986 in order to produce a 1986 Annual Report before the end of 1987.

In addition the Chief of Statistics and an epidemiologist attended a two-month basic computer course in Chicago in July and August 1987. Francophone participants at the course were assisted by an interpreter; however, they stated that the program could have chosen any one of a number of more effective courses in Francophone countries.

The Health and Population Project, with World Bank support is currently providing technical assistance to help the MOH with revitalization and revamping of the Statistical Services HIS. The project anticipates a major effort beginning in January to consolidate HIS activities and implement the recommendations of the earlier studies and evaluations.

It is obvious that up to now a great deal more effort was spent in studying and evaluating Burundi's Health Information System than in developing it. However, with the World Bank supported Health and Population Project, the prospects for a viable HIS, and

subsequently a well informed planning service, are good. It is important that the CCCD project assist with the development of the National HIS initiative.

The EPI/CCCD health information system has provided a timely data collection service that the MOH Health Statistics Section was not able to provide. EPI/CCCD will need to continue providing this service until the National HIS is developed to the point where it can assume responsibility for effective data collection and analysis. When this occurs, EPI/CCCD and all the other health data collection systems should be integrated into the National HIS.

4.6.2 Constraints

Feedback to health facilities showing disease trends, seasonal occurrences of disease, percentage of vaccinations performed in relation to target population, etc. is necessary to maintain an informed, as well as motivated, health staff.

Implementing and maintaining an effective computerized HIS requires building in programming flexibility. The number of Health sectors may change, health facilities may increase, data collection forms will improve, etc. For example, the present system of reporting vaccinations performed reflects only two age groups (0-11 months and 12-23 months). There is no provision on the report form for recording vaccinations of children over 23 months of age. Subsequently, the over 23 vaccinations are recorded in the 12-23 age group. This distorts analyses of vaccination performance.

A second example of distorted analysis is when the first dose of polio vaccine is given at age 6 weeks and recorded as Polio-1 implying that it was given at birth. A solution would be to change the forms to read "Polio-0" or some similar coding for polio vaccine administered at birth. The Global Advisory Group meeting in November 1987 may have some recommendations on oral polio vaccine administration which may change reporting procedures.

In light of the Health and Population Project's effort to upgrade the MOH HIS, the following recommendations are designed to provide CCCD support for the general integration of HIS:

RECOMMENDATIONS:

CCCD request short-term technical assistance every three or four months for approximately three weeks each, to assist the MOH Statistical Services in the development of their new health and management information system.

(Responsible Agencies: EPI/CCCD. Date: January 1988)

EPI/CCCD Office employ the same computer coding as the newly created HIS is using in order to prepare for the integration of the EPI/CCCD HIS into the MOH Statistical Services.

(Date: Immediately)

4.7 Operations Research

The CCCD project efforts to initiate operations research occurred after one project had already been initiated. This project, conducted by the Director of Pediatrics at the University Medical School, studied the mortality and morbidity of children who had been released from hospital after being treated for measles.

During the CCCD project period major efforts have been initiated to develop operations research projects. A committee was formed in December 1986 to review operations research proposals and several proposals were submitted, including one promising study on neonatal tetanus and one on use of home fluids to prevent dehydration from diarrhea. The project also planned a two week consultancy which was to prepare a seminar to help in the design of operations research proposals. Unfortunately, none of the study proposals was approved, the committee never reconvened, and the seminar on proposal writing was cancelled by the MOH.

Most individuals we interviewed in the MOH appear to be quite interested in pursuing operations research projects. A seminar, sponsored by the Belgian Cooperative Assistance, has been scheduled for November to bring in several European experts to discuss issues of operations research for malaria.

4.7.1 Constraints and Recommendations

Given the interest expressed by MOH officials and the success of one operations research project it is not clear why the MOH has not facilitated operations research projects.

There appears to be quite a narrow conception of operations research which has focused less on operational issues of projects and more on applied research in treatment techniques or identification of epidemiological problems.

There is a pressing need for operations research that focuses on the problem areas in the EPI/CCCD program. Most of the operations research proposals that have been made to date focus instead on disease specific issues. Appropriate technical assistance could demonstrate the variety of operations research topics that would have more direct bearing on the problem areas in the program for such topics as health education messages, supervision forms and techniques, the effects of daily vs. twice weekly vaccination, etc.

RECOMMENDATION:

Schedule at least one technical assistance seminar which focuses on operations research topics for supervision, administration and health education issues.

(Responsible Agencies: EPI/CCCD and MOH. Seminar scheduled before April 1988.)

The MOH needs to take a more active role in defining priorities for operations research projects and in actively supporting them. The past committee reviewed operations research projects that were submitted by others. In the future, the committee should review project activities that are in need of research to determine options and strategies that MOH might pursue. The committee should then establish priorities for research and put out requests for proposals.

RECOMMENDATION:

The operations research committee be reconstituted after the CCCD operations research seminar to establish operations research priorities and prepare requests for proposals targeted to these activities.

(Responsible Agency: MOH. Date: June 1988)

5.0 FINANCING

Project financing has been effectively administered since the project began its operational phase in April 1986. This operational date represents a late start since the project was signed August 8, 1985.

In the Bilateral Project Fund (US \$834,000), to date all of the US dollar account (\$178,503 of a budgeted 179,000) for purchase of vehicles, has been spent and 37% (\$66,610) of the budget for refrigerators. In addition, only one third of the local currency budget (\$355,000) for operations has been spent.

This lack of timely disbursement of the local currency account is not due to any management problem or to a lack of absorptive capacity by the government, but rather to the delay in initiating project activities and to other AID constraints, which resulted in a six month blockage of the local currency account (February-August 1987).

Unexpended dollar and local currency funds in the current bilateral fund in September were 43% of the total budget. A substantial amount of this account should still be unexpended by the end of the project. These funds could be used to support the project extension for one year while reprogramming of CCCD Regional Funds is prepared for the subsequent four years of the project (see Section 1.0).

The regional CCCD funds administered through CDC and AID/Washington could not be fully evaluated by this team because a financial briefing was not provided in CDC/Atlanta where regional funds are administered. The funds from this account (the sub-allocation for Burundi) that are at the disposal of the TO were spent for appropriate purposes and amounted to \$159,316 as of September 1987 (\$84,967 during FY1986 and the remainder in FY1987).

The government counterpart funding for the project was evaluated in March 1987 by an external local consultant. This evaluation concluded that the government was fulfilling its agreement with USAID by providing even more than its anticipated total cost of the project. The government has been providing an increasing proportion of the project costs over the first five trimesters of actual project implementation (see Table 8).

The general government and MOH financing situation has been evaluated by the World Bank. The results of this study suggests that the government of Burundi will be hard-pressed to enhance public funding for health and cannot, under the terms of the International Monetary Fund (IMF) stabilization plan, commit new personnel positions in the government budget (Desrocher).

Table 8

Contribution of the Government to the CCD Project Expenses for Year 1986 and the 1st Trimester 1987.

(From Evaluation Report on G.O.B Contribution to CCD Project period 1986-8) done for USAID by
E. Batururimi, 6/29/87.

Trim. Expens. Fbu/\$US)	1986		1987		TOTAL	PLANNED FO 30 MONTHS	BALANCE TO COVER		Expenses Planned %			
	1	2	3	4			FBU	\$ US		FBU	\$ US	
CONTRIB.	1	2	3	4	1	FBU	\$ US	FBU	\$ US			
1. Salary Suppl. Personnel	FBU 10400 \$US 83	664400 5315	673800 5390	673800 5390	724200 5794	2746600	21972	7125000	57000	4378400	35028	38,55
2. Daily Ind.	FBU - \$US -	- -	58209 466	- -	100000 800	158209	1266	1000000	8000	841791	6734	15,83
3. Gazoline Petrol Repairs S.Parts	FBU 1295130 \$US 10361	1548020 12384	2008330 16067	1973173 15785	3121628 24973	9946281	79570	11750000		1803719	14430	84,65
4. Office Supplies	FBU - \$US -	- -	118752 950	677793 5422	- -	796545	6372	250000	2000	(546545)	(4372)	318,60
5. Cold chain	FBU 45490 \$US 364	32987 264	- -	- -	- -	78477	628	4625000	37000	4546523	36372	0,17
6. Training	FBU - \$US -	- -	- -	86400 691	941980 7535	1028380	8227	875000	7000	(153380)	(1227)	117,53
7. Miscellaneous	FBU - \$US -	- -	151345 1211	324624 2597	2204016 17632	2679985	21440	3500000	28000	820015	6560	76,57
TOTAL	FBU 1351020 \$US 10808	2245407 17963	3010436 24083	3735790 29886	7091924 56735	1743377	139475	29125000	59,86	11690523	233000	93524
% Total Planned	4,64	7,71	10,34	12,83	24,35	-	59,868				40,14	

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This study also showed that the government has been making good faith efforts to find alternative financing methods. Faced with the difficulty of providing public funds for health services, the government has experimented with several auto-financing schemes which should be recognized by AID. For many years Burundi health services have charged a consultation fee at hospitals and health centers. Since 1980 the government has pursued programs to provide social security financing mechanisms for civil servants. These efforts have been supplemented since 1984 with a Health Insurance Card (La carte d'assurance-maladie) which costs 500 FBU per rural family and covers all yearly health costs. These cards are currently being sold in health centers. Unfortunately, the revenues from consultation fees and medical insurance are sent directly to the treasury and are not returned as incentives to the point of collection. However, there is some indication that the government is considering means of retaining these revenues at the local levels. (Desrochers)

Several experiments have been made for autonomous clinics to become responsible for auto-financing of a progressively large portion of their costs.

A recent study by a CCCD consultant found that the MOH finances around 33% of the total health expenditures; individuals (including fees and insurance), pharmacies, and community contributions support 22%; other Ministries 22%; and external assistance 23%. (Rosenberg)

The World Bank has scheduled a short term consultant in November to evaluate these efforts and to project MOH financing needs based on several hypothetical strategies.

5.1 Condition Precedent

The CCCD project agreement established a condition precedent (CP) that required "a study of a financing system that will assist in covering recurrent costs in areas covered by the Project" be done before the 18-month mark of the project. Since this study was not done to AID's satisfaction, in February 1987 the local currency account was blocked. USAID/Burundi belatedly obtained an extension until December so that the MOH could be given more time to do the required study. The extension was obtained in time to unblock funds in August. This chain of events meant that no local currency was available for project operations for months. This team and many of our informants find that the condition precedent blockage was an unfortunate interruption in the project and that it did not have to be honored in the manner it was.

The intent of the condition precedent is clearly to encourage the government to do what it has been doing in good faith: initiate financing and cost recovery mechanisms to assure greater financial stability and resources for the health sector. The method to encourage this commitment that was chosen by the wording of the condition precedent was to establish a study of financing systems which could provide funding for this project activity. Since the study was not done the CP had to be honored and the funds blocked. However, the intent of the CP would have been better served if a study was not established as the sole evidence of good faith government efforts in providing financial support for health programs. It should be recognized that the fungibility of health care financial resources means that efforts to provide for cost recovery in several areas of the health system will provide funds that can cover recurrent costs in other areas. In any case, there is abundant evidence that the government has made genuine efforts and is continuing to make additional efforts in this area. One central example is the issuance of the Insurance Cards

at all health centers. These cards are a direct cost recovery method associated with the project activities. These efforts should be taken as sufficient for the intent of the CP. Indeed, to the knowledge of the members of this evaluation team, Burundi is in the forefront of countries pursuing cost-recovery and auto-financing mechanisms.

In any case, since the World Bank is to provide the government with short term technical assistance to do a study of financing that would satisfy even the technical requirement of the CP, this effort should not be duplicated by CCCD or AID.

RECOMMENDATION:

The intent of the condition precedent on financing should be taken to mean evidence of good faith efforts by the government to establish financing mechanisms which provide for cost-recovery and auto-financing and this condition has been met.

No efforts should be initiated to duplicate the anticipated World Bank short-term technical assistance for a financing study unless that study is, for unforeseen reasons, cancelled.

Future CP should specify good faith efforts and not hold strictly to a specific activity, like a study, as a requirement for demonstration of commitment to cost recovery and auto-financing.

(Responsible Agencies: USAID/Burundi, REDSO/Nairobi. Date: December 1987)

6.0 SUSTAINABILITY

It is difficult to judge the sustainability of a project of such short duration. It seems likely that the project activities would be sustained only with difficulty if AID funding was not continued for at least another three years, unless other donors provided funding for the activities currently sponsored by the CCCD project. Government financing capacities are extremely limited by the IMF agreement and the systems put in place by the project have not had time to be fully institutionalized, except perhaps in EPI.

Nevertheless, the project appears to be on the right track toward sustainability, if the project extension is approved. The team leader has just completed the second of a series of historical case studies of health project sustainability. These studies suggest that important contextual conditions and key project characteristics contribute to project sustainability. Most of these conditions and characteristics are present for the CCCD project in Burundi. For instance, the studies found that projects which have high national commitment are more likely to be sustained. From what we have been able to determine there is a wide consensus in Burundi that CCCD project goals and objectives are important government priorities.

Project characteristics which were important for sustainability included: 1) the project not be perceived as imposed by USAID, 2) increasing portions of project funds be absorbed by the national government over the life of the project, 3) the project be perceived as being particularly effective in achieving its goals and objectives. The CCCD project was negotiated in a mutually respectful process and is not perceived as imposed by AID. At

least over the first five trimesters of project implementation, the government has absorbed an increasing portion of the project costs. Finally, there is almost universal perception that the CCCD project is an effective one.

We should note however, that the dependence of the project activities on donor support -- especially the significant yearly contributions of vaccines from UNICEF -- make the project somewhat vulnerable.

ANNEX I

SCOPE OF WORK FOR SECOND YEAR EXTERNAL EVALUATION

1. OBJECTIVES OF EVALUATION

- a) To evaluate ASCI-CCCD activities in three countries through systematic collection and analysis of data on ASCI-CCCD management and operations at the central, regional and peripheral levels.
- b) To measure the extent to which ASCI-CCCD activities have been integrated into the existing primary health care structure.
- c) To offer a series of recommendations to impress the expansion and delivery of ASCI-CCCD services (including training, health education and health information system developments) and to accelerate their present resource constraints.

2. METHODS OF EVALUATION

Two teams comprised of epidemiologists, health educators and health economists, will be fielded to conduct an evaluation of the CCCD project. The team will work in the Francophone countries of Guinea and Ivory Coast.

- a) Study relevant reference documents at central and regional levels.
- b) Visit selected service delivery units and other health institutions in rural and urban areas of a representative number of regions of the countries.
- c) Review survey data.
- d) Interview relevant project implementing agents.

3. EVALUATION COMPONENTS

Project planning administration and management:

- a) Review the development of plans of operation and the adequacy of those plans to govern and support field activities.
- b) Describe and review the capacity of government management and administrative structures to manage and administer a program incorporating immunization, ORT and malaria treatment.
- c) Review the AID and CDC administration and support to the project and adequacy of procedures established for project support.
- d) Review country project executive management structure and functions with particular emphasis on relevant CCCD project and executive committees, as well as donor coordination activities.

4. PROJECT SUPPORT

- a) Review epidemiologic and health services statistics in order to determine if the CCCD project has exerted an influence on lowering morbidity or increasing the availability of quality of primary health care services in the respective country.
- b) Review the adequacy of information systems current and planned to provide data necessary to determine project impact.

5. PROGRAM OPERATION

Review the delivery system (current and proposed) to be utilized to deliver CCCD services, (supervision, logistics and supply, communications, personnel coverage, control of funds and supplies).

6. EPI PROGRAM COMPONENTS

- a) Review immunization policies and schedules.
- b) Review coverage of immunizations and review immunization practices with special emphasis on sterilization of equipment, immunization of ill children and frequency of immunization clinics.

7. ORT PROGRAM COMPONENTS

- a) Review national ORT policy.
- b) Review population coverage of ORT.
- c) Review ORT practices with special emphasis on continuing use of I.V., adequacy and frequency of use of ORS and adequacy of public information regarding ORS.

8. MALARIA

- a) Review national malaria treatment and antimalarial chemoprophylaxis policies.
- b) Review population coverage of malaria treatments; and
- c) Review malaria treatment and chemoprophylaxis practices with particular emphasis on availability of chloroquine, adherence to national policies, and frequency of antimalarial chemoprophylaxis in pregnant women.

9. TRAINING

- a) Review types and magnitude of training provided.
- b) Review training materials developed.
- c) Review numbers and types of personnel trained and evaluation of their performance; and

- d) Review training plan for remainder of project.

10. HEALTH EDUCATION

- a) Review the current health education structure, plan of execution and activities to date.
- b) Review staffing and institutional capacity for delivering health education services, and
- c) Review the adequacy of technical assistance provided for support to health education activities.

11. FINANCING

- a) Review sources and amount of funding for current program activities.
- b) Review governments normal budget, and auto-financing.
- c) Review USAID bilateral funds, regional funds, and counterpart funds.
- d) Review future financing of recurrent cost estimates, and country project ability to finance recurrent costs in 1987, 88 and 89 from government; and
- e) Review country fee-for service systems.

ANNEX II

LIST OF PERSONS CONTACTED

MINISTRY OF HEALTH

Dr. Tharcisse Nyunguka	Minister
Dr. Paul Mpitabakana	Inspector General
Dr. Cassien Ndikumana	Director General of Public Health
Dr. Adolphe Maderi	Director General of Health Logistics
Dr. Didace Seruzingo	Director, Department of Hygiene and Prevention
Dr. Fidele Bizimana	National Director, EPI-CCCD
Mr. Andre Nyereka	Head, Health Education Unit
Mr. Joseph Shwigiri	
Mr. Christophe Biharira	
Mr. Remy Nibizi	Assistant, Training Office
Mr. Evariste Rubugebuge	Microscopist, National Microbiology Laboratory
Dr. Gabriel Nduwumwani	Regional Medical Chief, Bururi
Dr. Maregeya Emmanuel	Regional Medical Chief, Ngozi
Dr. Dominique Gacukuzi	Medical Chief of Sector, Bujumbura
Dr. Audace Ntjinama	Medical Chief of Sector, Gitega
Dr. Serge	Medical Chief of Sector, Cancuzo
Dr. Tharcisse Nzosaba	Medical Chief of Sector, Bubanza
Dr. Stanislas Ntahobari	Medical Chief of Sector, Bururi
Dr. Joseph Rusmingobisur	Medical Chief of Sector, Ngozi
Dr. Eugene Rurangwa	Medical Chief of Sector, Kayenza
Dr. Cyprien	Hospital Director, Makamba
Dr. Egide Nicuburundi	Hospital Director, Bururi
Dr. Charles Karakura	Hospital Director, Ngozi
Dr. Rafael Bitera	National Coordinator of Diarrheal Disease Control Program, EPI-CCCD
Dr. Thadee Buzingo	Director, National Medical Technician Training School, Gitega
Dr. Severin Sinkiyajaco	Physician in Charge of MCH/FP/HE at FOREAMI Community Health Center, Bujumbura
Dr. Francois Ntareme	Professor of Pediatrics, School of Medicine, University of Bujumbura
Dr. Marc Coosemans	Director, LMTC Project
Mr. Charles Kabona	Technician/Supervisor, EPI-CCCD
Mr. Leonard Simbizi	Technician/Supervisor, EPI-CCCD
Mr. Emmanuel Biyaka	Technician/Supervisor, EPI-CCCD
Mr. Cyriaque Manirabarusha	Technician/Supervisor, EPI-CCCD
Mme. Maria Bukuru	Clinical Practice Coordinator for Medical Technicians, HPRC, Bujumbura
Mme. Patricia Ndiho	Clinical Practice Coordinator for Auxiliary Nurses Training School, Bururi

World Bank

Mr. Rene Plamondon

Technical Advisor

World Health Organization

Dr. Kalisa Ruti

Representative

U.S. Embassy, Bujumbura

Mr. Daniel Phillips

Mr. Dennis Hays

Ambassador

Deputy Chief of Mission

USAID

Mr. Don Miller

Mr. Charles Gordon

Mr. John Ford

Representative

Program Officer

General Development Officer

UNICEF

Mme. Maria Diamanti

Dr. Zeno Bisoffi

Mr. Nicephore Ndimutukunds

Representative

Program Officer

Burundi Media

Mr. Simon Kururu

President

AID/Washington

Ms. Wendy Roseberry

Ms. Myra Tucker

CCCD Project Manager, AFR/TR

Assistant CCCD Project Manager

CDC/Atlanta

Dr. Stanley Foster

Mr. Jean Roy

Dr. Ron Waldman

Dr. Helene Gayle

Dr. Michael Deming

Mr. Russell Charter

Ms. Kathy Parker

Mr. Brad Otto

Assistant Director, IHPO

Deputy Coordinator, CCCD Project, IHPO

CDD

CDD

EPI

Project Officer

Health Education

HIS

CDC/Consultant

Ms. Paulette Chaponniere

CDC/Burundi

Mr. Cyril Pervilhac

CCCD Technical Officer

LIST OF PLACES VISITED

BUJUMBURA

Ministry of Health
Prince Regent Charles Hospital
Forami Clinic

BURURI Sector

Kiryama Health Center
Gasanda Health Center
Munini Dispensary
Bururi Hospital
Counsellor to the Governor

MAKAMBA Sector

Muyenge Health Center
Mabanda Certified Health Center
Makamba Health Center
Makamba Hospital

GITEGA Sector

Governor
Gitega Regional Hospital
Paramedical School
Nyabiraba Health Center
Ruhande Dispensary
Bugendana Dispensary
Buhinda Dispensary

CANKUZO Sector

Governor
Kigamba Dispensary
Gisagara Health Center
Muyaga Certified Health Center
Administrator of Kigamba Commune

NGOZI and MUYINGA Sectors

Ngozi Regional Hospital
Gasmikanwe Health Center
Rukago Health Center
Kayenza Health Center
Gamombo Health Center
Ngozi Health Center

ANNEX III

LIST OF DOCUMENTS CONSULTED

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