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FINAL DRAFT REPORT  
INTERNAL REVIEW OF CCCD PROJECT  
USAID/BURUNDI  
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2

TABLE OF CONTENTS

- I. EXECUTIVE SUMMARY
  - A. PROJECT PERSPECTIVE
  - B. MAJOR ACHIEVEMENTS
  - C. MAJOR DEFICIENCIES
  - D. MAJOR RECOMMENDATIONS
  
- II. PROJECT ACHIEVEMENTS
  - A. HIS
  - B. EPI
  - C. CDD
  - D. MALARIA
  - E. TRAINING
  - F. SUPERVISION
  
- III. MANAGEMENT
  - A. CCCD PROJECT MANAGEMENT
  - B. MOH MANAGEMENT CAPACITY
  
- IV. PROJECT COORDINATION
  - A. INTRA - MINISTERIAL
  - B. DONOR COORDINATION
  - C. LINK TO OTHER MISSION ACTIVITIES
  
- V. ASSESSMENT OF PROJECT CAPACITY FOR ACCOMPLISHING PACD OBJECTIVES AND LIST OF REVISED PACD OUTPUTS FOR PROGRAM INTERVENTIONS
  - A. HIS
  - B. EPI
  - C. CDD
  - D. MALARIA
  - E. TRAINING
  
- VI. ASSESSMENT OF PROJECT CAPACITY FOR MEASURING DEGREE OF ACCOMPLISHMENTS FROM PROJECT ACTIVITIES
  
- VII. RECOMMENDATIONS
  - A. TECHNICAL
  - B. PROGRAMMATIC/MANAGEMENT
  
- VIII. ANNEXES
  - I. DATA REVIEW
  - II. LIST OF PRINCIPAL CONTACTS
  - III. ORGANIZATIONAL CHART
  - IV. BIBLIOGRAPHY OF MAJOR REFERENCES

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ACRONYMS

ACSI - CCCD	: Africa Child Survival Initiative Combatting Childhood Communicable Diseases
AID/W	: Agency for International Development/Washington
AIDS	: Acquired Immunodeficiency Syndrome
CCCD	: Combatting Childhood Communicable Diseases
CDC	: Centers for Disease Control.
CDD	: Control of Diarrheal Diseases
EPI	: Expanded Program on Immunization
EPI/B	: EPI Bujumbura
EPI/CCCD	: Ministry of Public Health Office CCCD Project
FP	: Family Planning
GDO	: General Development Officer
HIS	: Health Information System
HPN	: Health Population Nutrition
HPW	: Health Population and Welfare
IEC	: Information, Education, Communication
LMTCC	: Control of Communicable Diseases and Malnutrition Deficiencies Project (Belgian Cooperation)
LOP	: Life Of Project
MCH	: Maternal Child Health
MCS	: Medical Chief of Sector
MIS	: Management Information System
MOH	: Ministry of Health
OR	: Operations Research
ORS	: Oral Rehydration Salts
ORT	: Oral Rehydration Therapy
PACD	: Project Assistance Completion Date
PFIR	: Project <sup>INACIA</sup> Funding Implementation Request
PIL	: Project Implementation Letter
TO	: Technical Officer
USAID	: United States Agency for International Development
UNFPA	: United Nations Fund for Population Activities
UNICEF	: United Nations Children Fund
WHO	: World Health Organization.

## I. EXECUTIVE SUMMARY

### A. PROJECT PERSPECTIVE

The goal of the CCCD project is to reduce infant mortality by 25% through a multi-donor effort. The purposes of this internal review were a) to assess "project" achievements and to differentiate these achievements from "program" achievements, b) to assess the project capacity to accomplish the PACD objectives, c) to assess the project capacity for measuring the degree of accomplishment from project activities, d) and to make technical and management recommendations for the life of the project.

### B. MAJOR ACHIEVEMENTS

The team discovered that distinguishing between project achievements and program achievements was not always possible. The team observed the following principal "project achievements":

#### **HIS**

An HIS has been established that is mainly an immunization program data collection system that is used by sector medical officers to transform data into useful information for trend analysis for planning and monitoring purposes of the EPI. The first feedback bulletin has been produced.

#### **EPI**

The project has contributed to a certain degree to the notable increase in Burundi's vaccination coverage rates. It is probable that project objectives for vaccine coverage will be reached by PACD.

#### **CDD**

The newly named national CDD coordinator working closely with the project developed a CDD plan.

#### **MALARIA**

The project contributed to the revision of the 1987 national Malaria workplan with the Malaria coordinator.

#### **TRAINING**

A training strategy was developed and training performance assessment was initiated. Supervisory checklists will permit quantifiable assessment of health facility practices. This will allow the project to focus on identified weaknesses.

#### **SUPERVISION**

The supervision by sector medical officers was institutionalized.

#### **MANAGEMENT**

CCCD project management over the past year newly assigned Technical Officer (TO) has made great progress to coordinate project activities with UNICEF, the largest program donor. These efforts have led to monthly donor coordinating meeting chaired by the Director of Hygiene and Prevention. The TO's effort to improve and enlarge the HIS has proved successful. Project office management has been strengthened by the addition

of a coordinator for CDD activities. Health sector supervision was strengthened with the establishment of a supervisory team of donors/implementers (UNICEF and EPI/CCCD) and high officials of the Department of Hygiene and Prevention.

#### **MOH MANAGEMENT CAPACITY**

MOH input for the project in the form of personnel and local currency contributions continues at an acceptable rate. Newly assigned personnel at the departmental level of the MOH have provided new opportunities for donor coordination and beginnings for integrating project activities such as supervision of the health sector.

#### **PROJECT COORDINATION/INTEGRATION**

Integration of donor activities appears to be an effort that is desirable but not always practical. Support services in HIS, IEC, and training, for example, are designed for effective individual project implementation. No evidence of efforts to integrate support services was observed.

However, the newly installed World Bank Health and Population Project, with its HIS and IEC components, may be the method for approaching the integration of support activities such as HIS and IEC.

### **C. MAJOR DEFICIENCIES**

#### **WEAKNESS OF ASSESSMENT AND MEASUREMENT OF PACD OBJECTIVES**

The extension document outlined specific objectives for disease specific mortality reduction (as opposed to overall mortality estimates) which are less pertinent to obtain and probably not measurable during the LOP given the current state of knowledge regarding survey methods.

It is of major importance to measure the changes in overall mortality. Steps should be taken to implement mortality surveys such as preceding birth surveys. No action has been taken thus far to do this.

It may also be possible to estimate the impact of project activities by extrapolation of the presumed impact of known service indicators such as vaccine coverage.

Concerning CDD and malaria, no mortality baseline data is currently available that allows the assessment of PACD objectives. Similarly, no baseline data is available that permits estimation of home treatment of diarrheal disease or malaria.

## **WEAKNESS OF CDD AND MALARIA INTERVENTIONS**

The state of advancement of CDD and malaria programs lags far behind the EPI program.

The existing system for the distribution of anti-malarial drugs is extremely inefficient. This causes breaks in the supply of chloroquine, thus making the national malaria policy impossible to implement. Little efforts have been made to solve this problem.

Although the supply system for ORS packets appears adequate, health education measures that would enable health workers and mothers to implement ORT correctly are insufficient.

## **MANAGEMENT WEAKNESSES**

### **Project Officer**

Project office management suffers because the Project Director also functions as the EPI Coordinator and has undertaken financial accounting functions which impact on the time available for major managerial roles of administration and supervision. A full-time supervisor is lacking for CDD.

### **USAID**

The system of fund reimbursement, with lengthy time delays, has created problems in project implementation and should be reviewed. Over the LOP a GDO staff person, instead of an HPN Officer, has been responsible for project monitoring. Assigning an HPN could improve project efficiency.

### **MOH**

The organization chart of the MOH, specifically the Department of Hygiene and Prevention, has no structured positions for EPI, CDD and Malaria once the project activities cease. Coordination and supervision functions of the MOH are not well established because of the lack of a centrally placed official to handle these activities.

## **PROJECT COORDINATION/INTEGRATION WEAKNESSES**

The major issue here is that project coordination has developed among donor on an as-needed basis or as a result of resolving crises. A well structured effort toward project coordination and integration must be undertaken essentially by naming a highly placed official in the MOH to handle these functions.

**D. MAJOR RECOMMENDATIONS**

1. **HIS DEVELOPMENT** - The team recommends that future efforts be focused on the HIS to enable decision makers at the MOH to establish priorities and take administrative action as needed.
2. **EPI** - Given the success of the EPI program and the change in the epidemiology of vaccine preventable diseases, the project will assist in the development of a revised national immunization strategy.
3. **MALARIA** - The project will assist in the development of a system to estimate chloroquine needs nation-wide, insure these needs are met, and insure effective treatment nationally.
4. **CONTROL OF DIARRHEAL DISEASE** - Improve overall use of ORS by: a) train all health sector level supervisors to insure correct case management of diarrheal disease; b) conduct a study to determine how mothers are applying ORT in the home.
5. **CCCD STAFFING** - The MOH should assign another person to act as coordinator for EPI thus freeing the project director of this function, and allowing him to concentrate his efforts on the major managerial roles of administration and supervision.
6. **INSTITUTIONALIZATION OF PROFESSIONAL POSITIONS** - The MOH must institutionalize the positions for EPI, CDD and Malaria within the Department of Hygiene and Prevention (i.e. permanent positions for these professionals).

## II. PROJECT ACHIEVEMENTS

### A. HEALTH INFORMATION SYSTEM (HIS).

1. **System Development** - A partial HIS is in place. The CCCD project has been instrumental in developing an effective HIS for vaccinations (i.e. a reporting for 28 diseases). Programs for data entry of vaccination information have been prepared for EPI program in 1988 which allows cumulative monthly reporting of vaccination results and calculation of progress in individual health sectors in meeting their goals. By 1989, over two thirds of the health centers are reporting on time to the health sectors and central level to EPI/B each month.
2. **Decision Making based on HIS** - EPI indicators are being followed on a regular basis. The immunization HIS is used to train sector medical officers on trend analysis of outcome indicators for planning and monitoring purposes. Monthly meetings are held at EPI/B. Local planning seminars were made and each sector submitted a plan based on coverage in 1988 and first half of 1989 to the central level.
3. **Data Analysis** - Field visits have been done to follow up and make sure surveillance for the EPI diseases is appropriate and determine whether EPI objectives are being reached. Data analysis led to a decision to implement national immunization days the months of March and November 1989.
3. **Feedback Bulletin** - The first Feedback Bulletin was produced, circulated in MOH for approval and distributed to central and rural health care staff.

### B. EXPANDED PROGRAM ON IMMUNIZATION (EPI)

1. **Survey Design** - Two national coverage surveys were designed and implemented in 1985 and 1989. The evaluation of coverage by the administrative method (number of vaccine doses divided by the number of children in target ages) was found to be a reliable estimation of coverage levels.
2. **Commodity Support** - Support for logistics and commodities were provided for cold chain.
3. **Vaccination Strategy** - An outreach vaccination strategy was developed.
4. **Tetanus Sero-Survey** - A tetanus toxoid serosurvey was conducted in 1989 leading to the assessment of neonatal tetanus vaccination status as an element of a vaccination strategy.

5. **Outbreak Investigation** - Two measles outbreak studies were implemented in Muyinga and Butezi. A shift in the age specific attack rate to older age groups has occurred as a result of measles immunization.
6. **Annual Plan of Action** - An EPI Annual Plan of Action was developed and approved by the MOH in July 1989.

C. CONTROL OF DIARRHEAL DISEASE (CDD)

1. **National Coordination** - A national CDD coordinator was appointed in July 1989
2. **Annual Plan of Action** - A CDD Annual Plan of Action was developed and approved in October 1989.
3. **Training Unit Development** - Two training/treatment units were established in Bujumbura and Gitega and ORT corners were set up throughout 4 health sectors.

D. MALARIA

1. **National Coordination** - A national malaria coordinator was named in June 1988.
2. **Annual Plan of Action** - A National Annual Plan of Action for malaria was developed and approved by the MOH.

E. TRAINING

1. **Training Strategy** - A training strategy has been developed in 1986.
2. **Curriculum Development** - Curriculum development was provided for a Peripheral Level EPI/CCCD course which trained 361 peripheral level workers.
3. **Mid-Level Training** - All sector medical officers were trained at Middle Level Management courses.
4. **Training of Trainers** - Training of trainers courses were provided to 20 health care staff for CCD activities.
5. **Technical Training** - 63 microscop technicians were trained and four went to Ivory Coast and Burkina Faso for additional training in Chloroquine resistance.
6. **Job Aid Development** - EPI, CDD and Malaria job aids were designed based on training needs assessment.

7. **Performance Assessment** - Training performance assessment was initiated.

#### F. SUPERVISION

1. **Sector Supervision** - 24 sector level supervisors were designated with job descriptions outlined by the MOH.
2. **Medical Officer Supervision** - Regular supervision of sector medical officers was institutionalized.

### III MANAGEMENT

#### A. CCCD Project Management

The Director of the EPI Program is the CCCD Project Coordinator with direct line of authority emanating from the Department of Hygiene and Prevention of the Ministry of Health. The Director is also the Coordinator of the EPI program. A Coordinator also exists for Diarrhea and Malaria.

Four Technician/Supervisors are assigned to EPI and one to Malaria. At present no Technician/Supervisor is assigned full time to Diarrhea.

The CCCD Technical Officer functions as a counterpart to the Project Coordinator and provides technical inputs to the Coordinators and Technician/Supervisors.

The Project Coordinator also has indirect links to USAID, especially in funding and financial accounting while the Technical Officer has direct line of authority links with USAID and indirect line of authority to CDC Atlanta. Direct line of authority links to AID/W occur through USAID and CDC. (Please refer to annex III 1).

Project support from AID/W and CDC Atlanta continue and provide necessary backstopping and technical assistance. USAID/Burundi continues to provide assistance in the form of overall project monitoring and through REDSO needed technical assistance. Fund advances and reimbursements continue with some procedural problems needed to be resolved.

#### 1. Constraints

a) The Project Director acts both as project manager and EPI Coordinator. For most of the life of the project he has also acted as the financial accountant preparing documents of funding

advances and reimbursement.

b) All Coordinators are now in place for the 3 sectors of intervention. Four full time Technician/Supervisors are in place for EPI, one for Malaria but no full time person for Diarrhea is in place. No job descriptions, with reference to project activities, objectives and goals, have been prepared for the three Coordinators.

c) The EPI and Diarrhea intervention sectors are included in the Department of Hygiene and Prevention while Malaria activities are included as part of the Department of Health Services, along with the LMTC project. Thus, the EPI/CCCD project has no direct line of authority to the Department of Health Services.

d) The project office lacks a structured system of monthly meetings resulting in a lack of information and understanding of the three sectors of intervention. These meetings should be attended by all by all levels of management as well as coordinators, supervisors, and the TO.

e) Constraints between the project and USAID are minimal. Some delays have appeared in PIL approvals and problems have been encountered for advance funds requested in PFIR's. The latter problem may have been influenced by the project not being able to provide adequate documentation for fund advances and reimbursements. Strong financial management within the project is lacking.

f) The USAID/Burundi organization chart (annex III 3) indicates a General Development Officer responsible for project activities in the health and population sector. The mission needs to consider future staffing in relation to its health/family planning/AIDS portfolio. The mission should consider posting an HPN Officer for this position.

#### B. Ministry of Public Health Management Capacity

The organization chart of the MOH (annex III 2) is a partial one representing those departments and support groups impacting directly on the project. Reorganization which has taken place emphasizes decentralization, self-management and local financing of health facilities by the use of user-fees.

New projects, developed with foreign assistance, require additional local health personnel inputs along with foreign technical assistance. Thus, the MOH expands its activities with the addition of each new project. Creation of new positions to meet new project activities does not guarantee absorption of these personnel into the MOH structure once project activities cease. Future activities, such as Acute Respiratory Disease

Activities, may find no structured position in the MOH organization chart.

Management functions, such as coordination and supervision are mandated by Covenants contained in project Amendments. However, Quarterly Donor Coordinating meetings occur infrequently (i.e. 2 meetings in 1987, 2 in 1988 and 1 this far in 1989). Attendance is not compulsory and participation varies from meeting to meeting.

Coordination of supervisory activities for the Health Sector level occurs monthly under the guidance of the Director of Hygiene or on an as-needed basis. The same is true of the Department of Health Care..

MOH project contributions, in the form of personnel needed for the project and local currency needs for salaries and other costs, have been provided as required by the project budget and in a timely manner.

#### 1. Constraints

- a) The lack of a clear and rationally structured MOH Organizational Plan continues to be a constraint.
- b) There is a lack of coordination for supervision at the Department of Hygiene and Prevention and the Department of Health Services level among, and between these departments, and project participants such as UNICEF and EPI/CCCD.
- c) A MOH-wide feedback system, especially with reference to vaccination activities of EPI/CCCD, is lacking.
- d) Another constraint on MOH management capacity is the ability to maintain their recruitment and training of doctors and other professional medical personnel as well as having a high success rate for the return from abroad of doctors and professionals.
- e) The ability of the MOH to continue their efforts to improve existing alternative sources of funding and to develop additional financing methods must be addressed. At present funds collected for self-financing are not required to be directed towards the peripheral health units.

#### IV. PROJECT COORDINATION

##### A. Intra-ministerial

With the naming of a new director of Hygiene and Prevention in

September 1989 a more active and effective coordination effort has developed between this department and donor project implementers such as UNICEF, UNFPA, EPI, CCCD, Project Population and the AIDS project. Since October, meetings have been regularized every second Tuesday of the month and areas of discussion include health sector supervisory scheduling and for resolving outstanding implementation problems and other problems affecting the projects.

As new projects begin, such as the USAID funded Population Project and project relationships with the World Bank funded Health and Population Project increase, coordination efforts within the ministry become even more important. One of the objectives of the Bank's Health and Population Project is to provide for overall donor coordination for health project within the MOH.

Another area of intra-ministerial cooperation is in the ultimate establishment of a ministry-wide HIS within the Epidemiology and Health Statistics section with assistance from the World Bank funded Health and Population Project and Technical Assistance from the EPI/CCCD project. Three different sectors of the MOH are to be involved.

#### B. Donor Coordination

As a general rule donor coordination results from a personal relationship between donors or project implementers and also as a result of perceived common needs or priorities. This appears to be the type of coordination developed between the project and UNICEF, the largest project donor along with USAID, and with other donors.

This unstructured coordination effort by the donors, while effective in the short-term, has delayed the inevitable necessity of the MOH taking a more active participation in a centralized coordination role for donors.

Program coordination with UNICEF, its principal donor, continues at a high level. The EPI/CCCD project had not received advance funds requested from USAID in July because of improper documentation. UNICEF has provided local funds to purchase gasoline so that project activities could continue without interruption. Coordination in the various sectors of intervention and support area continue in an efficient manner.

The following is the budget for project activities and support areas to be carried out by UNICEF from 1989 - 1991:

FIGURES IN THOUSANDS

<u>ITEM</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>TOTAL</u>
EPI	396	466	479	1,341
DIARRHEA	205	230	250	685
MALARIA	26	35	41	102
GROWTH				
SURVEILLANCE	81	90	97	268
MCH	48	69	90	207
AIDS	96.5	70	95	261.5
PROGRAM				
SUPPORT	323	334	273	930
LOGISTICS	24.5	22	126	172.5
TOTAL	1,200	1,316	1,451	3,967

UNICEF sees no major modification in program directions over the next three years. This is based on the renewal of Italian Government support for the program as well as the Canadian support. A key concern of UNICEF is the continued support of USAID to the program. UNICEF should be informed of the future direction USAID/Burundi intends to take with reference to funding and areas of intervention.

The World Bank funded Health and Population project and its multi-sector approach will create other areas of coordination for the EPI/CCCD project especially in the area of the establishment of a centralized HIS, training, health personal, health education and health sector supervision.

C. Links to Other Mission Activities.

Major mission activities, in addition to the EPI/CCCD project, are the Population Project and the AIDS project both under the supervision of the Department of Hygiene and Prevention. Each of these projects have a commonality of support systems such as HIS, training, IEC. The EPI/CCCD and the Population Project each have, in addition, an operation research activity. These common activities do not lead to options for integration. These support

systems are necessary for proper project implementation. Two major common components of these projects, HIS and IEC, are common to other projects supported by the World Bank, UNICEF, UNFPA, and WHO.

While integration of these activities may not be desirable or even possible between these USAID funded projects, the World Bank funded Population and Health Project lends itself ideally to integration of HIS and IEC activities. A major component of this project is to develop an effective HIS system eventually leading to a ministry-wide integrated HIS.

Another major component of the World Bank Project is the development of an IEC Program under the supervision of the Health Education Division. Strengthening of this division is necessary so that all of the planned IEC activities can be implemented. While an integrated IEC may not be desirable or feasible, the Population and Health Project is an ideal vehicle for attempting this.

#### V. ASSESSMENT OF PROJECT CAPACITY FOR ACCOMPLISHING PACD OBJECTIVES AND LIST OF REVISED PACD OUTPUTS FOR PROGRAM INTERVENTIONS

##### A. ASSESSMENT OF PACD OBJECTIVES FOR THE HIS.

1. The objectives for the HIS as described in the extension document have all been achieved. However, these objectives were not precisely defined. Therefore, HIS priorities are listed below. The HIS is currently providing useful information for establishing EPI disease strategies. Reporting requirements and frequency at commune, sector and provincial levels have been established. A mechanism to provide feedback on disease and service trends to health workers has been developed.

##### 2. HIS PRIORITY ISSUES

2.1. A set of objectives for the HIS should be defined. These objectives need to focus on CCD interventions in the immediate life of the project (LOP). However, the overall objective should be the integration into a larger Ministry-wide HIS/MIS under the responsibility of the Department of Epidemiology and Statistics.

2.2. Design a reporting guide for disease diagnosis and filling out HIS report forms.

2.3. The forms need to be revised and reduced by the MOH to avoid duplication and collection of non-essential information.

2.4. Design a list of appropriate indicators for measuring the

degree of accomplishment of the different interventions of the project. The list needs to be short in order to get a better quality of information. The list should focus on few indicators aimed at determining whether the program is functioning properly. These indicators should be evaluated monthly by each health center staff.

Suggestions are listed below:

- 2.4.1. - Registers should be standardized.  
 - Diseases should be reported by the smallest defined reporting area (collines de recensement).  
 - The quarterly report does not give any additional information compared to the monthly report and should not be continued.

2.4.2. EPI Indicators

- A surveillance system should be established for polio cases declared in health centers. It implies a case definition dividing people into 2 categories: "probable case" and "not a case". A case reported should be considered a cause for action/intervention on the part of local health authorities.
- The annual change in coverage rates for DPT1, DPT3 and measles is a good indicator for establishing objectives in vaccination planning. These calculations should be made using the most recent projected population data.

2.4.4. CDD Indicators

- Baseline information about the number of diarrhea episodes per child per year should be obtained by survey to better estimate the magnitude of the diarrheal disease problem.
- The number of ORS packets divided by the number of diarrhea cases in children below five years of age should give simple useful information about the availability of ORS as well as a general appreciation of diarrheal case management by health center and health sector reporting each month. (2 packets per child).
- Findings on the degree of dehydration, ORS preparation, feeding during diarrhea and knowledge of referral should be scored each month in each facility by the sector supervisors.

#### 2.4.4. Malaria Indicators

- The number of chloroquine tablets per 100 new cases per month and the number of blood smears positive after the first line treatment give evidence of drug availability and whether the malaria national policy is followed. However, because the follow-up blood smears are costly to the patients, it is doubtful that this indicator will be useful.

2.5. Institutionalize the feedback epidemiological Bulletin at central level.

2.6. Provide computer training in DOS Lotus EPIINFO to four people designated by MOH.

### 3. HIS CONSTRAINTS

3.1. The principal person responsible for HIS is available only part time.

3.2. Recurrent costs in the long run might be excessive.

### B. ASSESSMENT OF PACD OBJECTIVES FOR EPI

1. Objectives are technically appropriate and reasonable. For the most mortal disease (measles), vaccine coverage is now 79%. With the financial inputs of UNICEF, EPI program achievement will be reached by PACD.

2. List of revised PACD outputs.

1. Review measles immunization strategy.  
Please refer to annex I for explanations given
2. Institutionalize neonatal tetanus reporting.
3. Develop a plan for the reduction of neonatal tetanus.

### C. ASSESSMENT OF PACD OBJECTIVES FOR CDD

1. There is no ready way of assessing diarrhea case management in the homes as called for in the extension document. PACD objectives are overly ambitious, considering the progress made until now.

2. List of revised PACD outputs.

1. Establish 2 training units respectively in Ngozi and Bururi, as well as ORT corners in each health center.

2. Develop a long term national strategy.

#### D. ASSESSMENT OF PACD OBJECTIVES FOR MALARIA

1. There is no ready way of assessing the project's impact on malaria. Once again, PACD objectives are overly ambitious.

2. List of revised PACD outputs.

1. Develop an effective system to manage anti-malarial drug supply. (Number of cases x 10 chloroquine tablets). Current system is a quota system. The full curative dose should be given at the first visit with complete instructions made by the nurse.
2. Provide additional equipment (60 microscopes)
3. Undertake in vivo trials to study anti-malarial drug sensitivity.

#### E. ASSESSMENT OF PACD OBJECTIVES FOR TRAINING

1. The extension document outlines a series of training objectives. These are realistic and can be reached by PACD through a multi-donor effort.

2. List of revised PACD outputs.

1. Integrate training needs assessment into supervisory visits.
2. Finalize/produce job aids for EPI, CDD, Malaria
3. Institutionalize training performance assessment.

#### VI. ASSESSMENT OF PROJECT CAPACITY FOR MEASURING DEGREE OF ACCOMPLISHMENT FROM PROJECT ACTIVITIES

The project is capable of measuring the achievement of most of its objectives. However, in the project design and in the extension document "population surveys" were stated as the methodology for measuring mortality goals. At this time no standard protocol is available to obtain consistent mortality data. Research protocols have been developed in other CCCD countries which may be applicable to obtain reliable mortality estimates in the future.

The overall goal of the project, the reduction of child mortality by 25%, should be assessed either by preceding birth surveys or by extrapolation from measured service indicators of coverage. Until now, no action has been taken to obtain these estimates. The measurement of disease specific mortality reduction is not of primary importance at this time and is not a realistic or productive endeavor.

Because of the as yet unknown impact of AIDS on infant mortality, the precise disease specific measurement of infant mortality due solely to project interventions may be difficult to assess for the near future.

An HIS that monitors reduction of incidence of EPI diseases will continue to be a useful tool for measuring project effectiveness. Diarrhea and malaria incidence trends are not influenced by project interventions and therefore are much less useful to monitor. No baseline data is currently available that permits estimation of achievements of project goals that are expressed in terms of home treatment of diarrheal disease or malaria.

Lastly, a list of simplified service related indicators, such as packets of ORS used per case of diarrhea diagnosed, should be developed for evaluating local applications of MOH policy. Please refer to the above paragraph 2.4.

## VI RECOMMENDATIONS

### A. TECHNICAL

#### 1. HIS

- a) Emphasize training on descriptive, trend and interpretive analysis to enable decision makers at local, regional level to quantify health problems, establish priorities and strategies and monitor interventions.
- b) Train MOH personnel in data entry and analysis.
- c) Implement mortality surveillance through prenatal visits/maternalities (preceeding birth technique).
- d) Institutionalize feedback bulletins.

#### 2. EPI

Since overall vaccine coverage is 68 percent and measles coverage is 79 percent, continued efforts need to be made to detect eventual outbreaks.

- a) Strengthen measles surveillance system. Sector medical officers should use graphs to monitor trends monthly. PEV/CCCD Director and T.O. should discuss these trends on field visits.
- b) Because of the changing epidemiology of measles due to the high measles coverage, the MOH should consider using Edmonston-Zagreb vaccine to reduce the number of cases occurring in

children less than nine months of age. Studies currently underway should be monitored closely so that national policy may be changed if indicated.

c) Establish a surveillance system for polio cases reported in health centers. This requires a standard case definition and also an outbreak intervention plan. A case reported should be considered a cause for action/intervention on the part of the local health authorities.

d) Due to the magnitude of the reporting, sentinel surveillance is not considered useful. Prompt, universal reporting should be the goal of the project.

e) A stand-by plan should be developed in order promptly to implement hepatitis B vaccine immunization if and when recommended by WHO.

### 3. MALARIA

a) Health facilities have breaks in supply of chloroquine tablets: (current quota system), therefore it is necessary to establish an effective simple system for managing drug supply. (Number of cases x 10 chloroquine tablets).

b) The full curative dose should be given at the first visit with complete instructions made by the nurse. This should be stated in the malaria job aids.

c) In vivo trials should be undertaken in schools of Makamba and Ruyigi health sectors in order to study anti-malarial drug sensitivity.

d) Currently prophylactic treatment for pregnant women is not called for in the workplan. Unfortunately, it is still practiced in the field as observed by the team. The team recommends that the national policy be implemented.

### 4. CDD

a) Teaching mothers how to prevent dehydration of children at home is a major goal of the project. ORT demonstration for mothers should be done systematically in each health facility.

b) Complete physical examination of children should be emphasized in the curriculum of the training center. It appears that mothers are not taking proper rehydration measures at home and this aspect of treatment needs emphasis at the demonstration training unit.

c) Surveys should be done to investigate the unusually high

incidence of dysentery.

## B. CCCD PROJECT MANAGEMENT

1. Assign another person to act as Coordinator for EPI thus freeing the Project Director of this function allowing him to concentrate his efforts on the major managerial roles of administration and supervision.
2. Assign a full-time Technician Supervisor to the Diarrhea sector so that each intervention activity has at least one full time Technician/Supervisor. Prepare job descriptions for all coordinators based on project activities.
3. The Malaria unit should be transferred from the Department of Health Services to the Department of Hygiene and Prevention.
4. Institutionalization of monthly staff meetings at the EPI/CCCD Project Office should be attended by management, coordinators, technician/supervisors and the Technical Officer.
5. The project should consider hiring a bookkeeper/accountant to prepare financial/accounting requirements, or failing that, hiring financial/accounting services on an as-needed basis from the private sector.
6. Since three health sector projects will remain in the USAID portfolio (AIDS, Population Project and EPI/CCCD), the mission should consider posting an HPN Officer as a replacement for the GDO.

## C. MINISTRY OF HEALTH MANAGEMENT

1. Strengthen the MOH Organization Plan that provides continuity of personnel and provides for structured positions for EPI, CDD and Malaria within the Department of Hygiene and Prevention.
2. Institutionalize a Health Sector-wide supervision system and assigning a high level MOH person to coordinate these activities.
3. Institutionalize a system of monthly reports on all activities of EPI/CCCD to be transmitted to the Director General of Public Health for distribution, under his signature, to the Health Sectors, USAID and others interested in this type of report.
4. Strengthen the Quarterly Donor Cooperation meetings by including agendas, (or as-needed topics of discussion) and a fixed time and place of meetings with participating donors. Further strengthening would include meetings on an as-needed basis.

5. The present cost-recovery system now in place, the Medical Insurance Card, is used by only 20% of the population. This system must be strengthened to increase coverage. Alternative funding mechanisms must also be explored. Funds collected from these systems must be directed towards local health center activities.

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ANNEXE II. DATA REVIEW

1. Trends in incidence rates per 100,000 population for measles, poliomyelitis and pertussis over the period 1980-1988.

Year	Incidences per 100,000 Population			
	Measles reporting units	Poliomyelitis reporting units	Pertussis reporting units	Incidence rate
1980	174	1211	1.05	236
1981	195	1414	2.45	224
1982	165	993	0.75	138
1983	196	1063	0.84	131
1984	210	632	1.02	123
1985	220	812	0.54	97
1986	222	829	0.33	86
1987	250	473	0.20	40
1988	260	654	0.19	21

These figures demonstrate the long-term effects of the vaccination program with a more dramatic decreasing incidence from 1986 to 1988 for the three above diseases.

2. Number of measles cases prevented over the last seven years.

	Bujumbura	Bururi	Gitega	Ngozi	Total
1982	1,466	458	1,056	6,470	9,446
1983	1,536	(916)	1,069	4,464	6,143
1984	3,043	2,021	8,015	12,651	25,712
1985	3,825	270	3,723	11,354	19,148
1986	4,971	2,561	8,798	1,622	17,920
1987	14,581	2,128	6,132	13,111	35,914
1988	12,740	1,280	5,782	7,890	27,646

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42,163                      7,804      34,574      57,561                      141,930

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### 3. Trends in measles vaccine coverage for children less than 12 months of age.

Measles vaccine coverage for children less than 12 months of age increased from 11% in 1981 to 79% after the first semester 1989. Between 1987 and 1988, there was a stagnation in measles coverage respectively 54% and 58% due to political instability resulting in a limited availability of health personnel. A well developed strategy for raising coverage was designed through an intensified social mobilization by scheduling in march 1989 a national vaccination day which boosted vaccination coverage level.

4. Measles vaccine coverage has now reached a level of maturing which implies that efforts should now be concentrated on indentifying pockets of low coverage and monitoring effectively potential out breaks. Now that a high measles coverage rate (79%) has been reached, the risk of potential outbreaks is increased. In other terms, children are protected against measles either by getting the disease or by being vaccinated. At the beginning of the program, those children not vaccinated came down with measles before 2 years of age. As the vaccine coverage has increased, the time between epidemics has increased from 2 years to 3 years now. Therefore children are less protected by the disease and the number of susceptibles builds each year until there are enough to cause an outbreak when disease is introduced into the population. A shift in the age-specific attack rate to older age groups has occurred as a result of measles immunization. This shift was observed in the Muyinga outbreak study. The graph below (figure 1) derived from the PEV -CCCD monthly epidemiological bulletin gives evidence of the increased elapsed time between epidemics and shows that the baseline which was in 1980 was about 2500 cases, has now come down to 1000 cases in 1989. Thus the following immunization strategy should be emphasized:

1. Strengthen the measles surveillance system in the 24 health sectors of the country.

2. Intensify training for all sector medical officers in detecting critical epidemiological situations in their own sector by an appropriate trend analysis and in control measures to take during outbreaks.

3. Vaccinate from 6 months of age during epidemics, in area of the epidemics and adjacent areas.

4. From the graphs representing the number of measles cases observed over the first 6 months 1989, the following health sectors are found to be at increased risk of potential outbreaks and require enhanced vigilance. They are: Rutana, Ruyigi, Musema, Matana, Makamba, Cankuzo and Bubanza.

5. Consider the use of Edmonston-Zagreb measles vaccine in the future when the results of current investigations of its efficacy are known.

#### 6. Poliomyelitis

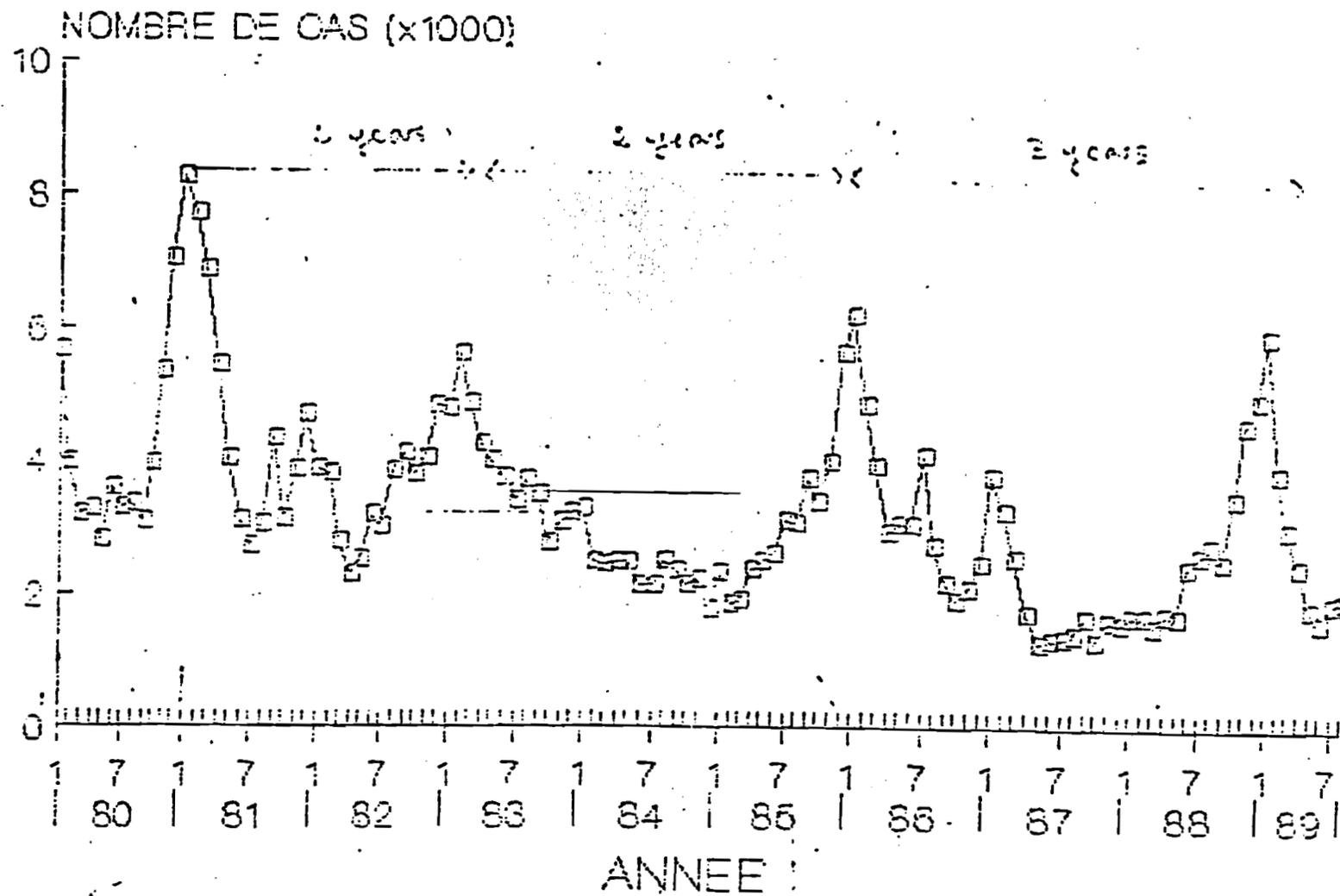
There is little question that the poliomyelitis situation in Burundi has been favorably impacted because of PEV. The graph below (Figure 2) shows the relation between coverage and incidence of poliomyelitis cases from 1980 to 1988. A notification system should be designed and implemented in order to be able to eradicate paralytic poliomyelitis by year 2000.

#### 7. Malaria

The graph below (Figure 3) indicates health sectors where the malaria situation should be looked at more carefully. Makamba and Ruyigi health sectors could be selected to undertake in vivo trials in order to study antimalarial drug sensitivity.

FIGURE 1

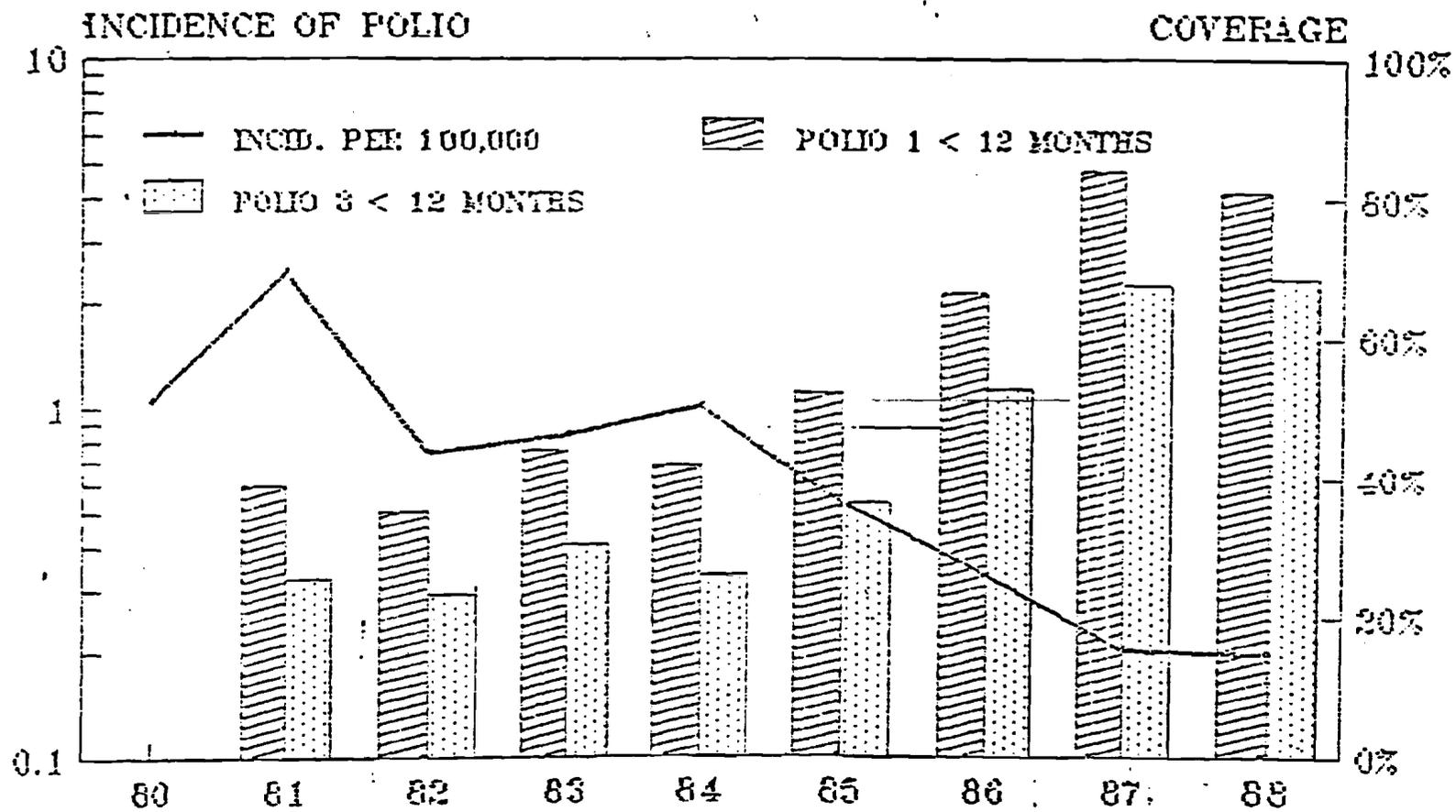
# CAS DE ROUGEOLE SIGNALES BURUNDI, 1980-1989



Source: Bulletin Epidemiologique Mensuel

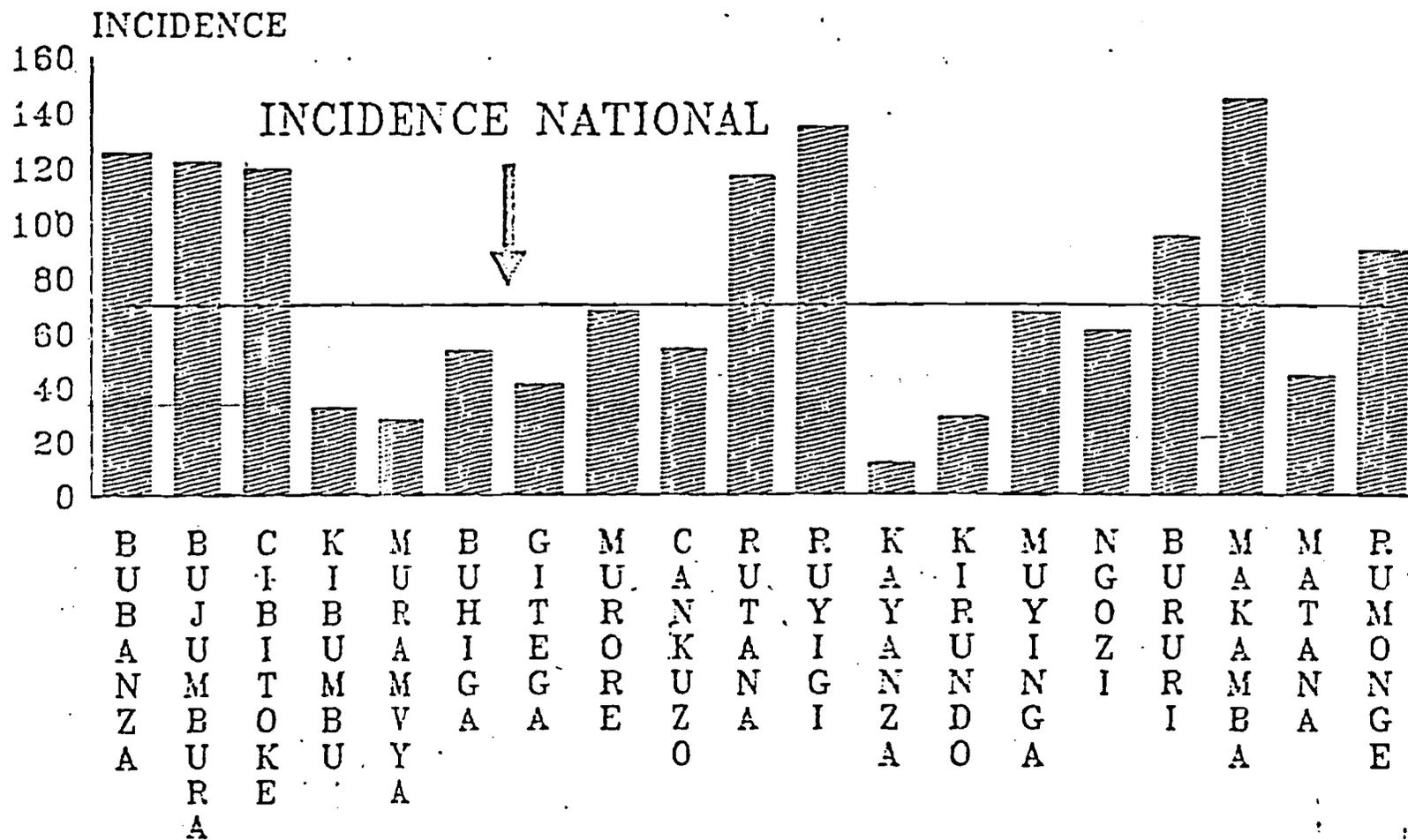
# INCIDENCE OF POLIO IN BURUNDI AND VACCINATION COVERAGE FOR CHILDREN LESS THAN 1 YEAR 1980-88

28



# PALUDISME AU BURUNDI EN 1988

## INCIDENCE POUR 1000 HABITANTS PAR SECTEUR



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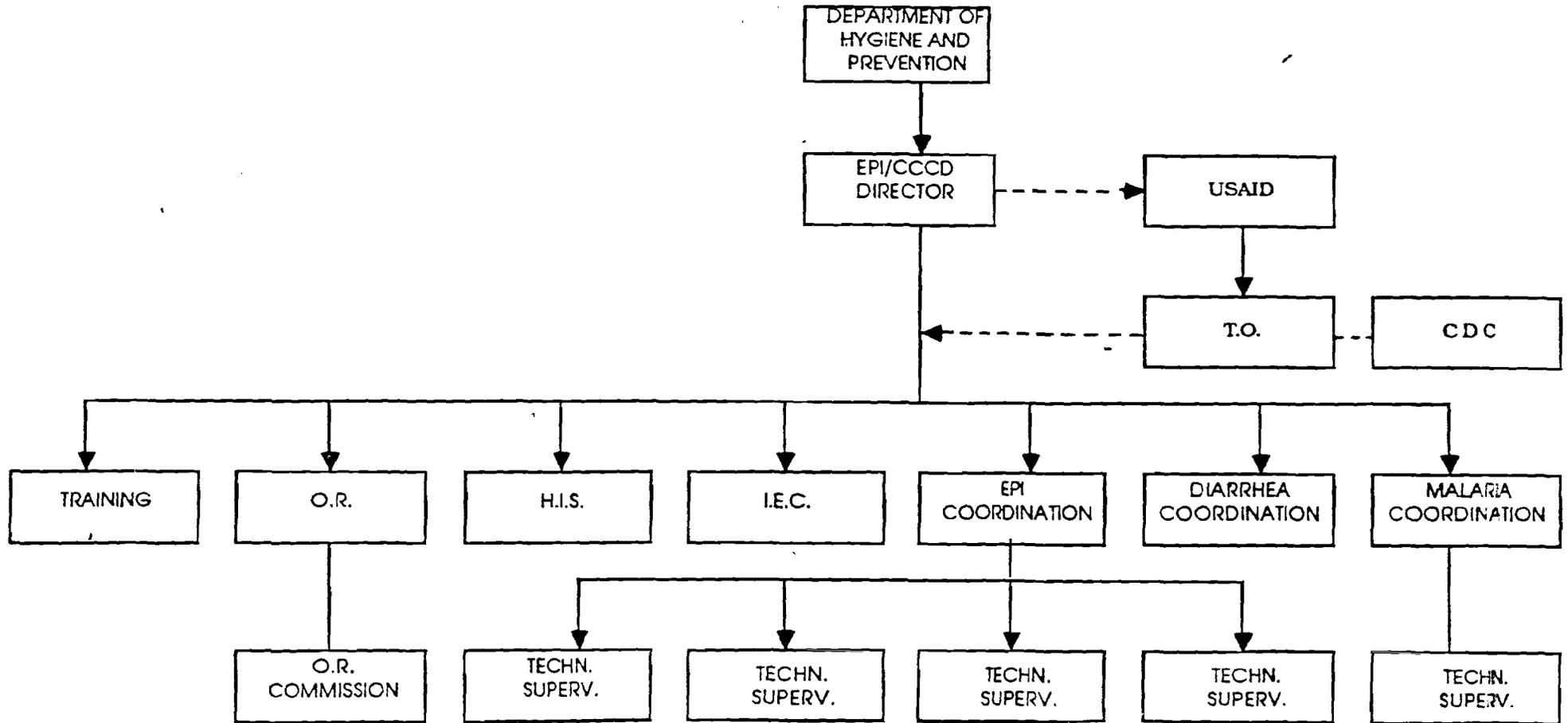
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5. Mr. Kevin MURPHY, CDC/Atlanta

EPI/CCCD  
ORGANISATION CHART

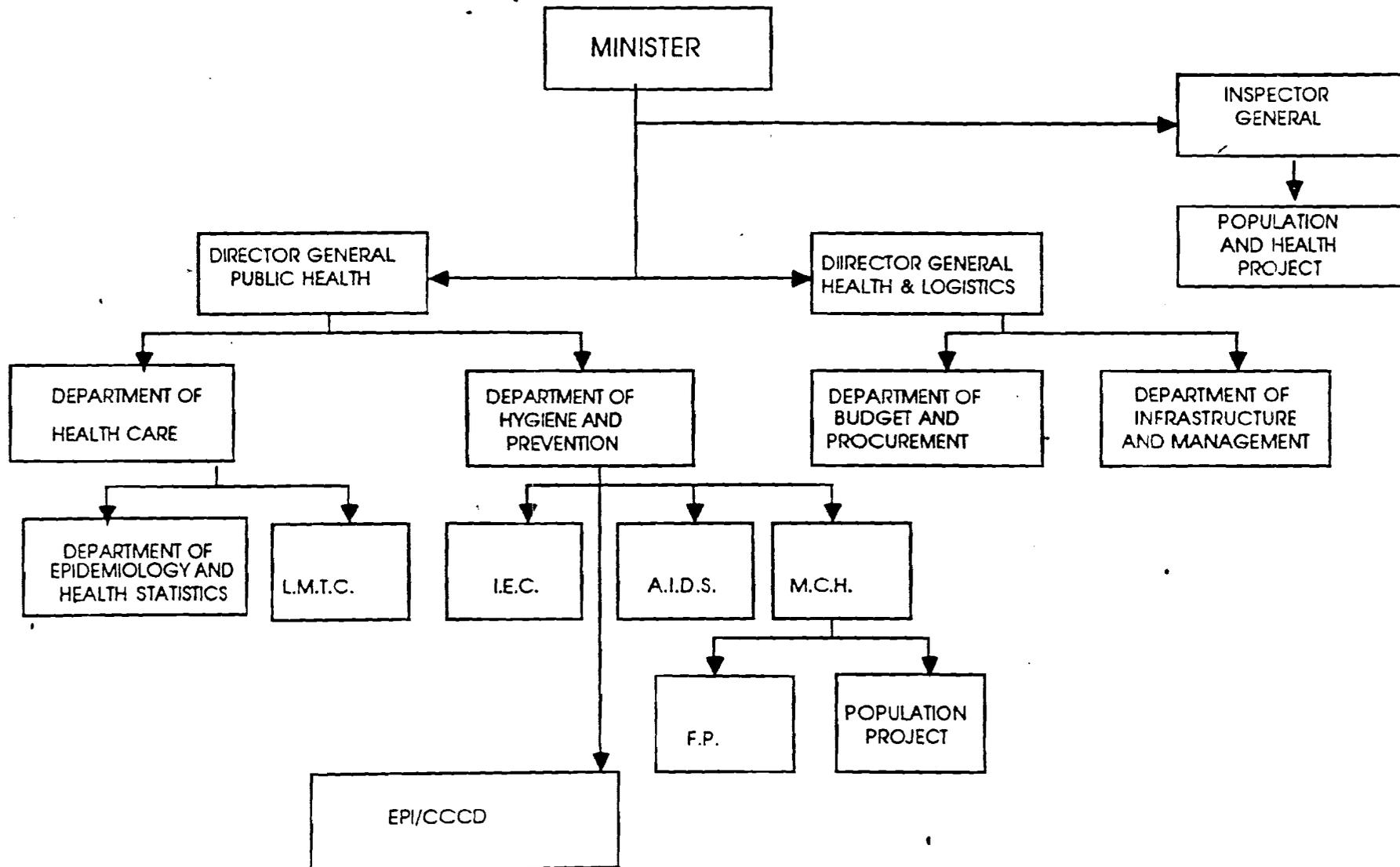
ANNEX III 1



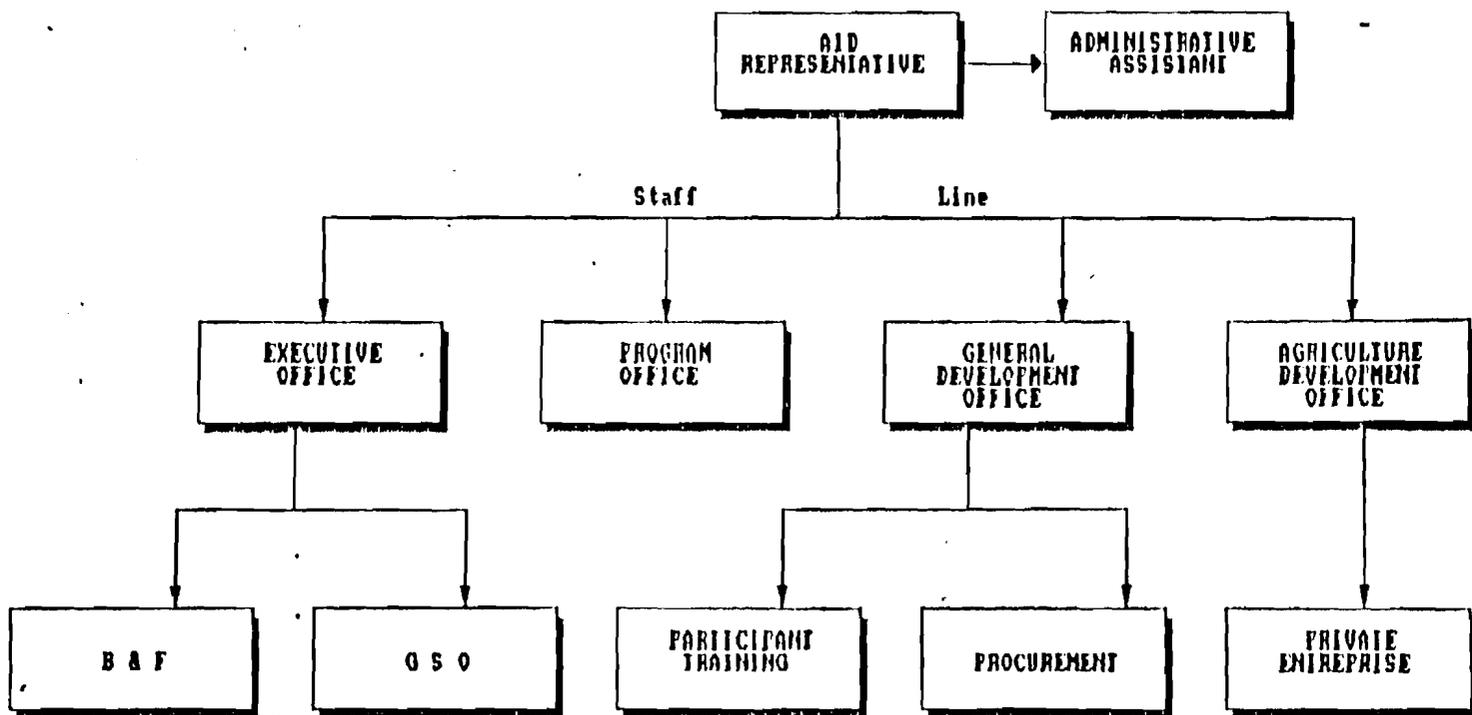
23

MINISTRY OF HEALTH  
ORGANIZATION CHART  
(PARTIAL)

ANNEX III 2



US AID - BURUNDI  
ORGANIZATIONAL CHART



## ANNEXE IV

IV. BIBLIOGRAPHY OF MAJOR REFERENCES

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