DISCUSSION PAPER FOR A POSSIBLE CADA PROGRAM

IN

COMBATTING CHILDHOOD COMMUNICABLE DISEASES

An Informal Talking Paper

Prepared by the U.S. consultant for use in a series of informal discussions with individual CADA technical experts as they explore and examine the desirability and feasibility of such a program.

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COMBATTING CHILDHOOD COMMUNICABLE DISEASES PROGRAM

Informal Talking Paper

I. Overall Program Purpose

In sub-Saharan Africa nearly one-third of the approximately 12,000,000 children born each year will die before they reach the age of five. Communicable and infectious diseases directly or indirectly account for 75-80% of this infant and childhood morbidity and mortality. These diseases can be largely prevented by immunizations and other cost effective, relatively inexpensive health care measures.

The Combatting Childhood Communicable Diseases (CCCD) Program is an initial five year effort, to begin in early 1981, to improve the health status of infants and children in sub-Saharan Africa. USAID is initiating this program by committing considerable funds to a project aimed at strengthening the capability of sub-Saharan African health care systems to control specific health problems in children. CCCD's primary focus will be on immunizable diseases (diphtheria, pertussis, neonatal tetanus, measles, poliomyelitis and tuberculosis) targeted by the World Health Organization (WHO) in the Expanded Program on Immunization (EPI) and other major childhood diseases such as diarrhea and yaws.

Program goals over the first five years are:

- Established regional training programs to meet the manpower needs of the country specific CCCD programs.
- Established systems for making vaccines, oral rehydration, salts and other supplies and related equipment readily available to all participating countries.
- CCCD programs operating in at least 15 countries
- Commitment on the part of the Africans and donor organizations to establishing an affordable CCCD program throughout the region over
the next two decades.

- Established coordinating CCCD mechanism.

The USAID CCCD project will work towards these common goals. The end of project status in areas where operational programs have been established is:

- The incidence of pertussis, neonatal tetanus, measles and poliomyelitis to be reduced by 50%
- Mortality from diarrheal diseases reduced up to 50%
- Prevalence of infectious yaws reduced to less than 50 cases per 100,000 population

The AID project will concentrate its activities at regional and sub-regional levels in order to better prepare country health establishments to carry out the bulk of the work of the CCCD program.

For the CCCD program to achieve its overall goal of improving the health of all sub-Saharan African children at risk from the health problems specified, it will be necessary to get pilot activities going in many countries and gradually to expand these into a series of long term projects that will ultimately cover the full target population. Few sub-Saharan countries have the resources to initiate and maintain these activities and a series of bilateral programs and support from other organizations such as WHO and UNICEF will be required to achieve the desired improvement in health status.

In addition to its regional CCCD activities, AID anticipates funding a small number of short term country specific bilateral projects each year. These projects will be initiated in order to allow time to plan for longer term assistance which may or may not involve AID. Countries receiving this assistance will have to meet certain criteria. They must be committed to the CCCD program and to carrying it out to the extent possible in the context of a
primary care program. There must be a planned expansion of CCCD program coverage. The country will have to pay at least part of the recurrent costs of the CCCD program and there must be a plan for ultimate phaseout of external support.

No donor has the resources to provide all of the country specific long term (5-7 years) projects and other assistance that will be required to implement the CCCD program. The purpose of this concept paper is to provide CADA members with information concerning the CCCD program preliminary to discussions regarding roles potential donors may play in its implementation.

II. Status of USAID Project

A. Background

The idea of having a regional CCCD project grew out of a series of discussions and meetings held in Africa and the U.S. in the late 1970s. The project concept was enthusiastically supported by the U.S. Congress. AID has allocated $35 million for the U.S. contribution to the initial five year effort.

USAID, working with the Center for Communicable Diseases in Atlanta, (CDC) a number of African countries, and WHO began to design a five year CCCD project scheduled to begin in 1981.

Teams were sent to Ghana, Ivory Coast, Togo and Mali to help determine the need for and likelihood of controlling yaws. Also, during 1979 and 1980 CDC teams visited Liberia, Somalia, Sudan, Tanzania, Rwanda, Congo and Burundi to assess CCCD feasibility, with particular emphasis on EPI.

This resulted in the U.S. funding several short term activities, each to providing approximately $500,000 over two (2) years/assist with EPI operations. AID is currently assisting or planning to assist the following countries in programs to combat childhood communicable diseases:
I.iberia, Somalia, Congo, Ghana, Burundi, Rwanda; Ivory Coast, Cameroon, The Gambia; Zaire and Mauritania.

The several activities now underway or planned are forerunners to the larger CCCD effort. It is anticipated that a continuation of some of these initial efforts will be included in the start-up activities planned under the first five year CCCD project.

An AID design team developed a draft project paper which outlined the proposed project strategy and components. This draft project paper is the working model for the CCCD program. It is important to stress, however, that the draft design is flexible and can be modified following discussions with CADA, other donors, and the Africans, concerning division of program responsibility and scope of activities.

The United States project will be carried out by AID and CDC who will be responsible for coordinating and implementing field activities in cooperation with regional organizations, USAID Missions, host governments and other donors.

B. USAID Project

There are four components identified for the project: regional and national training, data and evaluation in African countries, start-up activities including operational research in African countries, and health education and promotion. It is planned that the project operating within agreed-upon criteria will link regional and bilateral activities together in an all-out effort to provide the Africans with a capability to immunize children and deal with other project or local endemic disease priorities. Much of the technical assistance, training, and vaccine and cold chain supply elements lend themselves to a regional approach, but implementation will need to be undertaken by the responsible national authority within each country aided by direct donor assistance.

1. USAID Project Components

   a. Training - CCCD will continue WHO's emphasis on developing and conducting courses as priority elements of disease control training programs.
During 1981-1985, CCCD will sponsor both regional and country-specific training activities.

(1) EPI Management. Sixty-two (62) two week regional training courses will be conducted on the control of childhood communicable diseases for approximately 2,500 sub-Sahara Africa health workers. 1/

- Management I. First offered in 1977 this two week course teaches skills in program planning, management and evaluation to national level managers. It is presented on a regional or sub-regional basis, with several countries sending senior level personnel as participants. The curriculum is available in English, Spanish and French. Through March, 1980, the course has been conducted four times in Africa (in Algeria, Nigeria, Ivory Coast and Congo) and over 150 participants have been trained.

- Management II. This two week course for mid-level managers has been presented on a country-by-country basis, and the curriculum can be easily modified to fit local needs. WHO has offered two such courses in Africa (Benin and Zambia) and two courses were conducted during the first half of 1980 (Gambia and Zaire). It is expected that several African countries will utilize the materials in 1980/81.

(2) Cold Chain Logistics. The Cold Chain Unit of EPI WHO/Geneva has developed a course on vaccine handling and distribution which is generally presented in one day in conjunction with either Management I or II courses. An expanded version (four/five days) is also available for training cold chain specialists. In addition, twenty-four (24) two week sub-regional

1/ These courses have been developed by CDC in consultation with WHO and are available from both organizations.
courses will be conducted in French and English for approximately 1,000 health workers on cold chain repair and maintenance in specific countries or groups of countries.

(3) **Seminars (Workshops).** Approximately nineteen (19) seminars/workshops will be organized in French and English as required to deal with other selected childhood communicable diseases (such as yaws, yellow fever, etc.) specific to or prevalent in a given country or sub-region.

Training for other activities will be arranged as needed. This will include developing educational materials and curricula for use in training primary care teams at district and lower levels, as well as consideration of long term training in epidemiology and other appropriate disciplines.

Training in West and Central Africa will be coordinated with the Strengthening Health Delivery Systems (SHDS) project and other appropriate organizations. Wherever possible, the project will incorporate EPI, CDD and other CCCD-related training into existing institutional curricula.

In sum, approximately 4,200 health personnel will be trained.

b. **Data and Evaluation** - The USAID project will add to WHO-sponsored initiatives to strengthen national capabilities to collect relevant health data for the planning of communicable disease programs in a minimum of 19 countries. In EPI, short-term technical assistance will support country-specific data collection, epidemiological surveillance, program planning, management information system development and program evaluation.

The project will also provide epidemiological assistance in generating and revising national EPI plans. The CDC staff who will implement the project have have at the regional level participated in demonstration, planning and training exercises for EPI in Cameroon, Zaire, Gabon, Central African Republic, Congo,
Rwanda, Burundi, Sudan, Somalia, Ivory Coast and The Gambia. 1/

As diarrheal control programs are primarily in the planning stages, the bulk of activities during 1981 - 1985 will be short-term data collection and program planning. Development of CCCD activities to fight diseases other than EPI and diarrhea will depend upon request from African countries during 1981-1985.

- c. Start-up Activities Including Operational Research - In addition to supporting the regional effort, the project will finance the personnel, commodity and equipment costs of a number of bilateral start-up activities. The goal will be to initiate two to three such activities each year. These may not necessarily all be new starts since in many cases it may be advantageous to continue or expand some of the initial efforts already underway.

To improve and facilitate the operations of the project, operational research will be undertaken. A simple way of conceptualizing a health care service or system is to think of it in terms of inputs (primarily resources), processes (activities), outputs (service achievements) and outcomes (effectiveness, performance and adequacy of performance).

The project does not plan to become involved in basic research but there will be a need for an operations research element to provide data with which to answer specific questions posed by management. For example, with respect to inputs, it is not anticipated that there will be much field testing of equipment and supplies. More typical input studies would be to cost program components carried out with different kinds of inputs to achieve a specific output or outcome, or to establish the proper sequencing of resource use for optimum results.

1/ Underlined countries are members of the SHDS project.
In conducting any operational research in EPI, all CCCD activities will coordinate with the WHO EPI units in Geneva and Brazzaville. African health officials and institutions will be utilized as fully as possible in all operations research activities. In fact most such activities will be the direct responsibility of host country ministries of health.

In the areas of diarrheal disease control, CCCD will support field studies in child care practices, and in the use of new improved vaccines and drugs. These studies will build on previous WHO-supported research in utilization of oral rehydration therapy.

At the end of the five year program period ministries of health in at least 10-15 countries will be conducting new operational research projects.

d. Health Education/Promotion - For EPI, CDD and to control other childhood diseases such as yaws, CCCD will give priority to the development, publication and distribution of health education materials through African institutions, as available. Emphasis will be placed on tested materials designed with community participation. In addition, support will be offered for the translation, duplication, and distribution of WHO or other approved promotional materials for health workers as well as the public. Sub-regional workshops to stimulate the development of new materials and methods and to improve the utilization of available materials and methods will be conducted as appropriate. CCCD will supply health education materials to ministries of health in target regions through training courses and other channels and, to the extent possible, to other donors and regional organizations working on CCCD for reproduction and utilization (WHO, UNICEF, SHDS, etc.).
At the end of the program period health promotion materials are targeted to be utilized in a minimum of 20 countries.

2. Linkages with Related Projects/Activities

A number of individual sub-Sahara Africa Countries are already involved in childhood communicable disease control programs, and many bilateral and regional agencies provide some support to these programs. The additional effort resulting from the CADA initiatives in this area will require considerable coordination. This will be stressed and dealt with in the final program design.

It is not planned that CCCD would lead to the creation of a new level of bureaucracy; in fact the program will be designed to specifically avoid this. It will however need to develop an effective coordinating mechanism and a project implementing capacity.

To achieve this it will be important to develop close working relationships with the participating countries implementing agencies as well as donor and international organizations already involved in childhood communicable diseases control in Africa. These would include:

- WHO, through the Regional Offices for Africa and the Eastern Mediterranean, is the principal organization providing coordination and support for the planning and implementation of childhood communicable disease control programs including EPI, CDD and yaws.
- UNICEF is the principal group furnishing vaccines, equipment and supplies for EPI and will also be the major source of packets of oral rehydration salts.
Other international, national and non-governmental organizations such as the World Bank, the Danish and Swedish International Development Agencies, the Fund for Aid and Cooperation, the Permanent Interstate Committee to Fight the Drought in the Sahel, and the Organization for Coordination and Cooperation in the Battle Against Endemic Diseases in both West and Central Africa, and finally, U.S. supported activities. These would include a number of country rural health delivery systems which could be expanded to include CCCD activities as well as the AID-funded Strengthening Health Delivery Systems project which has been involved since 1977-78 in the training of health care workers in the west/central regions of Africa and includes two EPI demonstration components.

The coordinating task will require considerable effort and will rely on the cooperation and collaboration of all the above groups. The CADA group can be expected to play a major and constructive role in achieving these objectives.

3. Implementation and Management

An effective yet flexible management structure will be required to implement and successfully operate this multifaceted program. The geographic area is huge and includes some forty-seven nations in sub-Saharan Africa with a total population of over 340 million. An estimated 30-40 million children, five years of age or less, make up the target population to be served.

Since neither the specific countries to be involved nor the participating donors are now known, certain elements of the management structure cannot be presently finalized. However, the design proposed maintains adequate flexibility to respond to anticipated needs as they occur.
Establishment of an advisory council is proposed to provide technical and administrative review of planned project activities to recommend new approaches and to assess proper coordination of various interventions. It may or may not be used to explore sources of additional financial resources. It will consist of CADA members, WHO, UNICEF, DANIDA and appropriate African representatives. Specifics of the advisory council will need to be worked out.

a. Implementation

CDC was selected to implement the USAID project because of its demonstrated capability in the planning, implementation and evaluation of communicable disease control programs and its strong institutional commitment and support for international health programs.

Other major factors in CDC's selection are its staff expertise and experience in the program region as well as its extensive background and experience in the areas of program interventions and components (e.g. training, surveillance, etc.). CDC staff have played key roles in international communicable disease control programs in Africa, the most prominent of which was their work in helping to eradicate smallpox. They have also worked closely with many regional health organizations. As a result, CDC has developed productive working relationships with key individuals and groups throughout the target region and with the health ministries of many African nations. In addition, the EPI training courses utilized by WHO worldwide were developed by CDC staff and the agency has actively participated in conducting these courses in Latin America, Asia, and Africa.

b. AID Project Management

An AID project manager and a technical officer will be appointed by the Office of Regional Affairs of the Africa Bureau in A.I.D. (Washington).
The project manager will be the principal AID contact with CDC and other donors.

III. Role for Multidonor Efforts

It is assumed that the objectives of the program will be embraced by recipients and donors alike, but that the magnitude of effort and the diversity of implementation problems will require the resources of several donors to be brought to bear. The mix, the means of determining a logical division of labor, and the methods of applying these resources to accomplish the necessary results must be worked out. The purpose of this talking paper is to begin the process. However, as a working hypothesis it was assumed that the other CADA members would mainly be interested in assisting countries directly with their immunization progress while the major focus of the U.S. project would be on the regional or so called "catalytic" aspects of the program. It is hoped that the technical dialogues that will emanate from this exercise will provide a basis for a specific proposal for CADA, and the participating African countries to develop into a series of specific actions designed to achieve the program goals.

The AID draft project paper referred to in Section II contains reasonable estimates of the financing required to initiate a first five years effort to launch regional and bilateral start-up activities of the CCCD program. This cost estimate, which follows, is only preliminary and will need to be modified to reflect changes in the level of program activity as related to country requirements and donor support.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Five Year Total ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Start-up Activities (including Operational Research)</td>
<td>15,900</td>
</tr>
<tr>
<td>b) Training</td>
<td>6,500</td>
</tr>
<tr>
<td>c) Health Education and Promotion</td>
<td>2,000</td>
</tr>
<tr>
<td>d) Data and Evaluation</td>
<td>2,500</td>
</tr>
<tr>
<td>e) U.S. Support Administration and Overhead</td>
<td>5,200</td>
</tr>
<tr>
<td>f) Contingency/Inflation</td>
<td>6,200</td>
</tr>
<tr>
<td></td>
<td>38,300</td>
</tr>
</tbody>
</table>
A basic question with respect to donor funding of programs is how much will the program cost per year and over the life of the activity.

The CCCD program consists of several different activities - immunization, provision of rehydration salts, treatment of yaws, etc. Not all of these activities have been costed out with precision.

Estimates have been made of the cost of providing immunizations for the six diseases included in the EPI program. These costs will vary depending on several factors of which the delivery system is the most important, i.e., whether through fixed facilities alone or with outreach or through a mobile program and the mix of these delivery modes.

As an example, the following table shows the estimated cost to provide EPI immunizations in a hypothetical African country with a population of 11.7 million, a birth rate of 48 and an annual increase of live births of 2-1/2%.

In this example program access is increased 10% per year, and the emphasis is on providing immunization early on in fixed facilities with some outreach later.1/

<table>
<thead>
<tr>
<th>Year</th>
<th>Total No. of Births</th>
<th>Total Program Access</th>
<th>% Covered Births Reached</th>
<th>Per Birth Cost</th>
<th>Program Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fixed</td>
<td>Outreach</td>
<td></td>
</tr>
<tr>
<td>1981</td>
<td>562,000</td>
<td>10%</td>
<td>10%</td>
<td>-</td>
<td>.29</td>
</tr>
<tr>
<td>1982</td>
<td>576,000</td>
<td>20%</td>
<td>20%</td>
<td>-</td>
<td>.58</td>
</tr>
<tr>
<td>1983</td>
<td>590,000</td>
<td>30%</td>
<td>26%</td>
<td>4%</td>
<td>.89</td>
</tr>
<tr>
<td>1984</td>
<td>605,000</td>
<td>40%</td>
<td>27%</td>
<td>13%</td>
<td>1.21</td>
</tr>
<tr>
<td>1985</td>
<td>620,000</td>
<td>50%</td>
<td>27%</td>
<td>23%</td>
<td>1.52</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total Five Year Cost</td>
<td>$2,696,000</td>
<td></td>
</tr>
</tbody>
</table>

Using the same population but with greater use of outreach and mobile services the immunization costs increase significantly as shown in the table below:

1/ USAID computations based on Barnum, Howard N., Background Information for the Formulation of a Policy to Combat Childhood Communicable Diseases in Sub-Saharan Africa, processed, 1980.
<table>
<thead>
<tr>
<th>Year</th>
<th>Total No. of Births</th>
<th>Total Program Access</th>
<th>% Covered Births Reached</th>
<th>Per Birth Cost $</th>
<th>Program Cost $</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981</td>
<td>562,000</td>
<td>10%</td>
<td>10</td>
<td>.29</td>
<td>163,000</td>
</tr>
<tr>
<td>1982</td>
<td>576,000</td>
<td>20%</td>
<td>15</td>
<td>.60</td>
<td>346,000</td>
</tr>
<tr>
<td>1983</td>
<td>590,000</td>
<td>30%</td>
<td>15</td>
<td>1.11</td>
<td>649,000</td>
</tr>
<tr>
<td>1984</td>
<td>605,000</td>
<td>40%</td>
<td>15</td>
<td>1.63</td>
<td>986,000</td>
</tr>
<tr>
<td>1985</td>
<td>620,000</td>
<td>50%</td>
<td>18</td>
<td>2.10</td>
<td>1,302,000</td>
</tr>
</tbody>
</table>

The difference in cost is roughly 28%. Note that inflation has not been adjusted for in these calculations. If an annual 15% inflation factor is included after the first year, the five year cost for the lower cost program increases to $3,798,000 and for the higher cost program to $4,918,000.

What might the five year cost be for the EPI immunization for a total of fifteen countries, likely candidates for donor assistance, with a 1981 population of approximately 180 million, having an average birth rate around 48? Not counting inflation, the less costly program would amount to approximately $44 million and the more costly program around $55 million.

In the first five years, with an annual incremental increase of coverage of 10%, 50% of the target population would have had access to EPI immunization. In the next five years the coverage would theoretically reach 100%. However, the numbers to be immunized are much greater than in the first five years, and it will require more outreach and expensive mobile programs to get to all those under five. Preliminary cost estimates for the second five year phase of the CCCD program suggests that the program may run as much as four times the cost of the first phase, depending upon the accessability and characteristics of the target population and the efficiency of the delivery system.

It should be noted, however, that no sizeable initial lump sum payments will be needed since most of the costs would be spread through the life of the program.
IV. Timing and Phasing

A preliminary schedule of U.S. CCCD activities to commence early in 1981 is in the process of being established. To date, training activities have been chalked out for the five year program period, but the timing of other activities is less definite and requires further delineation.

In conjunction with the submission of this concept paper, discussions will be held between AID administrative and technical personnel and their counterparts from CADA and other donors as well as African experts. It is proposed that a technical group from CADA members be convened around November 19, 1980 to thoroughly review the CCCD program. Following that meeting a more definitive approach to bilateral activities of the program can be established.

V. Issues

A number of critical issues which impact on the success of the CCCD program require analysis and resolution. These will be discussed in meetings and technical dialogues. The issues which follow are representative but are certainly not exhaustive.

A. Issue No. 1: Program Costs and Affordability

Attention is directed to the fact that the CCCD activities described in this paper are mainly those which will be carried out at regional and sub-regional levels to prepare for and initiate the long term CCCD effort. The cost estimates given are for developmental activities primarily; the estimates include relatively small contributions to the actual delivery of immunization and other health services to recipients. These service delivery costs will be borne by countries themselves, with donor assistance in most instances.

The costs of the services to be delivered will vary widely depending on how they are incorporated into an existing low cost, wide coverage health care
program. Whatever the delivery system, the costs engendered will be recurring costs since immunization programs are continuous by nature.

There are a number of differing opinions as to the ability of host governments to assume, in the short, mid and even long term, the recurring costs involved in CCCD. In the short term covered by the initial five year effort there seems little likelihood that more than a limited number of target countries will have sufficient growth to be able to contribute substantially to the high costs of the CCCD program. However, in cases where they do, CCCD activities could possibly be phased out accordingly.

Related to a country's willingness to sustain the CCCD program is the level of its commitment to primary health care and the CCCD program goals. How to nurture and maintain this commitment will prove to be a challenge in many countries.

B. Issue No. 2: Social Impact and Policy Implications

The CCCD program goal of improving the health status in targeted sub-Saharan African populations aged 0-5 will have population, employment, and food production and consumption implications in the next two decades. To lessen the adverse impact of population growth resulting from reduced mortality, it will be of critical importance to confront land tenure problems, food production and food security issues, and expanded employment strategies and opportunities. In ten years the targeted EPI and CDD populations will be between 10-15 years of age. The AID health sector policy paper points out that population growth is taking place among the dependent age groups, so that in many developing countries half of the total population is under 15 years of age. This in turn creates a tremendous strain on the productive segment of society, and other limited resources as well.
The policy implication of this demographic impact is the need for a reduction in population growth rate and an intensification of food production to meet consumption needs in the next twenty years. Dialogue and operational collaboration between policymakers in health and agricultural sectors will be vital to the design and implementation of responsible development activities which will have consequences over the next two decades.