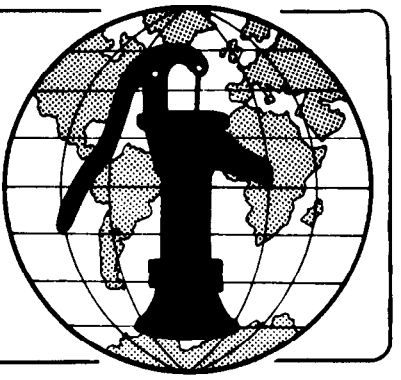
Water for the World



Planning Disease Control Programs
Technical Note No. DIS. 1.P.1

The planning of a disease control program should include certain steps to ensure its success. Program planning must include a high level of community participation. This will help the community recognize problems and become motivated to solve them in both the present and future. This technical note discusses the process by which planners develop successful projects. To ensure success, all these ideas require adaptation to local conditions.

Useful Definitions

SANITARY SURVEY - A study of the sanitary condition of an area. The survey detects sources of water contamination and origins of disease through observation of local environmental conditions.

VECTOR - An animal or insect that transmits a disease-producing organism from one host to another.

Eight steps comprise a planning process to assure that all problems and possibilities are considered in the development, implementation and evaluation of a program or project. The steps are essential for mobilizing community support and creating a sense of responsibility for the program.

Recognize the Problem

In a disease control program, there are two important steps to recognizing the problem. First, the specific diseases to be controlled must be identified. Where large numbers of people suffer from diseases such as river blindness, malaria, diarrheas, and the like, the symptoms can be observed and identified. Conversation with regional and local health officials will provide information on those diseases which affect people in the specific location.

Second, the means by which the diseases are transmitted need to be identified. This task is somewhat more difficult but usually includes poor sanitation facilities and practices, conditions that permit insect breeding, and unsafe water supplies. These can be identified through simple observation and by talking to community members. Specific identification is very important for determining appropriate solutions for environmental health problems.

Once the problem or need is recognized and an understanding of it is gained, community involvement in solutions can begin.

Organize Community Support and Set Objectives

There are several important ways to promote community awareness and organize community support. First, to solve their own problems, both official leaders (political and religious) and non-official leaders (respected community persons) should be approached and the problems discussed with them. The leaders may be able to suggest ways to deal with the problem and to stimulate further awareness in the community through meetings and other community activities. At the least, once they are informed, they will likely lend their support to programs to solve the problems. In many cases, community leaders are those who are aware of needs and seek advice to achieve solutions. These people are excellent sources of leadership and should be used as resources in gaining community support.

Another important approach is to develop a program of education for the community. Health education for teachers, students and community groups

is essential in creating an awareness of needs and in motivating people to begin thinking of measures which they can take to improve local conditions.

Along with organized education programs, less formal educational activities should be organized. Visits to homes should be made and small group talks given to several neighbors. These small informal talks greatly complement organized education programs.

Throughout the education program, objectives should be defined and met. Objectives will greatly depend upon what needs are identified. An objective may be to eliminate hookworm in a community, or to provide potable water to the entire community. The objective should be fairly wide in scope. Basic objectives for water supply programs will focus on the need to provide water of sufficient quantity and adequate quality. Quality should be such that it meets or comes close to drinking water standards established by the World Health Organization. A discussion of drinking water standards is found in "Determining the Need for Water Treatment," RWS.3.P.1. Water supplies should be easily accessible and reliable.

Objectives for waste disposal systems involve establishing sufficient guidelines for adequate sanitary disposal of wastes and the prevention of seepage of wastes into waterways or water supplies. Solid waste disposal should be sanitary and prevent the breeding of flies and rodents which spread disease.

Useful information in planning and developing safe water systems is available in the rural water supply series of technical notes. Waste disposal systems are discussed in the sanitation series. See "How to Use Technical Notes," HR.G for a full list of technical notes. Once the objective is set, the means to reach it must be explored. The first step in deciding on the means involves collecting data about the community.

Collect Data

The collection of data, combined with a sanitary survey, should provide the necessary information to determine the structure of the disease control or prevention program. Data should be collected through interviews with local leaders, house visits and interviews with members of households and by trips to hospitals, clinics, agricultural cooperatives or any other regional or national governmental and private institutions where health and economic data are kept. The purpose of the data collection is to get a picture of the socio-economic conditions of the community. The sanitary survey is similar to the data collection process and really should be a part of it whenever the problem is recognized as a result of inadequate water supply or poor sanitation. Sanitary surveys should determine the conditions that contribute to the spread of disease: lack of latrines, sources of contamination of water, poor hygienic practices and others. Information on conducting a sanitary survey is available in "Conducting Sanitary Surveys to Determine Acceptable Surface Water Sources," RWS.1.P.2. Worksheet A and B show examples of information that can be collected in a sanitary survey.

Data collection permits the planner to understand the problem, conditions and possible solutions given the resources and attitudes of the people. Once a good picture of the community is gained, alternatives for solving the problem can be discussed.

Formulate Alternatives

Once all available data on the community's health and socio-economic conditions have been collected, formulate possible solutions to the problem. The best program to follow will provide for three important results: (a) development of a community health education program stressing prevention of diseases, (b) establishment of an organized effort to solve community problems, and (c) creation of a desire in the community to continue its efforts in improving local conditions. In some cases, a fourth consideration should be added to the list. Preventive measures should be coupled with treatment for those already suffering from the disease. In that way, the disease is eliminated through both treatment and preventive measures which inhibit its further spread or development.

Worksheet A. Questions to be Answered by a Sanitary Survey

	Yes	No
1. Do potential sources of surface contamination exist		
a) above the site or in the watershed?	____	____
b) at the site?	____	____
If yes, determine these sources and		
a) remove sources of contamination, and/or		
b) protect the water supply, or		
c) find a more acceptable water supply.		
2. Do potential sources of fecal contamination exist	Yes	No
a) above the site or in the watershed?	____	____
b) at the site?	____	____
If yes, determine these sources and		
a) analyze the water, or		
b) remove sources of contamination.		
If level of coliform bacteria is greater than 10 organisms per 100ml of water,		
a) water must be treated or		
b) an alternative source must be found.		
3. Does the water source have unacceptable chemical or physical qualities such as:	Yes	No
a) color?	____	____
b) turbidity (1) all the time?	____	____
(2) after a rainstorm?	____	____
c) unpleasant odor?	____	____
d) a lot of salt?	____	____
e) excessive algae?	____	____
f) excessive flourides?	____	____
g) hardness?	____	____
4. Do conditions for insect breeding exist?	Yes	No
a) latrines, wells, water storage jars and garbage pits left uncovered?	____	____
b) feces scattered on the ground?	____	____
c) pools of standing water?	____	____
d) brush areas around water and villages?	____	____
e) swampy areas near community?	____	____

If the answer is YES to any of these questions, study the water source carefully and analyze the water if possible. Generally, these conditions will make water unacceptable to the users and the source must either be treated or abandoned for a new one.

Worksheet B. Planning the Development of a Surface Water Source

1. Name of community _____

2. Population _____

3. Type and number of water-related diseases in the community per year _____

4. Significant beliefs and taboos about health, sanitation and water _____

5. Present source(s) of water and form of distribution _____

   Determine:

   water quality (see RWS.1.P.2) _____

   water quantity (see RWS.1.P.3) _____

   accessibility _____

   reliability _____

   form of and location of distribution system _____

6. Potential source(s) of water _____

   Determine:

   water quality (see RWS.1.P.2) _____

   water quantity (see RWS.1.P.3) _____

   accessibility _____

   reliability _____

7. Methods of waste disposal

   sanitary _____

   non-sanitary _____

   none _____

8. Conditions appropriate to insect breeding _____

9. Community resources and organization

   Determine:

   a) sources of income _____
   b) seasonal distribution of income _____
   c) labor and materials available _____
   d) infrastructure in existence _____
   e) concerned community leaders and groups _____

10. Project Costs

    Estimate total costs for:

    a) equipment _____
    b) materials _____
    c) labor _____
    d) maintenance _____
    e) other costs (transportation, etc) _____

11. Sources of finance

    Determine:

    a) local funding capability _____
    b) external funding possibilities _____

Determine the most appropriate disease control program for the community's needs and discuss cost and resource requirements of each alternative with community leaders. These discussions are necessary to determine community preferences and ultimately select an appropriate method.

Select a Method

Where several problems exist or where different alternatives for solving the problem are available, it is important to choose the most appropriate method. When determining whether a method is appropriate consider the following:

Suitability to the Needs of the Community. Determine which program will truly meet the needs of the community now and in the future. Select a program that stresses prevention, that creates a system through which health education becomes accepted as an institution, and that stimulates people's desires to make improvements.

Social Acceptability. Select a method that involves the participation of the community. Community participation ensures that a chosen program will be acceptable to the community, that the community will be responsible for its implementation and continuation, and that the program will be successful in the long run.

Economic Factors. Determine whether the community has the economic resources to carry through the entire program. A community may be emotionally committed to a program but unless it can meet all the costs, success is doubtful. A successful project uses local contributions of labor, fund-raising activities and donations of agricultural or material goods. Often, preventive measures or the development of systems which promote prevention can be achieved using local resources that do not overburden the community. If medical treatment is proposed, help should be sought from the ministry of health or from private and public institutions.

Establish the Program. Once the best method is chosen, develop a program plan. The plan should serve as a guide for the life of the program and ensure that there are no organizational problems or gaps in program implementation. In many cases, the program plan must be submitted to a governmental or donor agency for approval or funding and it should be quite complete. The program plan should state a goal, provide population and other statistical information, indicate the number of people benefiting from the program, and demonstrate how the project will benefit the community. Moreover, the following information should be included in any project plan: (a) proposed program, (b) costs, (c) sources of funding, (d) implementation schedule, (e) construction plans and materials list, and (f) operation and maintenance plans.

Proposed Program. A complete explanation of the program including all components should be included. Mention the educational, construction, and treatment aspects of disease control. Photographs of the site, maps and other important data should be included. Also, people involved in the program development and participants in the implementation should be named. Any institutional affiliation should be mentioned.

Costs. Estimated costs should be included in the program proposal for all materials such as production of audio-visual materials, construction and maintenance of latrines or water systems, and spraying or medicines. The value of labor should also be included even if volunteer labor will be used. Labor counts as a community contribution.

Sources of Funding. Use local funds whenever possible. Local funds can be obtained through contributions of money, and agricultural goods, through community fund-raising activities, from fees charged for medicines and from various other sources. Communities may be eligible for loans or for outside funding and should investigate the possibilities that are available. Most donor agencies require a minimum commitment and contribution by the community before money is given. Community contributions imply community acceptance and should be encouraged.

Implementation Schedule. Determine the amount of time necessary for completing the project. Preventive

measures may begin to be accepted and adopted by people only after a good education program has been instituted. Be sure to allow sufficient time for the education program to become effective. Consider the timing of the schedule to take into account the school year, harvests, heavy work times and the climate.

Construction Plans. If the program requires the construction of sanitary waste disposal facilities or protective water structures, include plans of the proposed design. Include with it a list of needed materials and estimated costs of these.

Operation and Maintenance Plan. Mention in the project plan methods that will be used to ensure the continued operation of the program. Discuss the training that will be done and identify who will be trained. Attempt to name a person or people who will assume responsibility for continued operation. One method that may be useful is to form a local committee to oversee the project and accept responsibility for it. It should include community leaders, people such as teachers or health aides with responsibility in the community, and others such as parents interested in improving local conditions.

If a water or waste disposal system is established, a method for ensuring the operation and maintenance of the system should be developed. Local technicians should be trained and given responsibility for the system. Methods for training these technicians and using them in the field should be outlined in the project plan.

Carry Out Construction of the System

When all planning and approval steps have been completed, it is necessary to construct the facilities needed to accomplish the goals set out in the plan. Depending on the size and complexity of the project, this can be done in a variety of ways. For the construction of simple systems, the work can be done with local skilled labor though it may be necessary to hire a foreman who understands the whole construction process and can organize and use local skilled and unskilled labor to get the job done. If the project is large and complicated, it may be necessary to contract for all or the complicated parts of the system. In that case, the supervisors of the project will have to be skilled in writing and managing of contracts. They may need to obtain legal assistance from the regional or national environmental health agencies. However the system is constructed, it is important that the technical plans be carried out precisely and completely to avoid future problems in operation and maintenance.

Evaluate the System

Once the project has been completed or is in the final stages, evaluate it to see whether the goals set at the beginning have been met. The evaluation should provide useful statistics on the success of the program. For example, data can be collectd on the number of structures for water protection and sanitary waste disposal. If possible, attempt to gain information on whether there has been a decrease in illnesses. Hygienic practices should be observed and evaluated to determine the influence of the program on the people's way of life. The following questions are examples of those which should be addressed in the evaluation.

(1) Have people received sufficient education to gain an awareness of the problem and become dedicated to improving environmental conditions?

(2) Have people willingly adopted the suggestions and advice about measures which should be taken?

(3) Are people willing to make contributions of time, material or money to the program?

(4) What has been the effect on disease in the community since the project has ended?

(5) Do people understand the connection between disease and lack of hygiene and sanitation?

(6) Are people sufficiently trained to handle problems that arise? Do they know where to obtain supplies? Is there a willingness to maintain the established system?

(7) Are measures being taken not only to prevent the spread of disease but also to treat those with it and thereby eliminate it completely?

(8) How many people benefit from the project?

These types of questions should be asked when evaluating the program. Each evaluation should be thorough in order to provide information for the development of future projects. Compare the evaluation of this project to those in the past and those in other regions for valuable lessons in planning disease control programs.