

Guidelines for Health Education and Community Mobilization in Dracunculiasis Eradication Programs



CDC
CENTERS FOR DISEASE CONTROL



WORLD HEALTH ORGANIZATION COLLABORATING CENTER
FOR RESEARCH, TRAINING, AND ERADICATION OF DRACUNCULIASIS
CENTERS FOR DISEASE CONTROL
ATLANTA, GEORGIA 30333

in conjunction with
Global 2000
Carter Center, Inc.

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PREFACE

Based on documented evidence that dracunculiasis (Guinea worm disease) can be eradicated, an international goal has been set for the eradication of the disease by 1995.¹ To realize this public health goal, the first priority is to define the location and incidence of dracunculiasis in each affected country and establish and implement national eradication action plans. These plans are the basis for coordinating the efforts of multiple sectors at the national, regional,* and community levels in countries where dracunculiasis is endemic.

Health education and community mobilization are essential components of a national dracunculiasis eradication program for three reasons: (1) helping affected villagers to help themselves is the guiding philosophy of dracunculiasis eradication programs, (2) health education constitutes the primary means through which people can develop the inclination and capacity to take effective preventive actions against this disease, and (3) community mobilization promotes awareness and active participation in all stages of program planning and implementation which, in turn, promotes the long-term reinforcement needed for eradication.

Of the three main interventions to prevent dracunculiasis (the provision of a safe water supply, health education/community mobilization, and chemical control of copepod populations), health education/community mobilization is the most important. Not only is it the vehicle through which people learn how to protect themselves from the disease, it also mobilizes support of the other two modes of intervention. For these reasons, health education/community mobilization should be introduced into every endemic community as quickly as possible.

This document is divided into two parts. Part I, the Introduction, consists of two chapters: Chapter 1 gives a description of dracunculiasis, its effects, and some approaches that have been effective in preventing and eradicating the disease. In Chapter 2 the terms health education and community mobilization are defined within the context of a dracunculiasis eradication program. Part II, Leadership Actions, consists of three chapters: Chapter 3 describes the key roles and suggested actions that need to be carried out by those responsible for assuring the effective planning, implementation and evaluation of health education and community mobilization at the national level. Chapters 4 and 5 outline the

...health education/community mobilization should be introduced into every endemic community as quickly as possible.

*Hereafter, the term "regional" throughout this document will refer to those jurisdictional and geographic sectors that serve as the link between the national level and the local level: the community or village. Depending upon the country, "regional" activities may refer to actions carried out by a state, province, district, sector, or local government area (LGA).

Guidelines for Health Education & Community Mobilization

roles and suggested actions for health education and community mobilization at the regional and local levels, respectively.

These guidelines for health education and community mobilization are intended to be used in conjunction with three other sets of guidelines developed by the World Health Organization Collaborating Center for Research, Training, and Eradication of Dracunculiasis at the U.S. Centers for Disease Control*:

- *Guidelines for Developing a Plan of Action for Dracunculiasis Eradication Programs*
- *Guidelines for Surveillance in Dracunculiasis Eradication Programs*
- *Guidelines for Chemical Control of Copepod Populations in Dracunculiasis Eradication Programs*

Although presented here in the context of the prevention and eradication of dracunculiasis, community mobilization and health education are integral elements of *any* responsible prevention and control program. Therefore, by committing resources and policies to support community mobilization and health education for the eradication of dracunculiasis, political leaders will be simultaneously creating or strengthening the infrastructure needed to address other priority public health problems effectively.

*See Annex 1 for a brief description of these guidelines and instructions for obtaining them.

PART I: INTRODUCTION

Chapter 1. DRACUNCULIASIS: THE PROBLEM AND IMPACT

Dracunculiasis affects an estimated 3 to 5 million persons per year, with 140 million people at risk in Africa and Asia. It is caused by the parasite, *Dracunculus medinensis*, and transmitted by the ingestion of water containing cyclopoid copepods (the intermediate host), which harbor the infective stage of the parasite. The disease incapacitates its victims and is very painful.

The transmission of the disease can be effectively interrupted by uncomplicated interventions. Adult cyclopoid copepods (small water fleas or “cyclops”) are 1-3 millimeters long, visible to the naked eye, and can be filtered out of drinking water with a piece of cloth. In communities with clean, protected water supplies that community members routinely use, the disease is nonexistent. In affected countries, the relationship between unsafe water sources and dracunculiasis is so close that the incidence of the disease can be used as an indicator of the success of water supply projects in affected areas.

Dracunculiasis is an indicator of poverty, primarily affecting inhabitants of poor rural areas without access to safe sources of water.

During the one-year incubation or growing period in the human host, the adult female worm moves to a position under the skin of the afflicted person. Then the parasite causes a painful blister to form, usually on the lower leg or foot. When the person immerses the affected body part in water, the blister breaks, and the worm is exposed releasing hundreds of thousands of tiny first-stage larvae into the water. The adult female worm is capable of releasing larvae on repeated exposures to water.

Some of the larvae deposited in the water are ingested by the copepods where they live and develop into third-stage larvae after 10-14 days. Only these third-stage larvae are infective to people.

After people drink water containing infected copepods, gastric juices in the stomach kill the copepods, allowing the infective larvae to escape. These larvae migrate to the small intestine, penetrate through the intestinal wall and live in the abdomen. Male and female larvae reach maturity after about 90-120 days, when mating occurs. Thereafter, the female continues to grow into an adult worm. During this time the adult female moves toward the lower limbs and emerges after about 10-14 months.

It usually takes several weeks for the afflicted person to completely extract the worm. During this time the person is disabled or in pain, often from infection resulting from the worm as it emerges from an abscess or from inflammation of the joints. Secondary bacterial infections are common

and usually prolong and complicate recovery. Tetanus can develop, as well as frozen joints and permanent crippling. The worms do not survive in people for more than one year. They either surface through the skin and are extracted, or die inside the body.

Dracunculiasis is an indicator of poverty, primarily affecting inhabitants of poor rural areas without access to safe sources of water. It is well documented that the disease incapacitates able workers for long periods depending upon the number of worms and where they emerge. Studies comparing the effects of the disease on school-age children reveal that where dracunculiasis is endemic, pupils miss up to 25 percent of the school year compared to 2.5 percent in non-endemic areas.² Similarly, many farmers are unable to plant or harvest their crops, and mothers are prevented from nursing or caring for their young children because of the disease.³

Chapter 2. HEALTH EDUCATION AND COMMUNITY MOBILIZATION

This chapter presents operational definitions of health education and community mobilization and briefly reviews concepts that are fundamental to understanding the role of each in a dracunculiasis prevention and eradication program. Those responsible for the application of these strategies, regardless of whether this is at the national, regional, or community level, should keep in mind that their efforts are an integral part of an overall national plan of action to eradicate dracunculiasis. Figure 1 illustrates how selected health education and community mobilization activities contribute to the key steps of a national eradication plan of action as described in the *Guidelines for Developing a Plan of Action for Dracunculiasis Eradication Programs*.

Those responsible for applying these strategies, regardless of whether this is at the national, regional, or community level, should keep in mind that their efforts are an integral part of an overall national plan of action.

HEALTH EDUCATION

The prevention and ultimate eradication of dracunculiasis are dependent upon the *collective and individual behaviors of persons* exposed to unsafe drinking water. By making effective preventive practices the usual behavior in endemic areas, dracunculiasis can be eradicated. There is evidence that community-based health education programs can produce behavioral changes associated with improved health status, including the prevention of dracunculiasis.⁴⁻⁶ The potential power of health education was demonstrated in three villages of southwestern Burkina Faso in the early 1980s. Using only health education to promote the use of cloth filters, the incidence of dracunculiasis in the three villages was reduced from 62.0%, 52.7%, and 44.8% respectively, to zero in two years.⁷

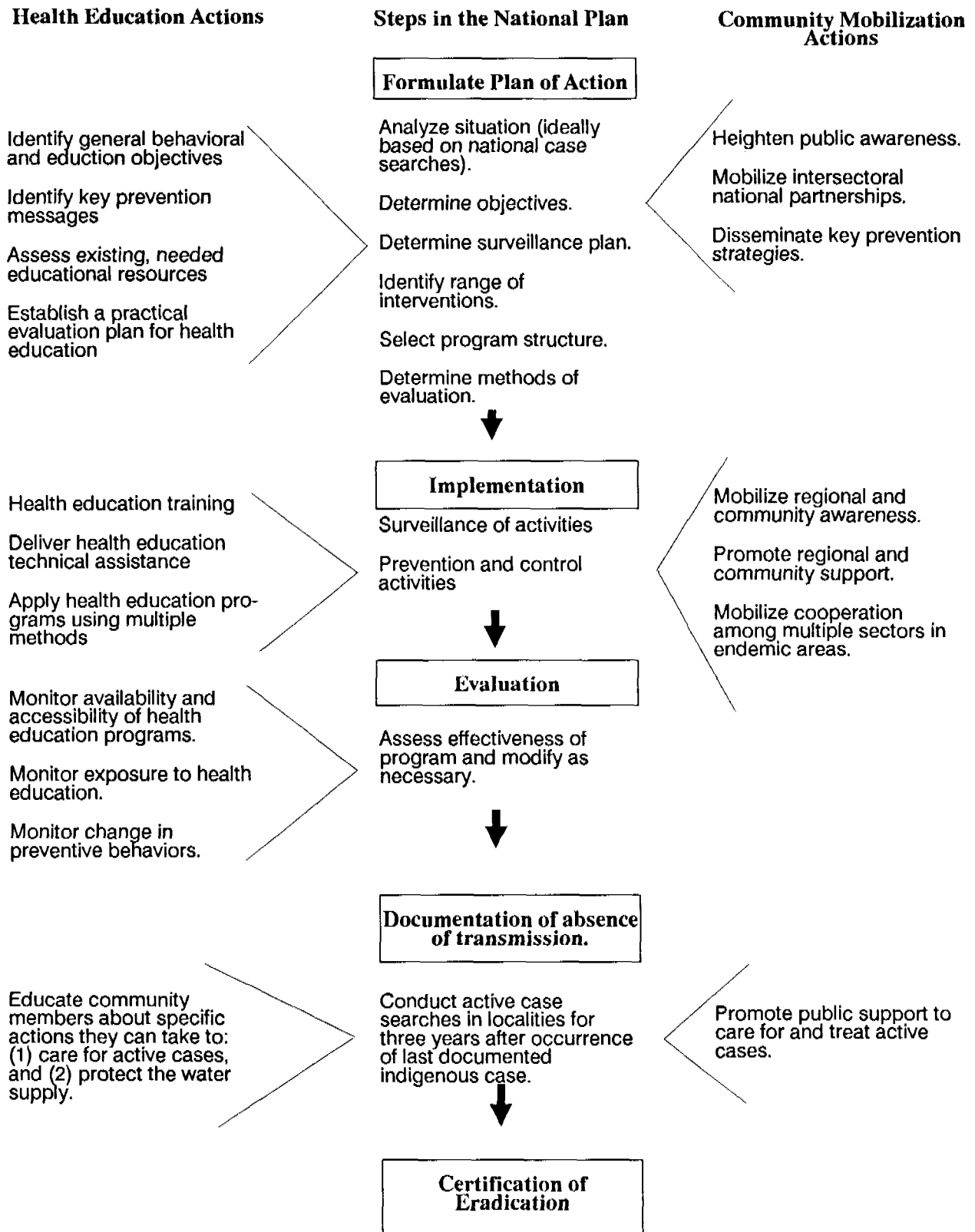
Using only health education to promote the use of cloth filters, the incidence of dracunculiasis in the three villages was reduced from 62.0%, 52.7%, and 44.8% respectively, to zero in two years.

The social, cultural and economic conditions of living vary from community to community and village to village. Therefore, the task of changing behaviors among populations requires careful assessment and planning which enable health workers to select the methods most likely to succeed in a given community.

Health education may be defined as ***planned learning experiences and social actions (including community mobilization) to enable people to gain an understanding and control over conditions that affect their health and the health status of others.***

An effective national dracunculiasis eradication program will require an active health education component in all communities and villages where the disease is endemic. However, it is equally important to make certain that the commitment to health education, including the reinforcement of key prevention messages, ***is actively promoted by leaders at the national and regional levels.***

Figure 1: Examples of Health Education and Community Mobilization Activities in the Context of the Key Steps in a National Plan of Action for the Eradication of Dracunculiasis



Research and experience confirms that the behaviors that influence health status are largely shaped, modified and maintained by the social and environmental forces present where people live and work. Therefore, it is imperative that those responsible for promoting health understand and address those forces in a given target population before developing a plan to change individual behaviors or environmental conditions in that population.

Before one can determine which health education methods are most likely to be effective for a given population or circumstance, a careful diagnosis of the health problem in that population must be made. Just as a physician should not administer a medication or perform surgery without an appropriate diagnosis of the health problem and assessment of the patient, neither can the health educator initiate educational interventions until the priority behaviors, including their probable precursors, are well understood. Developing programs based on precise and situation-specific information can make the difference between programs that are effective and those that are not.

Villagers may perceive that they have no "choices" because the only source of drinking water is contaminated. Regular and correct use of cloth filters does provide a viable, alternative choice. Therefore, health education not only serves as the primary vehicle to make villagers aware that they have a "choice," it is also the means by which they will learn how to act on that choice.

Generally, effective health education consists of four basic steps: (1) identifying target behaviors, (2) assessing the reasons for those behaviors, (3) choosing and implementing educational strategies designed to change the target behaviors, and (4) evaluating results. This process is described in Chapter 5.

Whether at the national, regional, or community level, those responsible for health education in dracunculiasis eradication programs should also understand several other concepts that are fundamental to effective health education practice.

1) A basic **ethic** underlying health education is "change by choice." Because the individual and collective actions of people are so basic to the prevention of dracunculiasis, a commitment to voluntary behavior change and community participation is essential. It is important to note that villagers may perceive that they have no "choices" because the only source of drinking water is contaminated. Regular and correct use of cloth filters does provide a viable, alternative choice. Therefore, health education not only serves as the primary vehicle to make villagers aware that they have a "choice," it is also the means by which they will learn how to act on that choice.

2) The **ultimate goal** of health education is the same as that of all public health interventions: to improve quality of life and prevent unnecessary death, disease, and disability.

3) The specific and most **immediate goal** of health education in a national eradication program is to facilitate and promote safe water practices among those who live in areas where dracunculiasis is endemic.

4) The **key skills** needed to plan and implement an effective health education program to prevent and eradicate dracunculiasis include:

- a working knowledge of both the people and relevant customs in the area and of dracunculiasis, including its mode of transmission and the ways to prevent it.
- the ability to identify the modifiable behaviors and environmental conditions associated with dracunculiasis.
- the ability to identify factors that influence the behaviors associated with the prevention of dracunculiasis.
- the ability to apply appropriate educational strategies including community organization, communications, the use of appropriate media, social marketing methods, and selected training techniques.
- the capacity to communicate effectively and credibly with all those who are working toward the goal of eradication at the national, regional, or community level.

COMMUNITY MOBILIZATION

“Community mobilization” refers to a planned strategy wherein all sectors of a community, including its leaders and the general population, declare dracunculiasis an urgent, priority threat to their quality of life and undertake coordinated, collective actions to eradicate it.

In these guidelines, “community mobilization” refers to a *planned strategy wherein all sectors of a community, including its leaders and the general population, declare dracunculiasis an urgent, priority threat to their quality of life and undertake coordinated, collective actions to eradicate it.*

Although communities may approach the task of community mobilization in different ways according to their unique cultural, educational, and economic circumstances, successful community mobilization efforts share five characteristics:

1. **Leadership** – an individual or group emerges to accept the leadership role. The leader or leadership group serves as the program advocate or “champion” who creates awareness that dracunculiasis is a preventable problem and works to secure resources for program implementation.
2. **Understanding Community Perceptions and Beliefs** – Implementation and maintenance of effective prevention strategies must be preceded by an understanding and sensitivity to the predominant beliefs of the members of the community. In communities where dracunculiasis is endemic, there is often a wide variety of beliefs about the cause of the disease. As an early and integral part of community planning, community leaders should try to ascertain the predominant community beliefs and perceptions

regarding all facets of the disease. While some may understand that the disease is linked to contaminated drinking water, the majority are likely to view the disease in terms of their folk beliefs derived from tradition and years of personal experience with dracunculiasis.

Special efforts should be made to accept those who express nonscientific beliefs or who may not immediately understand the link between dracunculiasis and water. Such views should be countered with demonstrations that water is the only source of the disease. Local beliefs should be respected and tactfully addressed in the explanations given by outsiders. Everyone should understand that for a community to undertake an effective eradication project, it is not necessary to accept a complete and accurate scientific explanation of the causes of dracunculiasis. However, it is imperative that the community understand that the disease is caused by drinking unsafe water, that people with the disease should avoid contaminating a source of drinking water, and how they can obtain water that is safe to drink.

A first priority is that community members recognize that dracunculiasis is a health problem that has substantial negative impact on infected individuals and on the welfare and productivity of the entire community.

3. Public Recognition of the Problem – Communities do not spend time, energy, and resources on issues they believe are of little importance or over which they have little control. A first priority is that community members recognize that dracunculiasis is a health problem that has substantial negative impact on infected individuals and on the welfare and productivity of the entire community. They must also recognize that the disease is linked to water and water usage, and by making relatively modest changes, they can prevent and eventually eradicate dracunculiasis.

Engaging the people of a community in assessing their own perceived problems, needs and aspirations and making practical and feasible options available are keys to success. The use of data that are specific to the community on the incidence and prevalence of dracunculiasis is extremely helpful in raising public recognition. Special efforts should be made to present the data in practical terms, showing trends in the number of cases over time, and comparisons with other villages and regions if possible.

4. Perceived Community Efficacy – Whether the issue is individual or collective behavior, change is not likely to occur if those making the effort **do not believe that their efforts can make a difference**. Thus, priority actions should be to (1) help communities understand that the resolution of this problem is within their abilities and resources (both resources within the community and those they can obtain from outside), and (2) help them understand how they can prevent and eradicate dracunculiasis.

5. Commitment to Objectives – In the document, *Guidelines for Developing a Plan of Action for Dracunculiasis Eradication Programs*, a key element in the planning process is the establishment of program goals and objectives. Objectives constitute the standard by which a community measures its progress toward the goals of prevention and

eventual eradication of dracunculiasis. In addition, the process of setting community-level objectives can become a practical tool for mobilizing entire populations at the national, regional or community level.

PART II: LEADERSHIP ACTIONS

Programs are strategic when the activities at the national, regional and community levels are interdependent, coordinated, and focused on a common goal.

The health education and community mobilization elements of a national dracunculiasis eradication program are “strategic” when the activities at the national, regional and community levels are planned as **interdependent** and **coordinated** functions which focus on a common goal.

The chapters that follow describe the key roles that must be filled to assure that effective health education and community mobilization activities are operational at all three levels. At the national level, the key role for health education and community mobilization will most likely be filled by the national dracunculiasis coordinator or by a national-level expert consultant assigned to that position. In the regions and localities, this role will be carried out by individuals assigned as dracunculiasis program coordinators for each level respectively.

Health education and community mobilization functions throughout the nation should be linked by the shared commitment to communicate and reinforce three simple messages:

1. ***Dracunculiasis is preventable.***
2. ***Drink water from a safe source or use a cloth filter.***
3. ***Stay out of the water if you have a blister or an emerging Guinea worm.***

Chapter 3. KEY ROLES FOR LEADERS AT THE NATIONAL LEVEL

Goals for health education and community mobilization leaders at the national level include:

- Participating in the development and implementation of plans and policies for the national dracunculiasis eradication program to insure the inclusion of responsible health education and community mobilization components.
- Heightening public awareness of the national-level commitment to eradicate dracunculiasis.
- Mobilizing participation and support for implementing health education and community mobilization among multiple sectors at the national level .
- Providing the technical assistance and additional resources needed to support regional and community-level interventions.

To achieve these goals, national-level leaders need to carry out four roles: (1) planning and policy development, (2) advocacy and promotion, (3) resource identification and distribution, and (4) technical assistance and quality assurance. In all four roles, national-level leaders should work closely with, and in support of, regional and local-level persons.

ROLE: PLANNING AND POLICY DEVELOPMENT

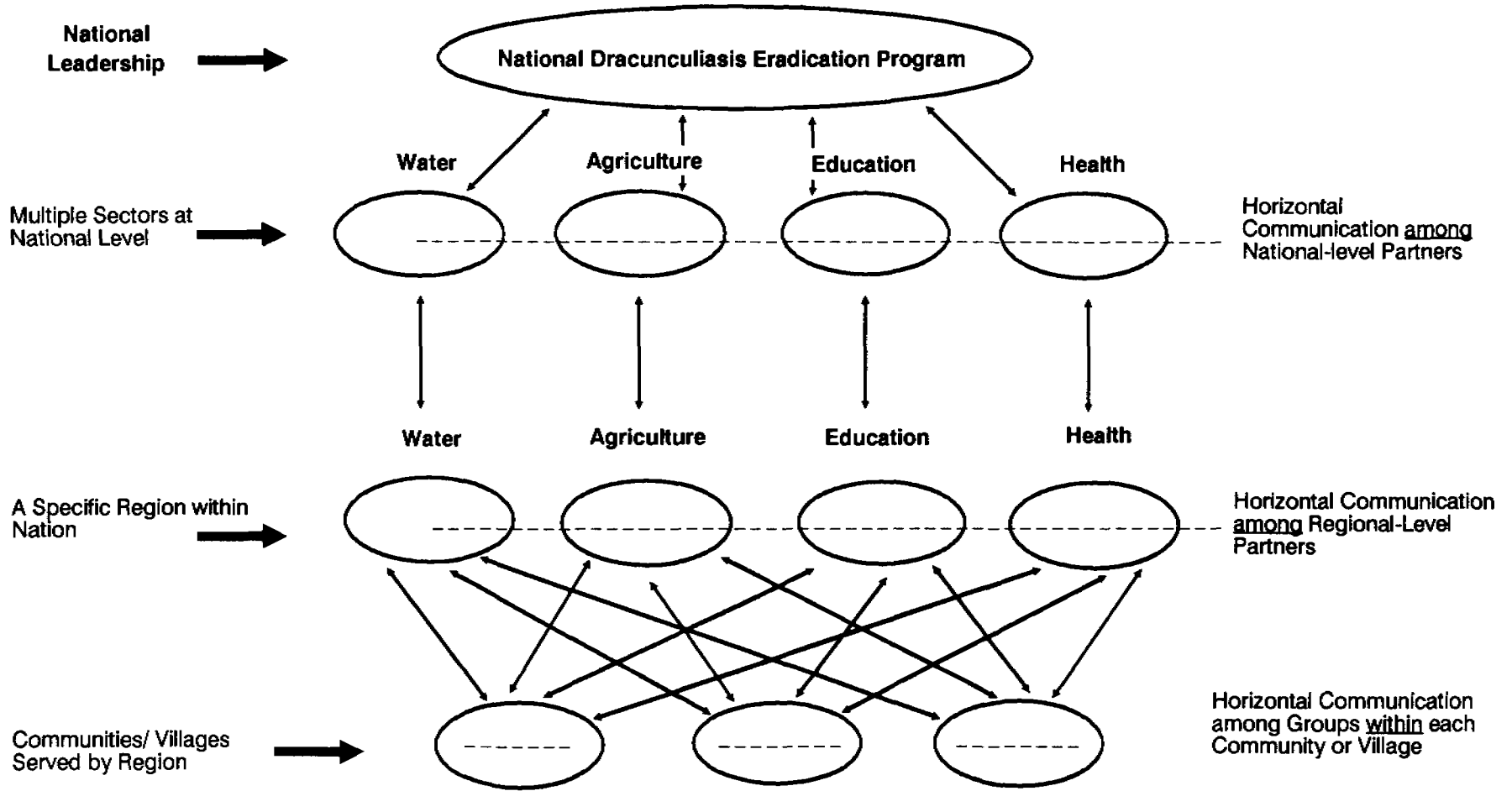
National leaders of the dracunculiasis eradication effort are in the best position to involve the national leaders from other sectors.

By actively participating in the development and implementation of the national dracunculiasis eradication plan, national leaders can insure that the health education and community mobilization activities and programs (including commitments for the resources needed to execute them) are explicit and integral components of national strategic plans and policies.

National-level leaders should make special efforts to engage national leaders from all relevant sectors as partners (for example, people from health, water, agriculture, education, mass media, social services, and religious organizations). Most often, national-level organizations in all sectors have communications infrastructures capable of reaching their counterparts with leadership responsibility at the regional and community levels. By encouraging partners in other sectors to incorporate dracunculiasis prevention messages into their existing communications channels, the overall communication effort will be strengthened. National leaders of the dracunculiasis eradication effort are in the best position to involve the national leaders from other sectors.

Figure 2 depicts what would occur if the water, agriculture and educational sectors, for example, joined forces with the health sector at

Figure 2
Mobilizing Vertical and Horizontal Communication and Support Among
the National, Regional, and Community Levels



Goal: Eradication of Dracunculiasis by 1995

The success of national and regional health education and community mobilization objectives, policies, and priorities is ultimately dependent upon the will and capacity of persons and organizations at the local level.

the national level. Vertical communications from the national level that flow through the regional level to the community level in the different sectors would carry a consistent prevention message. Furthermore, when the national-level office of each sector encourages its regional office to collaborate with their counterparts in other sectors, the basis for horizontal communication and collaboration at those two key levels is established. If multi-sector participation and ownership in the program is effectively established, common messages can be disseminated widely and rapidly at a comparatively modest cost.

The principle of community participation, so essential to effective action at the local level, is also critical at the national level. The success of national and regional health education and community mobilization objectives, policies, and priorities is ultimately dependent upon the will and capacity of persons and organizations at the local level. Therefore, leaders should make a concerted effort to achieve some level of local participation and endorsement of the process. By mobilizing multilevel participation, the tension and poor communication that so often occurs among various national participants can be avoided.

Suggested Actions for Planning and Policy Development (National Level)

1. Assure that there are national model guidelines that regional and local level program managers may use for: (a) planning and implementing health education programs, (b) tracking key aspects of the implementation process, and (c) program evaluation.

2. Establish a high level policy statement as to what is expected of endemic regions and communities before they will be eligible for additional resources. Criteria might include:

- **minimum standards for the organizational structure (task force, teams, health workers) at each level**
- **evidence of minimal baseline data for program planning and monitoring**
- **an evaluation plan**
- **development of a program plan including program objectives**
- **resources committed by the local level**
- **an evaluation plan**

3. Support and promote national and regional conferences where political decision-makers work with concerned citizens and health workers to study dracunculiasis and determine goals and actions necessary to eradicate the disease.

- 4. Participate in the formulation of national dracunculiasis policy by:**
- **emphasizing the effectiveness of health education in mitigating the dracunculiasis problem (as well as other priority health problems in the nation or region).**
 - **providing documentation of the efficacy of health education in dracunculiasis prevention from domestic and international examples.**

5. Develop clear and measurable health education and community mobilization objectives for the national program that focus on increasing preventive behaviors, mobilizing regional and community action eradication committees, reaching key target audiences in the country (eg., farmers, mothers, school children, and government leaders); and mobilizing multiple channels to disseminate key messages.

6. Draft model objectives that leaders at the regional and community levels can use to formulate eradication goals and program objectives pertaining to this initiative.

ROLE: ADVOCACY AND PROMOTION

It is critical to identify the most important health education messages and ensure the means to disseminate them throughout the country.

The most critical aspect of this role is to identify the key health education messages and themes relevant in the country, and insure the means to disseminate those messages throughout the country. Annex 2 provides some examples of simple but key messages for specific target populations. Culture, customs, and educational levels will determine both the precise content of a message and the means through which the message can be most effectively disseminated. In many instances, the most powerful messages may be depictions or illustrations used in print or electronic media. (See Annex 3 for examples.)

Once the most appropriate messages and methods of delivery are determined, it is the responsibility of the health education/community mobilization part of a national eradication program to insure that a mechanism is in place for dissemination through as many different channels as is feasible; this increases the chances that target populations will be exposed to, accept, and act on those messages.

National leaders should use creative opportunities to heighten public awareness of, and support for, the national eradication program. For example, to raise national consciousness about the problem, the Nigerian government produced three postage stamps to commemorate National Guineaeworm Eradication Day on March 20, 1991. (See Annex 4.)

**Suggested Actions for Advocacy and Promotion
(National Level)**

1. Take the lead to assure that a mass media campaign is planned and implemented to communicate key prevention messages through all appropriate channels in the country.

2. Create intersectoral links by educating prospective partners about the health and social burden that results from dracunculiasis and how, by eradicating the disease, their sectors will benefit.

3. Insure that health education messages are accurate and the messages are delivered using multiple methods and sound communication principles.⁵ For example:

- **A logo (a symbol of the program), should be simple, not cluttered; reflect a key concept or program benefit; be easily reproducible; and appeal to the great majority of persons in the community or village.**
- **A radio spot should present one idea; get people's attention; be direct and explicit; ask listeners to take a specific action; and reinforce key ideas or actions of the eradication program.**
- **A visual aid, brochure (flyer) or clinic poster, should carry information most likely to be forgotten; use visuals to tell a story, not only words; be concise; show people engaging in behaviors that will prevent dracunculiasis; and use images that are attractive to the target audience.**
- **An effective poster should dramatize a single idea; attract attention from at least 10 meters away; be memorable; model desired preventive behavior; and show the benefit of practicing preventive behavior.**

4. Insure that all messages be mutually reinforcing and support the overall goals of the eradication program.

5. Prepare messages that are appropriate for target audiences in a given sector, e.g., schools, women's groups, religious organizations, and farm workers.

6. Prepare guidelines for the effective use of the materials and messages by the partners in other sectors. These guidelines might include specific recommendations and prepared examples such as lessons and curricula for schools, sermons for religious leaders, and proclamations or pronouncements that traditional or political leaders might use.

7. Meet with representatives of partner organizations to (1) review the guidelines and discuss the dissemination process, including expected target audiences and time of dissemination; (2) explore possible methods of evaluation; and (3) urge that the organizations' contact persons at the regional levels would be willing to coordinate their efforts with other organizations at those levels.

8. Publish and disseminate progress reports on health education and community mobilization activities. Use a dissemination plan that will reach vertically from the national, regional and local levels, and horizontally at each level. Special efforts should be made to reach senior public health and political leaders, and key representatives from sector partners at all levels.

ROLE: RESOURCE IDENTIFICATION AND DISTRIBUTION

The primary concern in this role is to provide appropriate guidance, resources and materials to the regional and local levels. Regions and localities should not have to fend for themselves, nor should they have to develop "new" materials or approaches to problems or circumstances which are common to many sites and could be effectively addressed with a common strategy. For example, national-level health education/community mobilization leaders can provide regional and local-level workers with cloth filters, booklets and brochures, flip charts, posters, comic books, curricula and teachers' guides for schools, standard prevention messages, scripts for plays or puppets shows, vans equipped for video and/or public address equipment, attractive fabric with printed prevention logos and messages, and T-shirts.

The primary national role is to provide guidance, resources and materials to the regional and local levels.

The financial and human resources needed to support health education and community mobilization for the prevention and eradication of dracunculiasis can either come from existing resources that are not being applied to dracunculiasis prevention, or those that are used but are not well-coordinated, or from new sources available from within or from outside of the country.

Resources include direct economic support, such as a grant, contract, or a low-interest loan. It also includes human resources in the form of technical assistance or training support, which may come from other sectors within the country, from multilateral and bilateral assistance agencies, or from international voluntary organizations such as the Peace Corps and non-governmental organizations (NGOs).

National leaders should establish a system that will enable them to assess all current resources that can support the health education and community mobilization components of their national dracunculiasis eradication plan. In addition, they should explore every avenue to secure any additional resources needed to support health education and community mobilization at all levels in the nation. *However, the first priority should be given to activating the use of appropriate resources already available in the country.*

**Suggested Actions for Resource Identification and Distribution
(National Level)**

1. Identify all national organizations and groups that may have resources for, or interest in, health education, community mobilization, dracunculiasis, prevention, or health in general. Every effort should be made to insure that the mass media (eg., television, radio, print media, and government channels) are activated to create a national umbrella of communication support for the eradication campaign.

2. Contact these organizations and groups to ascertain their level of interest and to identify the contact person most likely to provide needed information.

3. Prepare and distribute a simple check list which will help respondents identify potential resources from interested organizations and groups.

4. Convene a meeting of those organizations and groups to determine how those resources might be most efficiently used or coordinated as a part of the overall national strategy.

5. Pursue potential opportunities for support from the government and other appropriate national sources.

6. Seek support from international health and philanthropic agencies (e.g., UNICEF, WHO, USAID).

7. Develop a communication system to inform those at the regional and community levels about what resources are available, including information about how to obtain them and how they might best be used.

8. Develop a clearinghouse or inventory list of the resources for health education and community mobilization.

9. Provide appropriate orientation or training in the use of resources.

ROLE: TECHNICAL ASSISTANCE AND QUALITY ASSURANCE

An important key to effective health education and community mobilization is adherence to quality standards, including evaluation.

While health education and community mobilization are not absolute remedies, they can render considerable health benefits when strategically planned and appropriately implemented.⁹⁻¹³ These benefits are well documented in varied ethnic, socioeconomic and geographic conditions¹⁴⁻¹⁶ and across multiple sites including community,¹⁷⁻²⁴ school,²⁵⁻²⁷ workplace,²⁸⁻³⁰ and medical care settings.³¹⁻³³ As is the case for all public health practices, an important key to effective health education and community mobilization is the extent to which they adhere to quality standards, including evaluation.

Suggested Actions for Technical Assistance and Quality Assurance (National Level)

1. Establish national/regional mechanisms for in-service health education and community mobilization training for appropriate workers at all levels. Special consideration should be given to enhancing the capacities of lay persons who must deliver programs in underserved areas.

2. Identify or establish a network to enable health education practitioners to have access to national/regional data, research findings and program material relevant to dracunculiasis prevention and eradication as well as other priority health problems common to a given nation or region. (Such information should be timely and available at reasonable cost.)

Guidelines for Health Education & Community Mobilization

3. Promote and support the development of performance standards for health education and community organization activities in collaboration with representatives from professional public health and educational organizations. The U.S. Centers for Disease Control's training course, *Guinea Worm/Dracunculiasis Eradication Programme: Training Course for Guinea Worm Coordinators*, is a good example.

4. Build a system for the long-range, simultaneous tracking of (1) changes in water use behaviors, and (2) documented health education and community mobilization efforts to modify those behaviors by communities. This system should be capable of regular monitoring of the proportion of affected villages covered by a given level of health education and community mobilization efforts. Information from this system, linked to the disease incidence data from the surveillance system (see *Guidelines for Surveillance in Dracunculiasis Eradication Programs*), will provide the evidence needed to demonstrate the link between the health education and community mobilization efforts implemented and the prevention and eradication of the disease.

5. Create a national map of all zones where dracunculiasis is endemic and color code the endemic areas in accordance to the level of training and technical assistance provided, and level of program activity. Use the map to highlight priority target areas and to graphically illustrate change that occurs throughout the eradication program.

6. Establish a highly visible system to acknowledge and reward outstanding health education and community mobilization accomplishments at all levels in the nation.

Chapter 4. KEY ROLES FOR LEADERS AT THE REGIONAL LEVEL

The single most important function that regional leaders must carry out is the provision of on-going supervision and assistance to the communities and villages.

Regional-level leaders for health education and community mobilization are in a crucial position in the overall scheme of a national dracunculiasis eradication program. In addition to reinforcing the national advocacy and public awareness function, they are positioned as the key communication link between the most practical program activities that take place at the community or village level and the national level where key support decisions are made about planning, policy and the allocation of resources in support of local activities. Regional-level leaders should provide support to local leaders and feedback to national leaders (Figure 2).

Within the context of a national eradication plan, personnel at this level have direct contact with community or village leaders and village implementers. Therefore, the regional leaders bear responsibility for providing training and technical assistance and assuring that materials and needed resources are available and delivered as needed. The single most important function that regional leaders must carry out is the provision of on-going supervision and assistance to the communities and villages.

The general goals for health education and community mobilization leaders at the regional level include:

- Establishing and maintaining the systems necessary to assure effective and timely communication within the region and between the national and community levels.
- Providing direct supervision, health education technical assistance, training, and resources to community- and village-level eradication programs.
- Heightening public awareness of dracunculiasis and its preventability by adapting messages and dissemination strategies developed at the national level to meet the unique needs and circumstances of the regional level.
- Developing and implementing the regional health education and community mobilization components of eradication program plans and policies (including identifying the important relevant characteristics of the region and its population).
- Mobilizing participation and support among multiple sectors at the regional level for the implementation of a strategic plan for health education and community mobilization.

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To achieve these goals, regional leaders need to carry out four key roles: (1) advocacy and promotion, (2) communications, (3) training, technical assistance and resource support, and (4) program/policy planning, management and implementation.

ROLE: ADVOCACY AND PROMOTION

To insure the development of a strategic plan of health education and community mobilization illustrated in Figure 2 (page 13), leaders at the regional level must nurture multi-sectoral partnerships at their level. The methods of achieving these partnerships should be complementary and natural extensions of similar efforts undertaken at the national level.

Suggested Actions for Advocacy and Promotion (Regional Level)

1. Following up on national-level initiatives, recruit partners from other sectors by educating them about the burden dracunculiasis creates in this region and how by eradicating the disease, their sector will benefit.

2. Assist in adapting and developing appropriate educational materials and dracunculiasis prevention messages for use in the region.

3. Adapt all prevention messages so that they are appropriate for the target audience in a given sector, e.g., schools, women's groups, religious organizations, and farm workers.

4. Because of regional language and ethnic differences, support and promote mass media campaigns specifically tailored for target audiences in the region.

5. Insure that instructions prepared to assist the partners in the appropriate use of messages and materials are used. Meet with representatives of partner organizations to (1) review the instructions and discuss the dissemination process, including expected target audiences and time of dissemination; (2) explore possible methods of evaluation; and (3) determine whether the organizations' contact persons at the regional levels would be willing to coordinate their efforts with other organizations at those levels.

ROLE: COMMUNICATIONS

To establish and maintain an effective communications link between the national and community levels, regional leaders must have (1) a system to gather relevant information from the national level and also from communities of this region, (2) a means of putting that information into a format and language which is understandable to all parties who will use it, and (3) a system to transmit the information to appropriate users.

**Suggested Actions for Communications
(Regional Level)**

1. Establish a system to regularly gather relevant dracunculiasis program information within the region. This information should include program activities, resources needed, resources available, and data on patterns of disease. This system should be consistent with procedures established at the national level.

2. Identify contacts at the national and community levels: specific persons to and from whom you should send and receive information.

3. Establish standard channels and mechanisms through which information will be exchanged. For example, newsletters or memoranda distributed at regular predetermined intervals are effective channels of communication with relevant sectors at all levels. Special meetings might be used to handle urgent information. Special efforts should be taken to inform decision-makers at the national and regional level of programmatic progress. These communications should be dramatic, accurate, brief, and easy to understand.

4. Establish a clear, uncomplicated means to coordinate the communication and interaction with leaders at the community or village level. This system should be consistent with national policy. Without such a system, individual, uncoordinated contact with the local level by partners from multiple sectors could create confusion.

ROLE: TRAINING, TECHNICAL ASSISTANCE AND RESOURCE SUPPORT

Health education and community mobilization are tools known to be effective in preventing and eradicating dracunculiasis.

Health education and community mobilization are tools known to be effective in preventing and eradicating dracunculiasis. Therefore, key indicators for a successful eradication program will be the abilities of local-level program workers to deliver these tools effectively. A most crucial function for regional-level leaders is to insure (1) high quality training, supervision, and technical assistance in health education and community mobilization and (2) the resources necessary to implement interventions. Both types of support must be provided for the local-level programs. Before preparing or conducting health education training programs for local-level workers, trainers should be familiar with the multiple health education roles carried out at the community level. (See Annex 5.)

Suggested Actions for Training, Technical Assistance, and Resource Support (Regional Level)

1. Assess training, supervisory, technical assistance, and resource needs of all communities and villages served by the region.

2. Prepare a short-range (up to 1 year) training plan that includes (a) recognition of the different training needs of regional workers, community workers, and workers from different sectors (e.g., health, agriculture, water, education), (b) identification of trainers and training staff, (c) specification of training resources needed, (d) dates and location of training, and (e) a plan or mechanism to notify prospective trainees. Consider the need for refresher training while the program is underway.

3. Coordinate and manage health education and community mobilization training workshops. In workshops for lay persons who must deliver programs in impoverished areas, special efforts should be made to include educational techniques that are effective for illiterate adults (e.g., popular theater, story-telling and the use of graphics that communicate ideas and concept without words). For all training programs, it will be helpful to apply or adapt to specific needs the methods and materials suggested in *Guinea Worm/Dracunculiasis Eradication Programme: Training Course for Guinea Worm Coordinators*.

4. With assistance from the national level, identify all sources that may have resources for, or interest in, health education, community mobilization, dracunculiasis, prevention, or health in general in this region.

5. Pursue potential opportunities for support in obtaining resources from the government, other appropriate national sources, and regional organizations.

6. Collaborate with national-level leaders in seeking support from international and bilateral assistance agencies.

7. Inform community and village-level leaders about what resources are available, including information about how to obtain them and how they might best be used.

ROLE: PROGRAM/POLICY PLANNING

In this role, leaders must be certain that the health education and community mobilization components of the dracunculiasis eradication plan, including the program objectives, realistically reflect the unique needs of the region and are consistent with national program policies.

As previously mentioned, the success of national and regional health education and community mobilization objectives and policies is dependent upon the will and capacity of persons and organizations at the local level. Therefore, the main job of regional leaders is to facilitate *local participation and endorsement* of the process.

**Suggested Actions for Program/Policy Planning
(Regional Level)**

1. Conduct regional meetings where political decision-makers work with concerned citizens and health workers to determine goals and actions to mitigate the disease in this particular region.

2. Adapt/interpret national program policies for application in this region.

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3. Develop clear and measurable health education and community mobilization objectives for the eradication program in this region. Contribute to the development of comparable objectives at the national level.

4. Draft model objectives that local leaders can use to formulate eradication goals and program objectives in their communities.

Chapter 5. KEY ROLES FOR WORKERS AT THE COMMUNITY OR VILLAGE LEVEL

Community or village-level workers have the front-line responsibility for mobilizing the community and applying the overall health education program, including the timely distribution of cloth filters. In addition, they have a major role in providing monthly reports of dracunculiasis incidence in their communities and referring patients for treatment and/or providing topical treatment as appropriate.

The primary health education and community mobilization tasks for community or village level health workers are several:

Community or village-level workers have the front-line responsibility for mobilizing the community and applying the overall health education program.

- Helping the community realize that dracunculiasis is an important problem for them and that there are simple things they can do to protect themselves.
- Mobilizing influential community members and relevant organizations in the common support and promotion of a dracunculiasis eradication effort.
- Establishing and maintaining a village health worker to monitor the disease in the community and to help villagers implement control measures (especially distributing cloth filters and training villagers in their use).
- Insuring that culturally appropriate, effective health education messages are widely disseminated through all available channels in the community.

To achieve these goals, community or village health workers need to carry out four key roles: (1) community mobilization and awareness, (2) health education and distribution of filters, (3) monthly reporting of cases, and (4) topical treatment or referral of patients with dracunculiasis. This chapter focuses on the first two roles.

ROLE: COMMUNITY MOBILIZATION AND AWARENESS

An essential function in fulfilling this role is to actively involve members of the community in all aspects of the program. In so doing, special attention should be paid to recruiting the participation of persons who are "informal" leaders as well as those who are "formal" leaders by means of their position in the community. Potential influential persons include:

- *village elder or chief*
- *religious leader*
- *community health worker*
- *water supply worker*
- *women's group leader*

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- *school teacher*
- *political organization representative*
- *health center employee*
- *traditional healer*
- *agricultural worker*
- *village scribe or secretary to village chief*

Most of the effort to mobilize community leaders must be done by and through persons at the next higher administrative level above the village itself, such as in a formal chain of command. For example, teachers should be mobilized and supported by the department of education for that region, and the village chiefs by the political leaders of the region.

All communities are organized to varying degrees. An effort should be made to look for previous positive or negative experiences with similar problems and, if possible, build on those. It is important to learn through discussions with community members the history, problems, customs, resources, and solutions already used by the community in problems previously encountered. However, most of the effort to mobilize community leaders must be done by and through persons at the next higher administrative level above the village itself, such as in a formal chain of command. For example, teachers should be mobilized and supported by the department of education for that region, and the village chiefs by the political leaders of the region. The village health worker can then work with and through the various village leaders in implementing the program. This interactive approach reinforces the importance of vertical and horizontal communication described in Chapter 3 and illustrated in Figure 2.

Suggested Actions for Community Mobilization and Awareness (Local Level)

1. Share village-specific information with leaders to insure that they (a) recognize that dracunculiasis is a serious threat to the quality of life of community members and (b) understand that prevention and eventual eradication are feasible and realistic.

2. Help villagers establish the link between water and dracunculiasis by:

- **conducting demonstrations either in public gatherings or by site visits to individual water sources. For example, people can be given the opportunity to look at their contaminated drinking water through a magnifying glass or microscope, or simply by holding the water in a glass or jar up to the light to demonstrate swimming copepods.**
- **inviting testimonials by persons who live in nearby communities or villages that now use clean drinking water and where dracunculiasis has been eliminated or reduced.**
- **encouraging groups to discuss various aspects of dracunculiasis. This can be accomplished in special community meetings or by including dracunculiasis on the agenda of established meetings at schools, women's groups, political and agricultural associations, and by the use of town criers.**

3. Establish mobile health education “teams” to assist in disseminating key health messages. The following are examples of methods and possible discussion topics for visits by such health education teams:

- **initiate discussion by showing photographs of people with dracunculiasis and then ask various questions: What is the disease? How do people get it? How is it experienced or recognized by people who have it? Is it common in the community? Has the pattern of the disease changed over time? What is the impact of the disease on individuals and their welfare in this community?**
- **provide an opportunity for individuals to recount their personal experiences with the disease (cultural norms permitting). These discussions can be stimulated or focused by using a variety of discussion techniques: questions and answers, role playing or community theater, puppet shows, story-telling, and visual materials (such as flip charts, video vans, films, posters, leaflets).**

4. Encourage community leaders to consider forming a dracunculiasis eradication committee to recommend and coordinate eradication activities in the community. It may not be necessary to establish a special committee for this if some other health or social committee that can assume this function already exists in the village.

5. Mobilize the community to raise money or donate labor for improving the village’s drinking water supply (for example, hand-dug well, borehole well, rainwater catchment).

ROLE: PLANNING, IMPLEMENTING AND EVALUATING THE HEALTH EDUCATION PROGRAM

To insure that the needs and interests of the target population remain central, members of that target population should be involved in the planning process...the educational exchange may be characterized as doing something “with” rather than “to” others.

Good planning must be based on relevant information. For the prevention and eradication of dracunculiasis at the community or village level, relevant information should include a description of water-use behaviors and the factors that influence them. To insure that the needs and interests of the target population remain central, members of that target population should be involved in the planning process.³⁴⁻³⁶ In such a context, the educational exchange may be characterized as doing something “with” rather than “to” others. Adherence to the principle of participation greatly strengthens the likelihood of attaining the desired educational outcome.

Because there are inherent differences in the way people receive and respond to information, the health education program should use several different learning methods and strategies to maximize the probability of reaching everyone in the community. For example, the CHILD-to-Child approach where children, through story-telling and selected participatory

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techniques, not only learn about Guinea worm, they also become “educators” for brothers and sisters and others their age. (See Annex 6) The final selection of methods and activities that will be used will depend on several factors, including (1) the unique characteristics of the target population (there may be several subpopulations or minority groups within a given community, and the unique needs and characteristics of all should be taken into consideration); (2) knowledge as to what methods are likely to be most effective given those unique characteristics; (3) the active involvement of collaborating organizations or partners; and (4) the resources available (economic, human and material) to implement those methods.

In terms of individual actions, there are two primary behavioral targets for the prevention of dracunculiasis: (1) drinking of water that contains infected copepods, and (2) wading in water by persons with Guinea worm ulcers, blisters, or emerging worms. In order to avoid drinking water that can cause them to get dracunculiasis, the community and its members could undertake any of several actions, including:

PROTECT their existing water supplies from contamination.

FILTER all water before drinking.

CONSTRUCT a new water supply or raise the funds for one.

ARRANGE FOR TREATMENT OF THE WATER supply with the chemical, temephos. (See *Guidelines for the Chemical Control of Copepod Populations in Dracunculiasis*).

The village health worker should focus his or her attention, as far as health education is concerned, on 1) efforts to persuade villagers not to enter sources of drinking water when they have an emerging Guinea worm or a Guinea worm-related blister or ulcer and 2) promoting the proper use of cloth filters to filter drinking water. The other main interventions (treatment of drinking water sources and construction of a new water supply) may require specialized assistance from persons outside of the village.

As mentioned in Chapter 2, the health education process requires a thoughtful analysis not only of the preventive behaviors in question, but also of the various factors that influence such behavior. For example, the single behavior of filtering water is more complex than it appears; it actually consists of several interrelated actions, including:

BUYING/OBTAINING a filter or filter material

USING THE FILTER for all drinking water

REMOVING THE FILTER CAREFULLY so that copepods will not spill into the filtered water

CLEANING (BACKWASHING WITH FILTERED WATER) THE FILTER after use

STORING THE FILTER in a secure place where it will not be damaged

INSPECTING THE FILTER before each use to be sure it has no holes or tears

DISCARDING A DAMAGED FILTER and REPLACING IT

The analysis of behaviors should continue throughout the eradication effort. As previously mentioned in this chapter, such information may be obtained from community assessments, community meetings, or from focus group interviews.

In Chapter 2, the point was made that health education planning can be carried out by generally following a step-by-step process in which the health worker: (1) identifies those behaviors that most contribute to dracunculiasis, (2) assesses the reasons for those behaviors, (3) selects and implements appropriate intervention methods, and (4) evaluates the program implemented. A detailed description of that process, with examples is presented in Annex 7.

**Suggested Actions for Planning, Implementing and Evaluating the Health Education Program
(Local Level)**

1. With technical assistance from the region, apply a systematic health education planning and implementation process such as that described in Annex 7, or proposed in the *Training Course for Guinea Worm Coordinators*.

2. Distribute cloth filters to all households in villages where dracunculiasis occurs and show the villagers how to use them properly. If nylon or other cloth filters are not yet available from the dracunculiasis eradication program, encourage villagers to use any other finely woven clean cloth they already have to filter their water, taking care to ensure that such cloth is suitable and is not used if it has holes.

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3. Ensure the proper use of cloth filters by conducting repeated demonstrations in small groups in the village and in individual households.

4. Use multiple methods and multiple channels to 1) encourage persons who have an emerging Guinea worm or Guinea-worm-related blisters or ulcers not to enter a drinking water source and 2) encourage healthy family or community members to gather water for such persons so they do not have to enter the source of drinking water.

5. Insure that prevention messages are conveyed to patients and their families in individual counseling. For example, key prevention messages should be a basic component of health workers' routine when they provide treatment for a person with dracunculiasis, when they distribute filters, or during their monthly visits to households for counting cases.

In summary, a successful national dracunculiasis eradication program requires the commitment and action of national, regional and community leadership. National success is dependent upon multiple successes at the community or village level where the workers must rely upon the timely assistance and support from their regional and national partners from all sectors.

REFERENCES

1. Hopkins DR, Ruiz-Tiben E. Dracunculiasis Eradication: Target 1995. *American Journal of Tropical Medicine and Hygiene* 1990; 43(3):296-300.
2. Water and Sanitation for Health Project (WASH). Adding Guinea Worm Control Components: Guidelines for Water and Sanitation Projects. (Prepared for the Office of Health, Bureau for Science and Technology, U.S. Agency for International Development). WASH Field Report No. 51, March 1988: page 3.
3. Watts SJ, Brieger WR, Yacoub M. Guinea Worm: An In-Depth Study of What Happens to Mothers, Families and Communities. *Soc Sci Med* 1989; 29(9):1043-49.
4. Akpovi SU, Johnson DC, Brieger WR. Guinea Worm Control: Testing the Efficacy of Health Education in Primary Care. *International Journal of Health Education* 1981; 24(4):229-237.
5. Ward WB, Neumann AK, Pappoe ME. Community Health Education in Rural Ghana: The Danfa Project. An Assessment of Accomplishments. *International Journal of Community Health Education* 1981-81; 2(2):143-155.
6. Brieger WR, Akpovi SU. A Health Education Approach to Training Village Health Workers in Nigeria. *International Quarterly of Community Health Education* 1982; 3(2):145-152.
7. Gbary AR, Guiguemde TR, Ouedraogo JB. La Dracunculose, Un Fleau Eradique Dans Trois Villages Du Burkina Faso Par L'Education Sanitaire. *Bulletin De La Societe De Pathologie Exotique* 1987; 80:390-395.
8. World Health Organization. Communication: A Guide for Managers of National Diarrhoeal Disease Control Programmes. Geneva: World Health Organization, 1987: 40-48.
9. Altman DG, Flora JA, Formann SP, Farquhar JW. The Cost-effectiveness of Three Smoking Cessation Programs. *American Journal of Public Health* 1987; 77:1562-1565.
10. Gordon AJ. Mixed Strategies in Health Education and Community Participation: An Evaluation of Dengue Control in the Dominican Republic. *Health Education Research, Theory and Practice* 1988; 3(4):399-419.
11. Heath GW, Leonard BE, Wilson RH, Kendrick JE, Powell KE. Community-based Exercise Interventions: Zuni Diabetes Project. *Diabetes Care* 1987;10(5):579-583.
12. Vincent ML, Clearie AR, Schlucter MD. Reducing Adolescent Pregnancy through School Health and Community-based Education. *Journal of the American Medical Association* 1987;257: 3382-3386.
13. Morisky DE, Levine DL, Green LW, Shapiro S, Russell RP, Smith CR. Five-year Blood Pressure Control and Mortality Following Health Education for Hypertensive Patients. *American Journal of Public Health* 1983; 73:153-162.

14. Formann SP, Williams PT, Hulley SB, et al. Does Dietary Health Education Reach Only the Privileged? The Stanford Three Community Study. *Circulation* 1982; 66(1):77-82.
15. Moynihan M, Mukherjee U. Visual Communication with Non-Literates: A Review of Current Knowledge Including Research in Northern India. *International Journal of Health Education* 1981; 24:251-262.
16. Akpovi SU, Johnson DC, Brieger WR. Guinea Worm Control: Testing the Efficacy of Health Education in Primary Care. *International Journal of Health Education* 1981; 24(4):229-237.
17. Kotchen JM, McKean HE, Jackson-Thayer S, et al. The Impact of a High Blood Pressure Control Program on Hypertension Control and CVD Mortality. *Journal of the American Medical Association* 1987; 257:3382-3386.
18. Puska P, et al. The Community-based Strategy to Prevent Coronary Heart Disease: Conclusions from the Ten Years of the North Karelia Project. *Annual Review of Public Health* 1985; 6:147-193.
19. Vartiainen E, et al. Prevention of Non-communicable Diseases: Risk Factors in Youth—the North Karelia Youth Project (1984-1988) *Health Promotion* 1986; 1(3):269-283.
20. Guyer B, Gallagher SS, Chang BH, Azzara CV, Cupples LA, Colton T. Prevention of Childhood Injuries: Evaluation of the Statewide Childhood Injury Prevention Program (SCIPP). *American Journal of Public Health* 1989; 79:1521-1527.
21. Lando HA, Loken B, Howard-Pitney B, Pechacek T. Community Impact of a Localized Smoking Cessation Contest. *American Journal of Public Health* 1990; 80:565-569.
22. Pierce JP, Macaskill P, Hill A. Long-term Effectiveness of Mass Media Led Antismoking Campaigns in Australia. *American Journal of Public Health* 1990; 80:565-569.
23. Brieger WR, Ramakrishna J, Adenyi JD. Community Involvement in Social Marketing: Guinea Control. *International Quarterly of Community Health Education* 1986-87; 7(1):19-31.
24. Nangawe E, Shomet F, Rowberg E, et al. Community Participation: The Maasai Health Services Project, Tanzania. *International Quarterly of Health Education* 1986-87; 7:343-351.
25. Results of the School Health Evaluation. *Journal of School Health* 1985 (October); 35(8): entire issue.
26. Perry CL, Luepker RV, Murray DM, et al. Parent Involvement with Children's Health Promotion: the Minnesota Home Team. *American Journal of Public Health* 1988; 78:1156-1160. Also, Perry CL, et al. Predictors of Adolescent Smoking: Implications for Prevention. *Morbidity and Mortality Weekly Report* 1984; 36(45), September 4.
27. Murray DM, Richards PS, et al. The Prevention of Cigarette Smoking in Children: Two and Three-Year Follow-up Comparisons of Four Prevention Strategies. *Journal of Behavioral Medicine* 1987; 10:595-611.
28. Bertera RL. Planning and Implementing Health Promotion in the Workplace: A Case Study of the Dupont Experience. *Health Education Quarterly* 1990 (Fall); 17(3):307-327.

29. Bly JL, Jones RC, Richardson JE. Impact of Worksite Health Promotion on Health Care Costs and Utilization: Evaluation of the Johnson and Johnson's Live for Life Program. *Journal of the American Medical Association* 1986;256(23):3235-3240.
30. Blair SN, et al. A Public Health Intervention Model for Worksite Health Promotion. *Journal of the American Medical Association* 1986; 255(7):921-926.
31. Kottke TE, Battista RN, Defriese GH, Brekke ML. Attributes of Successful Smoking Cessation Intervention in Medical Practice: A Meta-analysis of 39 Controlled Trials. *Journal of the American Medical Association* 1988; 259(19):2883-2889.
32. Morisky DE, DeMuth NM, et al. Evaluation of Family Health Education to Build Social Support for Long-term Control of High Blood Pressure. *Health Education Quarterly* 1985; 12(1):35-50.
33. Morisky DE, Malotte CK, et al. A Patient Education Program to Improve Adherence Rates with Antituberculosis Drug Regimens. *Health Education Quarterly* 1990; 17(3):253-268.
34. Minkler M. Citizen Participation in Health in the Republic of Cuba. *International Quarterly of Community Health Education* 1980-81; 1:56-78.
35. Green LW. The Theory of Participation: A Quantitative Analysis of Its Expression in National and International Health Policies. *Advances in Health Education and Health Promotion* 1986; 1 (Part A).
36. Bracht N, Tsouros A. Principles and Strategies of Effective Community Participation. *Health Promotion International* 1990; 5(3):199-208.

Selected Bibliography

A Manual on Health Education and Primary Health Care. 1987. WHO

Green LW, Kreuter MW. *Health Promotion Planning: An Educational and Environmental Approach*. Mt. View, California: Mayfield Publishers, 1991.

Rothman J. Three models of community organization. In Zaltman, Katler and Kaufman eds.), *Creating Social Change*, 1977: 4-72-501.

Brieger WR, Ramakrishna J, Akpovi SU, Adeniyi JD. Selecting alternative strategies for community health education in guinea worm control. *Intl Quart. Comm. Health Ed.* 1984; 5(4):313-320.

Brieger WR, Rosensweig F. 1988. *Workshop on Guinea Worm at the Community Level: A Training Guide*. WASH Technical Report No. 50.

Ekeh H, Adeniyi J. 1987. Using teachers as change agents in the control of tropical diseases: an extra-curricular approach. *Int. Quart. Comm. Health Ed.* 1987; 6(4):323-333.

Isely RB, Yohalem D. A Workshop Design for Community Participation. Volume I. Starting Work with Communities (ICE # TR048). Volume II Planning and Implementing Sustainable Projects (ICE # TRO49). WASH Technical Report No. 33, 1988.

Muller R. Guinea worm disease: epidemiology, control, and treatment. Bull. WHO 1979; 87(3)683-689.

Smith J, Yacoob M. Teaching about Guinea Worm Prevention: A Manual for Secondary School Teachers. WASH Field Report No. 223, 1988.

ANNEXES

ANNEX 1

RESOURCE DOCUMENTS AND VISUAL AIDS FOR DRACUNCULIASIS ERADICATION PROGRAMS

CDC Guidelines

Guidelines for Developing a Plan of Action for Dracunculiasis Eradication Programs.

Prepared by the WHO Collaborating Center for Research, Training, and Eradication of Dracunculiasis at the Centers for Disease Control.

These guidelines are intended for use by national and regional authorities, program officials, and consultants to the Ministries of Health charged with developing a national plan of action for eradication of dracunculiasis.

Available in English and in French.
Cost: Free of charge.

Guidelines for Surveillance in Dracunculiasis Eradication Programs.

Prepared by the WHO Collaborating Center for Research, Training, and Eradication of Dracunculiasis at the Centers for Disease Control.

These guidelines are intended to help persons involved with dracunculiasis eradication programs make decisions about the design or modification of surveillance to monitor and document the disappearance of the disease.

Available in English and French.
Cost: Free of charge.

Guidelines for Health Education and Community Mobilization in Dracunculiasis Eradication Programs.

Prepared by the World Health Organization Collaborating Center for Research, Training, and Eradication of Dracunculiasis at the Centers for Disease Control in conjunction with Global 2000 Project, Carter Presidential Center, Inc.

These guidelines are intended for use by national, regional, district, and community level personnel involved with developing and implementing health education and community mobilization plans in national dracunculiasis eradication programs.

Available in English and French.

Cost: Free of charge.

Guidelines for Chemical Control of Copepod Populations in Dracunculiasis Eradication Programs.

Prepared by the WHO Collaborating Center for Research, Training, and Eradication of Dracunculiasis at the Centers for Disease Control.

These guidelines are intended to help persons involved with dracunculiasis eradication programs make decisions about chemical control of copepod populations in sources of drinking water.

Available in English and in French.

Cost: Free of charge.

Request these Guidelines from: WHO Collaborating Center for Research, Training, and Eradication of Dracunculiasis, Centers for Disease Control, Division of Parasitic Diseases F22, 1600 Clifton Road, Atlanta, Georgia 30333. Telephone: (404) 488-4509.

PLANNING

Adding Guinea Worm Control Components: Guidelines for Water and Sanitation Projects.

WASH Technical Report No. 51, May 1988, 77 pp.

Authors: Agma Prins and May Yacoob.

These guidelines provide information on how to add a dracunculiasis control component to existing large-scale national water and sanitation projects, and are intended for use by project officers of private voluntary organizations, other donors, and national agencies in endemic countries.

Available in English and in French.

Request from: WASH Project, 1611 N. Kent Street, Room 1001, Arlington, VA 22209-2111, USA. Cost: Free of charge.

Cost-Effective Approaches to the Control of Dracunculiasis.
WASH Technical Report No. 38, September 1986, 53 pp.
Author: John Paul.

This monograph describes a model developed to help compare the costs and benefits of different interventions (provision of safe drinking water, health education, chemical control of copepods) in the control of dracunculiasis.

Available in English.
Request from: WASH Project, 1611 N. Kent Street, Room 1001, Arlington,
VA 22209-2111, USA.
Cost: Free of charge.

TRAINING

Guinea Worm/Dracunculiasis Eradication Programme: Training Course for Guinea Worm Coordinators.

Prepared by the WHO Collaborating Center for Research, Training, and Eradication of Dracunculiasis at the Centers for Disease Control in collaboration with Global 2000 Project, Carter Presidential Center, Inc..

This 5 day course was designed for district-level health workers in Ghana, but should also be useful in other endemic countries. Materials include a trainer's guide, participant packet, and course director's guide. The packet contains course handouts, health education materials (including a *Dracunculus medinensis* life cycle flip chart), and job aids, such as charts for keeping records. Topics include surveillance, community assessment, promoting community action, promoting individual and family action, vector control, and clinical treatment.

Available in English and in French.
Request from: Dr. Donald Hopkins, Global 2000 Project, 1840 North Hudson, Chicago, IL 60614, USA.
Cost: Free of charge.

Workshop on Guinea Worm Control at the Community Level: A Training Guide.
WASH Technical Report No. 50, January 1988, 83 pp.
Authors: William R. Brieger and Fred Rosensweig.

This training guide is designed to help trainers conduct a 2-1/2 day workshop for participants to improve their skills in planning and implementing dracunculiasis control projects. The guide is oriented towards improving drinking water sources as the preferred intervention. The workshop is intended for persons who work in rural community settings and who have responsibility for controlling dracunculiasis (e.g.,

health assistants, nurses, health inspectors, and other district-level (not village-level) health workers.

Available in English and in French.

Request from: WASH Project, 1611 N. Kent Street, Room 1001, Arlington, Virginia 22209-2111, USA.

Cost: Free of charge.

Programming Guide for Guinea Worm Eradication.

WASH Field Report 319, December 1990. 100pp.

Authors: David Yohalem. Revised by J. Benjamin and P. Olson.

The guide contains background information on the causes and effects of Guinea worm disease and the common interventions recommended by WHO, the Centers for Diseases Control, UNICEF, and A.I.D. It also suggests roles and responsibilities for Peace Corps staff to coordinate and promote Volunteer involvement in eradication efforts as part of a national program.

Available in English and in French.

Request from: WASH Project, 1611 N. Kent St., Room 1001, Arlington, Virginia 22209-2111, USA.

Cost: Free of charge.

Orientation to Guinea Worm Disease: A Guide for Use in Pre-Service and In-Service Training.

WASH Field Report 320, January 1991. 42pp.

Authors: David Yohalem and Sarah Fry.

This guide and orientation is aimed at Peace Corps trainees assigned to communities affected by Guinea worm disease. Its purpose is to help familiarize these trainees with the nature of Guinea worm disease and to help them define their role in eradicating the disease in their communities.

Available in English and in French.

Request from: WASH Project, 1611 N. Kent St., Room 1001, Arlington, Virginia 22209-2111, USA.

Cost: Free of charge.

TEACHING IN SCHOOLS

Teaching about Guinea Worm Prevention: A Manual for Secondary School Teachers.

WASH Field Report No. 223, February 1988, 93 pp.

Authors: Jason Smith and May Yacoob.

This manual provides sample lesson plans, resource materials, and an outline for a training workshop for teachers who will use the guide to educate students about dracunculiasis and its prevention.

Available in English and in French.

Request from: WASH Project, 1611 N. Kent Street, Room 1001, Arlington, VA 22209-2111, USA.

Cost: Free of charge.

Ghana Guinea Worm Eradication Programme Teachers Handbook.

Developed by a U.S. Peace Corps Volunteer, in collaboration with Global 2000 Project/BCCI and the Ghana Ministries of Health and Education.

This booklet describes the Guinea worm life cycle, filtration of drinking water using cloth filters, answers commonly-asked questions about Guinea worm disease, and provides exercises for pupils.

Available in English.

Request from: Mr. Larry Dodd, Global 2000 Project, Ghana GWEP, Private Mailbag, Kotoka International Airport, Accra, Ghana.

Cost: Free of charge.

Teaching Guinea Worm Prevention in Secondary Schools: A Guide for Training Peace Corps Volunteer Teachers.

WASH Field Report 321, January 1991. 77pp.

Authors: David Yohalem and Sarah Fry.

This training guide is aimed at Peace Corps Volunteer secondary school teachers assigned to communities where Guinea worm disease is endemic. Its purpose is to help familiarize these volunteers with the nature of Guinea worm disease and to help them define the role they and their students might play in eradicating the disease in their communities.

Available in English and in French.

Request from: WASH Project, 1611 N. Kent St., Room 1001, Arlington, Virginia 22209-2111, USA.

Cost: Free of charge.

SLIDES

WHO Slide Set Series: *The Guinea Worm.*

This set of 61 color slides was prepared by the World Health Organization.

Request from: Dr. Philippe Ranque, Filariasis Unit, CTD, World Health Organization, 1211 Geneva 27, Switzerland.

Cost: US \$60.00 per set.

TALC Slide Set: *Dracunculiasis (Guinea worm disease).*

This teaching slide set was developed for public and community health workers, and sanitarians and extension workers who are concerned with water supplies in areas where dracunculiasis is common.

Request from: Teaching Aids at Low Cost (TALC), Foundation for Teaching Aids at Low Cost, Institute of Child Health, 30 Guilford Street, London WC1N 1EH, England.

VIDEOS

Guinea Worm: The Fiery Serpent.

A 20-minute color video (available in VHS, NTSC formats) with sound. Produced by the Centers for Disease Control in cooperation with UNICEF, UNDP, and Global 2000, Inc.

Available in English and in French.

The Waters of Ayole.

This 28-minute color video (available in VHS, NTSC formats) with sound, produced by UNDP and USAID, includes some footage about Guinea worm disease in relation to a rural water supply project in Togo.

Available in English and in French.

Request from: United Nations Development Program, Division of Information, One United Nations Plaza, Room DC1-1904, New York, NY 10017, USA. Telephone (212) 906-5318. Each video is available at a cost of US \$15.00 (Checks/money orders must be in US dollars)

FILMSTRIPS/FLIP CHARTS

Where Does The Guinea Worm Come From?

Based on a project conducted in Kati, Togo, this filmstrip and/or flip chart is designed to encourage group participation of what the audience sees in each picture.

Available in English and in French.

Request from: World Neighbors, 5116 N. Portland Avenue, Oklahoma City, OK 73112-2098, USA. Telephone (405) 946-3333.

Cost: US \$10.00 per film strip or flip chart.

Guinea Worm/Dracunculiasis Eradication Programme: Training Course for Guinea Worm Coordinators.

This training course contains a Dracunculus medinensis life cycle flip chart. (see under **TRAINING**).

INFORMATION CENTERS

Water and Sanitation for Health (WASH) and the Vector Biology and Control Project (VBC) Information Center.

The WASH and VBC Projects are supported by the U.S. Agency for International Development to improve the quality of life for people in developing countries. VBC is designed to improve the effectiveness of vector control programs by providing technical services to identify weak links in the chain of transmission (both biological and operational). WASH provides short-term technical assistance services for water supply and sanitation projects. Objectives of the information center are to:

- collect and organize publications, reports, and articles pertaining to Guinea worm;
- respond to information requests about Guinea worm and to distribute or translate periodic bulletins or newsletters;
- develop a database on Guinea worm specialists and consultants;
- establish a database on current Guinea worm control projects;
- develop a database to monitor and report on occurrence or prevalence of Guinea worm; and

- prepare information packets/briefing documents of Guinea worm for USAID health officers, Ministry of Health Officials, etc.

The information center translates the Centers for Disease Control administrative communication Guinea Worm Wrap-up into French and distributes it to Francophone countries. To request information write to:

Guinea Worm Information Center

WASH Project
1611 North Kent Street, Suite 1001
Arlington, Virginia 22209-2111, USA

Annex 2

Suggested Messages, Possible Channels of Communication, and Specific Target Groups for Dracunculiasis Prevention and Eradication Programs

MESSAGES	METHODS/CHANNELS
Villagers or Users	
How one gets dracunculiasis	Posters
Filter water to prevent dracunculiasis	School children
How to use the filter correctly	Audiovisual aids
Care of the filter	Learning aids (flipcharts)
Do not contaminate source of drinking water	Handbills
Help neighbor who has dracunculiasis to collect water	Television and radio
	Drama, demonstration, role-playing
	Town criers
	Meetings, churches, mosques, market women
	Face-to-face communication
Schoolchildren and Teachers	
How dracunculiasis is spread	Lectures
How to prevent dracunculiasis	Demonstration on the correct use of filters
How to treat dracunculiasis	Parent/Teacher Associations
Help elders to collect water	Exercise books
	Essay competitions
	Debates
	Comic books
Health Workers	
What is dracunculiasis?	Workshops/seminars
How is it spread?	Training manuals and charts
How to prevent dracunculiasis	Supervisory visits
Management of cases: Follow-up, trace, search, treat	
Organize the community	
Be sensitive to local beliefs	

MESSAGES

Better Life for Rural Women

Dracunculiasis reduces income of rural women

How dracunculiasis is transmitted

How to prevent dracunculiasis

Education is a key to prevention

Religious Leaders

How dracunculiasis is transmitted

How to prevent dracunculiasis

How to filter water

Eradication requires community involvement

Policy Makers

What is dracunculiasis?

Provide safe water

National and state task forces promote programs

Educate the public about dracunculiasis eradication

Need to monitor eradication programme in their states

Incorporate into primary health care programme in their states

Economic/social impact of dracunculiasis

Task Force Members

Regular attendance of meetings by the same person for continuity

Need for intervention throughout year

Target dates for eradication

Developed by:

Health Education Subcommittee
National Task Force
Nigerian Guinea Worm Eradication Programme

October 4, 1990

METHODS/CHANNELS

Seminars

Meetings

Television and radio

Church/mosque sermons

Discussion groups

Handbills

Direct discussion

Activities on National Guinea Worm Day

Fund-raising at the state level

Zonal facilitators

Chairmen of Task Forces

Members of State Task Forces

LGA Coordinators

Progress reports

Annex 3

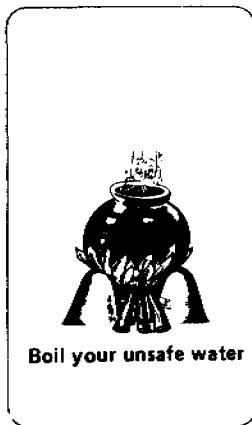
Examples of Visual Applications

avoid **GUINEA WORM**

filter your
drinking water
obtained from ponds.



IF ONLY UNSAFE WATER IS AVAILABLE



1. Always filter it before drinking
 - Filtering removes the guineaworm babies from the water
 - Use only a fine cloth or a special filter recommended by a health worker for filtering
2. Add temephos (Abate) to water
 - your health worker will teach you how to use temephos (Abate) to kill the guinea worm babies.
 - special care is required in banding temephos
3. Boil the water before drinking.
 - boiling kills all the guinea worm babies in the water.
 - boiling also kills other germs
4. Work with your community to protect your water sources from further contamination.

WHEN YOU HAVE GUINEAWORM

1. Do not go into the drinking water sources.
2. Keep your wound dry, clean and covered.
3. Do not cover your wound with any kind of animal dung, or remedies made from soil roots, herbs, oil.
4. If you get a high fever or your wound becomes very swollen see a health worker for treatment as soon as possible.
5. If you are unable to go, send someone in your family to bring the medical help to you.
6. If winding of the worm is practiced, do it gently, because breaking the worm can cause serious complications.
7. If you begin now to always drink only safe water you will not have guineaworm next year.
8. Always filter or boil unsafe water before drinking to prevent guineaworm next year.

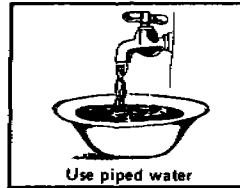
Guinea Worm/Dracunculiasis Eradication Programme



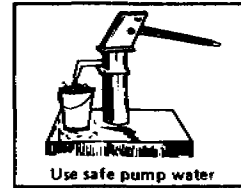
Produced by the
Health Education Unit for the Oyo State
Guineaworm Eradication Programme
Disease Control Department
Ministry of Health Ibadan

FACTS ABOUT GUINEA WORM DISEASE
GUINEA WORM COMES FROM THE DRINKING WATER

1. Man gets Guinea Worm by drinking water from unsafe sources.
2. Unsafe water has guinea worm babies in it
3. The guinea worm babies go into mans body where they live and grow into adult guinea worms.
4. It takes about twelve months for a baby guinea worm to grow into an adult guinea worm.
5. The worm slowly moves from the stomach to any place under the skin.
6. When the worm is ready to come out a painful blister appears on the skin, which causes a burning feeling.
7. Many people try to relieve the pain by putting the blister in water.
8. When it touches water, the blister breaks, the worm starts to come out, and thousands of tiny guinea worm babies are released into the water.
9. So whenever a man with guinea worm ulcer goes into the water to gather water, or just to relieve the pain, he fills the water with guinea worm babies.
10. When another man comes to drink this water containing the babies the cycle starts all over again.



Use piped water



Use safe pump water



Use safe well water



Use safe rain water

DRINK ONLY WATER WHICH IS SAFE FROM GUINEA WORM CONTAMINATION SAFE WATER SOURCES

1. Piped water
2. Well with hand pump
3. Well with rope and bucket
4. Rain water.

UNSAFE WATER SOURCES

1. Pond, Lake, Dam
2. River, Stream, Canal
- * Work with your community to protect your water source from contamination.

SITES OF GUINEA WORM ULCER

1. Most of the time guinea worm comes out from either the Legs or the feet
2. However, a worm may sometimes come out from the head, arm, chest, breast, hand or other parts of the body.
3. It is possible for one person to have several guinea worm coming out of different places.

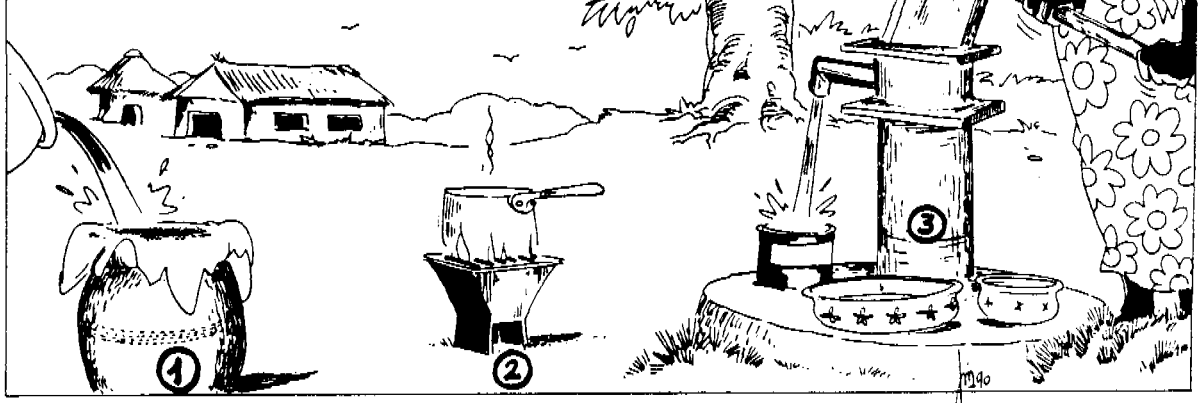
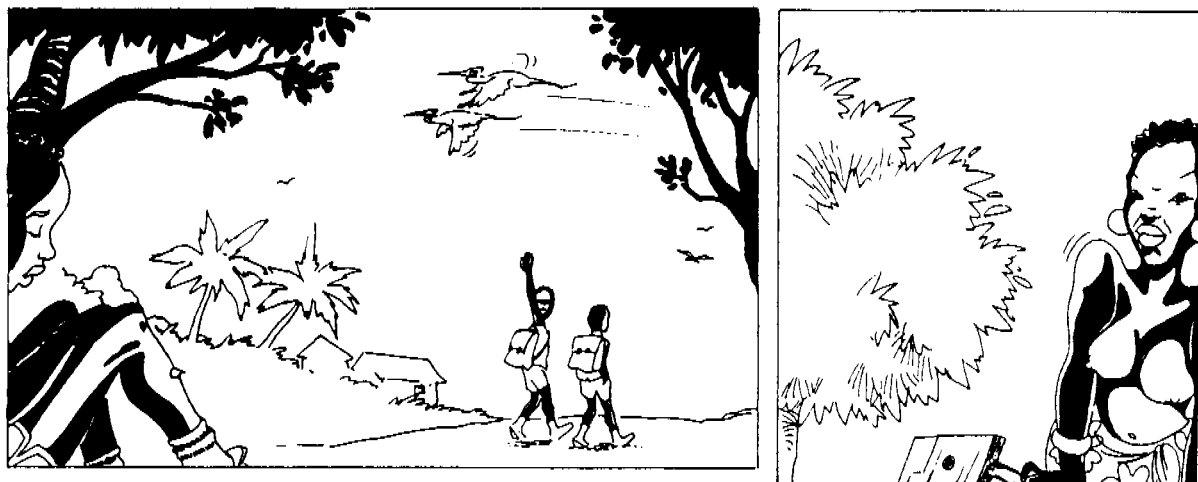
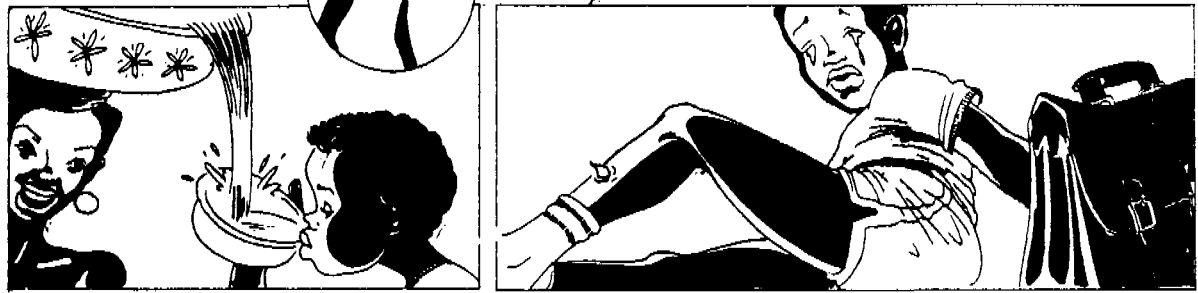
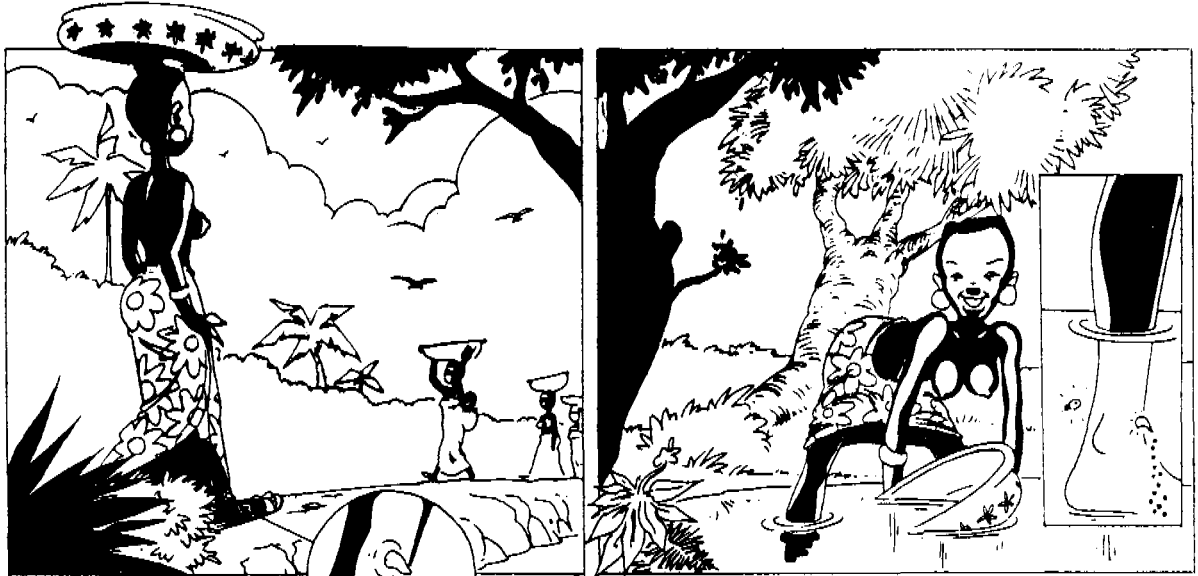


PERSONS WITH GUINEA WORM ULCERS OR BLISTERS MUST NOT GO INTO THE DRINKING WATER SOURCE



1. Work with your community to protect your water sources from contamination.
2. Build a resting shelter at water source to encourage infected persons to stay out of the water while a non-infected person gathers water for them.
3. Build a platform into the water source to keep infected persons from coming into contact with the water.
4. Post a local authority to monitor water source – to keep infected persons out of the water source.
5. Educate community members to keep infected persons out, of the water source.
6. Display posters at water sources to keep infected person out of the water.

ATTENTION!...VERS DE QUINÉE!



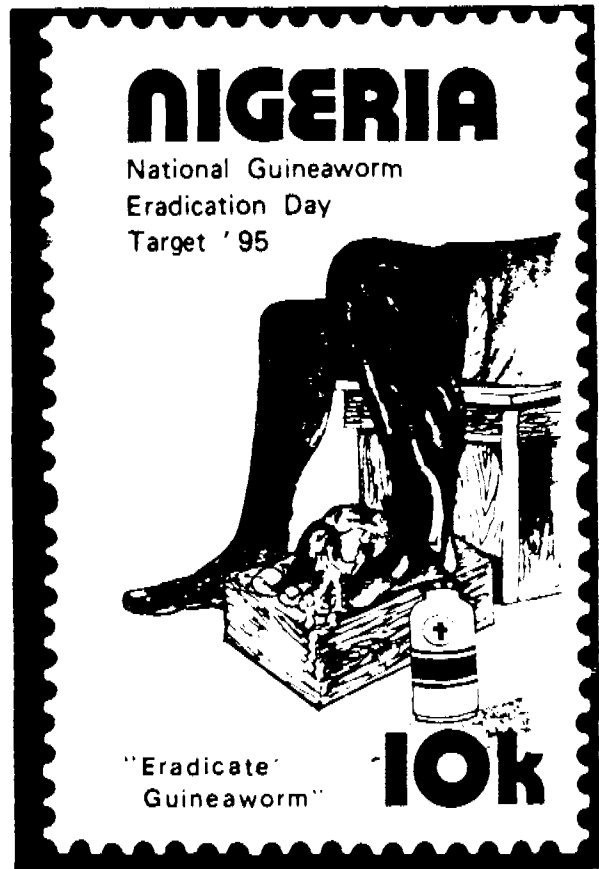
Annex 4

National Guineaworm Eradication Day Commemorative Postage Stamps

Date of Release: March 20, 1991

10K and 30K stamps designed by Mr. G.N. Osuji

20K stamp designed by C.O. Ogbebor



Annex 5

Roles of the Health Educator*

Providing guidance in changing behaviors may be accomplished through different approaches at several different levels of participation. In carrying out the health education task, the health worker may be required to provide direct counseling with an individual or family one day, while preparing a program for a meeting with the members of an entire village that afternoon.

The health educator must be flexible and able to quickly recognize that each audience may require different health education activities. Four of the most common roles, counselor, facilitator, linker, and trainer, are presented below.

- **Counselor**

In this role, the health educator encourages individuals to think about their problems so that they come to a greater understanding of the causes. Acting as a counselor, the health educator introduces persons to alternative solutions to problems. As a result of new insight and understanding, the likelihood is increased that they will commit themselves to taking action that will solve problems.

Example

A school teacher makes a home visit to the family of a pupil who has missed a week of school. The child's mother has GWD and she needs the child to fetch the water. The teacher, in the role of a health educator, listens carefully as the mother and child explain the problem. The educator expresses concern about the mother's suffering and also notes the value of school attendance and encourages the mother to think of alternative solutions to the problem.

The child mentions that she can collect some water early before school. The mother remembers friends whom she helped in the past who will return a favor. The mother thinks that she can come up with a water collection schedule that will address the problem without sacrificing the child's school work. Acting as counselor, the health educator has guided the discussion, but allowed the family to make its own decisions.

- **Facilitator**

In this role, the health educator fosters circumstances that will lower barriers to enable an individual, group, or community to take healthful actions. The health educator does tell

*Taken from Silverfine E.; Brieger, W.; Churchill. Community-Based Initiatives to Eradicate Guinea Worm: A Manual for Peace Corps Volunteers, U.S. Peace Corps and Agency for International Development, September 1990, Washington, D.C.

participants what they should feel, think, or do. Rather, he/she provides a setting where people, who share a common problem, can come together and help themselves.

The group may meet once and be satisfied or they may enjoy the experience of sharing a problem and decide to meet again. It is important that the health educator fosters the feeling that the group belongs to its members, and they have the capacity to, and therefore should, act in a way that can best serve their interest.

Example

An Agricultural Extension Worker recognizes that several farmers are complaining because they don't have enough people to work in the land because they, and/or their families are sick with GWD. The worker invites several farmers to have coffee at his house one evening. When the farmers arrive, their common complaint surfaces in the conversation. The extension worker suggests that the situation can be changed and gives the farmers examples of how others with a similar problems have solved it. After several follow-up meetings, the group decides to build a head wall around the local well.

- **Linker**

Networking is an important health educator function that helps link a community (or individual) with a resource agency or group. The health educator initially serves as an advocate for the needs of the community but eventually brings the community and agencies together to solve the problem jointly. The link may be made between groups within a community or between a community and an external organization that can provide technical or financial assistance.

Example

While visiting a village to talk about the GWD problem, the health educator becomes aware that the villagers are upset because the cloth filters mentioned on the radio have never been delivered to the village. The health educator explains that the cloth is available for collection at the District Health Office.

The villagers complain that they don't know how to sew the filters. The educator notes that the District Tailors' Association has gone on record to help and urges the villagers to send representatives to meet at the district headquarters the educator will introduce them to the health office staff and the tailors.

- **Trainer**

In the role of trainer, health educators provide formal or informal opportunities to transfer knowledge, skills, and attitudes to other health and development workers as well as to community members. Although health educators may not be technical experts on every subject, they do have the ability to organize appropriate learning experiences in collaboration with technical staff.

Example

A village development committee has decided filtering is a good short term measure to get GWD under control, but none of the members has ever used a filter. The committee asks the health educator to help plan a training session with them so that they can learn how to use filters correctly and subsequently how to distribute the filters in the community. A subcommittee, including the health educator, is formed to plan the training. They identify the concepts and skills they want to learn, specify the most appropriate methods and materials needed for the training. They outline a schedule and present it to the whole committee for consideration.

Annex 6

Targeting Children for Health Education in Guinea Worm Eradication using the CHILD-to-Child Approach

CHILD-to-child (CTC) is an approach to primary health education that is based on the view that children have the power to spread good health messages and to make decisions and take action to promote better health. Children can do this in four ways: 1) through the care they provide for their younger brothers and sisters; 2) through their influence on other children in their age group, especially those who do not go to school; 3) through individual influence on their parents; and 4) through their collective influence on their parents; and 4) through their collective influence on their communities.

CHILD-to-child promotes preventive health care through an active, participatory approach that teaches practical health messages and skills that children can use in their everyday lives.

A Sample CHILD-to Child Lesson on Guinea Worm

Lesson Objectives:

By the end of the lesson, children will be able to:

1. explain how Guinea worm is caused/spread
2. identify 3 ways to prevent Guinea worm
3. demonstrate how to filter drinking water using a cloth filter

Method:

1. Introduce the lesson by asking the children what they know about Guinea worm. In this way you can build your lesson on the children's knowledge and show them how much they already know. You might ask, for example:

- a. Have you ever seen a Guinea worm?
- b. How do you know when someone has Guinea worm?
- c. What happens when you get Guinea worm? Do you go to farm (or school) as usual?
- d. What causes Guinea worm? (Or how does Guinea worm get into your body?)
- e. How can you prevent Guinea worm?

2. Tell a story about Guinea worm, such as the following, using flannelgraphs or other illustrations at opportune places. Ask the children to listen carefully so that they can answer your questions after the story is finished.

Once upon a time in a village not far from Ugep (*or appropriate location*), there lived a very nice family. There was Papa, Mama, the baby Isu, the small boy Otu, and the senior brother Okoi (*use names appropriate to the location*).

One day Mama asked Okoi to fetch water as usual. Okoi took up his head pan and set off for the pond. On his way he met his best friend, Iwara. Iwara was not well! He walked like this (*pretend to limp, dragging the left foot with a pained expression.*) His right foot was quite all right, but his left foot! It was swollen up, with a big red sore near the heel. A thin white worm was coming out of that sore. (What do you think he had?)

Even though Iwara could not walk well, he went with his friend to fetch water anyway. Okoi and Iwara both walked right into the pond to get the water. When Iwara put that Guinea worm into the water, many tiny Guinea worm eggs came from the big one. The boys could not see the eggs, but many came out into the pond. (*Depending on the age of the children you might also add that these Guinea worm eggs were eaten by tiny white water fleas [cyclops] that the boys did not see.*)

Okoi filled his basin with water, and the boys walked home. Okoi filled up the family's water pot; then he took up his hoe and went to help his family on the farm.

When Okoi and his brother Otu came home from farm, they were very hungry. (What do you think they ate? What do you eat when you come home from farm? or school?) They boys ate a big pot of fufu (or garri, etc.), and young Otu drank a mighty glass of water from the family's water pot.

Everything went well with the family for some time. They worked hard on the farm; and everything grew well. The harvest was good! However, just before the next planting season something terrible happened. Little Otu's foot swelled up, and he got a bad sore on his heel. His foot pained him greatly. (What do you think he had?) He could hardly walk. He could not go to farm or to school for several weeks. He could only remain on his mat at home to suffer. The family farm did not do so well without Otu's help. The whole family worried for poor Otu. His grandmother and brother used to sit by his bedside. His mother tried to care for Otu, but she didn't know how to kill that worm!

One day she took Otu to the traditional healer in the village. She thought maybe he would have some small "Juju" to take away the Guinea worm. She gave her last kobo to the healer. The traditional doctor said that the boy's blood was not strong, so he gave him blood tonic. (Do you think that tonic took away the Guinea worm?)

The Guinea worm sore continued to pain Otu. His mother did all she could. She washed the sore every day with soap and clean water. Then she put a clean plaster gently on the wound. (Do you think that plaster stopped the worm from coming out?) It did not; and Otu's mother gently wound the worm around a small stick as it came out, a little more each day. She also took Otu to the health centre, where he was given medicine for the pain and swelling, and a Tetanus vaccination to prevent the deadly disease Tetanus.

After four weeks the worm finally came all the way out of Otu's foot. The foot healed quickly after that.

3. Ask the children questions to be sure they understood the story and can explain how Guinea worm is caused and spread. Encourage as many as possible to answer, and allow them to help each other.

Question: Why did the boy Otu get Guinea worm?

(He drank water that had been infected with Guinea worm. He swallowed the water fleas that contained Guinea worm eggs.)

Question: How did the Guinea worm get inside the water?

(Iwara walked into the pond when he had Guinea worm and the baby eggs came out of the sore on his leg into the water. Okoi fetched that infected water from the pond and put it into the family's water pot.)

Question: Can you see the Guinea worm?

(Babies [larvae]: NO. Adult worms: YES.)

Question: What can we do to stop this Guinea worm?

(First, discuss how to keep Guinea worm out of the pond or water source; then discuss how to kill or eliminate the Guinea worm if it gets into the water.)

Preventions:

- Build steps into the pond so that people don't have to walk right into the water when they go to fetch water.
- If there are not steps, don't go to fetch water if you are suffering from Guinea worm.
- Dig wells or bore holes to ensure a safe water source.
- Filter and/or boil water to get rid of Guinea worm.

4. Demonstrate how to use a cloth filter to remove dirt and the cyclops (water fleas) from infected water. Explain why it is important to mark the up-side of the filter in some way so that the dirt and water fleas stay on the top and the clean side is always on the bottom. (The filter can be made of 2 layers of cloth, one a light colour, the other white; or a special mark can be put on the up-side of a single layer.) **Have the children practice using the filter.**

5. Ask the children what they can do at home or in the community to help stop Guinea worm. Then encourage and help the children to do one or more of the following activities:

- find out how many people in their compound, school, or neighbourhood have suffered from Guinea worm in the last year
- tell other children at school the story about Guinea worm
- put on a play in the village square about how Guinea worm is spread
- show their parents and brothers and sisters how to filter drinking water with a cloth filter
- make up a song about how to prevent Guinea worm

For further information contact:

CHILD-to-Child
Institute of Education
University of London
20 Bedford Way
London, England WC1H 0AL

Annex 7

Health Education for Dracunculiasis Eradication

Public health workers have found the PRECEDE model to be an effective framework for planning, implementing and evaluating dracunculiasis health education programs.* Regional health education leaders can help village implementers by providing technical assistance in how to develop programs in this way.

This Annex provides an example of how the principles of the PRECEDE model can be applied in a health education program to eradicate dracunculiasis. The example is organized into four “diagnostic” steps: (1) identifying target behaviors, (2) assessing the reasons for them, (3) choosing and implementing educational strategies, and (4) evaluating results.

1. Identify the target behaviors.

In terms of individual actions, there are two primary behavioral targets for the prevention of dracunculiasis: (1) drinking water that contains infected copepods, and (2) wading in water by persons with active Guinea worm ulcers. If the health education goal was: “community members will only drink water that does not contain infected copepods,” the community and its members could undertake several behavioral actions to help them attain this goal, including:

- **FILTER** all water before drinking
- **TREAT THE WATER** supply with the chemical, temephos (See *Guidelines for the Chemical Control of Copepod Populations in Dracunculiasis*)
- **TAKE ACTION** to protect the existing water supplies
- **CONSTRUCT** a new water supply.

When a specific behavior is targeted for intervention and change, the behavioral “diagnosis” must be refined in order to identify all of the component parts of the behavior in question. For example, the single behavior: of “filtering water” is more complex than it appears; it is dependent upon a series of interrelated precursor actions, including:

- **BUYING/OBTAINING** a filter or filter material
- **USING THE FILTER** for all drinking water
- **PLACING THE FILTER ON THE POT CORRECTLY** so that unfiltered water can not splash into the pot

*The material in this annex has been adapted from Silverfine, E.; Brieger, W; Churchill. Community-Based Initiatives to Eradicate Guinea Worm: A Manual for Peace Corps Volunteers, U.S. Peace Corps and Agency for International Development, September 1990, Washington, D.C. The most up-to-date discussion of the PRECEDE model is found in Green, LW; Kreuter MW. Health Promotion Planning: An Educational and Environmental Approach, Mayfield Publishing, Mt. View, California, 1991.

- **REMOVING THE FILTER CAREFULLY** so that copepods will not spill into the filtered water
- **CLEANING (BACKWASHING WITH FILTERED WATER) THE FILTER** after use
- **STORING THE FILTER** in a secure place where it will not be damaged
- **INSPECTING THE FILTER** before each use to be sure it has no holes or tears
- **DISCARDING A DAMAGED FILTER** and **REPLACING IT**

The “diagnosis” of these behaviors continues throughout a program by drawing on information that provides insight on the probably causes of a given behavior. As mentioned earlier in this chapter, such information may be obtained from community assessments, community meetings, or specially conducted focus groups. The on-going selection of methods is based upon this level of information.

2. Assess and determine what factors shape the target behavior.

Among the main factors that influence behavior are: knowledge, access to services, availability of money, encouragement or discouragement by friends, and basic skills such as literacy, dexterity and so on.

These multiple, complex factors can be simplified and better managed for planning purposes if they are clustered into three more general categories of factors: predisposing, enabling, and reinforcing.

- **Predisposing factors:** influence people’s perceptions and motivation. They include what people know or don’t know, what they believe and what their attitudes are to relevant to issues associated with the behavior.
- **Enabling factors:** are the resources that enable the desired behavior to take place. Examples include the availability and accessibility of services and resources, personal skills and time.
- **Reinforcing factors:** are those actions and/or messages, passed on through existing channels of communication (including family, friends, community leaders and co-workers) that support or hinder healthful practices. For example, one’s behavior may be strongly influenced by the social rewards, incentives, or punishments (either real or perceived) of friends, family, and co-workers.

Here are some examples which illustrate how these factors operated as important positive and negative factors to influence the social and cultural acceptance of filtering behavior in a Nigerian village.

Predisposing Factors

Beliefs

Because some people believed that Guinea worm is a natural part of the body, like a tendon, and could not be prevented, they did not *believe* that the filter would work as promised.

Knowledge

Fortunately there was also a set of people who had access to well water, but they still bought filters. They knew that the wells sometimes go dry and so wanted backup protection against GWD. They had accepted “modern” health ideas.

Values

Among those who believed in the efficacy of the filters, there were those who considered them to be second rate compared to wells. They *believed* that the wells were more permanent and were, therefore, a *valued* solution.

Perceptions

Some people blindly accepted their filters and used them regularly to the point where tiny holes started to form. They did not understand that it was not the act of filtering that was protective, but the quality of the cloth. Unfortunately they did not *perceive* that the holes were dangerous. On the positive side there were those people who were happy with the filter because they could see what they felt were the results of filtering: dirt, leaves, etc., left behind after pouring water through the filter.

Habituation

It is often easy to forget to perform a behavior or not to bother. Some would carry the filter with them when they went from farm hamlet into town and then would forget it when returning to the hamlet. Regular filter use must become an unconscious, routine: a *habit*.

Enabling Factors

Costs

Although the filter was sold near cost (a price less than a measure of rice or about the same as a bottle of beer) some people complained that they did not have money to buy one.

Convenience

Many people felt that the filter was easy to use because a rubber band sewn in the hem made it cling to the pot while they poured water. The monofilament mesh allowed water to flow smoothly and many appreciated this.

Usefulness

A few individuals liked the filters because they could envision other, though inappropriate, uses for them, such as sieving corn and cassava starch.

Skill

Even when people remembered to use the filter, they sometimes did not use it correctly and placed it on the pot upside down.

Competition

We often forget that when we promote or “market” a new health idea that there is competition with other products. In this case people traditionally used alum to settle particulate matter in water. All that would be needed was a few cents of alum to do the job. Unfortunately alum, while making the water appear clear, has no effect on disease organisms. In the long run use of alum may cost more than a filter, but the short term costs were much less and the ‘visible’ results were the same.

Reinforcing Factors

Friends

Generally the filters were distributed through the network of village health workers (VHWs) who were local people selected by members of their hamlets for this job. As friends and neighbors, the VHWs found it easy to communicate to others in their hamlet and encourage acceptance. In hamlets where there were no VHWs, acceptance was quite low.

3. Select the methods or mix of methods that are most likely to change the target behavior.

This step involves careful consideration of the factors that influence target behavior(s) with the goal of selecting the most appropriate health education strategies and methods.

Just as there are three broad groups of factors that influence behavior, there are also three groups of educational strategies aimed at these factors. Continuing with filter use as an example, the table on the following page lists the educational strategies that lead to factors that may influence filtering behavior.

Table: Selecting Health Education Strategies to Address Priority Behavioral Factors

EDUCATIONAL STRATEGIES

(Information Strategies)

stories at village meetings
 health talks at clinics and with community groups and clubs
 visual aids to depict filter behavior
 counseling at clinic

(Resource Strategies)

fund raising
 organize local tailors to produce filters
 train village health workers to distribute
 train villagers to use filters properly

(Social Support Strategies)

discussion at women's society meetings
 village health workers (as neighbors) distribute filters
 opinion leaders mobilize support

BEHAVIORAL FACTORS

(Predisposing Factors)

knowledge of how filter works
 belief that filter prevents dracunculiasis; value that temporary inconvenience pays off
 knowledge of correct use
 decision to buy filters

(Enabling Factors)

money to buy filter
 source of ready made cloth
 access to filters
 skill of correct filtering

(Reinforcing Factors)

elder women influence younger
 neighbors encourage purchase
 general acceptability of filtering idea

It is unlikely that a health educator can conduct all of these activities, although a **mix of methods** is often more effective than any one method alone. It must be determined which strategies are most appropriate and which factors most changeable for the health educator to be successful in achieving the goal of encouraging community members to use a filter each time they collect water.

Although there are a wide variety of strategies and methods that can be used under the rubric of "community mobilization" and "health education," three are commonly used by health educators in a village setting: (1) story telling, (2) demonstrations and (3) group discussion. These and other methods are described in detail in Annex 2.

4. Evaluate the program

The ultimate test of success of a dracunculiasis eradication program, including its health education component, is whether or not the disease is, over time, eliminated. Within ultimate goal of eradication, the primary measure of success for health education will be the extent to which it achieves its purpose: to help persons at risk for GWD modify their behavior with regard to water use.

Evaluation is built into the health education planning process and begins with the careful process of defining the behavioral and educational objectives of a program. There are some very practical but effective steps that responsible practitioners can take to assess the effectiveness of their health education efforts. For example, an important evaluation task is to assess the extent to which educational an intervention influences intermediate behavior change indicators such as changes in knowledge about the cause of GWD and whether or not people possess the skill to put the filter on their pots correctly.

In order to measure such indicators of change, the health educator must first determine:

- **who** the target audience is
- **what** the key behaviors are
- **when** and with what frequency the behaviors should have been performed
- **where** the behaviors are to take place
- **how** the behaviors are to be measured.

Next, precise and concrete objective(s) should be stated:

“The girls in the school (**who**) will use cloth filters (**what**) at home (**where**) each time they fetch water (**when**).”

Every health education program that is evaluated must begin with an objective that is precisely stated and is relevant to the health goal. The objective is the standard by which you measure your success. Below is a practical example of evaluating the **process** and the **impact** of one aspect of a GWD health education effort, a filter demonstration.

- The target audience is: all girls in school who fetch water for the families in the village.
- Specific objectives for the session are established and clearly stated so that both the participants and those associated with the program full understand them. These statements form “behavioral objectives.” For example:

By the end of this session (when) the participants (who) will be able to demonstrate to another participant (how measured) which side of the filter faces up on the water jug (what)

By the end of the session (when) the participants (who) will be able to list (what) the 10 steps on “How to filter Water” (see Demonstration below) on a piece of paper (how measured)

By the end of the session the participant will be able to conduct a demonstration of how to filter water for another participant in the session.

(NOTE: It is important to develop each objective so that it is based on a very concrete, action verb. Objectives should be specific as to the outcome and measurable.

- Based on the content of the behavioral objectives, the educator would then select the educational method(s) most likely to achieve those objectives. If there are multiple activities, they should be listed in the order to be completed. The time required to conduct each method should be included. For example:

(5 minutes) 1. Demonstrate correct use of filter.

(10 minutes) 2. Demonstrate using poster, "Ten steps involved in correct filtering."

(45 minutes) 3. Have each participant demonstrate the process to another participant.

- The effectiveness of the teaching process could be assessed against the stated objective by (1) observing participants as they demonstrate the filtering process to one another, and (2) having participants list the steps they remember in the filtering process.

Success would be determined based on the following indicators:

- if all the girls used the correct side of the filter in their demonstration
- if all the girls listed the ten steps correctly on the paper
- if all the participants correctly demonstrated the ten step process of filtering water

Other information to assess the process of instruction can be obtained informally by talking to participants and finding out what works and what doesn't. These questions focus on information about your teaching methods. This is called process evaluation.

Typical process questions include:

- How many people attended the session?
- Who participated in the sessions? Males, females, ages?
- Was material available for all the participants?
- Could the activities be carried out in the time frame allotted?
- What changes would the participants suggest for improvement?

If the health education activity involves a larger group such as in a community demonstration, it is advisable to evaluate the activity through a **survey**, perhaps using a sub-sample of households. Once at a household, questions can be asked to find out about knowledge and beliefs; and, one can **observe** performance of the filtering skill. Also, the filter can be **inspected** to see determine its condition thus showing evidence of proper use.