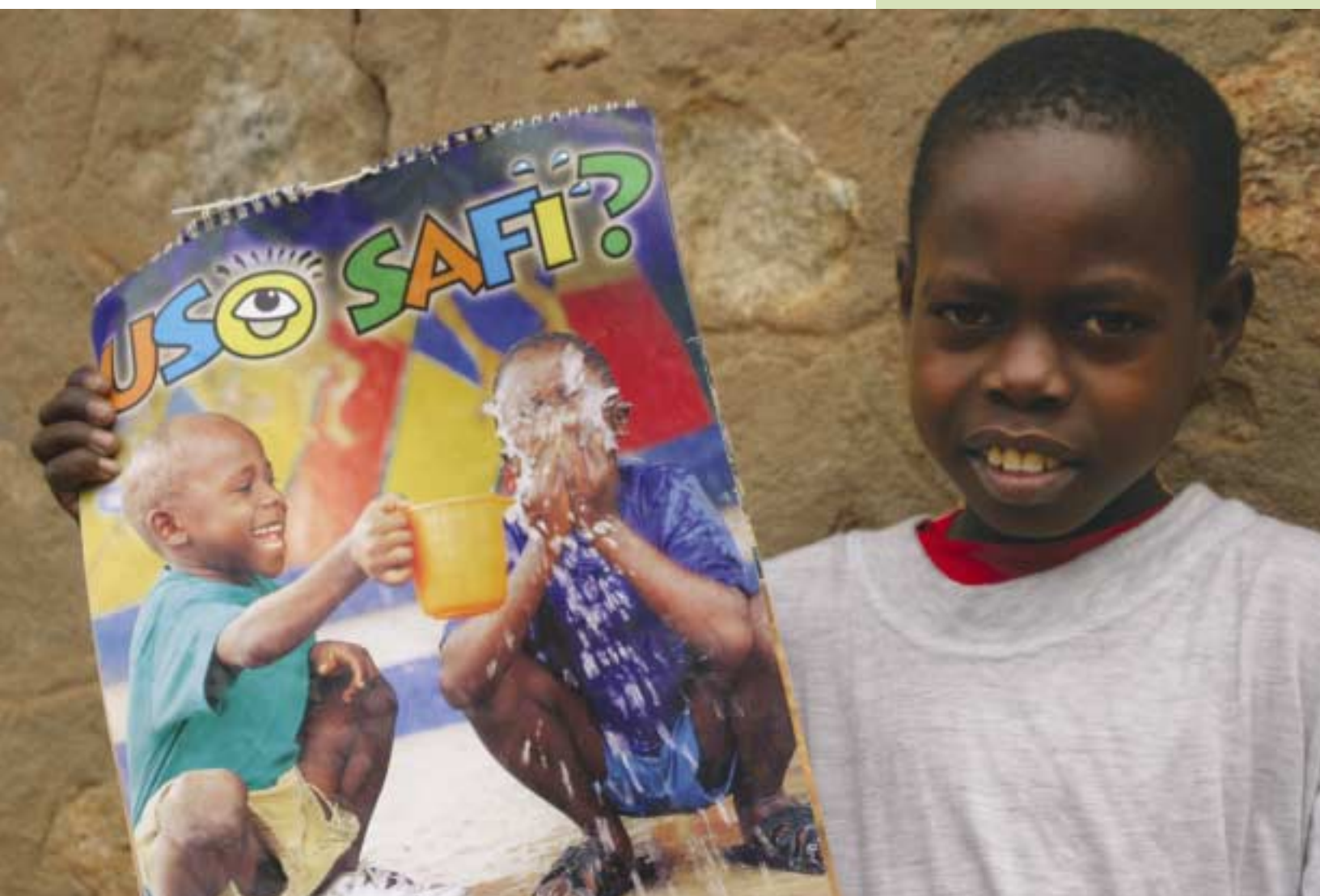


Implementing the SAFE Strategy for Trachoma Control

**A Toolbox of Interventions
for Promoting Facial Cleanliness
and Environmental Improvement**

Paul Emerson and Laura Frost, with Robin Bailey and David Mabey



THE
CARTER CENTER



**International
Trachoma
Initiative**

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Acknowledgments

The authors are grateful to the following individuals for their helpful advice, discussion, and for hosting visits to their programs: Sheila West, Harran Mkocho, and program staff from the Kongwa Trachoma Project, Tanzania; Momodou Bah, Ansumannah Sillah, Jerreh Sanyang, and Hannah Faal from the NECP and Sight Savers International, The Gambia; Jim Zingeser, Ali Amadou, and Mohamed Salissou Kané from The Carter Center, Niger; Dan Salter and Mrs. Phi from IDE, Vietnam; Mike Meegan and program staff from ICROSS, Kenya; Lisa Tapert, Chad MacArthur, Manisha Tharaney, and Helen Keller International program staff from Burkina Faso, Mali, Morocco, Nepal, Niger, and Tanzania; Joe De-graft Riverson, Sam Jackson, and World Vision program staff from Tanzania, Ethiopia, and Vietnam; Solomon Gudina from the BBC World Service trust in Ethiopia; and Silvio Mariotti from the World Health Organization.

Most of the photographs were taken by Paul Emerson. We are grateful to other individuals and organizations who have allowed use of their photographs: Jim Zingeser (Zinder latrine project, Sudanese boy washing face), Sophie Masson and Amy Ratcliffe (school-based trachoma program in Burkina Faso), Vanessa Vick (trichiasis surgery in Ethiopia), and Annemarie Poyo (Ghana water pump).

Support for the formatting and printing of this guide was provided by the Conrad N. Hilton Foundation and The Carter Center.

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Printed in January 2006

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Foreword

BY FORMER U.S. PRESIDENT JIMMY CARTER

There is no excuse for the unnecessary suffering caused by blinding trachoma. While we cannot eradicate this devastating disease, we have the tools to eliminate the more serious complications of trachoma, such as blindness.

The disappearance of trachoma in the United States, Europe, and some developing countries has occurred in conjunction with economic development and access to health infrastructure. Historically, the key features for stopping trachoma transmission have been improvements in hygiene and sanitation and access to water. These are incorporated into the WHO-endorsed SAFE strategy for trachoma control as the F and E components: Facial cleanliness and Environmental improvement.

There is a perception that hygiene promotion and environmental improvement are abstract, expensive, and immeasurable, but this is not true. This guide demonstrates that F and E can form a vital part of a truly integrated strategy for trachoma control that will also provide many additional health benefits, such as reducing intestinal worms and diarrheal diseases.

Rosalynn and I have seen the life-changing benefits of trachoma control programs on our many visits to Africa. In particular, during our 2005 visit to Ethiopia, we witnessed a latrine revolution taking place. I was struck by the fact that the program did not just include the men of the village, but was driven by the women who wanted the best for their families in terms of their current health and a brighter future for their children. The behavior of children had been changed. Now instead of relieving themselves in the fields, they were proudly using their own small potties. The situation in Ethiopia is simply one example of how trachoma programs can improve people's lives if we just apply ourselves and act.

This trachoma toolbox has been created to provide program managers and implementers an array of possible solutions, as illustrated in case examples,



Former U.S. President Jimmy Carter discusses trachoma with a man from Mosebo village, Ethiopia.

for the F and E aspects of their trachoma control programs. It fills a gap in current documentation of implementation of the SAFE strategy by giving practical guidelines and highlighting where interventions may or may not work.

Now that we have the tools necessary for trachoma control, the onus of responsibility falls on all parties to deliver the full SAFE strategy to everyone at risk. Together, we should act on our commitment to empower those men, women, and children suffering daily from this entirely preventable disease.

Introduction

The purpose of this manual is to provide program managers and planners with guidance for designing interventions for facial cleanliness (F) and environmental improvement (E) in trachoma control programs. This manual

- Shows how to learn about risk practices, identify appropriate F and E interventions, and identify target groups for interventions.
- Offers a toolbox of F and E interventions with specific examples and case studies.
- Explains how to communicate about a trachoma control program through the media.
- Provides steps for evaluating a trachoma control program.
- Gives resources for further information.

What Is Trachoma?

Trachoma is an infectious eye disease that is the leading cause of preventable blindness worldwide. It is caused by ocular infection with bacteria called *Chlamydia trachomatis*, and blindness is the result of repeated infections over many years. Each active infection can be treated with antibiotics, and steps can be taken to avoid infection or prevent transmission to reduce the risk of blindness in the future.

Identifying Trachoma

There are five distinct stages of trachoma, which have been categorized in a grading scale by the World Health Organization (see Figure 1.1). Only the last stages, trachomatous trichiasis (TT) and corneal opacity (CO), are clearly visible without examining the lining of the eye (conjunctiva) by everting the upper eyelid.

The other stages, trachomatous inflammation follicular (TF), trachomatous inflammation intense (TI), and trachomatous scarring (TS), can be identified only by everting the upper lid and examining the conjunctiva. It is not possible to identify these stages of trachoma by simply looking at the eye.

How Trachoma Leads to Blindness

When a person's eyes get infected with *Chlamydia trachomatis*, the bacteria develop in the cells of the conjunctiva. This infection usually results in the development of inflammation and a few follicles under the upper eyelid (stage TF). Many cases of TF

Trachomatous inflammation follicular (TF)
The presence of five or more follicles in the upper tarsal conjunctiva of at least 0.5 mm



Trachomatous inflammation intense (TI)
Pronounced inflammatory thickening of the tarsal conjunctiva that obscures more than half of the normal deep tarsal vessels



Trachomatous scarring (TS)
Presence of scarring in the tarsal conjunctiva



Trachomatous trichiasis (TT)
At least one eyelash rubs on the eyeball or there is evidence of recent removal of in-turned eyelashes.



Corneal opacity (CO)
Easily visible corneal opacity over the pupil



Figure 1.1. Simplified trachoma grading classification system from the World Health Organization.

are mild and get better in a few weeks or months. Sometimes the infection causes more severe inflammation (stage TI) and the eyes may become painful, a white or watery discharge may be present, and the individual may find it uncomfortable to be in bright sunlight. These signs of active disease (stages TF and TI) are most commonly seen in children.

The cycle of active infection and resolution repeated over many years leads to the development of scars on the conjunctiva (stage TS). Scarring is not a sign of active infection, but rather it indicates that an individual has had repeated trachoma infec-

tions in the past. Scarring is more common in adults and is seen first in teenage children in trachoma-endemic areas. As active infections lead to more scarring, the scars slowly develop into a network. Over time, this network of scars contracts, shortening the inner lining of the eye. This shortening distorts the lid margin, pulling the eyelashes closer to the eye. Eventually the lashes are pulled around so far that they touch the eye. This is called trichiasis (stage TT) and is seen typically in individuals over age 35, although cases do occur in individuals in their 20s or younger. At first trichiasis is uncomfortable for the individual, but it soon becomes painful as more lashes rub against the eyes. Smoke, dust, and sunlight make it more painful, and the individual will prefer to stay indoors. The rubbing of the lashes scratches the transparent part of the eye (the cornea) and other infections develop. The combination of scratching and infection finally turns the cornea opaque, and the individual loses vision (stage CO). Vision can be restored only by corneal transplant, but patients report improved vision after trichiasis surgery, which reverses the in-turning of eyelashes.

The Challenge of Sustainable Trachoma Control

Although some children with active trachoma may complain of sore or dry eyes, many feel like there is sand in the eye or experience some ocular discharge; most do not even know they are infected. Active trachoma usually goes ignored and untreated. In sharp contrast, trichiasis is a terrible condition that is impossible to ignore. It is widely recognized, and there is usually a specific word for it in the local languages of endemic regions. There are many traditional beliefs as to why some individuals get trichiasis, but people in the endemic regions do not link the mild eye problem seen in children to the horror of trichiasis and blindness in adults.

Surgery can reverse the in-turning of the lashes seen in trichiasis. Active trachoma can be treated with antibiotics. Transmission can be reduced by good hygiene and environmental improvement. But the challenge for sustainable control is for people who are at risk of blindness from trachoma to understand the link between good hygiene, good sanitation, and improved living conditions for their children and being spared the misery of trichiasis as adults. Improving the sanitation, hygiene, and access to clean water within a community will lower its prevalence of active trachoma in a sustainable man-

ner, meaning that future generations will be spared the blindness of trichiasis.

The Scale of the Problem

Trachoma is endemic in 55 countries, mostly in Africa and the Middle East, although a few countries in the Americas and Asia are also affected (see Figure 1.2).

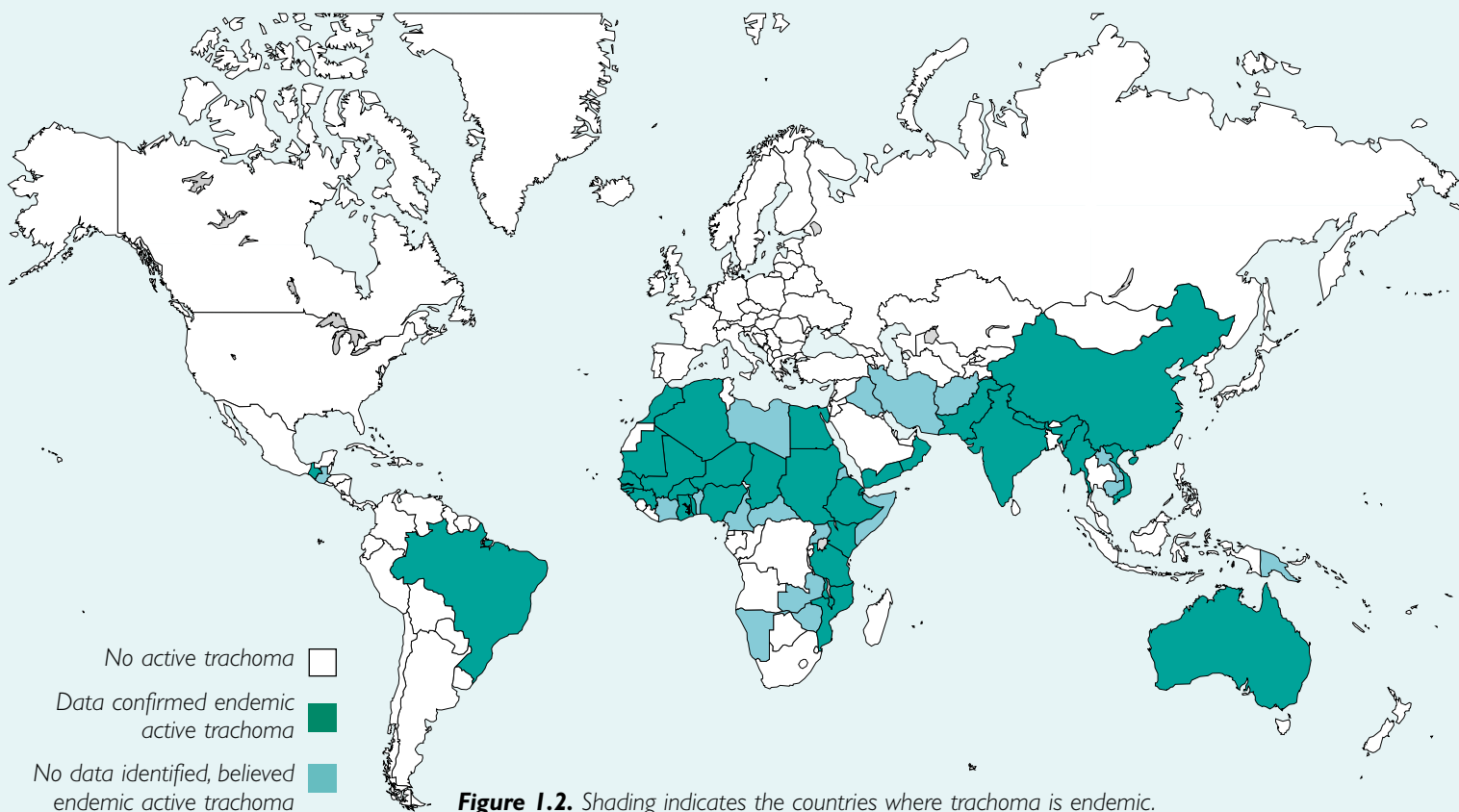
According to the most current estimates, some 84 million people are affected by active disease, more than 10 million additional people have trichiasis—and are, therefore, at immediate risk of blindness—and another 7.6 million people have been blinded. In addition to the misery and pain of trichiasis and the disability caused by blindness, trachoma causes dependency and is a barrier to development. The cost of disability and potential loss in productivity alone has been estimated to be in excess of \$2 billion USD per year.

The SAFE Strategy

To combat trachoma, the World Health Organization has endorsed an integrated strategy known as SAFE (see Box 1.1 for more detailed information):

- S**urgery for people at immediate risk of blindness
- A**ntibiotic therapy to treat individual active cases and reduce the community reservoir of infection
- F**acial cleanliness and improved hygiene to reduce transmission
- E**nvironmental improvements to make living conditions better so that the environment no longer facilitates the maintenance and transmission of trachoma

These four components form the foundation of the effort to eliminate blinding trachoma. All four components must be present for a trachoma control program to be successful. That is, equal attention must be given to providing surgery, antibiotics, hygiene promotion, and environmental improvements. If only surgery and antibiotic therapy are provided, with little effort to make sustainable changes in hygiene and sanitation, only the symptoms of the disease, not the causes, will be addressed. For sustainable control of trachoma, the F and E components of the SAFE strategy must be present in a program in addition to the S and A components.



Ultimate Intervention Goals for the Elimination of Blinding Trachoma

The World Health Organization has set ultimate intervention goals (UIGs) for trachoma that indicate the final targets that must be achieved to eliminate blinding trachoma globally.

Trachomatous Trichiasis UIG

For blinding trachoma to eventually be eliminated as a public health problem, each country must reduce the number of people with trichiasis to fewer than one per 1,000 people in a district. This can be achieved by making surgery available to people with trichiasis to eliminate the backlog of cases.

Active Trachoma UIG

For blinding trachoma to eventually be eliminated as a public health problem, each country must reduce the number of cases of active trachoma (TF) in chil-

dren between the ages of 1 and 9 to less than 5 percent of the population of children in any district. If TF prevalence is greater than 10 percent in children ages 1–9, districts should conduct mass distribution campaigns of tetracycline eye ointment or azithromycin oral antibiotic. In any district where TF is between 5 percent and 10 percent in children ages 1–9, targeted treatments may be used instead of mass treatments.

Facial Cleanliness and Environmental Improvement UIG

Hygiene promotion and environmental improvement should be conducted in a community so that, at any given time, 80 percent of the children in the community will have clean faces.

Box 1.1
The SAFE Strategy for Trachoma Control

Surgery is used to reverse the in-turned eyelashes of patients with trichiasis. It is usually the first part of the SAFE strategy to be delivered because it addresses the needs of those at immediate risk of blindness. Lid surgery is a fairly simple procedure that can be offered in the community or at health centers. Patients are often afraid of the operation, and offering community-wide surgery is the best way of getting good compliance. Lid surgery takes away the pain of lashes on the eyes but does not remove the scarring or restore sight. It is important that the surgeons have had training and supervision because there can be a high rate of recurrence if the surgery is not performed carefully.

A doctor performs trichiasis surgery in Ethiopia.



Antibiotics are used to treat active trachoma and to reduce the reservoir of infection in a community. Topical tetracycline eye ointment applied to the eyes every day for six weeks will treat active trachoma. Alternatively, the drug azithromycin can be taken orally in tablets (or liquid for infants), and one dose per year will treat active trachoma. The distribution strategy depends on the prevalence of trachoma, availability of drug, and availability of staff for screening or distribution. The World Health Organization recommends that all individuals in communities where the prevalence of active trachoma exceeds 10 percent of children ages 1 to 9 be mass-treated with antibiotic therapy. In communities where the prevalence of active disease is between 5 percent and 10 percent, health officials may choose to either mass-treat or treat only people with active disease and their families.

A woman takes the antibiotic azithromycin in Amhara, Ethiopia.

Facial Cleanliness: Dirty faces are associated with active trachoma. Children with dirty faces are more likely to transmit trachoma if they have active infections or get trachoma if they are not infected. Discharge from the eyes and nose attracts eye-seeking flies that can bring the infection or carry it to other people. Rubbing the sore and dirty eyes with cloths, bed sheets, or a mother's shawl can contribute to the transmission of trachoma. Trachoma control programs must convey that it is desirable for children to have a clean face — and that this should be the usual state.

Environmental Improvement: Trachoma persists where people live in poverty with crowded living conditions and where there is insufficient basic infrastructure for water, sanitation, and waste disposal. Unless such conditions change, trachoma will return after antibiotic treatment. The scope of this component is so broad that it is daunting for program managers and planners. It is essential, however, for sustainable trachoma control and should be achievable with the help of collaborators from other sectors such as education, water, and rural sanitation.



A schoolgirl uses a leaky tin to wash her face and hands in Kongwa, Tanzania.

2 Identifying Context-Specific Risks for Trachoma Transmission

How is trachoma transmitted from person to person? As Figure 2.1 shows, young children are the source of infection with trachoma. Transmission takes place when the bacteria move from the eyes of infected young children to the eyes of an uninfected person. Because there are several routes of transmission—eye-seeking flies, hand-to-eye touching, mothers’ shawls, towels, bed sheets, and pillows—it is necessary to identify the context-specific risk practices in each country.

It is important to consider that the relative importance of any transmission route may change with the season, living conditions, or environment and that some routes of transmission may not operate at all in some environments. For example, because the eye-seeking fly identified as a vector of trachoma, *Musca sorbens*, is not found in Mexico or Brazil, it would not be appropriate to promote fly control as a trachoma reduction method in these countries.

Flies, Faces, and Feces

Not all species of fly are able to transmit trachoma. For flies to be vectors, they must be present where

there is active trachoma, they must pick up the *Chlamydia* bacteria from infected eyes, and they must transfer it to uninfected eyes. The only species of fly that has been demonstrated to be a vector of trachoma is the Bazaar fly, *Musca sorbens*, and its sibling species, the Australian Bush fly, *Musca vestustissima*. The common housefly, *Musca domestica*, is suspected to be a trachoma vector. After the rains in Africa, the population of the housefly explodes and hundreds of flies crawl over everything—including human eyes. The large green flies seen in Africa around toilets, fresh fruit, and meat do not come into contact with eyes and so cannot be trachoma vectors.

Musca sorbens breeds in feces, most prolifically in human feces lying in the shade on the soil surface, but also in cow dung and dog feces. Therefore, where *Musca sorbens* is present, steps to minimize fly-to-eye contact and reduce breeding opportunities for flies by disposing of feces properly should be taken.

Eye Rubbing and Fingers

Children touch their eyes much more frequently than adults. Children rub their eyes in an attempt to

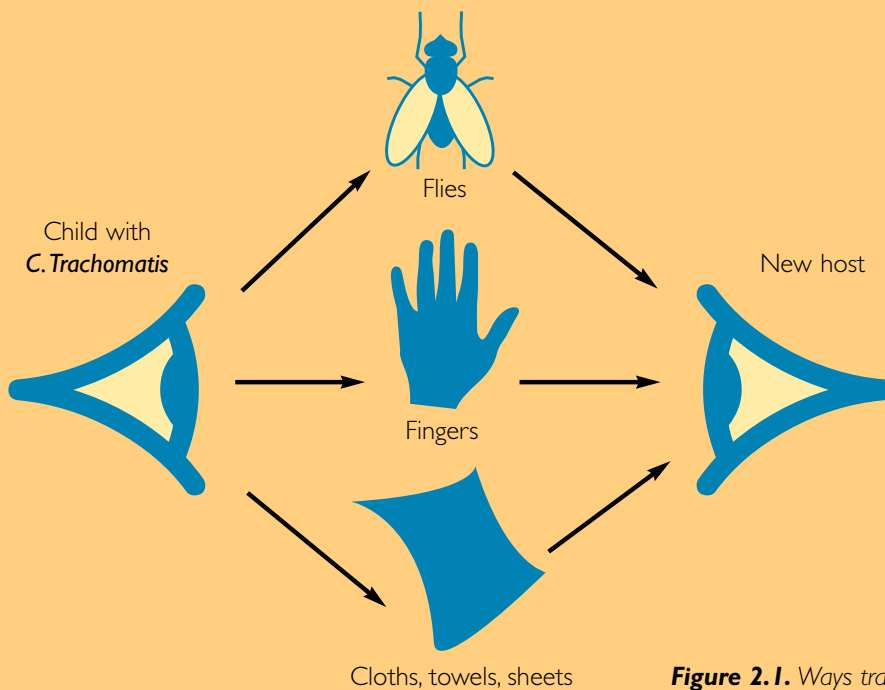


Figure 2.1. Ways trachoma is transmitted.

make them feel better; children usually rub them if they are painful or if they are irritated by something like dust, sand, or flies. Children tend to have more irritated eyes if their faces (particularly around the eyes and lashes) are dirty; if the environment is dry, sandy, or dusty; and if it is windy. If eyes are rubbed with dirty hands, then more irritation can be introduced, and the urge to rub them becomes greater.

Good hygiene practices, including hand and face washing, should be promoted by all trachoma control programs, especially in dry and dusty environments and where children have dirty faces.

Program managers may consider also taking steps to reduce children’s exposure to wind-borne dust, such as planting shade trees near schools and public markets or using live fencing around schools and playing fields. Such practices generally receive community support and also help reduce dust. Certainly these practices will do no harm and may marginally lessen trachoma transmission.

Shawls, Towels, Bed Sheets, and Pillows

All over the world, mothers wipe their children’s faces to remove mucus from the nose, food from the mouth, tears from the eyes, or dirt on the face. In most countries, the mother uses her own clothes to do this—her shawl in Asia, her kanga in East Africa

or South America, or her wrapper in West Africa. Because the bacteria that cause trachoma are often present in the discharge from the eyes and mucus from the nose, this practice could spread the bacteria to another child.

Sharing a Towel or Washcloth

In some cultures, people use cloths to wash their faces; in others, people use only their hands. In some cultures, people typically dry their faces with a towel after washing; in others, people leave their faces to dry on their own. When people share towels or cloths, the bacteria that causes trachoma can spread, contributing to high levels of infection in a family or even in a school or other group, if people share washing facilities.

A Framework for Understanding Hygiene Improvement

The Hygiene Improvement Framework (see Figure 2.2), developed by the Environmental Health Project for hygiene improvement programs, is a useful model for planning and implementing F and E interventions for reducing trachoma transmission. The model has three components: accessing hardware, promoting hygiene, and enabling environments.

Hygiene promotion involves encouraging existing practices, such as face and hand washing; it involves

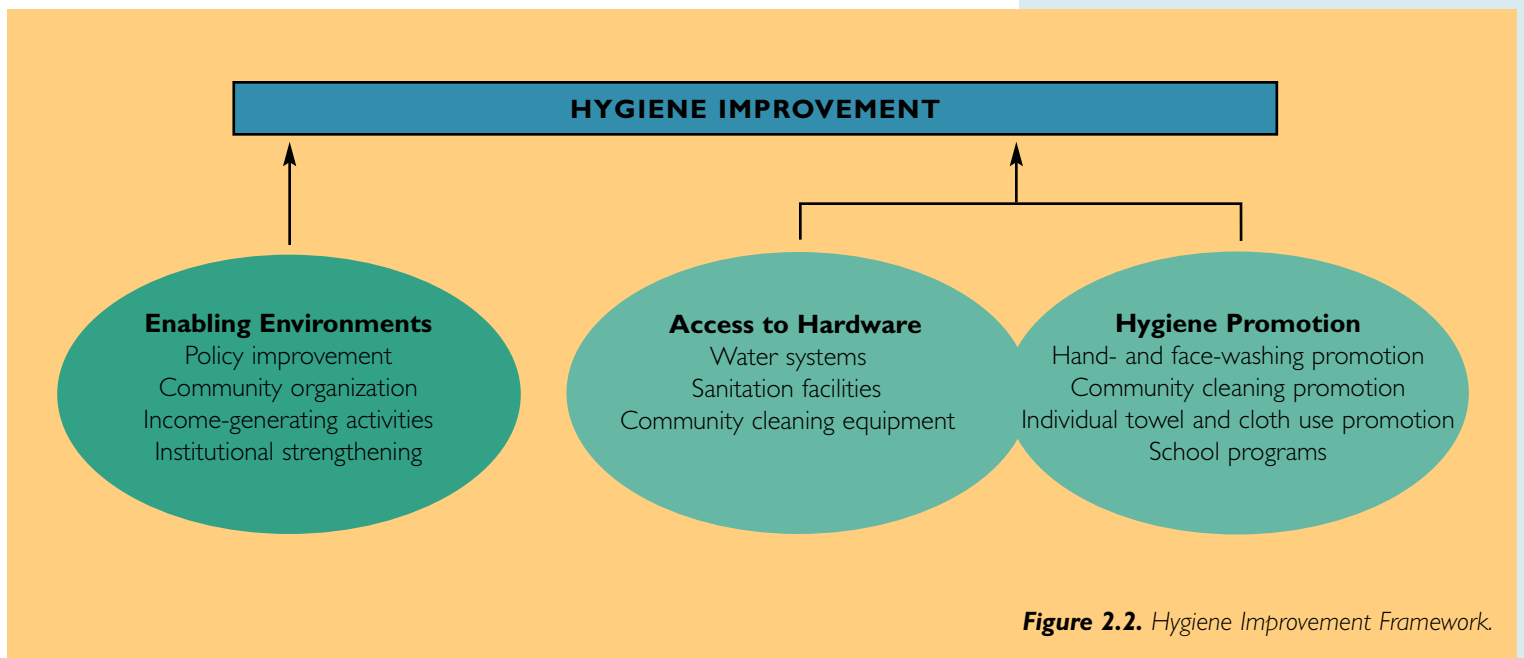


Figure 2.2. Hygiene Improvement Framework.

promoting new practices, such as individual towel use; and it involves changing key behaviors such as disposing of children's feces in a latrine instead of on a rubbish heap. These practices must be supported by community hardware such as water systems, sanitation facilities, and community cleaning equipment. Finally, hygiene improvement cannot be implemented and sustained at the community level without the enabling of institutional and policy environment.



Flies land on a child's face in The Gambia.

3 Generating Momentum for Changing Health-Related Behavior

All of the F and E trachoma control interventions discussed in this guide require a community commitment. This section provides methods for approaching and working with communities appropriately to generate and maintain momentum for the design and implementation of F and E interventions.

General Behavior Change

In the past few decades, research has shown some generalizations about behavior change that can be applied to F and E trachoma control interventions.



Community members make latrine slabs in The Gambia.

First, an individual's behavior is informed by pre-existing concepts, attitudes, and values. That is, behavior is shaped by culture and tradition. Therefore, an understanding of an individual's culture and tradition is vital for planning effective behavior-change programs.

Next, an individual's knowledge can be increased, but his or her behavior may not change as a result.

Finally, an individual's actions are determined not just by knowledge, but also by situation and structure. For example, if a woman knows the benefit of improved hygiene and wants to wash her children more frequently but her husband thinks it is a waste of water, or that the water cannot be spared, she will not be able to do it. Facilitating behavior change means addressing situational and structural constraints.

So while research shows that behaviors such as hand and face washing can prevent trachoma, simply prescribing these behaviors is not likely to lead to long-term behavior change if the situation, culture, and available resources are not also taken into consideration. Programs must be initiated in a very sensitive way, showing a great deal of respect to a community's beliefs and practices and having a clear understanding of the structural barriers to the adoption of new behaviors.

Motivators and Inhibitors of Behavior Change

Individuals react differently to adopting new behaviors. Some are progressive and will adopt new ideas and practices quickly, while others are traditionalists and more cautious about change. Traditionalists have good reason for not readily accepting new behaviors. They cannot squander the few resources they have on unproven practices. Traditionalists must understand how F and E interventions will ultimately benefit them, or they will not be interested.

In trying to change individuals' behavior, program managers must consider how behavior is influenced at several levels.

Individual level. A person will take up a new practice when he or she believes it has sufficient benefits—health or otherwise. An individual is influenced by his or her culture, values, and traditions, as well as his or her education.

Community level. Key people in the person's community will also influence his or her interest in trying the new practice. These people can include relatives and members of the social network. There are always key people in the community, such as elected or traditional leaders, health workers, or moneylenders, whose agreement is necessary for a new behavior or technology to be adopted. In most traditional societies, individuals need to maintain a good social network, which means they are not able to contradict the community decision-makers. To do something of which the key community decision-makers do not approve may cause an individual to be cut out of the social network.

Intersectoral level (enabling factors). To take up

a new practice, an individual also needs skills, time, and means. It is not possible to wash children's hands and faces without adequate water supplies and it is not possible to build a good-quality latrine without materials. If water and building materials are not available, individuals cannot practice the new behaviors no matter how great the desire to do it.

Political decision-makers. In theory, national laws affect the behavior of individuals. For example, the law can dictate that a head of household be fined if there is no access to a latrine in his household. But such laws seldom achieve the behavior change for which they aim. Instead, political or government bodies can do a great deal to establish the enabling factors that facilitate behavior change.

When a person finds that a new practice has immediate benefits—convenience, a cleaner environment, less hardship, recognition from respected others—he or she is more likely to continue it. Note that improved health is seldom an immediate benefit of a new practice. It is, therefore, often not a major reason why a person adopts a new practice. When asked, however, people will often say improved health is the reason for a new practice, but only because they know this is the expected answer.

Steps to Behavior Change

Figure 3.1 shows the steps involved in behavior change. What is important to know about the behavior change process is that people do not suddenly begin to do something they have never done before. People learn. They think through the bene-

fits of doing it or not doing it. They observe their community to see if anyone else is doing it—and if the community accepts those people. They learn the necessary skills. They apply it to their own lives. They evaluate whether it is worthwhile to continue practicing it. They may reject it. Or they may encourage others to follow them in carrying out the new behavior.

Targeting Interventions

For maximum impact, program managers must target F and E interventions to three specific audiences:

- 1. Primary target group:** People carrying out the risk practices, such as schoolchildren and mothers.
- 2. Secondary target group:** People who influence the members of the primary group and are in their immediate society, such as fathers and mothers-in-law.
- 3. Third target group:** People who lead and shape opinion, such as schoolteachers, religious leaders, political leaders, traditional leaders, and elders. These people have major influence on the credibility of a trachoma control program, and hence its success or failure.

Members of target groups may differ depending on the type of F and E interventions that have been identified as important for the community. For example, Table 3.1 details the target groups for an intervention that seeks to promote increased face washing among children.

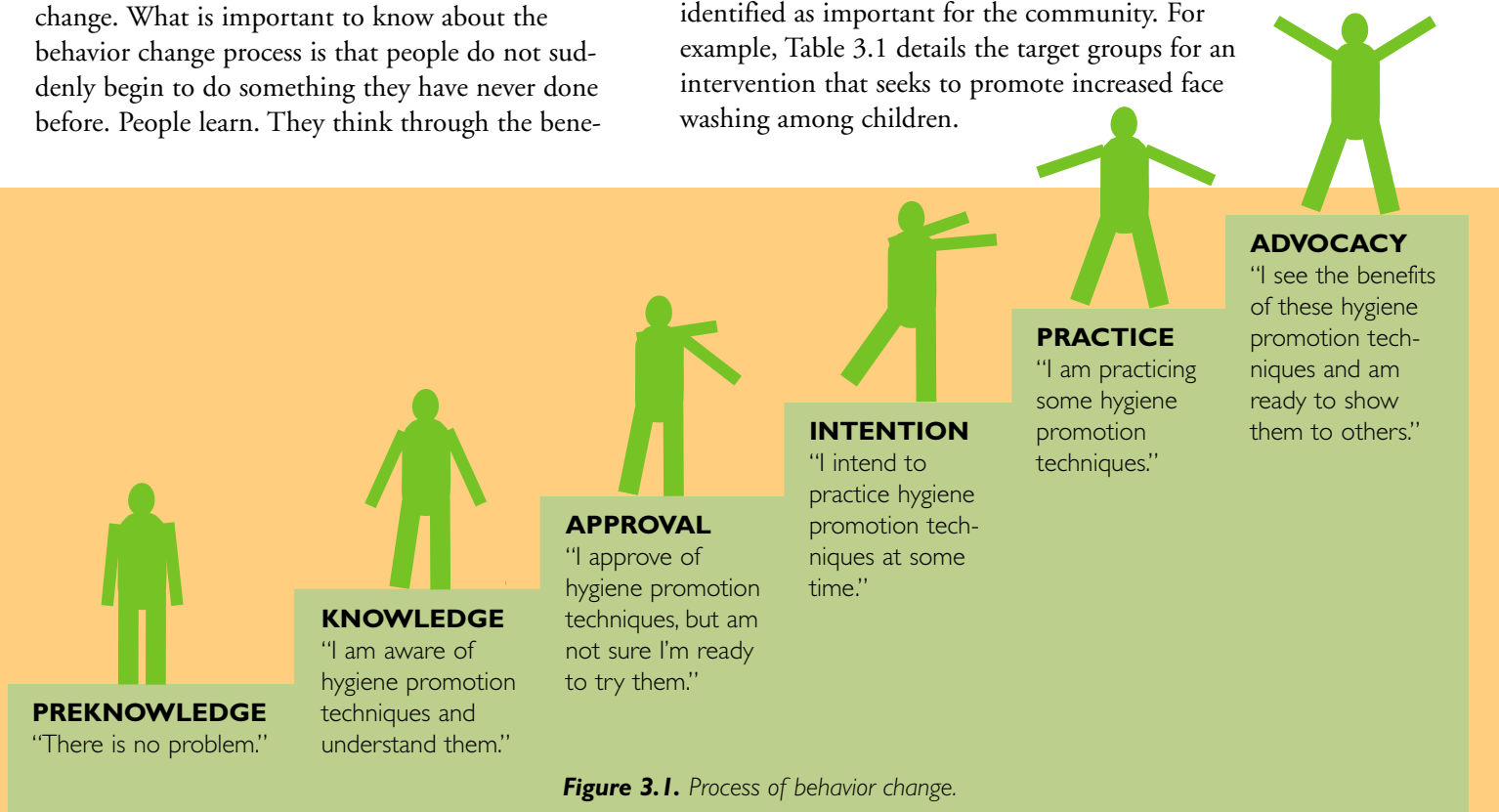


Figure 3.1. Process of behavior change.

Table 3.1

Target Groups for an Intervention to Increase Face Washing in Children

Primary Target Group

Who carries out face washing?

- Children and mothers.
- Possibly also fathers, older siblings, and other family members.

Secondary Target Group

Who in the immediate society influences the primary group? (e.g., Who collects the water and who decides how it is used?)

- Mothers and other women in the household usually collect the water.
- Male household heads may decide how the water is used.

Third Target Group

Who leads and shapes opinion in the community?

- Teachers may judge children with clean faces to be better or worse than the others.
- Key women in the community may criticize mothers for allowing their children to be dirty.

In this example, the program designers may decide to target children and mothers to promote face washing, to target heads of households to allocate water for hygiene purposes, and to target community leaders to recognize and congratulate the mothers of children with clean faces.

Once a program designer has identified the target groups for a specific intervention, he or she will need to reach all of them, but each group may need to be addressed separately with different messages tailored to the audience's interests and concerns. See Section 5 for more information on this process.

Program designers must look closely at the felt needs of the community before planning interventions. If an intervention responds to a felt need in the community, and the problem is merely a lack of infrastructure, then there is little need to include promotion. For example, because most trachoma-endemic communities have a felt need for water and sanitation, an intervention that provides these will likely be successful. But if an intervention does not respond to a felt need in the community, promotion will need to be an integral part of the intervention. For example, few trachoma-endemic communities have an existing felt need for adequate garbage disposal. Therefore, simply providing a mechanism for garbage collection is unlikely to result in any behavior change unless the practice is promoted and the target group takes the steps to change behavior.

Key Players in a Trachoma Control Program

Hygiene and environmental improvement are of the utmost importance in health promotion and are essential for the long-term sustainability of trachoma control. And they are achievable—with support and collaboration from other entities and individuals.

National Level

Because hygiene promotion and environmental improvement are such broad concepts, the F and E aspects of SAFE share common objectives with a range of other groups and government departments, such as women's unions and ministries of education. By combining efforts, these groups could see results that exceed what each could achieve individually, and a coordinated approach should help each to achieve its own targets. All interested groups and departments should share their breadth of skills, knowledge, and experience on a committee that could be called the Trachoma Task Force, Trachoma Coordinating Committee, or Trachoma Steering Group. This committee should include experts in water, sanitation, community development, and education, in addition to health.

The steering committee should set priorities, decide what can be achieved with available resources and expertise, and allocate responsibilities. These decisions then should be translated into an action plan with clearly defined roles for each member.

Finally, the committee should calculate the local and regional ultimate intervention goals for tra-

choma control developed by the World Health Organization (see Section 1). Such statistics will help the committee plan, raise funds, and allocate resources. In addition, knowing the goals for the program can keep committee members motivated as progress is made and measured.

Community Level

Hygiene promotion and environmental improvement activities can involve many different people in the community. Target groups, individuals, and communities most affected by trachoma should decide who within the community should be involved in the activities. Figure 3.2 shows some of the people who have important roles to play in supporting hygiene promotion. The rings indicate the three different target groups. Who to involve will depend on the specific activity and the unique context of each program. It is important that consideration be given to each player and his or her possible contribution valued. Program managers should consider that excluding some community groups could also result in negative consequences.

Generating and Maintaining Momentum

For F and E trachoma control interventions to be successful, they need ongoing momentum, nationally and in communities.

National Level

At the national level, the steering committee is responsible for generating and maintaining momentum for trachoma control interventions. An integral part of the steering committee's action plan should be to advocate for trachoma to be included on the agenda of all relevant sectors. For example, in the health sector, nurses, doctors, and health inspectors should be trained to be advocates for trachoma control. In the education sector, teachers should be trained on trachoma, and school curricula should include trachoma education. In the environment sector, governments should create plans for district and regional water and sanitation provision.

Community Level

The way in which momentum is generated and maintained at the community level depends on the specific F and E intervention. Activities that result in new infrastructure, such as a water point or household latrines, require a great deal of momentum to get them started but are then self-sustaining. Conversely, activities that require behavior change such as keeping children's faces or the village clean require long-term, sustained momentum. For all interventions, however, program managers should consider the following basic principles:

- Respond to the felt needs of the community. If the target group does not wish to participate in the intervention, then the program manager should either change it to fit the perceived needs, go elsewhere, or do something else.
- Identify community decision-makers (e.g., political, religious, or other leaders whom community members follow) and involve them in sensitization and decision making so that they will advocate for implementation.

Source: Adapted from UNICEF, *A Manual on Hygiene Promotion*, 1999

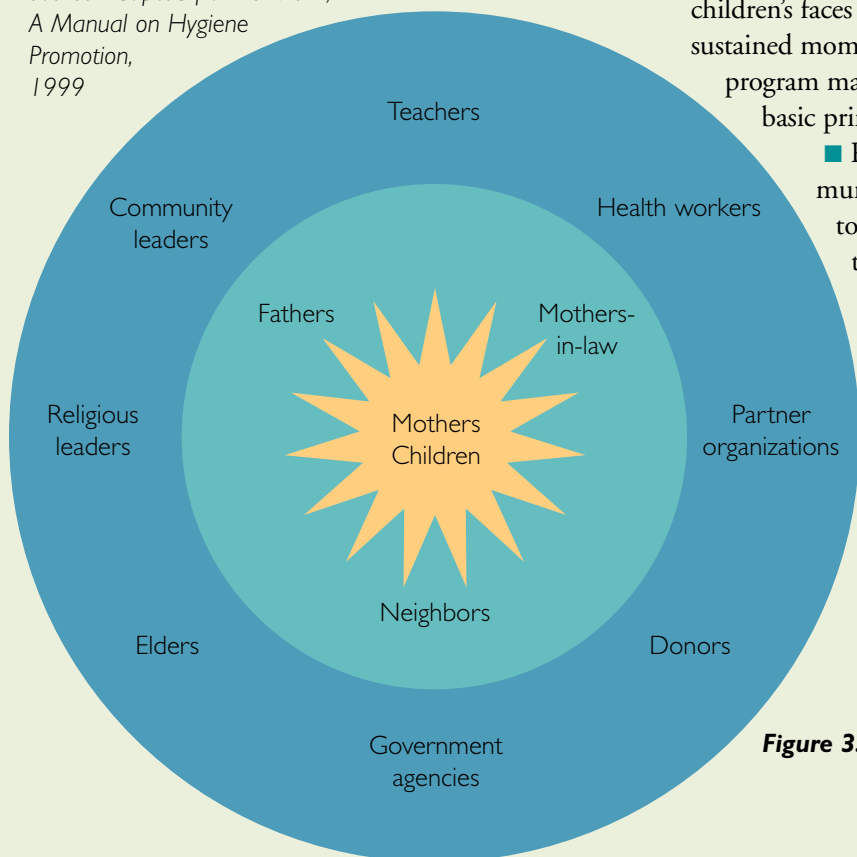


Figure 3.2. Key individuals for promoting hygiene.



A boy in Malakal, Sudan, washes his face.

- Time the interventions so that they do not conflict with other important activities. Interest and uptake of new community-based projects will always be poor during the main planting and harvesting seasons or during religious festivals. Time projects that include building to coincide with the time of year that people usually build; plan income-generating projects (like traditional soap making) to start when money is usually at its lowest.

- Ensure that there is adequate time in the community spent on discussion and sensitization before plans are implemented.

- Ensure that potential pitfalls (e.g., access to community water points, latrines, or other infrastructure) are considered and resolved before implementation.

4 F and E Interventions in Trachoma Control

This section provides a toolkit of interventions for the promotion of facial cleanliness (F) and environmental improvement (E) in trachoma control (see Box 4.1). The range of possible F and E interventions for a trachoma control program is presented. The following are provided for each tool:

- Background
- Basic principles
- Situations and locations where it works and does not work
- Advantages and disadvantages
- Case example (for selected tools)

The section ends with a description of other interventions that have been tried. These interventions are new, or are new innovations or activities in the field of trachoma control, such as window and door screening. Program experience, research, and evaluation is still ongoing for these interventions; some show promising opportunities for trachoma control, but overall effectiveness has not yet been determined.

Hygiene Promotion

The SAFE strategy includes facial cleanliness or face washing as one of its pillars. Programmatically, this can

Box 4.1 Intervention Toolkit

- Hygiene promotion
- Promotion of individual towels and washcloths
- School-based trachoma programs
- Promotion of water availability
- Rainwater harvesting
- Pit latrines
- Provision of village cleaning equipment

Other interventions that have been tried:

- Construction of public baths
- Fly control
- Radio listening clubs
- Leaky tins
- Window and door screens

be best interpreted as hygiene promotion in a broader sense because washing hands and faces usually go together. In a large study in Tanzania, a team from the Kongwa Trachoma Project succeeded in increasing the proportion of children who had sustained, clean faces and found that these children had less active trachoma. Hygiene promotion is also a core goal of many potential partners such as Save the Children, UNICEF, Water Aid, and Action Aid and may be included in government WATSAN (Water and Sanitation) task forces or groups. The messages of frequent face and hand washing are simple; there are many potential partners with whom to share materials, resources, and experience; and it need not be expensive. Hygiene promotion really does work to reduce levels of trachoma infection and should certainly be a central part of all trachoma control programs.

Basic Principles

The aim of hygiene promotion for trachoma control is to increase the proportion of children who have sustained clean faces. This requires that the acceptable standard of cleanliness and appearance in the community as a whole be raised so that it is unacceptable for children to have mucus coming from their noses, dirt on their faces, and food around their mouths. Adults should make sure children are clean, and children should understand being dirty is not normal. However, there are considerable physical, behavioral, and cultural barriers to this. Where water is scarce, it is difficult for women to allocate it for washing because it may be considered an unnecessary waste—after all, the children will get dirty again quickly. Women and children are invariably given the task of water collection, but men often decide how to use it. Even if mothers and children are convinced of the need for good hygiene, fathers may not allow it. In parts of West Africa, washing the faces of young children (under about 3 years) is not encouraged because it is considered to make the children undisciplined and difficult to control. Women influenced by this aspect of culture would not wish to appear to be bringing up children who are unlikely to be good community members and, therefore, do not wash them.

Good hygiene can be maintained with relatively small quantities of water (less than a liter of water per child per day would be sufficient to wash the hands and face at least twice) and the water then can be used for another purpose such as watering plants. The challenge facing trachoma programs is getting people to link good hygiene with good health, and good health with better prospects for the future; and to understand that just small quantities of water are needed for good hygiene; and to know that water used in this way is used well. Appearing clean should be considered as the typical state, not a sign that water is being squandered. Cleanliness should be desirable and taken as a sign that families care for their children and want the best for them.

Hygiene promotion can be conducted in many ways, but some of the strategies currently used by trachoma programs include the following:

- Village meetings conducted by health workers
- School-based education
- Use of a leaky tin or calabash to demonstrate that just small quantities of water are needed

- Counseling given to expectant mothers at prenatal clinics and to mothers at immunization clinics
- Cultural drama, dance, and song groups
- Mass media campaigns such as radio, television, and posters

The strategy a program manager adopts should consider, and be sensitive to, the physical, behavioral, and cultural barriers to the adoption of good hygiene practices. It should fit the budget available, and its effect should be able to be evaluated against a baseline (see Section 5 for more information).

Demonstrating that hands and faces can be washed with just small quantities of water can help people adopt the practice. Community leaders and decision-makers should lead by example, ensuring that they and their own children are clean and presentable. Case Example 4.1 shows examples of hygiene promotion campaigns.

Where It Works

- Hygiene promotion is effective where there is good availability of water.

Case Example 4.1 Hygiene Promotion Campaigns



To reach large populations, trachoma control programs have implemented hygiene promotion campaigns on a variety of scales. Drama performed by the Team Against Trachoma at a school in Nepal (picture 1) involves performers as trachoma educators and reaches schoolchildren and parents who come to see the show. The quality of the message is ensured by the school health teacher. Village drama groups like this one from Dodoma, Tanzania (picture 2), perform for both schoolchildren and adults from the wider community. This type of drama group has the potential to reach many more people and frequently performs for audiences of thousands. For this drama group from Tanzania, the World Vision trachoma program ensures the quality of the message and provides

training, uniforms, and musical instruments to the group. Even more people can be reached by a poster campaign such as the one conducted in urban areas of Sudan (picture 3). The message presented in the poster is clear and aims to be unambiguous, but the message taken by the audience may not be the one intended. Large numbers of people can be reached with radio campaigns (picture 4). If the trachoma control program or task force writes scripts for the radio shows, the quality of the message can be very high, although the question-and-answer format and interviews with people in the village are usually more popular. In this case, the most people are reached in the most enjoyable way, but the quality of the message may be reduced.

- It is effective in schools because teachers can inspect children's hands and faces for cleanliness every morning and after breaks.
- It is even more effective when it promotes the use of soap or ash with hand and face washing.
- It is effective when the program or campaign is flexible. The messages and thrust of the program can be changed as needed to best influence behaviors.
- Evaluation of the program's effectiveness by using simple key indicators is useful because it allows progress to be monitored and effect to be evaluated. A sample of children can be inspected for the following:
 - Ocular discharge(yes or no)
 - Nasal discharge(yes or no)
 - Dust or dirt on the face(yes or no)
 - Food around the mouth(yes or no)
 - Dirt, dust, or food on hands(yes or no)
- Hygiene promotion is best integrated into all aspects of a trachoma program. Azithromycin distribution is a good time for cultural groups to entertain the community with songs and dances promoting hygiene. Latrine promotion can include education on hand washing. Every contact with the community should be used to reinforce the basic message of "be clean — be healthy."

Where It Does Not Work

- Hygiene promotion is compromised where water is considered scarce or where it is actually scarce. In these circumstances, the program will need to promote the notion that only small quantities of water are needed for good hygiene.
- Hygiene promotion does not work well when programs focus only on mothers and do not include family decision-makers. Both the people who collect the water and the people who make decisions about water use must be targeted by the program.
- Just focusing on the health issues of hygiene may not encourage uptake. Associating cleanliness with beauty, a way of showing one cares for his or her family, or enhancing the prospects of children at school may help sell the idea.
- Mass media campaigns without personal involvement cause the wrong message, or no message, to be transmitted. Playing radio slots or pinning up posters without support from individuals is unlikely to have a major effect.

Advantages

- Evidence shows that hygiene promotion works to reduce active trachoma.

- The messages of washing hands and faces are simple and clear.
- Some elements of hygiene promotion are possible with any budget.
- Costly materials and resources are not needed, although the ability to spend money on mass media helps.
- Evidence shows that washing hands and faces will reduce children's possibilities of getting sick with other conditions, including diarrhea.

Disadvantages

- It is easy to transmit messages and to get people to remember campaigns and key information, but less easy to actually influence their behavior.
- Hygiene promotion campaigns should include regular monitoring and occasional evaluation so that the effect on behaviors can be measured and refined, if necessary.

Promotion of Individual Towel and Washcloth Use

Young children have the greatest rates of trachoma infection, and because they carry the most bacteria, they are the greatest source of infection. Parents and siblings of children with active trachoma are at risk of being infected by their close contact with the infected child. One of the main transmission routes within the family is probably the sharing of towels and washcloths.

Basic Principles

In communities where children use washcloths and dry themselves with towels, promoting the use of individual cloths and towels will reduce transmission of trachoma within the family. This health message can be delivered through health workers, the schools, radio, posters, village meetings, and so forth, or promoted more directly by providing washcloths and towels to young children. The target group should be children under the age of 10, with greater emphasis on reaching those under 5. Towels and cloths can be printed with the logo of the provider or other health promotion images and can be distributed to preschools and nurseries as part of an integrated program or used as motivating gifts and prizes for children or adults. Case Example 4.2 describes a campaign for promoting individual towel use in Nepal.

Where It Works

- Promoting individual cloth and towel use works in communities that regularly use washcloths,

Case Example 4.2

Promoting Individual Towel Use in Nepal



Individual towels hang in a nursery school in Nepal.

As in some other countries in Asia and North Africa, people in Nepal often use a washcloth to clean their faces. All the children in selected nursery schools in the Far West region of Nepal have been given their own washcloths. The cloths are labeled with a picture so that each child can recognize his or her own, and labeled with names to aid the teachers. The children wash their faces when they arrive at nursery school in the morning and then again after their games and activities outside.

such as in Asia and North Africa, rather than in sub-Saharan Africa.

- The program can be used as message reinforcement for community- or school-based health promotion.
- It works well in preschools and nurseries.
- It works well in primary schools, particularly when children start school at the age of 4 or 5.

Where It Does Not Work

- Promoting individual cloth and towel use does not work where washcloths are not routinely used.
- It does not work where there are few preschools, nurseries, and primary schools.

Advantages

- Individual washcloth and towel use is a simple and clear message to promote.
- Washcloth and towel promotion can be used in school- or community-based education campaigns to reinforce hygiene promotion messages.
- Washcloths are commercially available at low cost.
- The low cost of individual washcloths for each child makes them attainable for most mothers in trachoma-endemic regions who want to reduce risks of trachoma.
- Printing a logo on the washcloths is a good way

to enhance recognition for the national campaign, promoter, or donor.

Disadvantages

- Low individual cost of printed washcloths can be achieved only with high production runs. These runs can make the overall cost high.
- Unless there is a clear strategy to distribute the washcloths or towels, it may be difficult to take this intervention to scale.



These children attend a preschool in Zagora, Morocco, that has a trachoma program.

- There have been no scientific trials specifically investigating whether individual towel use reduces risk of trachoma. The evidence for this intervention is based on risk-factor analyses.

School-Based Trachoma Programs

Every trachoma-endemic country has an education system. Depending on the country, children as young as 4 years attend centers of learning and are taught by teachers. One of the United Nations Millennium Development Goals is for every child to have access to a basic primary education by the year 2015, and commitment to this goal by governments and nongovernmental organizations is likely to increase the proportion of children in school. Schools provide an excellent forum for training children about trachoma, promoting behavior likely to reduce trachoma, and influencing healthy behavior. The philosophy behind school-based trachoma programs is that they can reach large numbers of children in endemic areas and they will act as a conduit of knowledge and behavior, teaching those at home and influencing behavior at the community level.

This can be achieved at relatively minimal cost and delivered in a sustainable manner in schools, which will lead to sustained behavior change in the target communities.

Basic Principles

School-based health promotion works on the “training the trainers” concept. After curriculum and resources have been developed in partnership with the relevant government education department, the teachers are trained. The teachers deliver the health curriculum to the students who then act in accordance with the training. A greater effect can be achieved by training the teacher-trainers in government teacher colleges, where they exist.

In school-based programs, materials are designed to help empower teachers to deliver the health messages. Because primary school teachers are usually overworked and poorly paid, they often are reluctant to allocate time to lesson preparation. Therefore, materials are best prepared class-ready to encourage teachers to use them. Suitable materials include lesson plans for teachers, age-appropriate resource books for students, flip charts, posters, art supplies

Case Example 4.3

School-Based Program in Burkina Faso



Clockwise from far left: A boy in Fada N’Gourma uses trachoma materials in class. Plastic buckets and kettles form simple hygiene kits. Adequate latrine facilities are provided for both boys and girls. Children learn about trachoma in class.



Burkina Faso is one of several trachoma-endemic countries that works with Helen Keller International on a school-based component to its trachoma control program. The program runs in small rural community schools called *écoles satellite*.

The program aims to train all the teachers in each school on the trachoma curriculum. Training is popular with teachers and takes place during allocated time. The top-quality teaching materials that have been developed and distributed are class-ready, so there is no need for teachers to spend time on preparation. In addition to educating students, the program works with other partners to

ensure that each school has access to on-site water and adequate latrine facilities for girls and boys. Water provision is a major challenge in this part of the world, and where it is not possible to dig a well, the children are asked to bring water to school each morning. Hand and face washing is promoted through the use of plastic buckets and kettles. Long-term sustainability of the school-based component is achieved by incorporating the trachoma curriculum into the national primary school curriculum. This will make learning about trachoma an entitlement to all primary school children at risk for the disease.

for students to make their own materials, prizes to motivate students, and uniforms or musical instruments for health and drama clubs. Drama groups and interschool competitions can reach and involve large sectors of the community, not just those attending school. Sustainability (but not quality) can be guaranteed by including trachoma and health promotion in the standard curriculum, ensuring that all children are learning about trachoma. See Case Example 4.3, which describes a school-based program in Burkina Faso.

Program Components

Components of a school-based program can include the following:

- Training for teachers (program staff will need to decide how many teachers from each school are trained).
- Lessons on trachoma, using program resources such as booklets and pamphlets. Such lessons may be in designated health classes or classes in science, mathematics, civics, social science, reading, language, and comprehension. Nearly any class could contain trachoma material and other health promotion messages from time to time.
- School assemblies.
- School cleaning and provision of rubbish pits and bins.
- Provision of water to schools (via wells, rainwater harvesting, or the town supply).
- Provision of latrines to schools.
- Promotion of leaky tins and leaky calabashes for hand and face washing, and promotion of soap or ash to improve cleaning.
- Tree planting to reduce dust and improve the school environment.
- Trachoma clubs, health clubs, anti-trachoma teams, and other mass organizations that conduct trachoma awareness activities, make posters, inspect cleanliness of other students, and present drama and songs.
- Drama and dance clubs that perform and present trachoma messages to the school and adults in the villages. Drama groups, particularly where they include adults in addition to students, can help the program reach the wider community. These have been used effectively in Mali, Burkina Faso, Ethiopia, and Tanzania.
- School trachoma quizzes and interschool quizzes. Interschool quizzes and trachoma competitions in which community leaders are judges and parents are spectators have been extremely popular in Nepal and Vietnam.



- Poster and drawing competitions.
- Rallies and parades in towns and villages.
- School-based screening and case treatment by health staff. Sometimes the health teacher administers case treatment with tetracycline eye ointment.
- Home visits by trachoma club members or the health teacher to families of individuals with trachoma.

Where They Work

- School-based programs work where there is a good basic education structure in place with sufficient staff and adequate infrastructure.
- They work where there is pride in the education service, teachers are hardworking, students are attentive, and the community supports education.
- They work where all children have access to school.
- They work where the teachers feel supported by the school-based program, such as through in-service training or visits to schools by program facilitators.
- They work where rates of school enrollment for boys and girls are high.
- They work where there is support from the program or local health staff, which can greatly enhance the sustainability and effect of a school-based program.
- They work where there are materials such as booklets that can be taken home and shown to younger family members and parents by the students. These increase the scale of the effect.
- They work where lesson plans require students to talk to their parents or elders about trachoma, which extends the scope and scale of the program.

Where They Do Not Work

- School-based programs do not work where the education structure is weak due to insufficient numbers of schools, or unmotivated or frequently transferred teachers.
- These programs do not work in areas where few children go to school.
- They do not work when teachers are taken out of school for a one- or two-day training session, but then do not receive follow-up support with materials and visits from program staff.

Advantages

- School-based health promotion can reach large numbers of children as a captive audience.
- School-based health promotion can enhance delivery of health education in schools, which helps teachers do their jobs better and supports the education system.
- School-based health promotion can strengthen opportunities for sensitization on HIV/AIDS and malaria, and treatment programs for schistosomiasis or intestinal worms.
- Schools provide a good forum for demonstrating new technologies and appropriate use of existing technologies, raising the level of expectation among the next generation of adults.
- Sustainability can be guaranteed by including trachoma in the curriculum.
- Schools can be used as a conduit to reach children who do not attend school and adults in the community.
- Awareness of other trachoma control activities such as drug distribution, provision of surgery, and media campaigns can be raised through the schools.

Disadvantages

- It is fairly expensive and time consuming to set up a program because the ministry of education must approve teachers' participation in the program and program materials.
- Success largely depends on the quality of training and resources available.
- The effect of the program will vary on a school-by-school basis depending on the motivation of the teachers and those assigned to support them.
- The program can collapse if the trained teachers are transferred without the knowledge of the program.
- The program may not reach the poorest individuals and, therefore, may miss those at greatest risk of trachoma.
- School-based trachoma promotion may divert



A woman pumps water in Ghana.

attention of health teachers away from other major health risks such as malaria and HIV/AIDS.

Promotion of Water Availability

Hygiene promotion in the absence of water is almost meaningless. Those involved with hygiene promotion at the village level (e.g., health workers, school teachers) should be able to set an example of good hygiene by having a clean appearance and by following the guidelines that they encourage others to adopt. This is almost impossible without water. However, there are many ways to achieve water provision. Local expertise will be the best guide as to what works in a particular context.

Long distances to water and poor water availability have been linked frequently to high levels of trachoma. Certainly, life without easy access to water is tough. Having a reliable and regular supply of water within a 20-minute walk from home can transform the lives of people in trachoma-endemic areas. When water is provided, the prevalence of active trachoma and other health problems will likely lessen. Women can save several hours each day by not having to trek for water, and this time can be better spent on agriculture, child care, or home care activities.

Where water is in short supply, people make attaining it their first priority. Providing water through a trachoma program can help address this need and greatly contribute to local development.

Basic Principles

In most trachoma-endemic areas, there is no regular piped water supply. Water generally comes from

wells and boreholes that may be supplemented by springs, rainwater harvesting, use of dams, and collection from seasonal streams and water sources. Local knowledge from the government water supplies department and nongovernmental organizations providing water supplies are the best sources for determining the most suitable type of water supply for each area. These may be shallow wells fitted with hand pumps, deep wells with hand pumps, or boreholes with motorized pumps, solar pumps, or windmills. Water sources that use motorized pumps, solar pumps, and windmills are also best fitted with large holding tanks so that when the engine is switched off, the sun is not shining, or there is no wind, water is still available.

Suitable locations for water points need to be decided carefully. Where water can be found near the surface of the ground, it is easy to dig productive wells, which can be sited at the convenience of the community. Where groundwater is scarce or deep, the location will have to fit the underlying aquifer. Geophysical surveys can locate water but do not indicate whether it is suitable for use by people. Village history and memory may be more useful than an expensive survey; people can usually explain where water was found in the past or what type of vegetation is associated with good groundwater. Modern digging technology may allow those water sources to be tapped where traditional techniques have failed.

Community participation and collective responsibility is fundamental for success in water provision. Due to the high cost of installation and the possibility of high maintenance costs, community water provision should not be initiated unless there is an established village water committee or development committee. This committee will have responsibility for revenue collection, maintenance of equipment, rights of access to the water, and ownership of the water source. All of these issues must be clarified before the facility is installed. People expect to pay for water, and the committee can bank the revenue to ensure there is money to pay for repairs or maintenance. Two models of revenue collection are common: a house-to-house payment collected on a monthly, bimonthly, or six-month basis, or payment at the source for each full container collected. The monthly collection model works well where there is a strong system of village government and an established rule of law. (The threat of punishment stops people defaulting payment.) The payment at source

model works well when an individual has responsibility for collecting the money and organizing repairs and is allowed to keep all income above a certain threshold every month. The water source becomes that person's livelihood and he or she usually takes great care that it is treated well and kept in good condition.

It is vital that proper consideration be given to sustainability of water sources because they should be expected to last 20 years or more. It is not acceptable for expensive water sources to lie idle because there is no money to repair them or people are locked out because of disputes over who owns the water.

Where It Works

- Water provision works where there is a shortage of water. Enthusiastic support will be given to any program that offers water.
- Water provision works where the government can give strong support. Frequently there is a water provision plan in existence, but shortage of money stops it from being implemented. The program can support the government provision strategy.
- Water provision works where there is an individual responsible for the water source that reports to a committee and collects revenue from the water, which usually ensures that the pump and source are kept in good condition.

Where It Does Not Work

- Water provision does not work when the community has poor levels of cohesion and organization, which makes it unlikely to be able to coordinate revenue collection. As soon as maintenance is required, the water source will be abandoned or the program will be faced with additional costs.

Advantages

- Lifetime benefits of water vastly outweigh high installation costs. A covered well and pump costing \$3,000 USD could provide safe water for a village of 1,000 people for 20 years. No other intervention by a trachoma program can give so much benefit for so little unit cost.
- Water provision is likely to have immediate benefits for trachoma and other health issues.
- Where water is in short supply, water provision usually responds directly to a major development priority.
- Water provision demonstrates commitment to the community and is likely to enhance uptake of other aspects of the trachoma program because the community will be supportive.

Disadvantages

- A water program is potentially very expensive (costing at least \$20,000 USD for a 100 m bore-hole, pump, engine, 40,000 L holding tank and distribution pipes).
- Sustainability depends on the effectiveness of the local management committee. Threats to success come from poor management, inadequate revenue collection, and corruption from account holders.
- Water provision requires close collaboration with technical experts and providers of pumps.

Rainwater Harvesting

Rainwater harvesting is the capture of rainwater. In its simplest form, it can include putting buckets or basins under the eaves of a house when it rains. Complex systems can be designed to capture more water from large roofs fitted with gutters and drain-pipes leading to large holding tanks or from the construction of dams across seasonal streams. It is a useful system for providing water in the wet season, but because storage of large quantities of water is difficult, the water collected may only last days or weeks. Unless substantial dams can be constructed, this is not a solution for providing water to large groups of people through a long dry season.

Basic Principles

The quantity of water that can be harvested is calculated as the area under a roof (not the area of the roof) multiplied by the amount of rain. For each 1 m² of floor area under a roof, 10 L of water can be collected for each 10 mm of rain. For example, if a primary school classroom block 40 m long and 12 m wide has an area of 480 m², the quantity of water that can be harvested is 4,800 L if there is a modest rain of 10 mm (1 cm). Although this is a lot of water, it would probably serve a school of 350 students for only three to four days, and much less if the water is also used for watering plants.

Water tanks of 1,000 L capacity for home use can be made with just sand and cement. When strengthening wire, such as chicken wire, is added, tanks of up to 2,500 L can be constructed. Larger tanks require specialist construction and reinforcing bars. Plastic and corrugated iron tanks of 500–5,000 L can be purchased, although the plastic tanks tend to crack in the hot sun when empty and the corrugated iron ones rust. Large holding tanks suitable for schools and public buildings made from reinforced cement can hold 20,000–45,000 L, and dams can hold very large quantities of water.



Rainwater is harvested for use at this Tanzanian home.

A model system on a public building, such as a school or clinic, would have a subterranean tank of 30–45,000 L at each end of the building fed by large gutters on both sides of the building. A longitudinal bar just above the gutter reduces the quantity of leaves and other plant debris that is washed into the tanks. A silt trap with an inspection cover will catch a lot of the dust carried down the pipe. The water will be drawn from the tank by a hand pump. A large overflow pipe will be fitted below the level of the silt trap. It will have a 90-degree angle in it and a substantial galvanized steel grid over the outlet to prevent animals from entering. It is important that the entrance and exit of the water holding tank be covered with a fine screen, so that rodents and small animals cannot get into the water. Mosquitoes, which can carry diseases like lymphatic filariasis, breed in standing water, so it is important to prevent them from entering the water holding tank. Case Example 4.4 shows how water is harvested at a health clinic.

Where It Works

- Rainwater harvesting works well for buildings with large tile or tin roofs.
- It works in areas where it is not possible to dig wells because of a low water table or rocky ground.
- It works in areas that experience modest rain at least every few days during the wet season.
- It is particularly useful for dry areas that have two rainy seasons per year.
- It is useful for individual families.

Case Example 4.4

Rain Harvesting at Lorn'gosua Clinic in Kajjado District, Kenya

Lorn'gosua is in a semiarid region of Kenya where the water table is very deep. It is not possible to dig wells, and the community does not have sufficient money to rehabilitate the old borehole. The community harvests rainwater in two dams built across deep rain-washed gullies and uses the water for themselves and their cattle. The water in the dams is not clean. Staff at the clinic have attached gutters to the roofs and installed commercially available 3,000 L water tanks to harvest clean rain water for hand washing and for staff and patients to drink. It was agreed in a village meeting that the nurse-in-charge at the clinic would control access to the water. He ensures that the water is used only in the clinic and that it is reserved for hand washing and for staff and patients to drink. During the dry season the storage tanks are sometimes filled with water delivered from a truck.



This tank at the clinic holds 3,000 L.



People use the public dam for bathing and to water their cattle.

Where It Does Not Work

- Rainwater harvesting does not work well on houses or buildings with thatch roofs.
- It does not work well in areas of low rainfall, where most of the year's rain usually falls during just a few days or there are long dry periods between rains.

Advantages

- Rainwater harvesting is useful for areas with rocky soil or a deep water table where it is difficult to dig wells.
- It is a good system to ensure a constant supply of water for a family during the wet season.
- It is possible to fill the storage tanks with water from other sources.
- It has low running costs after initial expensive setup.

Disadvantages

- Rainwater harvesting has a high initial cost. The materials for a model system with two 45,000 L tanks would cost more than the construction of up to 10 shallow wells.
- It is only useful during the rainy season.
- Lizards, snakes, rats, and birds can find their way into the storage tanks in the dry season and die. The bodies contaminate the water in the wet season and can lead to spoilage of the entire tank. For this reason, it is important that the entrance and

exit holes of the tank be covered with a fine-gauge screen so that animals cannot contaminate it, and insects like mosquitoes cannot enter the water and breed.

- Because holding tanks need to be lower than the roof, water usually can only be drawn off at ground level.
- Most of the largest tanks are usually underground so that they are stronger. This adds two areas of concern: Water should be drawn off with a pump to avoid contamination, adding to cost, and the likelihood of animals crawling into the tank through the overflow pipe and drowning inside is increased.
- Where water is harvested from a public building it is unclear who owns it. This issue must be addressed before projects begin or damaging disputes are sure to occur.
- Large dams will be used by animals and become contaminated with their feces. They may also contribute to increased levels of schistosomiasis and malaria.

Pit Latrines

In their simplest form, pit latrines are holes in the ground with some sort of structure to allow the user to squat over the hole without falling in. At their most developed, they have cement slabs reinforced

with iron bars over the hole, pit ventilation pipes, and solid, attractive buildings. Unless modified to be connected to a septic tank and soak-away, pit latrines are temporary; when the pit is full, a new one must be dug. Simple pit latrines can be made more permanent by lining them with concrete rings so that it is possible to pump them out. By pouring ash or other alkaline substances down traditional pits, the volume of their contents is reduced, thereby prolonging their life span. The life of a pit latrine can also be extended by restricting what is disposed in it.

The specific design, depth, and method of manufacture of pit latrines depends on what is most suitable for the environment and culture of each country. Best practices on a country-by-country basis are usually available from the government, sanitation, waste disposal, or rural development department.

Basic Principles

Latrine construction should be sympathetic to the soil conditions. Extremely sandy soils may need cement rings or other support to prevent pits from collapsing. Lightly sandy soils may need a cement collar or head to prevent rainwater penetration.

Latrines should be dug on well-drained and level ground away from places where water runs or pools in the wet season. They should be at least 30 m away from a well or water source and should not penetrate the water table.

Latrines should be accessible, not more than 6 m away from the house and not where vegetation or an uneven surface might stop people from going to it. (Remember that it should be possible to reach the latrine safely at night.)

Latrines should have privacy. They should have adequate screening and should not be built next to paths, roads, or places where the users will be seen going in and out or heard when they are in the latrine.

Construction must be sympathetic to the beliefs of the local community. Health workers should talk to community members and find out what kinds of latrines they would be most comfortable using. In cases where community members believe that the characteristic odor of the latrine is considered dangerous, health workers can promote ventilated pit latrines, which have ventilation pipes covered with fine mesh screening that allow air to escape. The opening of the latrine is covered, but air and odors can escape without allowing insects into the latrine.

Religion may dictate that the drop hole is oriented from north to south and not east to west.

Different groups may require separate latrine

facilities. In some cultures, men and women may not use the same latrine, or it may not be possible for a wife or husband to share a latrine with his or her in-laws. Children may need a separate facility.

A sense of ownership is vital for sustainability. Nobody will want to use a dirty latrine or one with poor privacy. For a latrine to be maintained correctly, someone must feel individual responsibility for it. Guidelines will change with context, but household latrines appear to work best. In the household all users know each other, making it easier for someone to have responsibility for keeping the latrine clean and in good order. Communal latrines rarely work for a long time unless someone takes responsibility for keeping them clean.

The depth of a latrine will depend on the soil conditions, height of the water table, and what will fill it. A pit of 1 m diameter and 4 m depth should be suitable for an average family for a period of five to eight years. The speed that it fills will also depend on what people use to clean themselves. Water takes no space and encourages decomposition by providing the solvent for microbial activity. Paper adds minimal volume and breaks down. The depth should be increased when sticks, stones, or maize cobs will be used or where other waste such as batteries or glass will be disposed of in the latrine.

Where the soil is particularly rocky or the water table is very high, compartment latrines can be constructed. These latrines have a cement-block compartment built onto the ground with a drop hole in the top. The normal superstructure is built on, or around, the compartment. One enters the latrine by climbing a step or two to get onto the compartment. In two-compartment latrines, one compartment is used for six months and then left to compost while the other is used. After another six months, the first can be emptied and the contents used as fertilizer.

Household latrines offer huge advantages to the owner in terms of convenience, safety, and cleanliness, and they give the owner a feeling that he is developing the family compound. These advantages are likely to be far more important to the owner than the health considerations. Case Examples 4.5 and 4.6 show pit latrines and compartment latrines, respectively.

Where They Work

- Pit latrines work well when there is a felt need for sanitation in the population and it is not possible to provide permanent sanitation facilities.
- They work well where the ground is relatively easy

Case Example 4.5

Household Latrine Project in Zinder, Niger



(1) A man makes a mold for a slab with an iron form and local sand base. (2) The man casts the slab with cement reinforced with iron bars. (3) The finished latrine has a lid. (4) This pit was dug to about 4 m and lined with mud blocks. (5) This pit was plastered with cement.



Latrine coverage is very poor in Zinder, Niger. Less than 20% of households have a latrine. The latrine project has provided local masons with the skills and equipment to build family latrines at relatively low cost. The climate is dry, the water table deep, and soil sandy. The poor latrine coverage is, in part, due to the poor durability of local latrines. They collapse during the wet season, either because water runs down the pit toppling the slab or the sides of the pit collapse when the soil is wet.

To avoid these problems, latrines are raised above the soil surface by about 15 cm, and the pits are lined with mud blocks and plastered with cement. An attractive and reassuringly solid slab is made from ferro-reinforced cement and mounted on top of the pit. The waste filters out the bottom of the pit, which is not lined with cement. When the latrine is finally full, the slab can be removed and used again on another pit.

to dig, has a water table 5 m or more below the surface, and does not flood. (Compartment latrines can be used where the ground is hard to dig or water table is high.)

Where They Do Not Work

- Pit latrines do not work well where there is a high water table, such as lakeside sites, or where the ground is liable to flood. Again, compartment latrines may work in these environments.
- They do not work well where there is very rocky ground and it is not possible to dig. Again, compartment latrines may work in these environments.

Advantages

- An individual latrine can be inexpensive. The materials required to build a basic pit latrine with a reinforced cement slab and a cement head to the

pit are about two bags of cement, two wheelbarrows of sand, 6 m of 6 mm diameter iron bar, and 120 L of water. The cost of these materials, excluding transport, is unlikely to exceed \$25 USD.

- Household ownership means that the head of household feels responsible for the maintenance and upkeep of the latrine.
- The life of a pit latrine may be longer than it takes to fill the pit. Although pit latrines are temporary, well-made slabs can be removed from a full pit and transferred to a new one.
- Latrine construction lends itself to flexible cost-sharing schemes. Recipients can be asked to pay for their completed latrine, pay for the skilled labor, contribute labor and some materials (like sand and water), contribute labor only, or be given responsibility for making the super-structure or house

around the finished latrine. Varying the level of recipient contribution allows program managers to design interventions at all levels of cost.

- The running cost of a completed latrine is practically nothing.
- Because they are so inexpensive, demonstration latrines can be given to key community members to encourage latrine uptake in the community. These people can then lead by example and advocate for latrine use.
- Once a family becomes accustomed to the convenience of having a latrine, it may be difficult to do without one. Sanitation will then become a higher priority when the family allocates its resources.

Disadvantages

- There may be hidden programmatic costs of a pit latrine program. Organizing the construction of household latrines takes a long time and a lot of attention from program staff. The hidden pro-

grammatic cost of the latrines in terms of time and transport may, therefore, be high.

- Pit latrines are temporary. Once full, they need to be replaced, although well-made slabs can be reused.
- When the program latrines are full, there will be a need for new ones to be built. Unless some community members have been trained in latrine construction, and probably given the necessary equipment, the community may not be able to satisfy its own demand. Very poor people may never have the money to spend on cement for a new latrine.

Ventilated Latrines

In an unventilated pit latrine, warm air and odors from the pit rise and escape from the drop hole. Large green flies of the genus *Chrysomya* are attracted by the odor and breed in the latrine. Ventilated latrines have a vent pipe made of plastic or brick directly above the pit. As long as this pipe has a good airflow and stands at least 50 cm above the height of

Case Example 4.6

Two-Compartment Latrines in the Red River Delta Area of Vietnam



The Red River Delta in Vietnam is one of two areas in the country where trachoma is still endemic. The high water table and risk of flooding make it impossible to dig pit latrines, so the trachoma program is promoting the use of two-compartment latrines. The base of the latrines – which forms the compartments – is made of cement blocks, but the building can be made from any material. The buildings are usually finished with cement blocks because of the high-quality look. When one compartment becomes full, it is closed and left to compost for about six months and the family uses the other compartment. The composted waste is dug out of the base of the latrine through a door; and the highly prized fertilizer can be sold or used by the family for its own vegetable gardens. The design of the latrine separates urine from the feces and the urine is used as liquid fertilizer. Local masons have copied the design to use for families who have seen the benefits of the two-compartment latrines.



Above left: The high water table means pit latrines are not possible. Above: The doors to empty the compartments after composting can be seen clearly to the left and right of the stairs.

the roof (assuming that a roof has been built), the warm air from the latrine will be drawn up the pipe and fresh air will flow down the latrine hole. This circulation of air reduces odor and can control flies. To ensure good airflow, pipes should have a smooth interior and be at least 11 cm in diameter.

Reducing flies around latrines is beneficial. Being disturbed by flies when using the latrine or seeing a seething mass of maggots in the pit is off-putting; most people would find it dirty and prefer to go elsewhere. Flies that live in the latrine can carry germs from the latrine with them when they land on a person's food, exposing him or her to all of the contamination from the latrine. It is important to try to reduce the number of flies entering and exiting the latrine.

Flies still will be attracted by the odor from the vent pipe and drop hole of a ventilated pit, but those breeding in the latrine and trying to escape should be killed in the pipe. Young flies emerging from the latrine will fly toward the brightest light available. This light will come from either the drop hole or the vent pipe. When the latrine is covered or the drop hole is in a darkened room, the flies will go up the pipe. The pipe should be covered with a layer of corrosion resistant fly screen, such as stainless steel or aluminum, which will stop them from escaping. The flies will try to get out but will eventually die of exhaustion and fall back into the pit.

Advantages

- A vent pipe reduces odors and can control flies.
- A vent pipe increases the perceived value of the latrine because it looks more modern.

Disadvantages

- Including a PVC or brick vent pipe can double the cost of the latrine.
- Making the drop hole in a darkened room requires the building to be very well made and, therefore, expensive. If it is too dark, latrine users will have to keep the door open when using the latrine. This is clearly impractical, and ventilated latrines are usually made with a gap at the top of the door, on short legs, or with high-level windows. All of these designs allow flies and light to get into the latrine. If the light from the drop hole is brighter than that down the vent pipe (e.g., when the screen on the vent is blocked), flies will not be controlled.
- The vents are often blocked or missing. Fly screens on top of the pipe should be made from a corro-

sion-resistant material such as stainless steel or aluminum. These materials are frequently not available and are substituted with plastic mosquito screening. The fine holes in the plastic mosquito screening easily get blocked with dust, rendering the vent useless. Plastic screens slowly become brittle as a result of exposure to sunlight and then break. This problem allows them to function as vents, but they do not control flies.

- Replacing the fly screen requires the assistance of a skilled person — one who has the correct glue for a PVC pipe or a mason for a brick pipe. It is rarely done, and vents are often blocked or unscreened.

Provision of Village Cleaning Equipment

One of the easiest ways to improve the village environment and to reduce the factors that encourage the transmission of trachoma is to ensure the village is relatively free from human and animal waste, household rubbish does not accumulate in the streets, and communal areas are clean. Clearing long grasses and uncontrolled vegetation reduces the number of places that can be used for open defecation. Removing household waste reduces flies. An absence of rubbish around wells and meeting points improves morale and encourages community participation. Because the areas where trachoma exists are often remote and inaccessible, they usually do not benefit from government-funded rubbish or waste collection. Therefore, community cleaning has to be coordinated locally.

Basic Principles

Environmental improvement can be enhanced by cleaning if the community identifies it as a need and is mobilized to do it. Community mobilization can be encouraged or fostered by a combined program of hygiene education, provision of cleaning equipment, and follow-up visits.

Most village leaders are open to the suggestion that their villages will be improved by a clean and healthy environment. Village health workers and members of village development committees should be involved in the decision making about whether to adopt village cleaning.

Decisions about when village cleaning will take place, who will participate (and how nonparticipants will be handled), who has responsibility for storing and maintaining the equipment, and for what else (if anything) the equipment will be used need to be made before the equipment is handed over.

Scheduled group participation involving all the able-bodied adults in the community works very well. For example, village cleaning may take place weekly before a religious gathering or after the market day, monthly on a lunar cycle, seasonally when the work on the farms is reduced, or at the start and end of rainy seasons.

Promoting village cleanliness is seriously compromised if equipment is not provided. The quantity of tools that can be provided will probably be insufficient to enable large sections of the community to work together, but the donation is a display of commitment to the community from the provider and indicates that the goal of a clean and healthy village is taken seriously. Whether to provide a token set of tools or sufficient tools to allow many people to work simultaneously will depend on the local situation and resources available. A suitable set of tools will include a rake, spade (or other digging tool), machete/cutlass/panga (or other cutting tools), and a wheelbarrow. Other possible tools include a pickax, digging fork, and donkey cart.

Follow-up visits by field staff and visitors are important to maintain the momentum and reinforce health messages. See Case Example 4.7 to find out

how village cleaning was part of the trachoma control program in The Gambia.

Where It Works

- Villages that already demonstrate social cohesion and are actively involved in promoting their own development benefit from health education and provision of cleaning equipment.
- It also works in smaller villages where most people know each other and there is collective responsibility.

Where It Does Not Work

- Provision of cleaning equipment does not work well when given to poorly developed villages without a series of explanatory and planning meetings.
- It does not work well where villages are large and people do not know each other, so there is little collective responsibility (unless multiple kits are given to several neighborhoods).
- When a village has weak leadership, political schisms, or division of power, any intervention requiring community support will be difficult.

Advantages

- Village cleaning can be used as an entry point to the community.

Case Example 4.7

Village Cleanup Days in The Gambia

Village cleaning was included in the Gambian National Trachoma Control Program in an attempt to reduce the number of breeding sites for eye-seeking flies and to remove garbage and excess vegetation from the villages. Excess vegetation was considered to be a resting place for malarial mosquitoes and was thought to encourage open defecation. After a series of village meetings, sets of tools (five spades, five rakes, five cutlasses, one wheelbarrow) were handed over to a named person in the village for use with cleaning. Decisions about who would be involved in village cleanup days, who would have access to the tools, and where the tools would be securely stored were all made before the tools were provided. In most villages, cleaning takes place on Fridays immediately after the afternoon prayers and all able-bodied adult men and women participate. Village cleanup has been most successful in small villages where there is a good sense of community. Villagers report that they enjoy living in a clean community because it reflects well on everyone and they believe that it improves health.



Cleaning supplies are delivered by truck.



A woman clears rubbish from her village.

- In conjunction with other aspects of the SAFE strategy, such as latrine projects and antibiotic distribution, cleaning demonstrates a broad commitment to the community.
- Provision of cleaning equipment works well when accompanied by health education and group decision making about who has responsibility for the storage of equipment and management of the cleaning.
- It is relatively inexpensive. A set of Chinese- or Indian-manufactured tools (widely available in Africa) with five rakes, five spades, five cutlasses, and a wheelbarrow can be purchased wholesale for around \$50 USD. Sets of higher quality tools could cost between four and 10 times as much.
- It is sustainable. Once established, village cleaning can continue with participants using their own agricultural tools and without further intervention.

Disadvantages

- There is currently no published scientific evidence that the provision of tools for village cleaning reduces the prevalence of trachoma.
- Hidden costs of staff time and transport may be high. To be effective, the provision of tools should be accompanied by village-level meetings and periodic follow-up visits by members of a field team.
- It is not sustainable. Cheaply purchased tools have a very limited life of between one and two years, and the brittle metal does not lend itself to repair by local blacksmiths.
- Acceptance of community cleaning programs varies. Well-organized, strongly led villages with good levels of community mobilization are likely to welcome the village cleaning initiative immediately. Other villages will never adopt it. And it is likely that the poorly organized villages that lack social cohesion and leadership are those with the highest levels of trachoma that would benefit the most.
- This is a local-scale intervention that is not likely to have a uniform effect and, because of the need for follow-up, may be difficult to implement on a national or even regional scale in large countries.

Household Garbage Disposal

Regular collection of household garbage does not usually take place in trachoma-endemic countries, and garbage may accumulate in individual compounds and communal areas. The garbage may promote the breeding of flies and provide hiding, resting, or breeding sites for mosquitoes, cockroaches, rats, and other vermin. While there is no record of

any trachoma control program currently promoting household garbage disposal, this practice could enhance efforts at village cleaning and environmental improvement. Household garbage is best disposed of using the “burn, bash, and bury” practice. Garbage can be transported to pits or burned in piles on site. The burned waste is then “bashed” with a stick or spade to reduce its volume and buried. At least 15 cm of earth should be used to cover household garbage.

Other Interventions That Have Been Tried

The following interventions are being used by the national trachoma programs of some countries. There is currently little scientific evidence to show that these interventions are likely to reduce trachoma and there may be few collateral health benefits. The impact of these interventions on trachoma and other diseases may be minimal, if there is any health impact at all, so they should not be the first priority for program planning or delivery.

Construction of Public Baths

Community development to alleviate poverty and empower women is an important part of the Helen Keller International trachoma control strategy in southern Morocco. The approach includes the construction of public baths, called hamman, in trachoma-affected communities. Individuals pay a small amount of money to use the baths and there are separate designated days for men and women. It is culturally appropriate in Morocco for people to use public baths. In other countries, public baths may not be welcomed by community members, but other acceptable approaches can be adopted.

Fly Control

Eye-seeking flies, in particular *Musca sorbens*, are known to be vectors of trachoma. The most appropriate long-term control measure to reduce the number of *Musca sorbens* is to reduce the number of available breeding sites by promoting latrines. However, there are additional ways to control the fly population.

Spraying. Chemical control with sprays is possible and known to be effective for controlling flies. Spraying requires specialist equipment, training, and planning to be effective. There are two strategies: frequent space spraying or periodic use of residual insecticide.

Space spraying with a pyrethroid insecticide such as permethrin or deltamethrin is best conducted in



Sprays are used to control flies in The Gambia.

the early morning before winds and convection currents can carry the droplets away from the target area. Control can be achieved on a village-wide basis with an “attack” phase of spraying every two days for two weeks to kill the adult population and any new adults emerging, followed by a “maintenance” phase of spraying twice a week to kill any flies that have migrated to the area. This technique has been highly successful in The Gambia where fly control reduced active trachoma by about 50%.

Residual spraying with DDT or deltamethrin is used routinely to control malarial mosquitoes. The same spray teams can be used to control eye-seeking flies by spraying the outside of houses in addition to the inside. This plan works because flies usually rest on the outside walls of houses and other structures at night, when it is hot, or during rain. If the walls have been sprayed, the flies pick up a lethal dose of insecticide through their feet.

Any prolonged regular use of insecticide will lead to the evolution of insecticide resistance in flies after two to five years, after which the insecticide will have to be changed. The reliance on specialist equipment and high cost of consumables (the insecticide) means that chemical control of flies should probably only be attempted where there is an unusual and temporary increase in transmission risk. This increased risk may occur in displaced populations or refugee camps. In these circumstances, the collateral benefit of reducing flies and mosquitoes (e.g., reduced diarrhea and malaria) may well make the use of insecticides practically essential.

Scatter Bait. In Vietnam, World Vision uses scatter-bait fly killers to control flies. A good attractant (e.g., cooked rice) is treated with commercially available insecticide, then used as bait. The treated bait is

scattered around the areas with the highest fly concentrations. The flies come to feed on it and are killed by the insecticide. This technique is commonly used in Europe and North America to control flies in closed environments, such as poultry houses and cattle barns, where there is a finite population of flies. It is not used in open areas. The insecticide-treated bait could be hazardous for children, free-range chickens, or even small stock.

Bottle Traps. Homemade fly traps using old plastic drink bottles and feces have been developed by the Institute of Child Health in London and the International Community for the Relief of Starvation and Suffering (ICROSS) in Kenya. The device uses two plastic bottles, mounted one above the other, to create a flytrap. The lower bottle is the bait bottle and is covered with mud so that it is dark on the inside. It is filled with a mixture of goat droppings and cow urine to attract the flies. After feeding, the flies fly up into the top bottle where they are trapped and die.

Radio Listening Clubs

In Ghana, The Carter Center has worked with local women to set up radio listening clubs. The project

A Ghanaian woman hosts a radio program.



was initiated to increase access to the national radio station that, along with its normal programming, was being used to provide information about trachoma. Wind-up or solar radios are purchased for a community that gathers to listen to the radio. The radios do not need replacement batteries and have proved to be robust; they have already lasted several years. The project also involves distributing tapes to local radio stations with programs or jingles about hygiene and trachoma. In an assessment of program effectiveness, the project has found that 72% of the women in the radio listening clubs could repeat the jingle distributed to radio stations. The Carter Center and Helen Keller International have run similar programs in Niger and Mali.

In Niger, the typically factual and dry health messages have been replaced by broadcasts of “Health and Hip-Hop” by volunteer disc jockeys. The format of the shows is up-to-date music punctuated with health-related questions from listeners. Due to the age of the majority of listeners, many questions concern HIV and sexual health, but the DJs also provide messages about hygiene and trachoma.

Leaky Tins

Leaky tins can show that small amounts of water are all that are needed for face and hand washing. Households find old containers (cleaned) or locally available gourds and calabashes and make a small hole at the base. When water is poured into the leaky tin or calabash, the trickle of water that emerges from the hole is adequate for washing eyes and hands. The African Medical and Research Foundation (AMREF) has promoted leaky tins in Maasai communities in Kenya and Helen Keller International has done so in Kongwa, Tanzania.

Soap-Making Clubs

Soap making is a simple technology that ties together hygiene promotion and income generation. In the best soap-making programs, the participants (usually women) learn about the importance of soap and hygiene. The soap they produce is sold in local markets to raise money for their personal needs or for a cause on which they agree collectively (e.g., buying seeds to start a community garden, or buying bed nets for their houses). Soap-making technology is the same everywhere, but the best local ingredients may vary by country. In the context of their trachoma



Children use water from leaky calabashes to wash their faces in Tanzania.

control programs, The Carter Center is supporting soap-making clubs in Niger and Helen Keller International is supporting clubs in Morocco and Tanzania. Other nongovernmental organizations will be involved in soap-making activities and can provide this local knowledge.

Window and Door Screens

In Morocco, Helen Keller International runs a school-based trachoma program that includes the activity of placing screens on windows and doors in the schools and kindergartens to protect children from eye-seeking flies. Though screening is a proven method to reduce harm from flies, screening activities have not been used specifically for trachoma control. In addition to targeting schools, screening could be done for households in trachoma-endemic communities. Costs of a household program could be considerable however, and for this reason, screening could be promoted instead of purchased.

Windows and doors are screened on this school in Zagora, Morocco.



5 Communicating Health Through Social Marketing

Communicating health refers to working in communities to develop tailored messages and approaches through a variety of channels, such as radio or village meetings, to develop, promote, and sustain behavior change.

This section presents the “social marketing” approach to communicating health. Social marketing campaigns use similar techniques that have been successful in commercial marketing campaigns. In commercial marketing, products are sold to consumers, whereas in social marketing, ideas, attitudes, and behaviors are “sold” to target groups. Social marketing campaigns use information about the knowledge, attitudes, and practices of people in target groups to design messages that will motivate behavior change. Instead of simply telling people about the importance of a health issue, a social marketing campaign will link the issue to the needs, dreams, and desires of the target groups. The use of target groups requires research at the beginning of the campaign, followed by testing and evaluation of all aspects of it.

The nonprofit development organization International Development Enterprises (IDE) has extensive experience applying the social marketing approach to trachoma control, and its campaign in Vietnam is featured in this section of the guide. In addition, this section presents step-by-step methodology for developing and implementing a social marketing campaign.

A social marketing campaign can serve as a tremendous support to all F and E trachoma control interventions. It can raise the profile of the entire SAFE program and should be integrated into all planning, implementation, and evaluation activities.

An effective social marketing campaign has several benefits for a trachoma control program, including the following:

- Increase knowledge about trachoma and hygiene promotion in a language or visual medium that target groups can understand and to which they can relate.

- Promote behavior change, such as using of individual towels for face and hand washing.

- Challenge fatalistic ideas that trichiasis and eye diseases cannot be avoided.

- Reduce stigma and offer a solution for those with trichiasis.

- Promote services for environmental improvements and trachoma control in general.

- Lead policy-makers and opinion leaders toward making environmental improvements in the communities of target groups.

- Improve skills and sense of self-efficacy in target groups by teaching or reinforcing new behaviors such as facial and hand cleanliness and village cleaning.

- Raise the profile of the program by generating awareness and interest.

The four steps for developing a social marketing campaign will be discussed in this section. They include (1) research, (2) message development and pretesting, (3) materials development and pretesting, and (4) delivery and evaluation.

Step 1: Research

In developing a social marketing campaign, the first step is to ask a set of questions about the knowledge, behavior, dreams, and media habits of the target groups. Media habits are the behaviors that expose the members of target groups to new ideas. For example, do they attend village meetings, where do they see posters, when do they listen to the radio, what newspapers do they see and how often, do they watch TV or go to video shows? Once program designers know how to reach people, they can design a suitable strategy to inform the target groups about the program in a way that will interest them.

The following are the three main ways of collecting information about target groups:

1. Use personal knowledge along with existing information collected by others
2. Conduct a structured questionnaire with the target groups
3. Conduct key informant interviews or discussions with the target groups

It is best to use all three methods to collect information, but if time or resources are limited, then the greatest amount of information can be obtained

Case Example 5.1

Social Marketing Research in Vietnam

As part of the multiorganizational trachoma control effort in Vietnam, International Development Enterprises (IDE) designed a social marketing campaign to encourage adoption of certain hygiene habits. In the design phase of the campaign, IDE representatives conducted research to better understand the target groups. First they conducted a quantitative habits and attitudes survey that provided baseline information on socioeconomic situation, media habits, and water usage habits. They then conducted qualitative in-depth discussions with target groups to learn more detailed information. Research objectives included the following: understanding the key issues in people's lives (i.e., which situations cause the strongest feelings of happiness, sadness, anxiety, and anger), understanding children's dreams and aspirations, and learning about local proverbs for possible inclusion in campaign materials. The people to which IDE researchers spoke were men with children under age 10, young women with children under age 10, women ages 55 and older, and children ages 13-16. They spoke to men and women with children under age 10 to learn both about the lives of the adults and their young children. Findings showed that people's main concerns revolved around their family's happiness. Their primary concerns were health, crops, money, and children's progress at school. IDE decided to use these as emotional hooks in the social marketing campaign.

from using existing, institutional knowledge, followed up with key informant discussions or focus groups. Case Example 5.1 shows how research was used as the foundation for message development in Vietnam.

Before beginning this research, it is important to clarify the message that will be promoted in the communication strategy. Remember, a social marketing campaign should be designed to support the trachoma interventions and must therefore be linked directly to them. In addition, it is important to identify the desired audience, in other words, the specific target groups. Section 3 of this guide discussed primary, secondary, and tertiary target groups, and a social marketing campaign must define these groups.

Personal Knowledge and Existing Information

To begin the research about target groups, the program designer should find out what knowledge

Table 5.1

Questions About Target Groups

The Group Itself

- How many people are in the target group in our intervention area?
- Where are they? (Are they usually at home, do they travel frequently, do they get together regularly at markets or other gatherings?)
- Are they able to read? If so, in what language?
- Do they have any locally organized groups, such as religious groups, nurseries, informal groups, daycares?
- What positive behavior currently exists within the target group? Why? For example, why do people wash their hands and faces now?

Mass Media Behavior

- Do they listen to the radio, watch television, or attend video shows? If so, when?
- What channel do they like and what is their favorite type of program?
- Are there any audience research figures?
- What are the local and national newspapers and magazines? What are their circulation figures?

already exists. He or she can find out what other agencies are already doing to reach the target groups, plus ask other program staff members for their input. A brainstorming session about how best to reach the mothers of preschool children may reveal just as much as a survey—and will be considerably cheaper. Table 5.1 lists of some of the key questions to answer about each target group.

After gathering this initial research, the program designer should create a table that displays all the information collected about each target group.

Structured Questionnaire

Next, the program designer can create a structured questionnaire to find out more about the target groups. The questionnaire should build on the information that is already known. Examples of questions are provided in Table 5.2, but the program designer will want to add his or her own.

A questionnaire of this kind can provide quantitative data about the target groups that will be used for developing messages (Step 2) and choosing channels of communication for the social marketing campaign (Step 3). If designed purposely, this survey can also provide baseline information about the target groups that will help in the monitoring and evaluation of the campaign (Step 4).

Table 5.2

Questions for Structured Questionnaire

Media Habits

1. Do you have a working radio in the house?
(Yes/No)
 2. How often do you listen to the radio?
(every day/every few days/rarely/never)
 3. Which radio station do you prefer?
 4. What are your favorite programs?
(name of program/time of program)
- Similar questions can be asked about television, video shows, posters, or other forms of mass media used in the country.

Health and Hygiene Practices

1. Where do you collect water for the household?
2. How often do you collect water for your home?
(every few days/every day/more than once per day)
3. How do you use water each day?
4. How often have you been to the clinic in the past year?
(0, 1, 2, 3, 4, 5, 6+)
5. How often has a health worker come to your house in the last year? (0, 1, 2, 3, 4, 5, 6, 7+)

Literacy

Please read this sheet for me.
(read easily/read with difficulty/not able to read)

Interviews or Discussions with Key Informants

The questionnaire should identify some issues that need more in-depth (qualitative) discussion with key members of the target groups. These discussions can shed light on what motivates these individuals. For example, if your target group is children ages 10–15, interviews may reveal their dreams and aspirations. Perhaps they would like to be good in school, be popular with other children, excel in sports, or make their parents happy. This information will be useful in finding the emotional hooks necessary for the design of the social marketing messages. The campaign aimed at the children can use these hooks to show how being clean makes children popular with other children or how using a latrine will make parents happy and proud of their children. These discussions will also reveal which media will work best for the campaign. For example, there would be no point in producing expensive television slots for children if they do not watch television. Some of the questions to cover in discussions are listed in Table 5.3.

Step 2: Message Development and Pretesting

Once the research is complete, it is time to develop the themes and messages central to the social marketing strategy. The goal is to use the research to find the emotional hook on which to hang messages that will generate and hold the interest of your target groups and encourage action.

Themes and Messages

It is important to develop an overall theme that will appeal to and attract target groups. Themes should be positive, avoid blaming and stigmatizing, call attention to the campaign, and link its various elements together. The theme will provide overall guidance for the development of messages, all of which will therefore be consistent.

Individual messages contain carefully crafted information that is targeted at specific groups. They should meet behavior-change objectives and stimulate discussion and action. Messages are the most important element in a communication strategy, and

Table 5.3

Questions for Key Informants

Motivation

- What are your dreams and aspirations?
- When do you feel happy, sad, worried, or angry?
- Who in the country, region, and community do you most admire?

Media

- How do people get messages about local and world events?
- How do local groups and associations function?
- Who are the main influences on household behavior?
- Who are the right people to promote hygiene?
- What, how, and when is the best way to send messages?

they are where most communication strategies fail.

The following information can be used to develop the overall theme and key messages. The information needed for each of these three steps should be drawn from the research conducted in Step 1.

- Understand how culture and situation could affect the action and decision making of the target groups. Even if the target group members understand, relate to, and are motivated by the message, there may be other factors that stop them from adopting the proposed behavior.

- Identify and stick to the key fact that should be conveyed to the target group. The key fact should provide information about the problem and provide opportunities for solving it. The key fact may not relate directly to trachoma. For example, a key fact aimed at household heads could be: “Having a modern latrine is convenient, clean, and will make you respected by your neighbors.” A key fact aimed at

mothers may be: “Your child’s sight may be preserved if you get treatment for mild eye problems.”

- Develop messages from the key fact. Messages should be simple, attractive, and clear about the benefits of what is being promoted and conveyed in words or images. All messages should contain the same core information. Messages that promote services or facilities, such as wells, must include information on how to access them.

Case Example 5.2 shows the steps involved in message development, applied to trachoma control.

Pretesting

Pretesting is a way to ensure that themes and messages reach the intended target groups. Messages should be pretested with all target groups for whom the communication is intended, both primary and secondary. To pretest a theme and message, a program designer should take it to members of the tar-

Case Example 5.2

Steps to Theme and Message Development from Vietnam Campaign

Based on the research by International Development Enterprises in Vietnam (see Case Example 5.1), themes and messages for a social marketing campaign that aims to increase hand and face washing could be developed through the steps below.

Step 1: Determine the factors that could limit people’s ability to adopt the proposed behavior:

- There may not be a close source for water near the household, and therefore collecting water is a time-consuming activity.
- Women may feel that hand and face washing is not the best use of this scarce resource.

Step 2: Determine the key fact to address in the messages.

Many people in trachoma-endemic communities are not preventing trachoma and other diseases through face and hand washing. Limited access to water sources and a lack of knowledge about trachoma and hygiene practices are key problems. Benefit statements for the messages are as follows:

- If I wash my face and hands, I will prevent trachoma and other diseases.
- If I help my family members wash their faces and hands, I will have a healthy family.

Step 3: Determine the key message points that will be included in communication delivery.

For children:

- Face and hand washing can be done with small amounts of water.
- Individual towels and cloths should be used for each person in the household.
- Face and hand washing will lead to being happy, healthy, and popular.

For mothers:

- Face and hand washing can be done with small amounts of water.
- Individual towels and cloths should be used for each person in the household.
- These hygiene practices prevent trachoma and other diseases.
- Face and hand washing will lead to happy, healthy, respected, and united families.

get groups and ask, observe, discuss, and measure the following:

- Clarity
- Recall
- Interest
- Persuasion
- Cultural appropriateness
- Audience members' degree of identification

If possible, pretesting and discussions also should be conducted with stakeholders because their views may differ from those of the target population, and disagreement with stakeholders can derail or compromise a program.

Step 3: Materials Development and Pretesting

The next step in developing a social marketing campaign involves developing materials for the campaign and then pretesting them with the target audience.

Choosing Channels of Communication

The assessment of media habits conducted in Step 1 will help decide which channels are best suited to the messages developed in Step 2. Other ways to choose communication channels include the following:

- Select channels that reflect patterns of use of the target groups. The channels must be those that reach target groups with the greatest degree of frequency, effectiveness, and credibility.
- Know that different channels play different roles.
- Use several channels simultaneously.
- Select media that match the program's human and financial resources.

Channels of communication can be divided into three types: interpersonal (individual and group), mass media, and traditional media.

Interpersonal. One-to-one communication

between skilled communicators and target audiences is probably the most effective way of getting a message across. However, it is likely to be very time consuming and require many staff. Examples of one-to-one communication include home visits by health workers and peer education. Less effective than one-to-one communication, but less costly, is to address target groups through, for example, village meetings, schools, community-level animation/motivation sessions, mobile marketplace demonstrations, and small-group discussions. Table 5.4 lists the strengths and limitations of interpersonal channels.

Mass media. Mass communication channels such as radio and television are commonly used for health education because they can reach many people at lower cost per person. However, they have a lessened capacity to affect behavior because there is no opportunity for dialogue. Mass media include radio and television appeals, testimonials from celebrities, dramas, soap operas, and cartoons. Other mass media examples are cinema, video, newspapers, magazines, journals, leaflets, posters, recordings of popular music, and school curricula and materials. Table 5.5 lists the strengths and limitations of mass media channels.

Traditional Media. Traditional media channels include street theater, dance, storytelling, songs, and film. An example is the use of traveling film shows. In some trachoma-endemic communities in sub-Saharan Africa, men travel between villages to show the latest movies using generators, televisions, and VCRs loaded onto their horses or camel carts. These men could be involved in the social marketing campaign by showing movies on trachoma control or hygiene behavior as part of their film shows in villages. Table 5.6 shows the strengths and limitations of traditional media channels.

Table 5.4

Strengths and Limitations of Interpersonal Channels

Strengths

- Provides credibility to messages
- Provides detailed information
- Creates supportive environment
- Provides opportunity to discuss sensitive, personal topics
- Creates support at community level for recommended behaviors, ideas, products
- Allows immediate feedback on ideas, messages, practices

Limitations

- Time consuming with a high cost per person or contact.
- Reaches small number of individuals
- Requires practical skills training and support of field workers

Table 5.5*Strengths and Limitations of Mass Media Channels***Strengths**

- Reaches many people
- Allows messages to be delivered frequently
- Can create a demand for services or products on the part of innovators, early acceptors, and some of the early majority
- Reinforces important messages delivered through interpersonal communication channels
- Stimulates discussion of topics among family, friends, and neighbors
- Reaches those with limited literacy
- Can provide protective impersonality in dealing with sensitive issues

Limitations

- May have limited rural distribution
- Difficult to tailor program to special groups
- Difficult to obtain group feedback
- Requires access to radio, television, cinema, print media, and so forth
- Requires technical knowledge
- Can be expensive

Developing Communication Materials

Once the most appropriate communication channels have been chosen, specific communication support materials can be developed. These may include the following:

- Print materials for peer educators such as flip charts and posters.
- Pamphlets or information sheets to support health workers.
- School materials such as lesson plans, calendars, timetables, books, rulers, pens, and pencils that display the campaign logo or key messages.
- Television spots for general broadcast.
- Promotional materials such as T-shirts, face cloths, towels, caps, and buckets that display the campaign logo or key messages.
- Scripts for theater and street theater.
- Video spots for traveling film shows.

- Radio programs that can be recorded on tape and distributed to local stations, including those that are purely informational, in a question-and-answer format, or a combination of music and information.

- Soap opera scripts for radio or television.
- Murals to decorate schools, wells, and other water sources provided by the program that convey key messages or the campaign logo.

Case Example 5.3 shows how materials were developed and communication channels chosen for the social marketing campaign in Vietnam.

Pretesting

Like themes and messages, campaign materials, training packages, and support tools should be pretested using the same methodology as described in Step 2. The target groups can give feedback on the materials, which can then be modified to better suit the audience.

Table 5.6*Strengths and Limitations of Traditional Media Channels***Strengths**

- Can use local jargon and slang
- Puts messages and situations in familiar context
- More relevant than other media
- Uses local talent and gets community involved
- Has potential to be self-sustaining at low or no cost
- Stimulates discussion of topics among families, friends, neighbors, and the community

Limitations

- Reaches relatively small group
- May not be available when needed
- Requires investment in training and support
- May have difficulty broaching highly sensitive issues
- May be difficult to guarantee and monitor accuracy of messages

Schools in Morocco use several types of materials.



Step 4: Campaign Delivery and Evaluation

The final step in conducting a social marketing campaign is to deliver the materials and evaluate the campaign's results.

Campaign Management and Delivery

In the delivery phase of the campaign, all elements of the social marketing strategy go into action. The following activities will need to be carried out to ensure smooth delivery of the campaign:

Identification of collaborating partners. The partners will vary, depending on the communication channels and materials chosen. For example, an advertising agency can be hired for assistance in developing materials and buying media time, although most rural FM radio stations will be happy to play slots for free. Community groups can serve as partners for community-based group activities. The roles and responsibilities of each partner should be clarified before the campaign unfolds.

Campaign management. All partners, programmers and channels of the campaign must be closely coordinated. The manager must decide how often the partners will meet to discuss the progress of the campaign. Furthermore, the program and campaign elements must be closely linked or the overall program will suffer. For example, if services are being promoted through the campaign, they must be available immediately.

Staff training. Training allows campaign implementation to go more smoothly. For example, those

involved in radio slots need to learn, among other things, the schedule of broadcasts. Supervisors may need to learn how to evaluate staff performance and how to collect and compile monitoring data. Community health workers need to know how to use new messages and materials.

Press coverage and public relations. Where applicable, a staff member should be responsible for working with the press to ensure adequate coverage of the campaign.

Timeline. Timing and coordination are keys to effective program management. Campaign materials must be delivered to designated locations at the appropriate times. Because the social marketing campaign is linked to other parts of the trachoma control program, the campaign must be part of and coordinated with the broader program implementation plan.

Budget. It is essential to budget adequately for all steps of the campaign. Managers can save significant money by using materials developed by programs in other countries or producing large quantities of promotional material. Campaigns are possible at any budget, it is simply a matter of balancing objectives and resources.

Monitoring and Evaluation

A plan for monitoring and evaluation needs to be designed at the initial stage of message and campaign development. Monitoring and evaluation are important for improving delivery of the campaign, improving the messages, updating the messages to reflect a changing context, and measuring impact.

Monitoring is part of the ongoing management of communication activities, and it usually focuses on the process of implementation. The following questions should be asked regularly to ensure the campaign is as effective as possible:

- Reach: Is an adequate number of the target audience being reached over time?
- Coordination: Are messages adequately coordinated with service and supply delivery and with other communication activities? Are communication activities taking place on schedule and at the planned frequency?
- Scope: Is communication effectively integrated with the necessary range of audiences, issues, and services?
- Quality: What is the quality of communication, including messages, media, and channels?
- Feedback: Are the changing needs of the target groups being captured?

The answers to these questions can be monitored through reports, site visits, and reviews of materials. Periodic key informant interviews can help assess the perceptions of target groups. Peer educators can collect responses from target groups to help identify changes that may have to be made.

Evaluation refers to the assessment of a project's implementation and its success in achieving stated behavior-change objectives. The social marketing campaign should be evaluated against its stated objectives and in reference to a baseline that may be quantitative or qualitative, or both. Step 2 discussed carrying out a household survey for research purposes. For large-scale interventions, household surveys

can be used to collect baseline information on knowledge, attitudes, and reported behaviors in relation to communication and project-level behavior-change objectives. These surveys may be repeated to demonstrate changes over time. Change can also be assessed through qualitative research into target-group responses to interventions. Qualitative evaluation involves examining data that are designed to illustrate changes in audience behavior.

All monitoring and evaluation of the social marketing campaign should be coordinated with the overall evaluation of the trachoma control interventions.

Case Example 5.3

Channels and Materials for Vietnam Campaign



These posters were part of the marketing campaign.

International Development Enterprises (IDE) decided to promote hand and face washing through a campaign focused primarily on children but also on mothers. Because of the focus on children, IDE developed a central character for the campaign – a “funny-haired” boy modeled on a Vietnamese folktale about the Buffalo Boy, who has a lot of adventures and is well regarded among children. This character became the campaign logo and was incorporated into all materials. The main slogan of the campaign was incorporated into the logo. It reads “Clean eyes – healthy eyes” above the boy and “A bright future” below him.

The channels used to reach the children included school, television, and commune loudspeakers. The communication materials developed included video spots broadcast to children in school and on television, a song taught in schools that focuses on how having clean and healthy eyes results in success in school and happiness for the whole family, and school exercise book covers that read, “Have you washed your face?” “Wash your hands and clean your face with your own towel.” IDE designed a cartoon based on the campaign logo that showed the “funny-haired boy” waking up, washing his face with his own towel, and happily going to school. No words are spoken, trachoma is not mentioned, but the background music is the trachoma song. IDE also developed a video slot targeted to boys. In this video, a boy is watching television and sees a football star washing his face and talking about the importance of hygiene. This boy decides to wash his face before playing football with his friends. He goes on to score a goal and is lifted into the air by the other boys.

The main channels IDE used to reach mothers were television, women's groups, and commune loudspeakers. They developed a video slot that featured a trachoma poem composed and performed by a famous balladeer. This video was shown to women on television, in women's union meetings, and village meetings.

The campaign logo also appeared on T-shirts, face and hand towels, plastic rulers, stickers, calendars, wall clocks, and posters.

6 Monitoring and Evaluating Interventions

Although monitoring and evaluation are often mentioned together, they are different. Monitoring refers to the ongoing process of recording the day-to-day progress of the program. Evaluation, on the other hand, refers to assessing the total program achievement against the initial objectives. In a simple example, if the initial objective of a program is to build 3,000 household latrines during a three-year program, monthly or quarterly recordkeeping (i.e., monitoring) will allow the program manager to revise activities throughout the program to work toward the target. After three years, the program can be evaluated against the initial objective: If 3,000 or more latrines have been constructed, the main target has been met. Most programs typically have several initial objectives that will be monitored and evaluated at the same time.

Monitoring and evaluation can also be used for advocacy because they demonstrate the progress, output, and impact of the program, which gets policymakers more involved. Furthermore, monitoring and evaluation helps show donors how their funds have been put to good use. And finally, but possibly most importantly, evaluations can serve as tools to empower beneficiary communities by demonstrating the positive impact and improvements made by their efforts and also by identifying remaining hurdles.

Importance of the Baseline

Baseline data is basic information gathered before a program begins or when a new phase is launched. It is used later to provide a comparison for assessing the impact of the entire program or a phase of the program.

Conducting a baseline study is essential for the proper planning and evaluation of F and E interventions. Baseline studies help to analyze the currently existing problems concerning trachoma, hygiene, and sanitation in the target area, while taking into consideration different age groups, sexes, ethnic groups, and social classes. After a program or intervention has been launched, comparisons with baseline data will reveal the impact the program has made.

A baseline study on trachoma typically will report the following information:

- Prevalence of trachoma in the target communities
- Communities' knowledge about trachoma and hygiene
- Behaviors that increase the risk of trachoma currently practiced by the target communities
- Environmental factors in the communities that increase the risk of trachoma
- Population of the risk groups
- Main communication channels in the communities
- Primary motivators for behavior change in the communities
- Capacity of local health and hygiene professionals

Once the above information has been collected and analyzed, the basis for program planning and future monitoring and evaluation has been set. Keep in mind that even if the project is well underway, it is never too late to start a new phase and collect baseline data.

Steps for Monitoring and Evaluating Interventions

There are four steps for monitoring and evaluating F and E interventions for trachoma control: (1) develop a purpose and plan for the evaluation, (2) gather data, (3) analyze data, interpret findings, and make conclusions and recommendations, (4) present findings and act on recommendations. These steps are described in detail next.

Step 1: Develop a Purpose and Plan

Articulating the purpose of an evaluation is an important first step because it has implications for logistics, data collection, and uses of the final conclusions. The purpose will depend on factors such as those listed below:

The specific interventions being implemented.

In general, the following should be evaluated if they are relevant to the program: trachoma prevalence; hygiene practices (including number of clean faces in

children); trachoma knowledge; physical attributes such as presence and condition of water supply and sanitation facilities; variation between gender groups, age groups, households and communities; and effect of social marketing or communication campaigns.

The planned uses for the evaluation. Is the evaluation intended to assess effectiveness of program interventions for the purposes of deciding how best to allocate new resources? Is the evaluation intended to influence and educate policy-makers and donors? Is the evaluation going to be used to empower beneficiary communities to stimulate dialogue and raise awareness regarding trachoma and hygiene issues?

Once the purpose is articulated, the questions that will be asked in the evaluation can be written. Some sample questions are listed below.

On scope: What is being done?

On scale and coverage: Are we operating on a sufficiently large scale or reaching enough people in our target to have a significant effect?

On quality: How well is the program being delivered?

On success: Is the program working? Can we show that we are making a difference?

Once the purpose of your evaluation has been determined, an evaluation plan can be devised. Some of the factors to consider include the following:

Types of information to be gathered. What types of data are needed to answer the evaluation questions? What evaluation techniques are most appropriate and feasible?

Study team. Who will participate on the study team? What are the terms of reference for the study team? Evaluation of F and E interventions is labor intensive and in many cases will need a professional study team. Once the team has been recruited, training should be undertaken to sensitize the team about the project and develop a common understanding of the evaluation purpose and design.

Timing. What is the timing for the evaluation?

Budget. Evaluation costs should be factored into overall F and E program costs and may include travel, fees, and accommodation of the study team, as well as field work costs such as fuel, equipment, and training.

Before an evaluation has begun, the community should be adequately sensitized, but it is probably better not to talk specifically about evaluating a program because that can influence how people

respond. It is better to say that “more information is needed to improve the program” and that “we would like to conduct some interviews and hold some discussions.” The key findings of the evaluation should be delivered back to the participants, which can strengthen the relationship between the program and the community.

Step 2: Gather Data

Indicators are tools that show how far a program has come in achieving its goals. The right indicators allow program managers to measure success and determine if the program is heading in the right direction. There are two general types of indicators: process indicators and outcome indicators. The selection of specific indicators will depend on the situation, but the following should be considered:

- The indicator should be relevant.
- The indicator should be easily understood by everyone interested in the program.
- The indicator should be easy to measure.
- The indicator should give valid information (i.e., the truth) and should be repeatable by the same program team or another team in the future.

Process Indicators

Process indicators assess the program activities that have been conducted in pursuit of the program goals. Because they measure activities at the program level, they usually are derived from monitoring data and reports, but are best backed up with verification. Process indicators can be verified by follow-up studies that prove the reported activities actually took place. Two examples of program aims, suggested process indicators, and verification methods are shown in Table 6.1.

Outcome Indicators

Outcome indicators measure the impact of a program in the target population against the aims. An epidemiologically sound collection of outcome indicators allows assessment of the program effect to date and generates a new baseline against which to compare further progress. Examples of tools to use to generate outcome indicators include field-based surveys and formal interviews. The tools used should produce valid and repeatable data; that is, the data should be true and the tools usable by the current team or another team in the future. The two examples of program aims used previously are listed with suggested tools and outcome indicators in Table 6.2.

Table 6.1
Sample Process Indicators

Program Aim	Process Indicator	Verification Method
Ensure all people in target area have access to a latrine at home	<ol style="list-style-type: none"> 1. Realistic goal and plan of action 2. Number of builders trained 3. Number of demonstration latrines built 4. Number of other latrines built by builders but paid by participants 	<ol style="list-style-type: none"> 1. Check calculation. Total need = Number of households in target area minus the number that already have a latrine. Confirm plan of action is reasonable and achievable. 2. Check participant lists for training. Examine post-training knowledge. 3. Visit a random sample of households that are listed as having received demonstration latrines. 4. Check builder's records. Visit a sample of households listed as building their own latrines.
Promote knowledge of trachoma through schools	<ol style="list-style-type: none"> 1. Realistic goal and plan of action 2. Suitable curriculum and support materials 3. Number of teachers trained 4. Number of classes taught and students reached 	<ol style="list-style-type: none"> 1. Check plan of action. Confirm that resource allocation and teacher training is sufficient to meet need. 2. Check curriculum for content and age appropriateness. Examine teaching materials. 3. Examine lists of training participants. Confirm with some teachers that they actually attended. 4. Discuss with trained teachers, class, and school registers.

Step 3: Analyze Data, Interpret Findings, Draw Conclusions, and Make Recommendations

The analysis of the data should yield evidence of the steps being taken toward the project aims (the process indicators) and the impact of the program against the aims (outcome indicators). These then have to be interpreted with the overall goal of the program in mind. The interpretation will use both process and outcome indicators to inform the recommendations.

Using the first example in Tables 6.1 and 6.2 (ensure all people in the target area have access to a latrine at home), consider that the program has set its target to train 15 builders, construct 300 demonstration latrines, and satisfy all other demand for latrines generated by the program. Process indicators may reveal that 15 builders have been trained, they have built 260 demonstration latrines, and 50 latrines have been built in response to community demand. Verification from the baseline survey shows that the target population is 180,000 people in 3,000 households and that only 12% had latrines at baseline. The target of 300 demonstration latrines appears realistic, provided that they generate

demand, and progress has been good ($260/300 = 87\%$). Only 50 other households have requested latrines, and the builders have been able to satisfy 100% of demand. The program appears to be doing well. However, comparison against baseline shows that the program must ensure that 2,640 latrines are constructed to achieve the aim. The construction of 310 covers only 12% of the need. There is still a need for more than 2,000 household latrines, and it looks unlikely that this target will be met. Suitable recommendations in this circumstance may be as follows:

1. Because the demonstration latrines have failed to generate demand, interviews should be conducted to find out why people have not been employing the builders to make latrines for them.
2. Assuming that there is demand, but the participants cannot afford to employ the builders to make latrines, subsidies or cost-sharing schemes should be investigated.

Step 4: Present Findings and Act on Recommendations

Evaluation findings should be shared with the main stakeholders so that their feedback and additional

insights can be incorporated. Ideally all stakeholders will agree with the main findings and recommendations before they are widely distributed. Final findings and recommendations should be communicated to relevant audiences in a timely manner through appropriate means such as written reports for donors and village meetings for participating communities.

Where findings and recommendations are supported by verifiable evidence, it is much easier to act on them. Using the example of the latrines, the national program may wish to conduct a series of interviews with participants who have seen the demonstration latrines but have not employed builders to make them. The program planners may decide to allocate resources to subsidize latrine provision, perhaps by donating the cement. The donor may give financial support for latrine provision so

that they can be built for free.

Whatever the outcome, an open and transparent process of monitoring and evaluation allows evidence-based decision making and the allocation of resources in response to need. Programs managed in such a way are likely to be both strong and successful. Before publishing the findings, a draft should be shared with the main stakeholders. This step provides opportunity for feedback, additional insights, and assessment of their agreement with the findings. The primary result of the evaluation is a complete study report. To make findings more accessible for groups, such as community members and policy-makers, however, other presentation methods also may be used, including a summary report, a brochure, or verbal presentations.

Table 6.2

Sample Outcome Indicators

Program Aim	Tool	Outcome Indicator
Ensure all people in target area have access to a latrine at home	1. House-to-house survey of a random sample of houses in the target area; visual inspection for a usable latrine 2. Structured interviews with homeowners to determine who has access to a latrine.	1. Proportion of households with access to a usable latrine at home (can be compared against baseline to demonstrate program impact) 2. Proportion of people in target area with access to a latrine at home (can be compared against baseline to demonstrate program impact)
Promote knowledge of trachoma through schools	1–3. Structured questionnaire of the knowledge of teachers/students/other community members about trachoma	1–3. Proportion of teachers/students/other community members able to identify trachoma, name transmission routes, explain how to avoid or treat trachoma, and so forth (can be compared against baseline to demonstrate program impact)

Resources

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Web Sites for Further Information

WELL

<http://www.lboro.ac.uk/well/>

WELL is a resource center network providing access to information and support in water, sanitation, and environmental health for the Department for International Development (DFID) of the British Government. The WELL Web site provides a wide range of publications including WELL Fact Sheets on various topics such as hygiene promotion (<http://www.lboro.ac.uk/orgs/well/resources/fact-sheets/fact-sheets-htm/hp.htm>) and evaluation of hygiene promotion (www.lboro.ac.uk/well/resources/fact-sheets/fact-sheets-pdf/ehp.pdf).

UNICEF Water, Environment, and Sanitation

<http://www.unicef.org/wes/>

The UNICEF water, environment, and sanitation Web site provides fact sheets and technical, policy, and advocacy documents including “A Manual on Hygiene Promotion” (<http://www.unicef.org/wes/hman.pdf>) and “A Manual on Communication for Water Supply and Environmental Sanitation Programmes” (http://www.unicef.org/wes/com_e.pdf).

The Center for Communication Programs

<http://www.jhuccp.org>

The Center for Communication Programs at the Johns Hopkins Bloomberg School of Public Health focuses on the central role of communication in health behavior change. The site provides health communications resources including “A Field Guide to Designing a Health Communication Strategy: A Resource for Health Communications Professionals” (<http://www.jhuccp.org/pubs/fg/02>).

World Health Organization Water, Sanitation, and Health

http://www.who.int/water_sanitation_health/

The water, sanitation, and health Web site of the World Health Organization provides diverse resources including information about participatory techniques in water and sanitation programs such as the “PHAST Step-by-Step Guide: A Participatory Approach for the Control of Diarrhoeal Diseases” (http://www.who.int/water_sanitation_health/hygiene/envsan/phastep/en/).

The Francophone Network on Water and Sanitation

<http://www.oieau.fr/ReFEA>

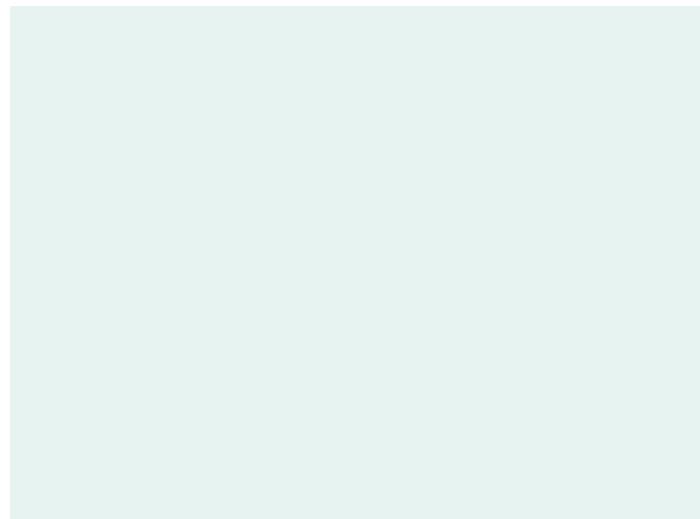
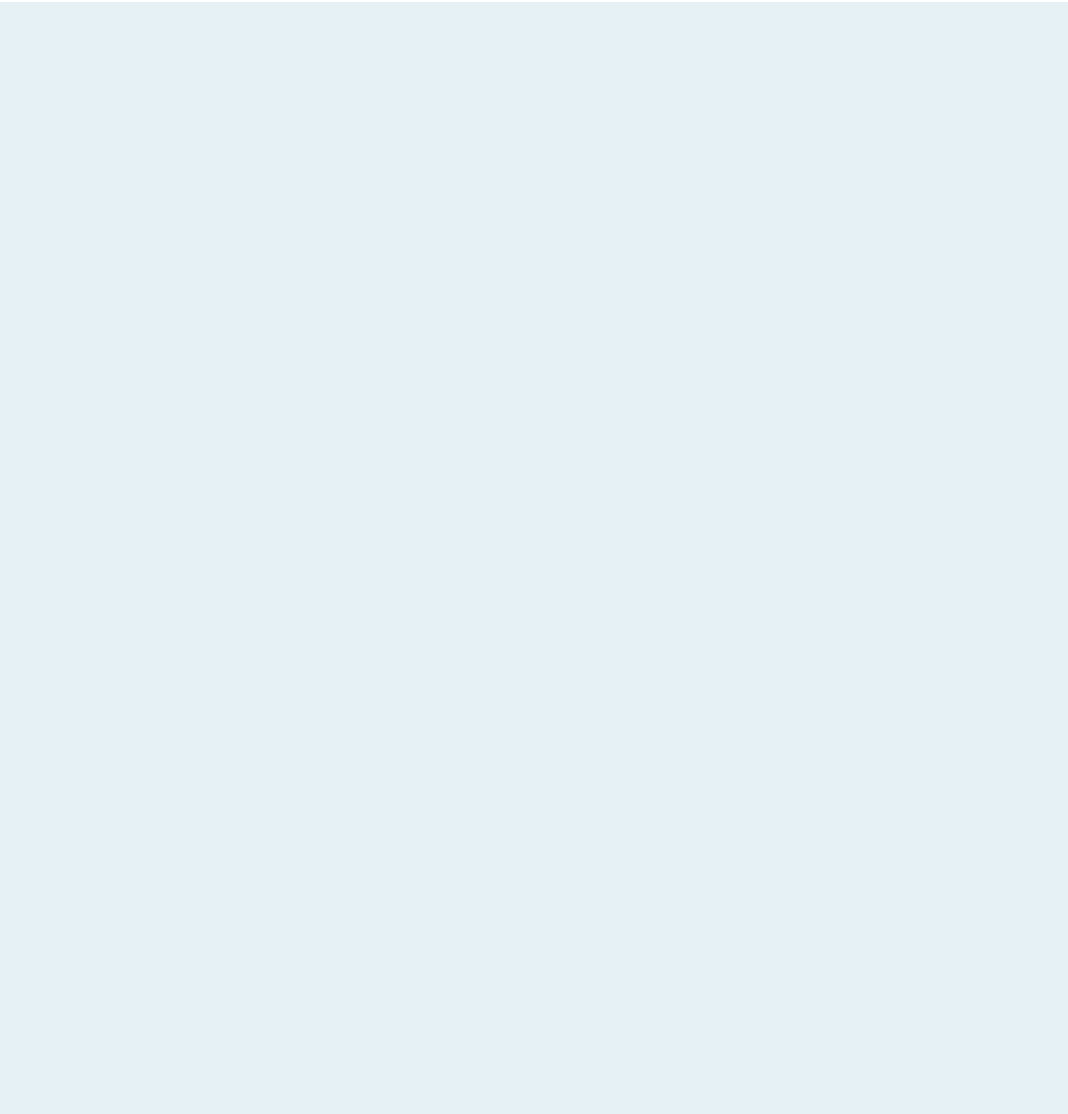
The Francophone Network on Water and Sanitation provides resources in French on the provision of water. In the Low-Cost Technologies section of the site, technical publications are available on water provision technologies for surface, underground, and rainwater, and on the treatment and analysis of water (<http://www.oieau.fr/ReFEA/module3.html>).

Environmental Health Project

<http://www.ehproject.org>

The Environmental Health Project (EHP), funded by USAID, provides resources on a wide range of environment and health issues. Though the EHP project ended in September 2004, its publications and resources remain on its Web site, including “Strategic Report 8: Assessing Hygiene Improvement: Guidelines for Household and Community Levels” (http://www.ehproject.org/PDF/Strategic_papers/SR-8-HISGPaperVersion.pdf).

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