

# Keynote paper

## Coming into its own: Hygiene promotion for development

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### Introduction

This paper presents a state-of-the-art overview of current approaches used for hygiene promotion, and aims to help the reader understand the far-ranging benefits and importance of good hygiene practices. It describes behaviours, target groups, locations and timings when hygiene promotion is most crucial, and offers a range of approaches to hygiene promotion and a model for designing or assessing these approaches. The paper also examines a selection of good practices from the region highlighting their strengths and weaknesses, and offering a number of conclusions for hygiene promotion in South-East Asia and the Pacific. Extensive references of web-based papers are given to assist readers in examining specific areas of interest further.

### Hygiene promotion benefits: beyond health

Safe hygiene can greatly improve health. Hygienic practices reduce diarrhoea, acute respiratory infections such as pneumonia and influenza, worm infestations and infections of eyes and skin. Ten studies showed that handwashing with soap could cut the risk, by an average of 23%, of upper respiratory infections which are the biggest killers of children under five. In her paper in this publication, Dr Valerie Curtis shows that handwashing with soap reduces diarrhoea, the second leading cause of death in children, by around 45%.<sup>1</sup> The Disease Control Priority Project (DCPP)<sup>2</sup>, in which hundreds of specialists are involved, lists hygiene promotion as the intervention with the greatest effects at the lowest cost<sup>3</sup>.

However, the value of hygiene promotion goes beyond health benefits. Table 1 shows how the eight Millennium Development Goals (MDGs), which have been adopted by almost all countries in the world, are all related to good hygiene and its promotion. From this, it is clear that either directly or indirectly hygiene promotion supports all the Millennium Development Goals. However, to improve health, some hygiene practices are more important than others. The four most important clusters are discussed in the next section.

Table 1. The Millennium Development Goals (MDGs) and the relevance of hygiene promotion

#	MDG	Relationship with hygiene/hygiene promotion
1	Eradicate extreme poverty and hunger	Households with less WASH-related disease lose fewer working days and have fewer expenses related to illness. Households' productive uses of water surplus and composted waste improve nutritional status and reduce poverty. <sup>1</sup>
2	Achieve universal primary education	Less diarrhoea, respiratory infections and worm infestation improve school attendance and learning performance. <sup>1</sup> Girls' school attendance is influenced positively when they can use toilets. Providing for privacy and hygiene for older girls during menstruation is very important. <sup>1</sup>
3	Promote gender equality and empower women	Better education for women and girls is related positively with smaller family size and higher income, a higher status of women, better hygiene practices and health. <sup>1</sup> All this, in turn, benefits maternal and child health and poverty reduction.
4	Reduce child mortality rate	Handwashing with soap, improved water quality and excreta disposal reduce diarrhoea by about 45%, 17% and 36% respectively. Handwashing by midwives and mothers may reduce neonatal mortality by 25% and 60% respectively. <sup>1</sup>
5	Improve maternal health	Nutrition and health are improved by less diarrhoea, fewer worms and the use of surplus water for food and income from kitchen gardens and animal breeding. <sup>1</sup>
6	Combat HIV/AIDS, malaria, and other diseases	Keeping water points and drains free from stagnant water reduces breeding places for malaria-transmitting mosquitoes, especially in areas where surface water is scarce. Good hygiene reduces the risk of chronic diarrhoea in HIV/AIDS infected persons and keeps them healthier.
7	Ensure environmental sustainability	Environmental sustainability means that improving access to safe water and sanitation must go together with hygienic use and maintenance of toilets and water.
8	Develop a global partnership for development	Although not mentioned in the targets for this goal, cooperation among hygiene promoters and local industries, shops and masons has been shown to be important for the adoption of handwashing with soap and sanitary toilets. <sup>1</sup>



Handwashing with ladle, India

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## The main hygiene behaviours

Four hygiene clusters are known to have the greatest impact on people's, and especially children's, health<sup>4</sup>: (1) washing hands with soap; (2) safe and sustained ways of disposing of and handling human excreta; (3) keeping drinking water safe from source to mouth; (4) using enough water for hygiene, and, although this is not well researched, using the surplus water for small-scale production.

This paper mainly addresses the two first behaviour clusters for the following reasons. Handwashing with soap is the most important behaviour for health benefits. It can reduce diarrhoea by almost half and upper respiratory infections by almost one-fourth. Having a toilet only brings health benefits when combined with good hygiene. Clean toilets with a cover or water seal keep excreta away from human contact. Toilets must also be used hygienically by all family members (not just women and girls) and be used to deposit the excreta of infants. Where there is

no toilet, excreta should be buried (the 'cat method') to prevent disease transmission.

The other two clusters of behaviours (3 and 4 above) apply to specific situations. Making drinking water safe through home treatment is needed especially where there is no improved water supply or when the supply is not safe. Promoting the boiling of drinking water is common, but it is not always realistic. The boiling of water may require too much time or cash for fuel. Solar disinfection by exposing the water to sunlight is a good alternative, but in the poorest and isolated areas polyethylene terephthalate (PET) bottles are not always available, and glass bottles must be less than 2 mm thick for the UV rays to penetrate. Developing new habits at scale is not easy.<sup>5</sup> The largest evaluation to date showed only about one-third (32%) of households continuing solar disinfection, not sufficient to reduce diarrhoea.<sup>6</sup>

Keeping drinking water safe during storage and at the point of use also requires several good practices. Water drawn by dipping a communal cup into the container is often contaminated. The container for storing water must be covered and regularly cleaned. Water should be taken from the container by pouring from a tap or a long-handled ladle into clean individual cups/glasses.

Besides preserving good quality drinking water, the use of enough water for personal hygiene is important. While handwashing reduces faecal-oral diseases, face washing reduces eye infections and bathing with soap reduces skin infections. Finally, health benefits are linked to habits of using surplus or wastewater for domestic productivity, e.g. for extra food and income from kitchen gardening and keeping livestock.

## Adjusting hygiene promotion according to the situation

Whose practices to address, and where and when to promote them, depends on the specific situation. Planners and practitioners sometimes need to adjust hygiene promotion to specific target groups, locations and seasons.

### Target groups

Children under five are most at risk of dying from infections because of their own practices, such as sucking hands after touching the ground or their own excreta. Mothers (or grandparents and siblings) can greatly reduce infant diarrhoea by depositing stools safely and by washing their hands with soap after possible contact with stools as well as washing hands before preparing food and feeding young children. This goes also for acute respiratory infections that can be transmitted by sneezing into hands or touching objects infected by air-transmitted droplets. New mothers, those who assist in deliveries, the elderly and their caregivers are special target groups for handwashing with soap, to reduce neo-natal, maternal and old-age related mortality.

Hygiene promotion is needed for men and adolescent boys, in general, but particularly in cultures where women cannot influence male hygiene practices or where they need men's support, financial and otherwise, to adopt new hygiene practices in the home. Mothers (and mothers-in-law) of young women can be a special target group because they determine the behavioural patterns of their daughters (and daughters-in-law).

Households with members infected by HIV/AIDS are a specific category, because half of those infected develop chronic diarrhoea.

Promoting good hygiene and access to enough water, a toilet and a kitchen garden helps people with HIV stay healthier longer. It reduces the negative impact on work, cleanliness and dignity.

### Location-specific practices

Promoting the use of more water for hygiene is especially important in areas with a seasonal or permanent water shortage. In water-scarce areas people often have a habit of being frugal with water. Handwashing studies show less handwashing at critical times under such conditions<sup>7</sup>. Less face and skin washing can mean more skin and eye infections. Infection with trachoma, for example, has made about 8 million people blind, and some 84 million people are currently infected. There are two solutions to the problem of water shortage for hygiene: (a) build more infrastructure and (b) promote methods of hygiene that require only small amounts of extra water, for example, washing the face only, using a washing cloth for bathing and washing hands by pouring.

Where water is scarce or must be bought, promoting hygiene habits that require collecting, buying and using even more water also means calculating the required extra amount of effort and its cost. Women focus group discussions in Kalimantan, Indonesia, for example, first wanted to calculate how much extra drinking water had to be bought for teeth brushing. This was usually done with unsafe river water ("since we are told that drinking water must be safe and we do not drink the water with which we brush teeth"). They wanted to know what cost was involved before they would accept brushing teeth with drinking water. The practice was also promoted with men, because they make the financial decisions, and it was difficult for women to influence the hygiene practices of adult men.



Children play a handwashing game at school. The 'fastest' team is not necessarily the 'winner', as the slower team washes their hands more thoroughly

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In addition, risks of malaria, filariasis and other mosquito-transmitted diseases increase in dry areas when insufficient drainage practices bring new mosquito breeding places around water points and at drainage places near kitchens and bathing areas.

A specific situation in South-East Asia's river deltas is the increase of arsenic in groundwater used for drinking. This may require specific hygiene promotion programs in combination with home water treatment and/or rainwater harvesting.

### Seasonal changes

Especially in rural areas, diarrhoea peaks when the rains start and excreta wash into surface water used for bathing, cooking and drinking. Acute respiratory infections also peak in this season. At this time it is particularly important to have safe hygiene practices. Poor people benefit particularly from good hygiene practices in the wet season, because at the end of the dry season, when there is less food and no green vegetables can be grown, poor people have the lowest resistance against infections. Most at risk are those who, according to custom, are 'fed last and least', often the women and girls.

Having defined the most important practices and environmental factors, the question addressed in the next section is how hygiene programs can be assessed and designed.

### Analytical model

Hygiene programs can use different approaches, based on different models of behaviour change. This paper focuses on two major approaches: marketing of a single intervention, and community-based total approaches.

The FOAM model describes four core elements of hygiene promotion programs (Coombes & Devine, 2009):

1. **Focus** of the program. Who are the target audiences and what are the behaviour(s) to be adopted?
2. **Opportunity** for change. Is it possible to practice the behaviour in the specific physical and social environment? Does the practice fit into people's own knowledge system rather than scientific knowledge? Are there relevant materials and convenient, working infrastructure? Will important others, such as opinion leaders, support the change?
3. **Ability** to change. Are people themselves capable of carrying out the behaviour(s)? Do they have the practical knowledge and skills to practice the new behaviour? Can they afford the new practices in terms of money, effort and time?
4. **Motivation** to change. Do the target groups want to carry out the new practice(s)? This relates to the positive or negative attitudes of people to a particular change, their beliefs about its importance and benefits, their general readiness to change (some people are more ready than others), their earlier experiences and competing priorities.

Using the FOAM model, the next section contains the analysis and evidence from several programs for the two key hygiene behaviour clusters, handwashing with soap and safe excreta disposal and toilet use habits, as well as a program for multiple hygiene improvements.

## Review of selected cases

### Safe handwashing habits at critical times

In this section, social marketing programs for handwashing with soap are analysed. The reason for focusing on this particular approach is that handwashing with soap lends itself well to social marketing, because the products, water and soap, are widely available and relatively cheap. In addition, the practice (washing hands with soap at critical times) is not too complex for promotion through mass channels.

There is a small but growing amount of evidence on the impact of social marketing on handwashing with soap<sup>8</sup>. Examples in Central America, Vietnam and Kenya were chosen for analysis.

Social marketing of handwashing with soap began in three countries in Central America (1996-1999). The partnership for the program combined health departments, national soap companies, media, two large farmer associations, NGOs, two donors and a knowledge centre for facilitation. The private sector contributed almost double the amount of other donations (Saadé & Bateman, 2001; Saadé *et al.*, 2001). A baseline study showed only 3% of the people had perfect handwashing practices before the campaign began. Campaigning combined mass media (radio, TV) and printed materials with interpersonal promotion by NGO fieldworkers and schools.

The campaign had the following FOAM characteristics:

1. **Focus:** The two focus groups that emerged from market research were: low-educated mothers with children under five, and primary school children, both in rural

areas. The focus change was soap used at five critical times, later simplified to three.

2. **Opportunity** factors needed for behaviour change were: accessibility of soap and water, the common interests of the commercial and health stakeholders, available marketing expertise, presence of an intermediary organisation that helped the partners in all stages of the campaign and mothers' concern with child diarrhoea.



School students in Uttaranchal state, India, learn proper handwashing technique

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3. **Ability** to adopt was helped by going for three stages of good practice and affordable soap brands. Mothers also said that they could influence handwashing practices of the whole family.
4. **Motivations** for change were the mothers' concerns about their children's health and

their beliefs that handwashing helps to improve health at least partially.

The evaluation was done best in Guatemala. The rate of diarrhoea fell over time (three surveys). The cost of preventing diarrhoea was less than US\$10 per case (Shordt, 2006). One weakness, however, was that access to

the campaign and to information about handwashing practices was better in urban rather than rural areas.

The campaign is now being taken up, with local adaptations, in Colombia, Nicaragua and Peru; Benin, Ghana, Kenya, Madagascar, Senegal, Tanzania and Uganda; and India, Indonesia, Nepal, the Philippines and Vietnam<sup>9</sup>.

Applying FOAM to the preparation of the campaign in Vietnam shows that careful audience research helped shape a campaign that differs from the Central America campaign on all four aspects (Nguyen, 2010):

1. **Focus** groups are not only mothers and school children but also grandparents who in the Vietnamese culture do a lot of caretaking of grandchildren.
2. **Opportunities:** Access to media and water and soap are high. The campaign further uses the children's song, "Five little fingers", popular with caregivers and children. Handwashing education in schools was designed to be entertaining for children. Promoting special handwashing 'stations' (that is, special places to wash hands) in homes and schools may also help habitual handwashing with soap (Devine, 2010).
3. **Ability:** Inter-personal promotion of handwashing with soap is done by the teachers, and the national women's and youth unions. Together they reach a large part of the target groups. As inter-personal communicators they are also respected and have influence.
4. **Motivation:** The motivating message for caregivers is not child health, but the broader concept of child development, for

example, through better learning ability. For the schoolchildren, a core message is protecting the health of friends, brothers and sisters.

The Vietnamese campaign has four measurable objectives for caregivers and five for schoolchildren. Costs and results are yet to be reported.

These examples show that social marketing may be an effective way to promote handwashing with soap, but requires research that is used for careful planning of the program. These cases are all large and costly campaigns. Perhaps NGOs could adopt a similar approach, but with more local and less costly research and mass media. However, no example of local social marketing was found. Special adaptations of the promoted practice would be needed in areas of social and environmental hardship. Of course handwashing with soap can be promoted through community-based and group-based hygiene promotion. However, in those cases the promotion is part of a more comprehensive total package of hygiene practices.

### Open defecation and toilet use

While toilets as a product lend themselves well to social marketing, the adoption of good toilet practices involves a more complex set of behaviours than washing hands with soap. These behaviours include: ending open defecation, toilet use by everyone at all times, the burial of excreta when far from a toilet, proper operation and maintenance of the toilet, safe removal and disposal of sludge and practicing good toilet hygiene by all. Social marketing preferably addresses one specific practice on a large scale and is therefore less suitable than a community approach.



Washing only left hand without soap, poor hygiene practice

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Four cases are described here relating to the abolishment of open defecation and the adoption of toilet use and hygiene. Two are Community-Led Total Sanitation (CLTS) programs in Bangladesh and India; the third and fourth are community-managed sanitation interventions in India and Indonesia. At the end of this section, a case of two other forms of community-based hygiene promotion are presented: hygiene promotion through school hygiene programs with a community outreach component, and through voluntary learning groups.

In Community-Led Total Sanitation programs, communities use participatory techniques to learn and decide about open defecation. They then commit themselves to abolish open defecation and use mainly simple toilets built with local skills, designs and materials. CLTS programs provide trained facilitators for ‘triggering’ (motivating community decisions to end open defecation) and to promote related hygiene practices (hence the ‘total’ sanitation).

In Bangladesh, VERC, one of WaterAid’s partners, pioneered the approach in rural areas and saw it adopted by other NGOs. The Community-Led Total Sanitation program in Maharashtra, India, is state-managed and works through the local governments. Neither CLTS program gives individual household subsidies, but the Indian program provides a financial reward to villages declared open-defecation free.

The FOAM analyses of the two programs give the following findings:

1. **Focus** groups are all villagers who practice open defecation, either because they have no toilet or because they are not using it. The main desired practice is to stop practicing open defecation by any means.

For example, away from homes, people could practice the cat’s method (burial of excreta in the field), or share toilets of relatives (for example, young couples who are still building their house) as well as the construction and use of temporary and permanent toilets.

2. **Opportunity:** By using village-wide participatory events, the promoters raise awareness on the effects of open defecation and the campaign. The programs adjust to local opportunities and means by giving information on a range of very-low cost to low-cost and medium-cost toilet models that households can build themselves from local materials<sup>10</sup>.
3. **Ability:** The programs provide practical information and emphasise local skills for toilet construction. The VERC program is especially strong on engaging the skills of untrained villagers to build their own toilets with local materials. Village leadership is developed to manage follow-up after triggering: promoting and monitoring that households build toilets and open defecation actually stops.
4. **Motivation:** The overarching motivating factors used are not health, but disgust with open defecation: the dirt, the bad smell and lack of privacy and dignity; and pride with having such a clean community. Negative social attitudes to open defecation are strengthened and positive ones emphasised – dignity, privacy and safety for women and girls, and compliance with community decisions. In the Indian program, the Open Defecation Free award is an additional incentive for local leaders.

In both programs the uptake is large-scale. In Bangladesh, reportedly more than 70 million

people abolished open defecation, through VERC and many other programs. And after four years, Maharashtra had more than 3800 open defecation-free villages with over five million households (10% of all households) in mid-2006 (Sanan & Moulik, 2007). However, monitoring actual practice remains a challenge, because of the political and financial rewards. In Bangladesh, the government reported increases in sanitation coverage from 29% in 2003 to 87% in 2008 due to total sanitation and other approaches. This was highly inflated and did not mean that toilets were used (Chambers, 2009). A cost-effectiveness study found a sustained use of toilets, limited open defecation in newer villages and freedom from open defecation in the older villages at an investment cost for promotion and training equivalent to US\$ 1.23 per person in 2002 (Allan, 2003). A sample study by VERC itself showed that all self-built/financed toilets remained in use over time and many, especially the poorer ones, were upgraded to more permanent models that were easier to keep clean (Shayamal *et al.*, 2008). However the study report gives no details on the methods and representativeness of the village and household sampling (Sijbesma, 2008).

In Maharashtra, being free of open defecation in a community was initially verified by an independent party. The monitoring did not always find that open defecation had actually ended (Jain, 2007, in Sijbesma, 2008). Verification in the neighbouring Indian state of Orissa gave 70% use among the 40% of households that had built a latrine (Whittington *et al.*, 2008). It is not clear if this use is by all household members or only by some, for example female members. In the

Maharashtra program, independent verification soon ended, however. Certification became a farce when NGOs commissioned to carry out



Grandfather teaches grandson to use toilet

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the independent inspections sub-contracted the work to others and even subcontractors subcontracted others again. The more rigorous verifications have found open defecation in many communities that claim to be open defecation free (Chambers, 2009). And where reuse of excreta is practiced, agricultural needs have over-ruled safe disposal practices (Cole *et al.*, 2008).

In contrast, the community-managed sanitation program in Kerala did not use total sanitation methods and formally did not have open defecation communities as a target. The program was started as a separate sanitation component led by a local NGO that had begun as a socio-economic action research unit (SEUF) in an externally-financed water program. SEUF tried out three approaches to toilet construction and use and found that the approach involving the local government and locally formed committees was the most cost-effective.



Men in Tegal neighbourhood set hygiene priorities of men, Indonesia

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Its FOAM characteristics were as follows:

- 1. Focus** groups were the households that had no toilet. Focus practices were installation and use of a toilet by all family members and keeping toilets clean, with a cleaning brush inside and water and soap for handwashing nearby.
- 2. Opportunities** for change were the involvement of local governments and the establishment and continued involvement of mixed local neighbourhood committees for sanitation and water. The neighbourhoods assessed which households in the neighbourhood had no toilet and supplemented local government fund allocations for poor households with their own resources. The target became: each household in our neighbourhood has and uses a sanitary toilet. Measures to reduce corruption lowered toilet costs and helped create the pre-conditions for toilet use by all.

**3. Ability** to change was enhanced by using and training local masons or people with construction skills living in the neighbourhood, and maximising resources through developing a more affordable toilet model. Use of local materials, promotion of gradual construction over time (e.g. first the slab and pan with one off-set pit, and/or a temporary superstructure), training poor local women as toilet masons, shared financing by households and local governments (external subsidy was phased out) and various measures to reduce corruption were all important factors affecting the ability to change.

**4. Motivation** for toilet construction and use was based on local factors, which differed for women and men and were social and economical, rather than health-based. Moreover, the husband and wife of each participating household had to attend three hygiene promotion sessions, covering operation, use and hygiene, and have their attendance cards signed off, and had to pay for their part of the toilet cost before construction. After construction, toilet use and hygiene habits were checked by committee members in three follow-up visits, at toilet completion and one and three months later. Adherence to community-set norms and social control encouraged compliance.

Under the program, 200,000 households and over 2000 schools and playschools built double vault composting toilets between 1996 and 2003 at half the investment cost of the state program, including the support cost for community organisation and training. Initial reported toilet use was 96%. Observations showed that 75% of the toilets had water nearby, but soap was rare (Kurup *et*

*al.* 1996). Nine years later, a sample study found sustained female use, but halving of male use (Sijbesma, 2009).

There are also important lessons to learn from weaknesses. The example chosen is the second Water and Sanitation for Low-Income Communities (WSLIC-2) project of the Ministry of Health, World Bank and AusAID. This is a highly successful water project, but it illustrates the much more rarely reported institutional challenges for hygiene promotion. The project enabled almost 3000 villages in Indonesia to build and manage their own improved water supply services, which was 20% more than the target. For hygiene promotion, community facilitators, project consultants and local health staff were trained on participatory methods (PHAST) to promote home hygiene and handwashing with soap in schools. Because the project increased access to water and sanitation, hygiene practices may have improved. This is currently measured through a household post-study. There was, however, no clear strategy for hygiene promotion (Robinson, 2005, Shatifan pers. comm.). A FOAM analysis of the program gives the following outcomes:

- 1. Focus** for change: The target groups for hygiene improvements were mothers of children under five and school children. A knowledge, conditions and practices study was done to establish the baseline data. However, the findings did not lead to the identification of specific practices for the two focus groups and there was no study of other factors that might help or hinder behavioural change.
- 2. Opportunity** for change: The improved water supply and toilet programs made improved practices possible. Other means such as soap and utensils were also

available. The participatory methods of PHAST further help the participants to understand good and risky practices in a practical way and to decide what risks they want to reduce and how.

- 3. Ability** to change: Through PHAST training the promoters had learned how to enhance practical understanding of good and risky hygiene behaviour with participatory tools. They had also learned new skills to help the local women and men analyse their practices and plans and monitor improvements. However, several institutional constraints reduced this ability in practice: (1) the district hygiene promoters had no specific job descriptions and goals on hygiene promotion; (2) in the villages, they did the same work as the other staff, such as organisation of community participation for the water supply; (3) the PHAST training had not replaced the guidelines for hygiene promotion, which still followed the traditional top-down educational strategy; (4) for both the villages and the staff hardware outputs were the main performance indicators; and (5) village water and sanitation committees were trained to make hygiene plans, but concentrated mostly on water supply management and making villages open defecation free (ODF).
- 4. Motivation** to change hygiene was low both in the agencies and the communities. The priority of the program and the villages was water supply, which received 90% of the time and funds. Overall, the management committee did not really recognise the importance of changing sanitation and hygiene practices. Activities were not monitored or results measured. Now that the project has ended, measurement of

behaviour change is being undertaken through a post-survey with the two target groups and structured household observation. The results should be available at the end of 2010.

Halcrow and Donnelly (2008) report similar institutional problems in an integrated WASH project in Vanuatu.

Finally, two types of hygiene promotion programs are presented that do not work community-wide, but with small groups. The first is through voluntary groups or 'community health clubs'. The second type is WASH-in-school programs with a link to improved hygiene in students' homes through an 'outreach' component.

These learning group programs usually promote several hygiene practices. A famous early



Pinki washing her hands at Premnaga School, Panchat Nathurpa, Mahoba district of Uttar Pradesh, India

example of hygiene promotion through small groups is the radio listening groups around weekly broadcasts of "Mtu ni Afya" (Man is Health) in Tanzania in 1978. After preparatory research and motivating government leaders, a broadcasting program and study group manual were prepared and 75,000 cadres were trained as study group leaders.

A before-after study was done on hygiene knowledge and over 2100 groups were visited to observe measurable changes. Common changes included clearing of vegetation (28%), making, repairing and rebuilding latrines (20%), adopting boiling or filtering of drinking water (12%) and avoiding communal cups when drawing drinking water. A before-after study of 11 practices in 8 villages showed an average improvement of 15% (Hall & Dodds, 1974).

More recently, trained rural health staff in Zimbabwe organised mixed community health clubs. In 25 sessions their members measurably improved hygiene practices as compared to a control sample. A survey on hygiene indicators showed higher scores for all practices for group members compared with a matched control group. Notably the survey reported abolishment of open defecation and observed kitchen gardens (100%), individual cups and plates (almost 100%), handwashing by pouring instead of all in the same basin (90%), a ladle to draw drinking water (50%) and a designated place for handwashing (25%) and soap (6%) (Waterkeyn, 2005). Costs were modest (US\$ 0.60/per person, excluding staff costs, Sijbesma & Christoffers, 2009).

A FOAM analysis shows the following lessons:

1. **Focus** groups were self-selected, so they

might include people who are more motivated, although analysis did not show higher socio-economic levels. There were many hygienic practices and the participants had a wide menu to choose from.

2. **Opportunity** for change was high as everyone who was interested could join. Unlike most hygiene promotion programs which target only women, men attended equally with women. Although no gender analyses were carried out, it may well be that this facilitated the opportunity for change as both men and women could agree on changes and work together to carry out the changes. The menu of improvements, and the fact that they were simple and low-cost, also improved opportunity for change.
3. **Ability** to change was also high in both programs, except for soap which the economic crisis made unaffordable for many households in Zimbabwe. Most changes required no expert knowledge and skills, and were affordable.
4. **Motivation**-wise, neither program gave information about what motivated the improvements achieved. It is, however, likely that making group decisions, opinion leaders setting examples and possibly peer pressure to carry out practices have played a role. The high adoption of kitchen gardens in Zimbabwe seems to indicate that economic factors were important.

A final option is outreach programs through local schools, e.g. through the WASH-in-Schools program of UNICEF and its government and NGO partners. It promotes better home hygiene through more participatory learning on health/hygiene in schools<sup>11</sup>. The target groups are teachers and school children, and through them, the parents and siblings at

home. Both the class sessions and the school health clubs promote better hygiene habits through participatory learning and peer pressure and control. Emphasis was on freedom from open defecation, hygienic toilet use, handwashing with soap and food hygiene. In Nepal, the school hygiene program of 200 schools reached 60,000 households in 15 districts. In Vietnam it was upgraded to all rural primary schools in nine provinces that have high percentages of ethnic minorities.

An end study in six countries showed improved hygiene in schools when comparing pre- and post-studies in pilot and control schools. The main bottlenecks were soap for handwashing and availability and safe disposal of anal cleansing material, for example, in covered and foot-pedal operated bins and burned afterwards (Bolt *et al.*, 2006). Reported good practices in Nepal included ending open defecation and sustained toilet use, handwashing with soap, safe water storage, food protection and garbage pits (Adhikari & Shrestha, 2008).

These examples show that both community-based and group-based approaches can be used to reduce open defecation and increase safe toilet use. They are also suitable for achieving a wider range of good hygiene habits.

### Achieving long-term sustainability

Evidence-based programs demonstrating the sustainability of good hygiene practice over time are still very scarce. Shordt and Cairncross (2004) report on a six-country study which investigated the sustainability of hygiene practices in two different ways. The study compared hygiene practices in samples where programs had finished more recently with samples where the program had ended a longer time ago. If hygiene behaviours were

not sustained, it was reasoned that safe behaviours would decrease over time. The behaviours in communities where the project ended in 1998 would then be less than in those where the program ended in 2000. A second method used to measure sustainability was to compare hygiene practices in the same communities over two years (2001 and 2002) to see if they would decrease.

The research studied handwashing skills, reported handwashing with soap and water (by pocket voting, not questioning), location of soap/water in households, signs of latrine use and maintenance, reported latrine use, drinking water covered/stored safely and so on. The results showed that the promoted practices had continued over time, even after the projects had ended.

In the Indian study, even nine years after the end of the project, handwashing and use of clean latrines seemed to continue in comparison with the control communities where there had been no program. It therefore appears that hygiene promotion can be a very cost-effective intervention whose benefits can last for years. This study also found that where the project has been more intense and local committees and government more active, the long-term results were better.

Another area of investigation considered the type of behaviour change technique used, in order to find out what worked best. The answer was personal contact, group meetings and hygiene classes. This confirms the importance of inter-personal communications and group dynamics in the promotion of hygiene.

There were two findings on gender. One was that better educated women tended to have healthier behaviours. The other was that hygiene promotion (which was given to women) had not changed the latrine use of the men in the Indian study (Shordt, 2004, Cairncross, 2005).

## Conclusions and implications

### Hygiene promotion approaches

This review confirmed that single hygiene practices, such as handwashing with soap at critical times or hygienic use of toilets, may be promoted best through social marketing approaches. The social marketing interventions described here were, however, all large and costly programs. NGOs can probably apply the same approaches with similar effects at more local level and at much lower costs, using a combination of local media and inter-personal contacts. They

should also carry out the preparatory investigations along the lines of the FOAM model and test the media and messages with the target groups. Checking if culturally, women can influence adult and adolescent male practices is also relevant in some cultures.

More comprehensive changes and the targeting of multiple behaviours seem to work better through group and community approaches and participatory processes. Community-based programs are ideally adapted to local conditions and allow local women and men to organise, set their own priorities and plan and implement their own local activities. Using participatory methods to identify key risks and to trigger change, local hygiene programs are still likely to arrive at a common set of key hygiene practices, such as freedom from open defecation.

Another finding is that when hygiene promotion is part of infrastructure (construction) programs for water supply, it is in danger of not getting the attention that it needs. Where hygiene promotion is part of a water supply program, it should have its own clear strategy, plan of activities, finances, skilled staff, studies and behavioural and process indicators.

### Adjusting to context

A second set of findings relates to context. While ending open defecation and handwashing with soap are key target behaviours, the ultimate targets are locally specific. Adjustment to local conditions and needs ('contextualisation') helps to get better results. Examples are adjustment to local water shortages and payments for water. Special programs may be needed in crowded slum areas, in river deltas where arsenic in drinking water is a problem and in areas with

a high percentage of households with HIV-infected members.

Preparatory research for planning programs better is still rare. To do this, NGOs do not have to undertake expensive research studies. Using the FOAM framework they can already get many useful insights about what the different groups do and want and what constraints they face.

A noticeable gap in programs that work to abolish open defecation is the absence of attention for safe end disposal. Pit latrines and septic tanks get filled up at some stage. If the raw excreta then still end up in the environment, the goal of abolishing open defecation is defeated.

### Measuring change and costs

Many hygiene promotion programs now set measurable behaviour objectives, but investigations and reporting of behaviour change are still often done through specific evaluations and research studies, and are not built into ongoing programs. Ideally, hygiene promotion programs should build simple databases using community monitoring. Local monitoring can be done through quantitative participatory tools that generate numbers, also called people's statistics or 'party numbers'<sup>12</sup>. This data is combined at higher levels and used to compare progress between communities and across indicators. This makes it possible to manage change better, by learning which communities do well and less well and why. This information can also show on which indicators more and less progress is made and for what reasons. Quantitative participatory monitoring is possible even with low- and non-literate groups through participatory rural appraisal



Identifying worst practices, Indonesia

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methods that give numbers about qualitative data with the help of scenario rating scales.

Moreover, in almost all hygiene promotion cases discussed, information about costs was lacking. This may be one important reason for the low political commitment and resources for hygiene promotion programs, despite general evidence of effectiveness through health, economic and social benefits.

### Link with behavioural change theory

Hygiene promotion should use a model of behaviour change. For example, analysing what motivates people to adopt better hygiene practices shows that social and economic reasons are often more important than the health benefits that promoters tend to emphasise. This finding is not really surprising, since health benefits take much longer to appear than, for example, social benefits such as cleanliness and status. In such cases it makes sense for program planners and promoters to rely on what motivates the people and not what they think should be motivating factors, e.g. health knowledge.

A basic choice in hygiene promotion seems to be between models that help promote one behaviour at larger scale and slower approaches that seek to change several practices. The latter need to build organisational and human capacity for planning and management.

However, one thing is obvious: hygiene promotion programs that just tell local people what to do are gradually being replaced by

promotion that uses behavioural change models and evidence from studies on why and how different groups change specific hygiene habits. Ongoing reflection on case studies as in this publication and its dissemination will help learning to continue aiming for better hygiene promotion programs.



Demonstrating good handwashing practice, Zambia

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## End notes

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3 In places where basic water and sanitation are not available, hygiene is poor, and oral rehydration therapy (ORT) is not widely used, public health interventions aimed at preventing diarrhoeal diseases are extremely cost-effective.

Promoting hygiene, nutrition (exclusive breastfeeding), measles immunisation and ORT costs less than US\$5 per DALY (years lived with disability) averted; promoting better sanitation about US\$11, a hand pumps program about US\$94, piped house connections about US\$223 and sanitation (promotion + hardware) more than US\$270 (Jamison *et al.*, 2006).

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Guryia, 10 years old, washing her hands in the renovated school sanitation block, Kaushal Nagar, India