

A handwashing communication intervention in Guatemala

by Elena Hurtado and Elizabeth Mills Booth

Mothers and other carers are often well aware of the importance of washing their hands, and the hands of their young children. Why, then, are rates of diarrhoea increasing in areas newly supplied with piped water? Elena Hurtado and Elizabeth Mills Booth describe how their team developed a strategy to hammer home the links between handwashing and health.

A WHO-FUNDED project, carried out in the Guatemalan town of Santa Maria de Jesus, by the Institute of Nutrition of Central America and Panama (INCAP) between 1989 and 1991, aimed to assess the impact of the introduction of piped-water supplies on aspects of the inhabitants' behaviour which related to water and child diarrhoea. The other objective was to develop an education/communication intervention to maximize this impact.

An education/communication health intervention is defined as a planned and systematic effort to transmit knowledge of, and influence positively, specific practices or behaviour that are thought to be beneficial. During the process, however, researchers learn a lot about what people already know and do, and this is built on. 'Education' and 'communication' are both used to describe the activities, as the latter term is sometimes taken to rely mostly on mass media; the Santa Maria project included face-to-face and group education, and instructional design.

An earlier epidemiological study of Santa Maria — a highland town of approximately 10 000 mostly Kakchikel (Mayan descendants) people who speak the Kakchiquel Mayan language — had identified 'mother's hands were visibly dirty' as one of the behavioural indicators significantly associated with increased rates of diarrhoea in children. The intervention focused, therefore, on attempting to make sure that the mothers and carers of children aged three or under — and the children themselves — washed their hands properly.

Assessment and analysis

The project's method involved five steps: assessment; analysis; testing; designing and implementing the intervention; and monitoring and evaluating its impact.

The researchers began by carrying out qualitative assessments of:

- Water-related hygiene practices, especially handwashing;
- people's beliefs and knowledge about hygiene practices;
- their material, social, and cultural context and determinants; and
- how they communicated.

This involved a combination of qualitative-research methods, such as 'key-informant interviewing' (interviewing knowledgeable individuals), open interviews with mothers, and focus-group discussions with mothers and health promoters. The project-workers also conducted group activities with school-children because they often acted as carers for their younger sisters and brothers.

The second stage encompassed ethnographic, communication, and behaviour analysis:

Ethnographic Ethnographic analysis comes from the tradition of social anthropology. It involves reading, summarizing, diagramming, searching and, in general, bringing order to both the data and the field-notes from observations and interviews. This provides researchers with a description of people's behaviour and relevant beliefs, the material and socio-cultural context, and some ideas about what determines them.

In Santa Maria, for example, the INCAP researchers examined how mothers distinguished between different 'kinds of water'. According to the women, there were two categories of water: 'water inside the house', and 'water outside the house' (*ya' pa jay* and *ya' cho jay*). They differentiated between the two kinds of water in terms of their preferred source, the type of container in which they stored the water, and in the ways each type of water was used and protected.

Discrepancies were also found between the mothers' 'ideal' behaviour, and what happened in practice. All the



The term 'intervention' is, perhaps, misleading; researchers should find out — and then build on — what people do.

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women interviewed thought that handwashing was important but, although their hands were in contact with water several times a day (during water collection, cooking, and washing dishes or clothes), they rarely washed their hands purely to eliminate contaminating dirtiness. The women washed their hands only when they considered them to be very dirty, or if they were visibly dirty. All handwashing was done with 'water outside the house'. This involved getting hands wet in a bowl of water, rubbing hands together without using soap, rinsing them in the same bowl of water, and drying them with any available cloth. If the water did not look dirty, it was considered fine to be used again by another member of the family, especially a child.

Understandably, the availability of water was a major factor. For example, mothers did not use soap, or they used very little soap 'because soap needs water' (for rinsing). This community did not consider the new piped-water system to be either an improvement, or reliable. The people continued to use the communal water-taps and rainwater because of chronic water shortages.

Communication Communication analysis involves describing the communication characteristics of the population being studied. For example, Kakchiquel was spoken in most homes in the community, while Spanish was used in conversations with non-Indian Latinos outside the community. Men tended to be bilingual, whereas women spoke in their own language. Women said that the education messages should be in both Spanish ('to learn'), and in Kakchiquel ('to understand'). Neither men nor women liked to attend meetings, because they felt that they did not have enough time. They preferred home visits — lasting about 10 minutes — although if the women were weaving, they were happy to spend an hour or more talking to a visitor. The majority of women were illiterate.

Behaviour In Santa Maria, the analysis was conducted by a multidisciplinary research team (a physician and/or an epidemiologist, an anthropologist, a communication specialist — who also acted as team-leader — and a

community-based fieldworker). A key element was the comparison between real and ideal handwashing behaviour (the latter defined as running water over hands, using soap, rinsing with clean water, and drying with a clean cloth). The team found that, in Santa Maria, ideal handwashing required too much water and took up too much of the mothers' time. To reduce this high 'cost' to the mother, the team decided to introduce a 'tippy-tap', a simple handwashing device made out of a plastic half-gallon or gallon bottle (see step-by-step guide below). Use of the tippy-tap reduced the amount of water needed for handwashing.

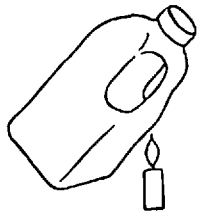
The tippy-tap

Could this attractive new technology motivate mothers to engage in handwashing? To answer this question, the research team conducted tests: household product and behaviour trials of the tippy-tap; and handwashing using the tippy-tap, respectively. Mothers from selected households were given a tippy-tap; at the same time, demonstrations and messages about correct

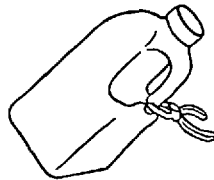
How to make a 'tippy-tap'

You will need:

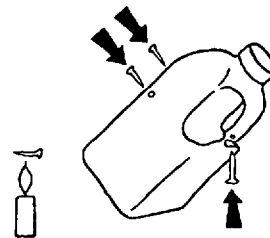
- a plastic bottle ● a nail ● a small, empty tin can ● string ● a stick ● a pair of pliers ● a candle ● matches ● a bar of soap



1 Take a plastic container with a hollow handle. Gently warm the base of the handle over a candle, turning the handle around until the base of the handle is shiny and soft all the way around.



2 Remove the candle and quickly 'pinch' the soft base of the handle with pliers so that the base is sealed tight to prevent water flowing through it. Hold the pliers there until the plastic cools, ensuring that the seal is completely closed.

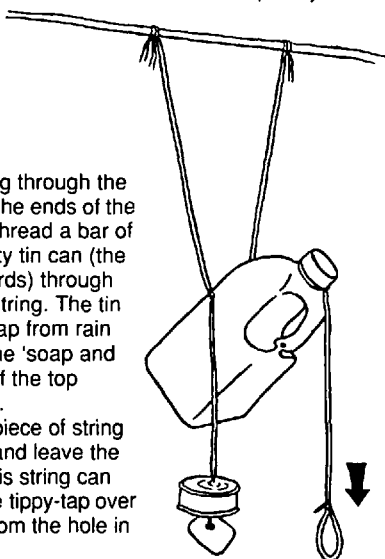


3 Heat the point of a small nail over a candle. Use the hot nail to make a small hole on the outside edge of the handle, just above the sealed area.

Heat the nail again and make two larger holes in the back of the bottle. The holes should be about half way up the bottle and about a thumb-width apart. These holes will be used to thread string to hang the tippy-tap. The holes need to be wide enough apart to hold the string, and to be positioned so that the 'full' bottle hangs at a 45° angle.

4 Thread the string through the two holes and tie the ends of the string to a stick. Thread a bar of soap and an empty tin can (the base facing upwards) through another piece of string. The tin will protect the soap from rain and sun. Attach the 'soap and tin' string to one of the top supporting strings.

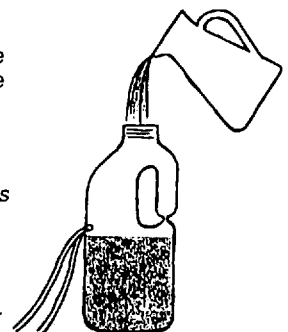
Tie a separate piece of string to the bottle cap, and leave the string hanging. This string can be pulled to tip the tippy-tap over for water to flow from the hole in the handle.



5 Pour water into the tippy-tap until the water is almost level with the holes in the back of the bottle. Use the stick to hang the tippy-tap in the bathroom or outside in a tree. The tippy-tap is now ready to use.

The original gourd tippy-tap was designed by Dr Jim Watt and Jackson Masawi at the University of Zimbabwe's rural centre. The plastic tippy-tap was designed by Ralph Garnet and Dr Jim Watt in Canada.

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Sean Sprague/Panos Pictures

When water is scarce, women prioritize: they believe that handwashing 'costs' time and resources.

handwashing were presented. The women were encouraged to use the tippy-tap and to practise ideal handwashing at home for a week. In giving away a concrete 'product' in this way, the team was engaged in 'social marketing'. They were then interviewed: did they use the tippy-tap? How did they use it? If not, why not? The mothers' answers to these questions enabled the team to establish what were the material, cognitive, and behavioural barriers to the community's adoption of the recommended practices; and to incorporate the women's suggestions.

The results of the trials helped to modify both the tippy-tap itself, and the intervention strategies. For example, discussions between the researchers and the community identified a specific problem: the procedures suggested by the project team for the fabrication, installation, and maintenance of the tippy-tap involved too many different stages. It was decided that, as part of the communication strategy, fathers should be encouraged to install the tippy-tap, while the older children could take care of some of the maintenance. It became clear that the skill of improved handwashing — with or without the tippy-tap — needed further 'modelling' — health educators and community health promoters demonstrating correct use and maintenance step by step — and practice, to enable wholesale adoption.

Intervention action-plan

A communication-intervention action-plan was developed. The 'primary audience' was identified as mothers, school-children (aged six to 14), and those grandmothers caring for young children. Fathers and the change agents (community health promoters and selected project fieldworkers who acted as educators) were defined as the 'secondary audience' as they were responsible for teaching, supporting, and reinforcing correct handwashing. Given the nature of the intervention design (with both a 'control' group — non-participants — and an intervention group) the community as a whole could not be considered to be a 'tertiary audience', neither could it be included in the promotional efforts to change handwashing.

The plan also contained specific communication objectives. These included the community's exposure to the intervention, together with 12-month targets for increasing knowledge and improving practices.

Using social-marketing analysis, the Santa Maria intervention identified certain 'products': correct handwashing; the tippy-tap; and the clean cloth itself. The tippy-tap and the clean cloth were placed in the 'nice corner' of the corridor/patio in the house (which can also be considered to be a product). As a result, handwashing was linked to the concrete and visible tippy-tap, the clean cloth, and the 'nice corner'. All of these, in turn, were perceived

by the mothers and other carers to be linked with particular benefits.

The team's 'message strategy' laid down what would be said about the selected target behaviour. The key messages were translated into everyday, easy-to-understand terms, and explanations — in both Kakchiquel and Spanish — were geared towards being culturally appropriate and comprehensible. Other elements such as appeal, image, and the mood/tone of messages were considered. For example, the products had to be projected in a positive, practical, and happy light.

Dissemination

Three phases, each lasting about three months, were planned and followed up in the intervention:

- Introducing the relevant enabling knowledge;
- introducing the products; and
- maintenance and reinforcement.

Every possible attempt was made to keep control-group members in ignorance of what the intervention group was doing, so that the impact of the work could be evaluated accurately; not an easy task in a relatively small community.

Audio and graphic materials suitable for transmitting the messages were designed, tested, and produced.

The community health promoters were identified as the most appropriate and convincing agents for making

these information and educational materials available to the mothers, fathers, and other carers. They were trained to incorporate the different materials in home visits to mothers and grandmothers; during tippy-tap fabrication meetings with fathers; and as part of special educational activities with school-children.

Monitoring and evaluation

The intervention was implemented between January and October 1991. Because of a national cholera epidemic, the team decided to complete the intervention two months early: it would have been unethical to refuse to take part in emergency health education focused specifically on cholera prevention, both within the control group, and in the wider community.

During the ten-month intervention, the research team conducted monitoring, using qualitative methods, to perfect the different strategies. They carried out their evaluation of the impact of the intervention on specific aspects of behaviour, and on diarrhoea rates, by applying the same epidemiologic and behaviour-indicator observation methodologies which were implemented in the risk-factor study. In addition, communication-effects indicators were also developed and studied through evaluation surveys at the begin-



Sean Sprague/Panos Pictures

ning and the end of the intervention. Such indicators included, for example, the number of mothers who could remember basic messages accurately, the number who had installed the tippy-tap, and the number of villagers now washing their hands correctly.

Effects on health

By late 1992, the average incidence of diarrhoea among children in families belonging to the intervention group was lower than in children in the control group. But this difference was not statistically significant. More im-

portantly, when asked to demonstrate how they washed their hands, 89 per cent of the mothers trained to use the tippy-tap performed at least three out of four correct steps, and 61 per cent performed all the correct steps; compared to less than 2 per cent and 0 per cent, respectively, of the mothers who had not been trained in tippy-tap use.

The emphasis on the children's role in learning the hows and whys of correct hygiene behaviour, and maintaining and using the tippy-tap, also proved fruitful. Evaluation found that the Santa Maria children would fill the tippy-tap when empty; wash it when dirty; ask their fathers for more soap when necessary; ask their mothers to wash a dirty drying cloth, or do it themselves; and wash their own and their siblings' hands with the tippy-tap. They also became promoters of diarrhoea-prevention messages in the home.

The authors acknowledge the contribution of other fieldworkers and local health promoters to the design of the Santa Maria project. ●

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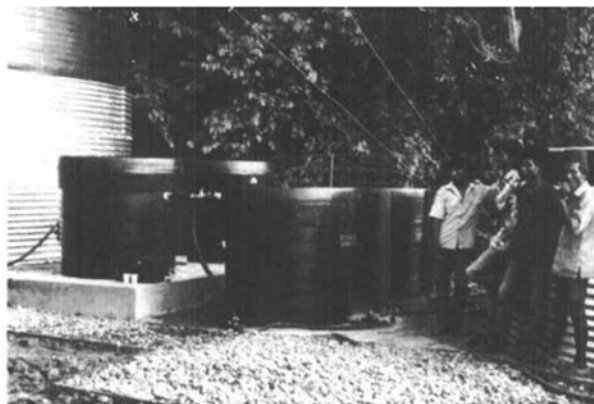
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