

Studying hygiene behaviour — where are we now?

by Astier Almedom and Valerie Curtis

Water and sanitation programmes aim to improve people's health, mainly by reducing the rates of intestinal infections such as diarrhoea and worms. Long-term benefits will only come about, however, if people change some of their water-use and hygiene-related habits. In recent years, this realization has stimulated a resurgence of interest in the study of hygiene behaviour: what is emerging?

DESPITE MAJOR INVESTMENTS — of money, time, and effort — in control programmes, over three million children still die of intestinal infections in developing countries each year; a third of the world's population is still infected with parasitic worms.^{1,2} Our failure to defeat these diseases suggests that it is time to re-examine our standard approaches. It is increasingly clear that our main control strategies, the development of sanitary infrastructure, education about health and hygiene, and the promotion of oral rehydration therapy, have limits. Focusing on people's hygiene-related behaviour may offer a key to increasing their effectiveness.

Improvements to water and sanitation infrastructure are excellent methods for controlling intestinal infections in the long term, but only if they are used as intended; they need to be locally needed, acceptable, and affordable. Similarly, health- and hygiene-education efforts are effective only if they are designed on the basis of sound socio-cultural knowledge of the target population. Oral rehydration is effective only in dealing with some of the life-threatening symptoms of diarrhoeal disease and no more. The efficacy of oral rehydration depends on the mother's ability to prepare the solution correctly, using clean utensils and the right proportions of ingredients, including clean water.

Lessons are being learned from the experience of projects which have failed to achieve their objectives because of the planners' ignorance, or their lack of will — or their refusal — to learn; or because they have not actively involved their target populations in design and planning. Focusing on the people who are the targets of these projects; on their social, economic, and cultural realities and, in

particular, on their behaviour, should make such interventions more effective. At the London School of Hygiene and Tropical Medicine (LSHTM) we are currently investigating this hypothesis in both the Environmental Health Programme (EHP) and the Maternal and Child Epidemiology Unit (MCEU).

Improving health?

Evidence is growing of the key role that hygiene plays in children's health.

For example, recent studies have suggested that handwashing reduces rates of diarrhoeal infection by 35 to 48 per cent. The safe disposal of faeces in the school environment can reduce diarrhoea by 44 per cent. Other aspects of hygiene behaviour associated with reduced rates of intestinal infections include: protecting water from faecal contamination at the source, in transit, and in the home; and protecting food from faecal contamination during handling, preparation, and storage.

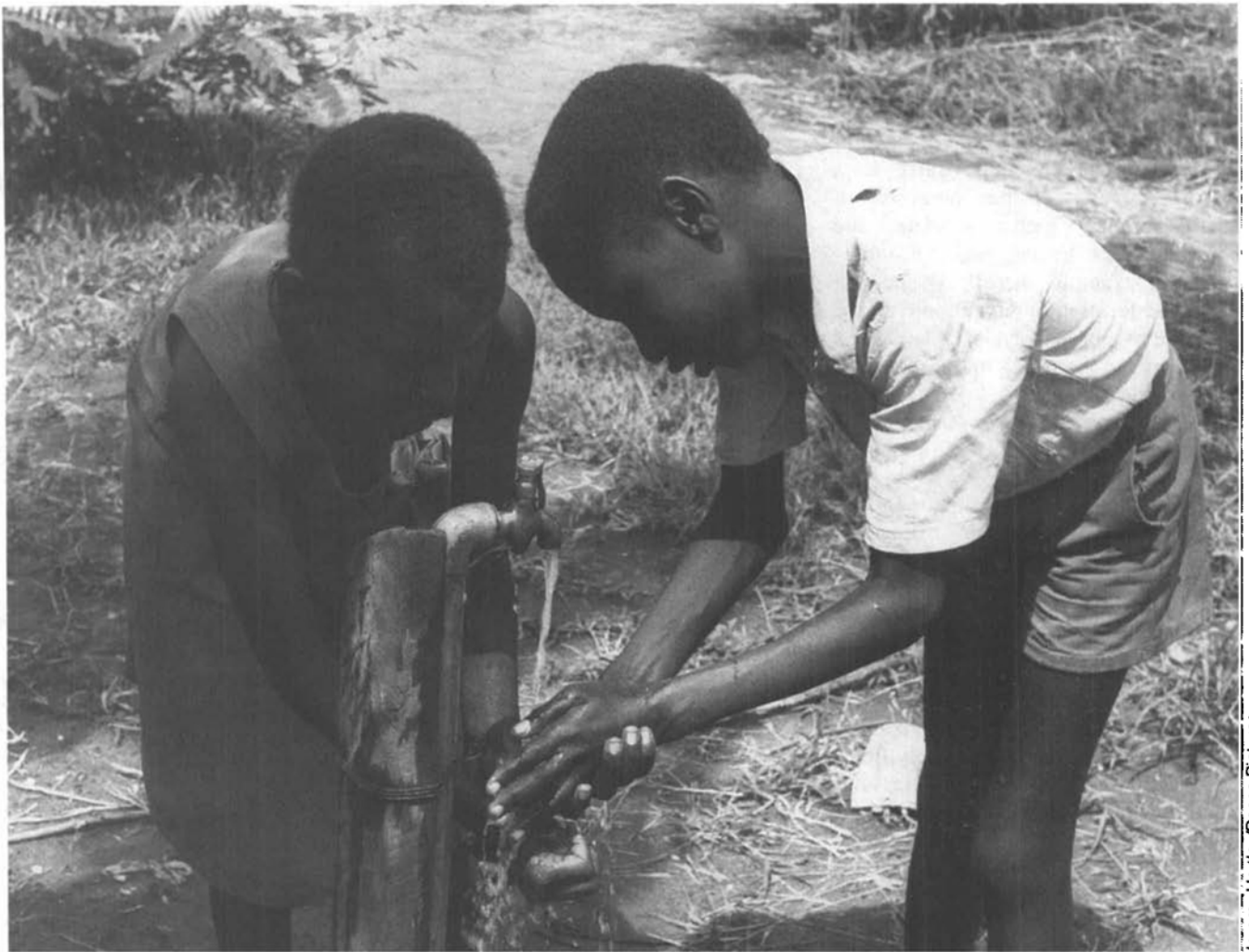
Targeting

The table below lists every aspect of a person's behaviour — associated with sanitation, water, food, and the environment — which may pose a risk to health. Precisely which activities cause the greatest problem vary from one place and culture to another, although certain habits are worth targeting for change wherever they occur.

Following the international workshop on the measurement of hygiene

Table 1. A guide to the relevant features and activities of the main hygiene-behaviour clusters.

<i>Clusters of hygiene behaviour</i>	<i>Relevant features, behaviour, and activities</i>
Sanitation Excreta disposal (Cluster A)	<ul style="list-style-type: none"> ● Location of defecation sites ● Latrine maintenance (structure and cleanliness) ● Disposal of children's faeces ● Handwashing at 'critical' times (after cleaning children's bottoms; after handling children's faeces; after defecation) ● Use of cleansing materials
Water Sources and uses (Clusters B and C)	<ul style="list-style-type: none"> ● Protection of water source(s) ● Siting of latrines in relation to water source(s) ● Maintenance of water source(s) ● Water use at the source(s) ● Other activities at water source(s) ● Water-collection methods and utensils ● Water treatment at the source ● Methods of transporting water ● Water handling in the home ● Water storage and treatment in the home ● Water use (and reuse) in the home ● Handwashing at 'critical' times (before or after certain activities, including religious rituals) ● Washing children's faces ● Bathing (children and adults) ● Washing clothes
Food Food hygiene (Cluster D)	<ul style="list-style-type: none"> ● Food handling/preparation ● Utensils used for cooking, serving food, feeding young children, and for storing leftover food ● Handwashing at 'critical' times (before handling food, eating, feeding young children) ● Reheating of stored food before serving ● Washing utensils and use of a dish rack
Environment Domestic and environmental hygiene (Cluster E)	<ul style="list-style-type: none"> ● Sweeping of floors and compounds ● Household-refuse disposal ● Cleanliness of footpaths and roads ● Management of domestic animals (cattle, dogs, pigs, and chickens)



Jeremy Hartley/Fanos Pictures

Recent studies show that handwashing at 'critical' times should be promoted globally.

behaviour convened by the Environmental Health Programme in April 1991, the World Health Organization held an informal consultation, with the aim of narrowing down the list.

WHO concluded that the following sets of hygiene behaviour are most relevant to the control of diarrhoeal disease and should be investigated systematically:

- Safer disposal of human excreta, particularly the faeces of young children and babies, and people with diarrhoea;
- handwashing, after defecation, after handling babies' faeces, before feeding and eating, and before preparing food;
- maintaining drinking-water free from faecal contamination, in the home and at the source.³

Researchers from the LSTHM have carried out studies in West and East Africa, focusing on the disposal of infants and children's stools, and on handwashing after contact with faecal material. A study of hygiene behaviour in the Burkinabé town of Bobo-Dioulasso showed that the failure to dispose of children's faeces in latrines is associated with increased rates of diarrhoea.

The methods included a questionnaire-based case-control study, structured observations carried out in the courtyards of the mothers included in the sample, focus-group discussions (people from similar backgrounds or experiences gathering to discuss a specific topic of interest to the researcher) with women from different backgrounds, and a communications study. Plans are under way to implement and evaluate a communications intervention targeted on safe stool-disposal, and on using soap to wash hands after cleaning children's bottoms. The Bobo-Dioulasso project has made important methodological contributions to the study of hygiene behaviour. Significant among these has been the systematic appraisal of data obtained by questionnaires, compared to that obtained by structured observations. The results suggested that information gathered by observation is, on the whole, more reliable than that gathered by questionnaire.⁴

Field trials

In 1993, the EHP embarked on the task of making the available anthropological and related methods and

tools for assessing hygiene behaviour accessible to fieldworkers (non-researchers) in health/hygiene education, and water supply and sanitation projects. This involved a series of field collaborations with fieldworkers in Kenya, Tanzania, and Ethiopia, with the aim of identifying the most relevant hygiene behaviour and activities to be assessed; and to field-test the available methods and tools for assessing them.

Interestingly, the findings of these field-trials suggest that the disposal of children's stools, and handwashing at critical times, are worth assessing systematically. These results reflect the findings of the Bobo Dioulasso study, although the health risk posed by disposing of children's faeces by digging and burying may be minimal in rural western Kenya and parts of Tanzania, when compared with urban Burkina Faso where latrines are essential. In both rural and urban settings in Kenya, Tanzania, and Ethiopia, handwashing with soap or alternatives such as ash — after handling children's stools, and cleansing infants and young children — was found to be worth promoting through participatory approaches.^{5,6}

Hygiene evaluations can be done at different points during a programme cycle, depending on the purpose to which they are put. For example, assessments of hygiene behaviour and activities are done early in a project cycle for the purposes of baseline data gathering. They are also done for the purposes of monitoring, for example, the effectiveness of health-education interventions in the middle of a project cycle; or at the end of a project cycle for the purposes of project appraisal.

Where are we now?

As we go into 1995, much still remains to be learned about hygiene behaviour, both in general, and specific settings. The four articles which follow concentrate on some of the gaps in our knowledge: how to identify behaviour which is a problem, how to understand and evaluate it, and how to intervene using communications approaches. Further work is needed to widely field-test methods of measuring, assessing, and explaining hygiene behaviour; otherwise, behaviour change cannot be promoted effectively.

While water-related practices con-



UNICEF/Maggie Murray-Lee

Behaviour change will only come about when people are convinced that they should practise what 'experts' preach.

tinue to become easier to investigate and understand, enquiries into sanitation-related behaviour remain difficult. Although common obstacles in observing what 'people take great pains to conceal',⁷ may be overcome by using more sensitive approaches — and by

adopting participatory methods which promote a good rapport with the groups under study, both individually and collectively — poverty continues to limit people's capacity to put their knowledge into practice.

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SCF has been supporting a programme of rural water supply and sanitation improvements and health education in the Lhasa Municipality since 1991. Now an Environmental Health Adviser is required to work with the Regional Water Resources Bureau (RWRB) and expand this programme beyond the Lhasa Municipality.

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Bridging the gap

Perhaps the biggest problem that remains to be solved is the gap between what is known — and what is being learned — and what is being done in practice, in the field. Fieldworkers know a great deal about operational matters. Likewise, applied researchers are very knowledgeable about theoretical advances and lessons learned at a global level. It is high time that the two groups worked together, and made it possible for target populations to participate meaningfully in project activities aimed at behaviour change. The targets of behaviour change have to be convinced that it is worth their while to practise improved hygiene. Only then will the intended health benefits be achieved through improvements in water supply and sanitation.

This issue of *Waterlines* aims to contribute towards bridging the researcher/practitioner gap by looking at the experience of four projects studying food hygiene, excreta disposal, water-related hygiene, and water quality and uses:

- *Food hygiene* Sandra Saenz de Tejada and Florida Alma Cano report on a qualitative study in Guatemala which formed the basis of an educational intervention on weaning-food hygiene. They look spe-

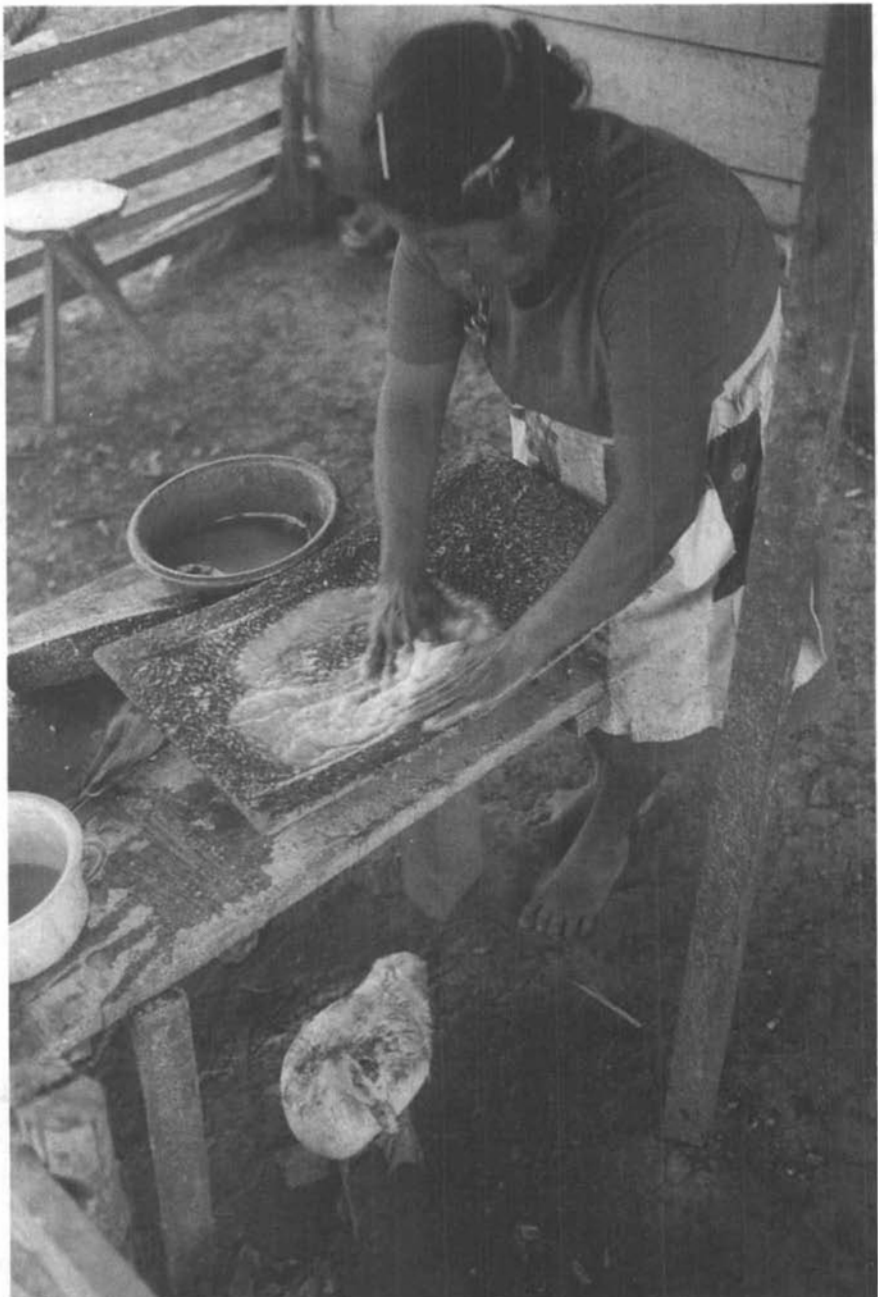
cifically at water handling; hand-washing before handling food; food preparation; and storage and reheating. The authors discuss the issues involved in trying to establish hygiene-behaviour barriers to the transmission of faecal pathogens from fingers and food to mouth.

- *Excreta disposal* The results of a series of qualitative studies (including quantifiable data) conducted with the aim of field-testing several methods and tools for hygiene evaluation, in collaboration with selected health-education, water-supply and sanitation project staff in East Africa, are summarized by Astier Almedom and Ashoke Chatterjee. They propose some effective and measurable indicators for sanitation, and discuss their practical applicability and use.
- *Water-related hygiene behaviour* Elena Hurtado and Elizabeth Mills Booth's article describes succinctly the process of developing an effective communication intervention in Guatemala aimed at improving handwashing practices, thereby reducing diarrhoea.
- *Water quality and use* A detailed qualitative study conducted in Sukumaland, Tanzania, investigated the socio-cultural constraints on the use and maintenance of improved water sources. Jan-Olof Drangert contrasts the villagers' traditional notions of water 'quality' with the Western bio-medical concept of contamination; highlights the complexity of the problem; and outlines the role of anthropologists in informing intervening agencies.

This issue of *Waterlines* will, we hope, arouse interest in practical efforts to integrate the 'software' aspects of water supply and sanitation interventions with the 'hardware'. A 'hygiene-behaviour network' has been set up under the Global Applied Research Network (GARNET) of the Collaborative Council for Water Supply and Sanitation. Interested readers should contact Astier Almedom, direct, for more information. ●

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In April's issue

We look at the techniques smallholders use to irrigate their crops. We focus, in particular, on how farmers develop and shape technologies to fit different physical and social environments. Contributors also examine the supportive role of external agencies.