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HIP HYGIENE IMPROVEMENT
PROJECT

RESEARCH BRIEF

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CONDUCTING TRIALS OF IMPROVED PRACTICES IN MADAGASCAR



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TIPs participants applied local resources to improve their latrines. Materials that are available in every home, such as rice sacks, can serve as a door and provide privacy.

To support efforts that address gaps in access to safe water and improved sanitation and hygiene in Madagascar, USAID's Hygiene Improvement Project (HIP) worked with key water and sanitation partners in Madagascar to conduct a series of Trials of Improved Practices (TIPs) in November 2006. The TIPs tested the feasibility for households to use a set of improved practices or actions to benefit family health in the three hygiene areas HIP supports: the treatment and storage of drinking water; safe disposal of children's feces using latrines and potties; and hand washing with soap at key times.

HEALTH CONDITIONS IN MADAGASCAR

In Madagascar, diseases linked to the lack of access to safe drinking water, sanitation, and poor hygiene

conditions are the main causes of infant morbidity and mortality. Diarrhea, primarily caused by unsafe drinking water and poor hygiene and sanitation, is reported to be the third leading cause of outpatient consultations at health clinics. Sixty-five percent of people living in rural areas, compared with 23 percent of people living in urban areas, do not have access to improved drinking water sources,¹ and 90 percent of the rural population, compared to 74 percent of the urban population, does not have access to improved sanitation such as hygienic latrines.² To improve this situation, the Government of Madagascar aims to achieve one of the Millennium Development Goals—to reduce the number of people without access to safe water and appropriate sanitation by the year 2015, and it has included a component on hygiene in its national five-year action plan.

HIP'S APPROACH IN MADAGASCAR

A wide range of water, sanitation, and hygiene related programs and activities are under way or planned in Madagascar by members of the national DIORANO-WASH initiative, a partnership of government, public, private, religious, and other organizations that have come together to bring about real, sustained change for improved hygiene. The WASH group was created to support the Government of Madagascar's Millennium Development Goals in the water, sanitation, and hygiene sectors. HIP's goal in Madagascar is to support comprehensive hygiene improvement programming for immediate and multiple actions for community-based behavior change at a large scale. HIP's approach to scale is to work at multiple levels with multiple partners through the DIORANO-WASH initiative using

a comprehensive behavior change strategy. The TIPs were therefore an integral part of HIP's contribution to develop a national hygiene improvement behavior change strategy and action plan.

INTRODUCTION TO TRIALS OF IMPROVED PRACTICES

HIP used Trials of Improved Practices to explore the extent to which some 100 families in four regions—Amaron'i Mania, Analamanga, Atsinanana, and Haute Matsiatra—where HIP has a presence in Madagascar could implement “small doable actions” (*petites actions faisables importantes*, or PAFIs, as they are known in French) associated with the three hygiene behaviors—treatment and storage of drinking water, safe disposal of feces, and hand washing—within their households. The PAFIs designed for this research were meant to help communities to easily adopt new water, sanitation, and hygiene related behaviors, so the TIPs tested whether or not the PAFIs could in fact be easily adopted by families or if they needed modification before they would be adopted. The results from this research helped HIP's program managers develop behavior change strategies and refine HIP's promotional approach for effective behavior change to reduce diarrheal disease prevalence among children, especially children under the age of five.

HIP trained researchers from local partner organizations on how to conduct the TIPs, collect data, and analyze the results. The researchers worked in areas they were familiar with, where they then invited households to participate in the TIPs, and subsequently observed small doable actions related to water treatment, sanitation, or hand washing. Depending on the behavior or method used in the test household, a researcher negotiated a simple set of practices to follow related to that behavior.

Water-related PAFIs addressed different household water treatment methods including boiling, solar disinfection, chlorination, and filtration, as well as the storage of water to prevent recontamination after treatment. The Biosand filter option was tested in only one region (Atsinanana) in both peri-urban and rural households. Sanitation PAFIs focused on the disposal of children's feces, proper use of latrines, and latrine maintenance. Hand washing PAFIs covered the five key times for hand washing (after defecating, before preparing food, before eating, after cleaning child's feces, and before feeding a child), hand washing materials and



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Two interviews were conducted at each participating household. During the second interview, researchers observed the negotiated trial practice and recorded the family's perceptions.

process, and the construction of “tippy taps” (a closed container with a spigot or opening that provides a slow, steady stream of water for washing/rinsing) to encourage hand washing.

TRIALS OF IMPROVED PRACTICES METHODOLOGY: FIELD WORK, NEGOTIATION, AND ANALYSIS

The TIPs methodology was developed by the Manoff Group and evolved out of commercial marketing and anthropology research methods. The technique of TIPs combines the advertising-design approach of concept testing (Market Navigation, Inc.) with product testing in order to modify the practice or “product” before it is ever introduced into the market, based on feedback from a small sample whose members actually try using the product in their daily lives. Through TIPs, planners learned from families, providers, or communities what practices the program should promote, eliminate, or modify; what are the most effective motivations and most significant barriers to adopting new practices; what level of change in particular behaviors the program can expect; and in some cases, what level of health impact the program can expect. In many cases, trials

are the only reasonable way, other than learning from program failures, to gauge the acceptability of a practice or product and the best ways of promoting it. Trials are the best way to anticipate and prevent problems in acceptance and proper use.³

HIP aimed for an overall sample size of 100 to 120 households in order to recruit at least five households per site at the peri-urban and rural locations for the TIPs and have sufficient information to detect patterns in behavior. Households that agreed to participate tried one of the practices and/or technologies for a given behavior. HIP worked to have a minimum of five households try out improved hand washing practices, 20 households try out point-of-use water disinfection practices (five households per technology), and five households try out sanitation practices. At no point did any households try out more than one practice or technology in the trial behavior; and only one behavior was tested per household.

Two interviews were conducted at each household. During the first interview researchers negotiated the recruitment of participant households, obtained the family's agreement to try out the practices, and reached an agreement on the behavior to try. The second interview took place at the end of the 7-10 day trial period and discussed the family's perception about the trial and recorded the results. All of the participating households included children under two years of age.

Recruitment interviews for TIPs addressed the following topics:

- willingness to be interviewed and participate in a week-long trial;
- assessment of current practices (self-reported and observed);
- counseling on recommended good practices to be tried during TIPs and a discussion of those current practices needing improvement;
- discussion and negotiation of trial practices, including the families' suggestions;
- agreement on trial practice;
- discussion of how to carry out trial practice,

PAFIs are not limited in number and method and are created or modified when appropriate to facilitate a behavior that will reduce infections or diseases.



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Solar disinfection of water or SODIS relies on the availability of both sunshine and PET-type bottles but is otherwise considered an easy-to-use water treatment method.

- reiteration of the agreement; and
- scheduling of the follow-up interview.

The follow up interviews addressed the following topics:

- observation of the negotiated trial practice;
- discussion on the level of difficulties of practicing the trial practice;
- discussion on who carried out the practice and who may have helped; and
- suggestions coming from the households on how to facilitate adoption and sustain the use of improved practices.

POINT-OF-USE WATER TREATMENT AND SAFE STORAGE

HIP found that public water taps with supposedly potable water were frequently in disrepair or out of order. People often told the HIP researchers that water from these sources is pure, even "sacred" in some cases, when, in fact, the water was contaminated. HIP tested samples of the water using the H₂S approach developed by Dr. Amy Smith of the Massachusetts Institute of Technology, which tests water for the presence of bacteria, and confirmed contamination using this test at a number of field sites. Participants also said they did not have access to potable water in the fields unless they brought it themselves in a container or bottle (which HIP found

that they rarely did), and often they did not have access to water for washing their hands after working on their crops in the field.

In light of these findings, TIPs researchers counseled participating households on the importance of point-of-use water disinfection and offered a variety of options for doing so. During the course of the research project, participants treating water by boiling were asked to do so for 10 minutes. Reporting on this was considered by the TIPs researchers to be somewhat subjective and difficult to monitor. Boiling water was the most commonly used method in households for treating water since it is part of the process of making *ranonapango* (a drink made by boiling water in a pot after burning leftover rice).

TIPs participants often cited time wasted boiling water and squandering fuel wood as obstacles to continuing this treatment practice on a regular basis. However, these obstacles may become moot because at the end of 2006, the World Health Organization stated that boiling is effective “as soon as the water begins to bubble.” WHO also declared that the danger of bacterial and other infections is primarily due to poor handling of the instruments used to store and supply treated water. It now considers boiling to be an unreliable water treatment method.

Sur'Eau, a locally produced sodium hypochlorite (chlorine bleach) solution sold in shops and through community health workers in coordination with Population Services International, was a well known water treatment method among TIPs participants but considered by many to be expensive. (Researchers noticed that participants interviewed did not always measure the Sur'Eau correctly, often using a much larger quantity than needed, which would make the method more expensive than it need be.) Sur'Eau is widely available, even in rural communities, and a bottle that can treat hundreds of liters costs around US\$ 0.25 (in December 2006). Participants reported that Sur'Eau is easy to use, provides fresh water, and is available upon returning from working in the fields. Of all the water treatment options studied, Sur'Eau appeared to be the easiest method for participants to use. Community health centers and schools could benefit from this method since it is easy to use and can treat large quantities of water.

Participants also considered the solar disinfection (SODIS) method easy to use and a good option if there is enough sunshine (requires at least six hours of exposure when sunny and 48 hours when cloudy). However, SODIS uses plastic PET-type bottles, which participants viewed as an obstacle to adopting the practice since these bottles are hard to find, especially in rural areas. This issue would need to be addressed in order to effectively promote the use of SODIS. Finally, the Biosand filter is a method that should be promoted in peri-urban and rural areas in the Atsinanana region because the people found the method easy to use, and the technology is available locally.

SANITATION

In terms of feces management, HIP found it is still common practice to relieve oneself outdoors. Though people reported to TIPs researchers that they believed the use and maintenance of latrines is necessary, the majority of people do not use them. When used,



Mothers expressed a desire to change their habits to protect their children's health and were receptive to using plastic potties for young children.



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TIPs participants were eager to adopt hand washing improvements, such as the creation of hand washing stations using tippy taps, which are often ingeniously constructed.

latrines were often poorly maintained and viewed as not “attractive.” Participants in the TIPs were receptive to using plastic potties for young children, but the idea needs to be promoted so that families actually use them, and a supply of affordable potties made readily available. The mothers interviewed expressed a well articulated desire to change their habits in order to protect their children’s health.

The PAFIs suggested by TIPs participants to improve sanitation practices changed from the initial action of latrine use to multiple actions including: have the members of the household use the latrine each time, and not only “sometimes”; improve the latrine with a roof, a door, or put a tippy tap for washing hands at the exit of the latrine; and clean the area next to the latrine and cover the hole of the latrine with a lid. TIPs participants applied local resources when they put the actions into practice. For example, to improve latrines, they used large leaves or dried grasses for roofing materials and jute or plastic rice sacks to create latrine

doors. Some families negotiated using ashes instead of soap for hand washing after using a latrine.

HAND WASHING

Many of the participants in the TIPs research perceived hand washing with soap to be a necessary and important practice. However, based on observations during the household interviews, people often do not wash their hands with soap properly or do not wash them at all. The reasons given were lack of time, habit, and/or the availability of supplies, such as water, soap, and containers. Participants often cited two times when they wash their hands: before eating and after working. However, observations indicated that most fail to rub their hands together properly and often wash without soap. Ashes and sand were available in the Atsinanana region and were often used for washing cooking pots, dishes, and hands.

TIPs researchers introduced a number of PAFIs that targeted hand washing behavior. Setting up a tippy tap to use or save water for rinsing hands proved to be popular and often these devices were ingeniously constructed out of plastic bottles and other materials. Prior to the introduction of the PAFIs, hands were frequently dried on a dirty towel or on clothes. Here again, mothers expressed a willingness to change their behavior in the interest of their children’s health. A PAFI suggested during the TIPs to improve this hygiene practice was to shake hands dry after washing. Since soap is considered expensive, the possibility of making soap locally to reduce the cost should be investigated, or the benefits of using ashes (and sand in Atsinanana) for hand washing should be promoted.

KEY FINDINGS

- In general, the PAFIs were well accepted by the members of the households. However, not all were convinced, and sometimes behaviors were not routinely practiced during the trials. Some participants adopted the improved practice/new behaviors because they were supplied with the necessary materials during the TIPs, which underscores the need to consider the availability of the necessary hardware and materials to sustain new practices when planning program strategy.
- During the TIPs research, HIP noted that the application of the PAFIs became a family affair

in the household. The TIPs researchers often saw husbands help their wives implement the PAFIs in some way—setting up latrines, installing a door or roof on the latrine, or constructing a tippy tap.

- HIP found that while most of the people who participated in the TIPs understood the link between diarrhea in young children and contaminated water in particular, there is often a large gap between what people say they do and their actual behavior. Children are left home alone playing in the mud and drinking “cold” water; i.e. untreated water; while parents are working in the fields. Household awareness of the actual quality of water from available sources will need to be heightened.
- TIPs researchers found that the economic situation of families was such that the willingness of participants to implement the negotiated PAFIs was often moved down on the list of priorities by the need to meet such fundamental obligations as going into the fields to plant rice and earn an income. In other cases, parents had to sacrifice money they had set aside for Sur'Eau for clean water to buy a portion of rice to feed their children.
- Many households have problems storing treated water due to a lack of available containers, such as a cooking pot, since available pots are used for water to cook rice. Other supplies that households would need to implement the suggested PAFIs include water bottles for transporting clean water to fields or school, to perform SODIS, or to make tippy taps, as well as soap for hand washing.

CONCLUSIONS

The goal of promoting PAFIs is to introduce incremental hygiene improvement practices that will have a long-term impact on overall health and quality of life without adding a significant burden of cost or time to a household. Promoting the adoption and sustained practice of PAFIs encouraged members of the household and communities to become more proactive by adopting new and healthier behaviors. At the same time the PAFIs could play a role in helping the

Government of Madagascar and its partners attain the objectives of the national action plan for improved water, hygiene, and sanitation. The research also showed clearly that PAFIs depend on the habits and cultural factors in the regions where HIP and its partners work. PAFIs are not limited in number and method and are created or modified when appropriate to facilitate a behavior that will reduce infections or diseases. Implementers of any behavior change strategy will need to address these issues to improve the odds that suggested PAFIs are widely adopted at a significant scale. For these reasons, HIP is working with local NGOs and the government at regional and national levels to support their efforts to effectively promote improved hygiene practices for better family health.

ENDNOTES

- ¹ Madagascar Coverage Estimates: Improved Drinking Water. WHO/UNICEF, Joint Monitoring Programme. June 2006. http://www.wssinfo.org/pdf/country/MDG_wat.pdf
- ² Meeting the MDG Drinking Water and Sanitation Target: The Urban and Rural Challenge of the Decade. WHO/UNICEF. 2006. http://www.who.int/water_sanitation_health/monitoring/jmpfinal.pdf
- ³ Adapted from article on Trials of Improved Practices prepared by the Manoff Group. 2005. http://www.manoffgroup.com/approach_developing.html

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