

Proposal for Water Education Workshop Borbón, Ecuador, August 2006

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Summary

This proposal describes the motivation and details for a 3-day workshop on drinking water quality and hygiene education for the association of health promoters working in the region of Borbón, Esmeraldas Province, Ecuador. The workshop, to be carried out in August, 2006, will utilize popular education techniques to familiarize the approximately 30 community health workers with concepts related to waterborne disease transmission, water treatment, safe water storage practices, and proper hygiene. The workshop will also prepare the health promoters to hold similar workshops in their own villages to pass the information learned on to other community members.

Water for Life

Despite the dedication of a decade (1981-1990) by the United Nations General Assembly to water and sanitation issues, around 1.1 billion people still lack access to improved water sources and 2.4 billion have no basic sanitation, according to the World Health Organization (WHO). Each year 2.2 million people, mostly of children under the age of five, die unnecessarily from diarrhea. Much of this disease is transmitted through contaminated water. According to the Pan-American Health Organization, acute diarrheal disease accounts for 9% of annual registered deaths in Ecuador.



A recent review of water, sanitation and hygiene interventions to reduce diarrhea in developing countries found that all interventions studied were found to significantly reduce the risks of diarrheal illness. Interventions focused on carrying out hygiene education, increasing the water supply, or improving the quality of source water all worked. In other words, we are not wasting our time in our efforts to decrease the burden of waterborne disease.

Water for the Borbón Region

One of the great challenges of water interventions is tailoring programs to the water conditions and culture of a particular location. According to the WHO, "initiatives in water, hygiene and sanitation must include community participation, education and behavior modification."

I propose to carry out a 3-day workshop on drinking water quality and hygiene education for the association of health promoters working in the region of Borbón, Esmeraldas Province, Ecuador, where I have worked over the past three years on a large, NIH-funded research project on waterborne disease transmission. My particular research has focused on drinking water quality and in the course of my dissertation research I have analyzed over 1000 water samples from the region and surveyed hundreds of community members about their water usage practices. The time has come to give something back to these communities.

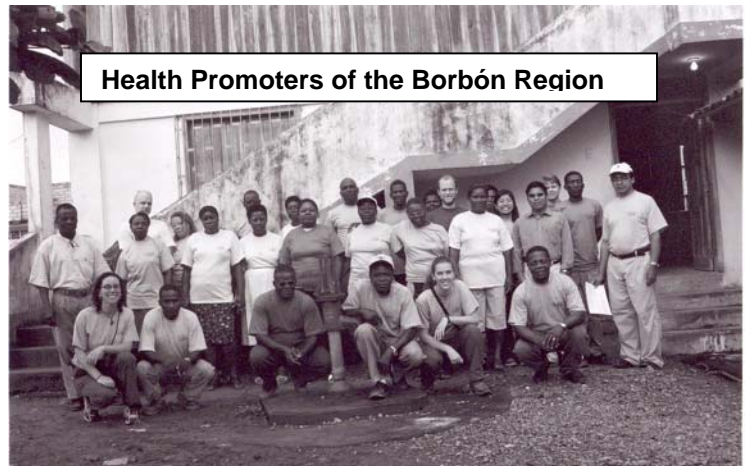
The 125 villages in this area of northern coastal Ecuador are situated along the Santiago, Cayapas, and Onzole rivers, all of which drain into the major population center of Borbón. No



sanitation infrastructure exists in these communities. While some people utilize private or community latrines, 60% of people report that they dispose of human waste out in the open, by digging a hole, or directly into the river. This same river serves as the primary water source for 68% of households, with 60% of households report drinking their water without treating it. It is not surprising that we have observed high diarrheal disease rates in the area.

The water education workshop will be carried out in August, 2006, in Borbón in collaboration with the Borbón Hospital. All health promoters, auxiliary nurses, and other community health workers will be invited. Topics to be covered include concepts in waterborne disease (such as germ theory, the fecal-oral transmission of pathogens, sources of contamination, measurement of water quality, and treatment of diarrhea) and water treatment and prevention options (including hand-washing, proper water storage, chlorine, boiling, and SODIS UV disinfection). These treatment options were chosen based on knowledge of locally available materials.

Of course, the topics will not be presented in these terms, but rather with popular education techniques that involve participation from workshop attendees. Examples include mapping exercises to identify sources of water contamination in the health promoter's village or covering hands with glitter to illustrate pathogen transmission when hands are left unwashed. We will also use simple microbiological water quality testing materials to demonstrate the effectiveness of water treatment. The goal of the workshop will be to enable the attendees to return to their home villages and carry out similar educational workshops in their own and neighboring communities about the importance of health drinking water and how to achieve it.



My colleagues and I have the advantage of experience working in this area as well as data specific to these particular villages. We will build on the experiences in a pilot workshop I held in one community in January, 2006, which villagers enjoyed.

Budget

Travel to Borbón for 30 health promoters	\$500
Food and lodging for 30 health promoters for 3 days	\$1000
Xeroxed Materials	\$500
Water quality testing materials	(in-kind contribution of leftover supplies from dissertation research)
TOTAL	\$2000

