Empowering schools and communities in Kenya: A school-based water treatment, hygiene, and education program using electrochlorination

Background

Adequate facilities for water, sanitation, and hygiene (WASH) are lacking in many schools in developing countries. Globally, almost half of all schools lack access to safe water. In Kenya, simple school-based water treatment and handwashing interventions have led to reductions in pupil absenteeism by 26%–39%.1,2 This project aims to pilot tools for water treatment and WASH education in three primary schools in Western province, Kenya.

Goals

- Understand current WASH status and practices in the three primary schools in Butere District of Western Kenya.
- Implement and evaluate an intervention program aimed at improving water treatment, hygiene, and WASH education.

Approach

Provincial Ministry of Education (MoE) and Ministry of Public Health and sanitation (MoPHS) officers identified Butere District as the location for the project due to the high incidence of diarrheal disease. Three schools were identified, and a head teacher and health teacher were recruited at each.

- Interviewed teachers about WASH infrastructure and education.
- Surveyed 20 pupils from each school about WASH knowledge and behaviors.
- Water sample taken from the primary and secondary water sources and tested for total coliforms and E. coli using the IDEXX Colilert-Quants-Tray 2000 method.
- Teachers and district officers attended day-long training workshop.
- Participants learned interactive educational lessons to teach about WASH.
- Participants learned to operate the Smart ElectroChlorinator 200 (SE200) to make chlorine for water treatment.
- SE200s were implemented for water treatment.
- Educational WASH activities took place in schools.
- District officers will perform monthly monitoring visits to schools from November 2012 through April 2013.
- Results and feedback will be compiled to inform scale-up within APHIAPlus.

Findings

Water quality

The World Health Organization recommends that the E. coli concentration in drinking water is less than 1 CFU/100 mL. Overall, slightly more than one-third of all samples were microbiologically safe according to these guidelines.

<table>
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<th>School 1 (n=1)</th>
<th>School 2 (n=1)</th>
<th>School 3 (n=1)</th>
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Acknowledgements

Funding for this project has been obtained from APHIAPlus/Western Kenya and the 2011 Reed Environmental Challenge competition. APHIAPlus is funded by the United States Agency for International Development.

References


Findings (continued)

WASH facilities

Despite on-site water sources, availability of water was not reliable at the three schools due primarily to maintenance, repair, and water rationing issues. There was inadequate water storage capacity and no water treatment. None of the handwashing stations for pupils had soap, and most did not have water on the day of the visit. All of the latrines at the schools were simple pit latrines. Only one school met the WHO guidelines for pupil:latrine ratio for males (50:1 plus a urinal), and another school met the guidelines for females (15:1).

WASH awareness and behavior

Surveys were administered to 20 pupils per school. Results indicated that only 21 out of 60 pupils could identify at least one way of preventing transmission of diarrheal disease. Health teachers are responsible for teaching pupils and fellow teachers about WASH. WASH concepts are most often taught by verbal explanations rather than interactive exercises, sample interactive lessons shown in the workshop were met with positive feedback by attendees.