

RESEARCH ARTICLE

Evaluation of facial cleanliness and environmental improvement activities: Lessons learned from Malawi, Tanzania, and Uganda

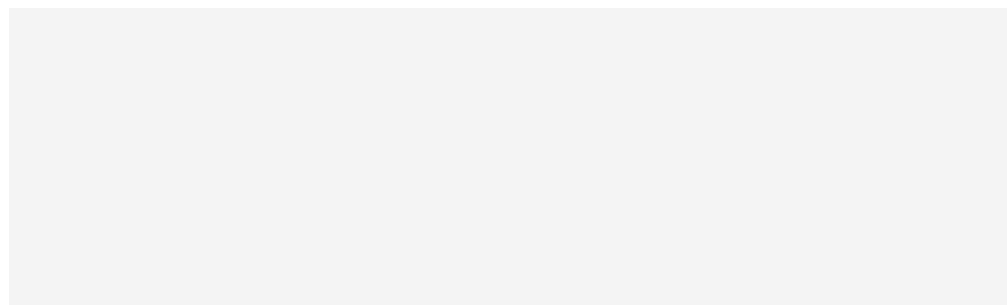
Angelia M. Sanders^{1*}, **Ruth Dixon**², **Logan Stuck**³, **Michaela Kelly**²,
Geordie Woods², **Edridah M. Muheki**⁴, **Gilbert Baayenda**⁴, **Michael Masika**⁵,
Holystone Kafanikhale⁵, **Upendo Mwingira**⁶, **Leah Wohlgenuth**²

1 The Carter Center, Atlanta, Georgia, United States of America, **2** Sightsavers, London, United Kingdom, **3** Amsterdam Institute for Global Health and Development, Amsterdam, Netherlands, **4** Uganda Ministry of Health, Kampala, Uganda, **5** Malawi Ministry of Health, Lilongwe, Malawi, **6** Tanzania Ministry of Health, Dar es Salaam, Tanzania

* Angelia.sanders@cartercenter.org

Abstract

The World Health Organization promotes the SAFE (Surgery, Antibiotics, Facial cleanliness, and Environmental improvements) strategy for trachoma control and prevention. The F&E components of the strategy focus on promotion of healthy hygiene and sanitation behaviors. In order to monitor F&E activities implemented across villages and schools in Malawi, Tanzania, and Uganda, an F&E Monitoring and Evaluation (FEME) framework was developed to track quarterly program outputs and to provide the basis for a pre and post evaluation of the activities. Results showed an increase in knowledge at the school and household levels, and in some cases, an increase in presence of hand/face washing stations. However, this did not always result in a change in trachoma prevention behaviors such as facial cleanliness or keeping compounds free of human feces. The results highlight that the F&E programs were effective in increasing



and supporting NGOs with insights, recommendations, and data collection tools that could be used to support their efforts to conduct monitoring and evaluation of their current or future trachoma prevention activities.

Introduction

implemented within each country is provided in [S1 Text](#). Ministries of health, water, and education, and supporting implementing partners implemented these interventions from July 2015 to March 2018 in Malawi, May 2016 to March 2018 in Tanzania, and May 2015 to March 2018 in Uganda. While F&E interventions targeted districts with a trachomatous inflammation-follicular (TF) prevalence over 5% (in children ages one to nine years), not all selected program activities were conducted in all villages within the targeted districts due to lack of funding and implementing partner availability.

Monitoring and evaluating F&E

An F&E Monitoring and Evaluation (FEME) framework was developed for each country to assist with conducting quarterly monitoring of F&E activities and to provide the basis for a pre and post evaluation of F&E activities. The indicators used within each country's FEME included a combination of WASH and NTD indicators identified during a Delphi consultative process [17] and country specific indicators requested by the Ministry of Health. Country specific FEMEs are provided in supplemental information ([S1](#), [S2](#) and [S3](#) Tables).

The FEME can be divided into two parts: 1) the logical framework that includes outcome and output indicators; and 2) program implementation activities. Theoretically implementation of activities leads to the achievement of the desired outputs and outcomes reflected by changes in their indicators. For example, conducting community meetings about trachoma (activity) should result in an increase in the percentage of people who have knowledge of hygiene practices in relation to trachoma prevention (output) which thereby contributes to an increase in the percentage of children with clean faces (outcome). Throughout the life of the Trust funded project within the three countries the F&E activities were reported on a quarterly basis. For measuring progress on achieving outcomes and outputs, each country conducted a pre and post-survey.

Objectives of the paper

The purpose of this paper is threefold: 1) present the methods and results of the pre and post surveys in each of the three countries; 2) discuss challenges and successes of the survey process and indicator measures selected; and 3) provide recommendations based on this experience for implementing F&E monitoring and evaluation mechanisms.

Methods

Ethics statement

Ethical approval was obtained for the pre and post-surveys in all three countries. In Malawi from the National Health Sciences Research Committee (Ref: #16/12/1700), in Tanzania from the National Institute for Medical Research (NIMR) National Health Ethics Review Committee (NatHREC) (Ref: NIMR/HQ/R.8a/Vol. IX/2405), and in Uganda from the Uganda National Council for Science and Technology (Ref: HS 2166). The study conducted in Uganda had additional ethical approval from Emory University (eIRB#: IRB00093647). All survey participants gave written informed consent prior to participating, head teachers provided written informed consent on behalf of school children who individually assented to take part. Assent was documented.

Evaluation units

F&E alfnram

small (Tanzania) multiple regions were grouped into a single EU. For regions where there was both school and community programming the EUs were considered separately ([Table 2](#)).

In all three countries, implementation of F&E activities began prior to the pre-surveys being conducted. Pre-surveys were conducted in 2017 and post-surveys conducted in 2018.

School sampling

In Uganda schools were randomly selected from a list of all interventio

countries. In order to clearly present results of the pre and post-surveys, results are organized into the thematic groupings of WASH infrastructure, trachoma knowledge, and F&E related behaviors and are presented first for school EUs and then community EUs.

School EU Results

Key results from each school EU within each country are provided in [Table 4](#).

Only the EU in Tanzania is shown

from 7.5% (CI: 1.9±25.0) at baseline to 74.2% (CI: 28.6±95.4) at post-survey (P

12.2±36.2)

percentage of school children washing their faces when washing their hands during the school day with a baseline of 22.0% (CI: 12.2±36.2)

indicators for all age groups showed a significant decrease in facial cleanliness. There was no significant change in percentage of households free of human feces, with the exception of Busoga, Uganda, where there was a decrease from 96.8% (CI: 94.6±98.1) at baseline to 92.8% (CI: 90.2±94.8) at post-survey. Despite little change in this indicator across the evaluation units, it is worth noting that the percentage of households free of human feces was above 85% at baseline for most regions, ranging from 88.6% (CI: 84.0±92.1) in Karamoja, Uganda, to 96.8% (CI: 94.6±98.1) in Busoga, Uganda. In Malawi, both regions were at 95.6% at post-survey.

Discussion

In order to meet the stated objectives of the paper, the discussion is broken down into three sub-sections. First, a discussion of country specific programmatic achievements in WASH infrastructure, trachoma knowledge, and F&E related behavior. Second, an examination of the challenges and successes in the survey design and indicator measures used, and finally recommendations for future implementers.

Programmatic achievements

WASH infrastructure. Data was collected on a range of WASH related indicators. For purposes of this paper, results and discussion focus on indicators that highlighted a household's hygiene and sanitation related behaviors such as hand and face washing and latrine use, as these are believed to decrease the likelihood of trachoma transmission. As a proxy indicator for

region of Uganda that there was a significant increase in households with hand/face washing stations and the presence of soap and water at those locations. Despite the statistically significant increases in Karamoja and a few of the other regions for select WASH indicators, programmatically the results are not encouraging. At post-survey, the overall percentages of households with hand/face washing stations ranged from a low of 3.8% in Tanzania to a high of 41.7% in the Southern region of Malawi. Hand/face washing stations with water, a likely sign of their proper use, ranged from a low of 4.0% in Karamoja to a high of 31.9% in the Southern region of Malawi. These results highlight that even where there were hand/face washing stations, the percentage that had soap and/ or water was much smaller. This could signify that simple presence of hand/face washing stations did not guarantee their use and issues revolving around access to and prioritization of water use remain.

Trachoma knowledge. Results showed that there was increased knowledge around trachoma in villages receiving interventions in most EUs.

donors. Additionally, the surveys did not include trachoma infection data, therefore, these surveys cannot claim that particular F&E related activities directly led to a decrease in trachoma

There were lessons learned from the data collection process during the pre-survey that were implemented for the post-survey to improve data quality and assurance. This included allowing data collectors and supervisors to check the data before sending to ensure increased data quality and control. In addition, mobile data capture forms were designed to validate eligibility criteria before allowing enumerators to proceed with data collection. Based on the experience from the pre-survey, a supervisor form was developed for the post-survey to calculate household replacement rates and capture the population of the village for weightings ([S7 Table](#)).

In all three countries, F&E activities funded by the Trust and DFID began before the pre-surveys were conducted, due to funding dynamics and the time it took to get survey protocols developed, approved, and implemented. This delay in pre-survey implementation created a challenge for the data collection process.

gap in understanding how best to evaluate F&E activities in trachoma programs. It is clear from the lessons learned and recommendations that the FEME framework, survey indicators, and survey methodologies could use some improvement or modifications to make monitoring and evaluation of F&E activities more effective. Additionally, a more robust system for monitoring implementation of F&E activities would have aided in programs making quick F&E

12. Lynch M, West S, Munoz B, Kayongoya A, Taylor HR, Mmbaga BB. Testing a participatory strategy to change hygiene behaviour: face washing in central Tanzania. *Trans*