

## Monitoring and Evaluation Primer

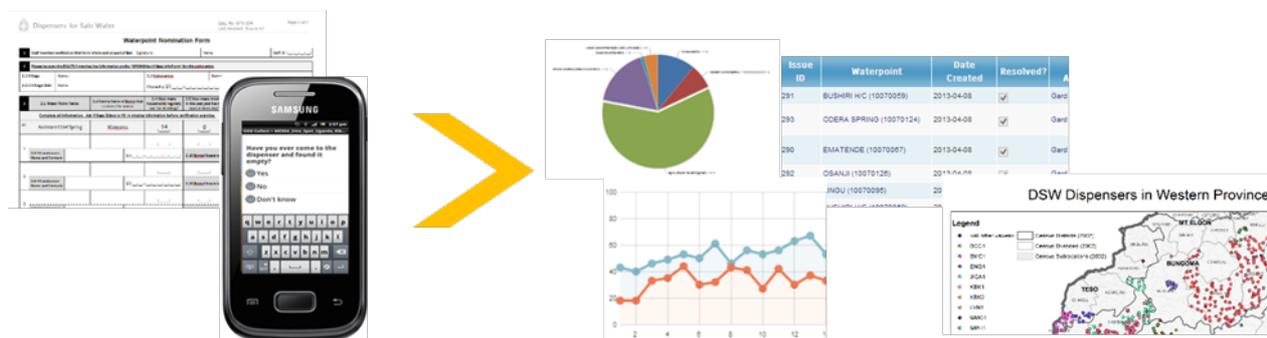
Evidence Action scales proven development solutions to benefit millions of people around the world. We fill the gap between knowing 'what works' and having impact at scale. We implement cost-effective interventions whose efficacy is backed by substantial rigorous evidence.

Evidence Action's Dispensers for Safe Water program embodies this commitment to rigorous evaluation and data-driven decision making. Lessons learned from ongoing monitoring and evaluation are regularly used by the program to appraise their processes, performance and impact. This document provides an outline of these measures.

### Data Collection Methods

Dispenser for Safe Water can be categorized into two phases: 1) Community sensitization and dispenser installation and 2) ongoing maintenance. In the first phase, program follows the following order of steps: i) Local stakeholder meeting and waterpoint nomination, ii) Waterpoint verification, iii) Village community sensitization, iv) Dispenser installation, and v) Community education meeting. Ongoing maintenance of the dispenser entails the management of chlorine supply chain, maintenance of the dispenser hardware, and community engagement primarily through promoters.

The Chlorine Dispenser System is regularly evaluated by field officers using mobile phones deploying Google's open-source Open Data Kit survey software. The program's mobile surveying ecosystem is supported by an online cloud-based Management and Information System that allows for real-time data processing and analysis through the use of dashboard, maps, and case management. Teams use these tools to track anything from chlorine deliveries to attendance at community meetings or motorbike inventories.



We collect operational data during each step required to install the Chlorine Dispenser System. During on-going operations stage, the program works with the Monitoring Learning and Information Systems (MLIS), and independent team from program implementation, to conduct continuous monitoring on the hardware, supply chain, and community use. The results of monitoring and evaluation activities are categorized according to three outputs; process evaluation, performance evaluation, impact evaluation.

### Process Monitoring and Performance Evaluation

Dispenser for Safe Water field teams work with local stakeholders to conduct all operations required to install the Chlorine Dispenser System and sensitize the community to the program. The program then runs continuous appraisals on the hardware, supply chain, and community use of the chlorine for the entire life of the dispenser. The results of these activities are categorized according to three outputs; process monitoring, performance evaluation, and impact evaluation.

### Process M&E: inputs required to achieve program goals

**Water point Verification:** Using a [waterpoint verification form](#), the program conducts a full census of waterpoints in the region. At verification, the program investigates the following key variables: the flow rate of the water, the number of people using the source, the willingness of the landowner to host a



chlorine dispenser, and the turbidity of the water. These variables are then used to determine the final eligibility of the waterpoint for a dispenser. For instance, eligible dispensers should be serving at least 10 households, should have sufficient flow of water throughout the year and the landowners should consent to the installation of the dispenser.



**Village Community Sensitization:** Once a water point is verified as eligible for a dispenser, the community is informed about the program and provided a chance to ask any questions. We take attendance of the meeting on this [form](#). Attendance of community education meetings is associated with higher adoption rates. Monitoring these meetings informs future program engagements with communities. For instance, the program can arrange for re-fresher meetings in areas with low initial attendance.



**Installation:** Documenting the successful installation of a dispenser allows the provision of a full record of dispensers in operation and ensures that dispensers are installed appropriately. Through the [installation form](#), the program checks and confirms the quality of installation (eg, the access and location of the dispenser in relation to the path to the waterpoint and the height of the dispenser), dispenser and waterpoint geocodes for future management of the dispenser. This data forms the dispenser database that we actively update and maintain to reflect the functional status of the dispenser.



**Community Education Meetings:** The specific users of each water point receiving a dispenser are gathered together for education at community health centers and the election of a single champion of the dispenser. This “promoter” is then tasked with encouraging proper use of the dispenser within the community. In Malawi, the promoter works closely with a government health assistant (HSA). We use [CEM attendance form](#) to capture attendance. Attendance of community education meetings is associated with higher adoption rates. Monitoring these meetings informs future program engagements with communities. For instance, the program can arrange for re-fresher meetings in areas with low initial attendance.



**Chlorine Delivery & Hardware “Spot Check”:** Every two months the program’s community service assistants (CSAs) deliver additional chlorine to promoters and HSAs. The [form](#) used in this process records the amount of chlorine that has been disbursed since the last delivery period. Using the same [form](#), the CSAs also conduct a spot check of the dispenser to check that there is chlorine available in the tank at the time of the visit, and any hardware issues that need repair. Monitoring the presence of chlorine allows the program to predict how many dispensers that may be empty at any one time and take steps to minimize the time between complete usage and refill.

Performance Monitoring: the target population reached by the program



**Water Quality Baseline Survey:** Between installation of the dispenser and the community sensitization meeting (that is, before the delivery of the first batch of chlorine to the community), a random sample of waterpoints are chosen and a sub-sample of households selected, for a microbiological assessment of the safety of their drinking water to serve as a baseline. This is done as carbon credits monitoring requirement.



**Household/Community Survey:** We use [community survey](#) to objectively identify the percentage of households that have treated their water with chlorine. Sampling 1.5% of all dispensers across 2 months, MLIS field officers visit 8 households per water point per day to determine the presence of chlorine residual in a random sample of household drinking water. In addition, this survey collects information on reported rates of diarrhoea, community perceptions, knowledge outcomes, preferences, and concerns.

Also done at this time is a “spot check” of dispenser functionality and chlorine availability in the dispenser tank. Dispenser functionality and chlorine availability at an unannounced visit are strongly associated with community adoption of the dispenser. Therefore, cases of chlorine unavailability in chlorine

dispensers allow the Program to re-check its supply chain management in the affected areas.



**Promoter Survey:** Using a [promoter survey](#), MLIS monitors interview the “promoter”, the champion of the dispenser to understand their level of involvement in promoting the dispenser and to gauge community reception. These interviews are also conducted at 1.5% of all dispensers over a 2 month period.

## Sampling

There are four types of data that is collected on a regular basis;



**Chlorine Delivery Rates & Hardware Spot Checks:** collected every 2-3 months with the delivery of chlorine to promoters, resulting in 6 checks annually per dispenser.



**Household/Community Surveys:** For the first three months of evaluation in a new region, households in 2% of all dispenser areas are monitored. Following that, 1.5% of installed dispensers are sampled and monitored over every 2 month period. For community surveys, we employ 2-stage cluster sampling. 1.5% of the dispensers are selected at field office cluster level. At each randomized waterpoint, 8 households are randomly selected for the surveys and chlorine residual testing. For more information, on the calculation of adoption rate, please refer to [measuring dispenser adoption](#).

All samples are randomly collected to ensure reliable data.

## The number of people with Access

We continuously update the number of people with access to the dispensers. The number of people with access is a product of households using the waterpoint and the household size. At pre-installation of the dispensers, we ask village elders and community health workers to provide us with the number households using a waterpoint. The waterpoint landowner and promoter validate these numbers at installation and community education meeting. We continuously confirm and update this numbers from promoters every time we deliver chlorine. We collect average household size data from the community surveys we conduct on bi-monthly basis.

## Quality Checks

The use of smartphones as data collection tools prevents several of the most common sources of error in data collection. Data does not need to be typed up, removing the possibility of transcription error. Electronic data collection also allows us to analyze GPS coordinates, take barcode readings as well as examine timestamps, skip patterns and patterns of responses collected. Additionally we strive to conduct back-check surveys on 5-10% of key surveys such as installation, spot check, and community surveys. These back-checks are done by monitoring and evaluation field associates and provide a clear check on the performance and results recorded in the initial data collection activity. Additionally, field monitors are provided with periodic data quality and [productivity reports](#) that highlight their general areas of strength and weakness.

## Example Monitoring and Evaluation: Adoption Rates

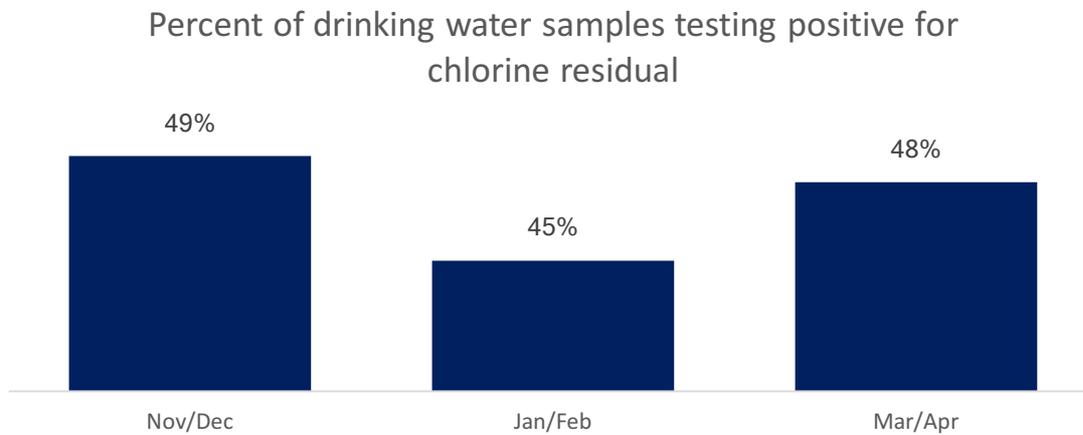
Figure 1 represents the percentage of household water samples testing positive for chlorine residual (adoption) covering November 2016 to April, 2017 across Kenya, Malawi and Uganda. There are 28,430 dispensers being monitored at the time of this report, serving over 4.76 million people. In order to collect the data represented in Figure 1, MLIS field officers visited 1,276 waterpoints and surveyed 9,645 households. During household visits, field officers collect survey information and ask for a sample of household drinking water.

Water samples from each of these households are then tested for the presence chlorine residuals using the color wheel test kit. Those households testing positive are assumed to have treated their water with chlorine from the Dispenser.

### Chlorine Adoption Measurement

Independent field officers randomly check at least **1.5% of all installed dispensers over a 2 month period month**, resulting in an evaluation of approximately 420 of the 28,430 installed water points we currently have program-wide (9% per year). Monitors, can physically visit **8 households per water point**, per day to test water samples. When this information is aggregated across the three primary countries of operation, we have over 3,360 household test results every month, or 20,160 per year - all measuring whether there is chlorine in household drinking water.

Adoption in these randomly selected households was 48% in March/April 2017, representing an increase of 3% from January/February 2017. The results of performance metrics such as adoption, and chlorine usage are communicated to the program on a monthly basis via the online cloud-based platform. This allows for timely decision making regarding innovation and serves as a cross-check for any problems.



**Figure 1.** Program-wide adoption figures across Kenya, Malawi and Uganda for November 2016 to April 2017

#### Measuring Program Impact

Our cost-effectiveness analysis summarizes program impact in the communities in which we work. We calculate impact indicators of the DSW program such as 1) the cost per case of diarrhoea averted; 2) cost per disability adjusted life years averted; and 3) cost per life saved. We use country-specific program data from community surveys we conduct (adoption and # of children in a household), country-specific secondary data (% of children with diarrhoea in a 48hr period and life expectancy) and global secondary data (WHO disability weights) from reputable sources.