



## THE LIBERIA STUDY: CLEAN WATER FOR AN ENTIRE COUNTRY

With the help of Sawyer filters, Liberia will be the first developing country with clean water, border to border, in every household by December of 2020. Sawyer filters will bring clean water to the last 20% of rural Liberia that everyone said was impossible to reach.

**THE STUDY:** Independent, U.S.-based scientific research teams from Calvin College are collecting and processing data from GIS (geographic information system) software. Currently, they are tracking the implementation of 100,000 Sawyer filters placed throughout Liberia. The results will be submitted for peer review and scientific publication in the American Journal of Tropical Medicine and Hygiene.

Measurements include:

- Diarrhea reduction
- Work and school days recaptured associated with waterborne sickness
- Purchased water savings and medical savings associated with waterborne sickness

Table 1: Initial and Follow-up

Symptom	Initial		Follow-up	
	Frequency	Proportion	Frequency	Proportion
Runny Stomach	8083	0.362	699	0.029
Headache	8561	0.383	4396	0.180
Cough	6592	0.295	2427	0.099
Difficulty Breathing	4	0.000	0	0.000
Rapid Breathing	1	0.000	0	0.000
Skin Rash	6768	0.303	2942	0.120
Sore Throat	3772	0.169	662	0.027
Vomiting	2749	0.123	457	0.019
No Symptoms	8786	0.394	16985	0.695



# DATA DRIVEN SOLUTIONS

Sawyer's Hollow Fiber Membrane filters are the core to achieving immediate improvement and ultimate full nation access to clean water in Liberia and other developing nations. The Sawyer filters are portable and can be easily distributed to rural, hard to reach areas. The filter simply attaches to an inexpensive and readily available 20-liter bucket. The filter provides enough water for a family's daily drinking, cleaning and cooking while removing 99.99999 percent of bacteria and 99.9999 percent protozoa from any fresh water source.

There are currently 100,000 Sawyer filters donated to Liberia that are in process of distribution to the villages. October of 2015, a team of Sawyer water filter specialists made its way to Liberia to train the first 25 Liberians in filter installations, follow ups, and GIS data collection. There have now been over 150 Liberians trained in this process, helping to methodically eradicate the clean water need in Liberia.

The data collection is providing ongoing tracking of the filter installations. It is also providing robust health and socio-economic data to immediately measure Return-on-Investment. Each family that receives a water filter voluntarily participates in a survey that measures diarrhea reduction, school and work days recaptured that were once lost due to waterborne sickness, purchased water savings and medical savings associated with waterborne sickness. The independent U.S.-based team is analyzing all data and will publish the results .

**IMPRESSIVE EARLY RESULTS:** In the first 23,719 households analyzed, 8,083 reported cases of diarrhea. After a two-week follow up, the number was down to 699. A second follow up at eight weeks reported another decrease.

**NGOS, CHANGING BEHAVIOR:** Partner NGOs are committed to weeks of ongoing intervention, observation and review in this program. The NGO teams provide instruction and then revisit every village and observe each family to follow up, review and continue the education process. Success is measured at two weeks and eight weeks to ensure the family demonstrates their use of the water filters. The families also demonstrate maintenance cleaning of the filters and are coached by the intervention teams. Data is collected on proper use of the filters, and the health and socio-economic surveys are again administered providing before and after analytics. Those results will be published twice a year until the completion of the project in December 2020.

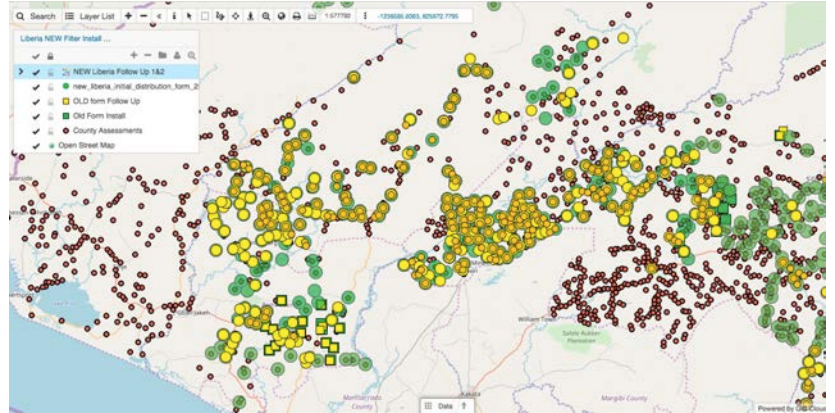


Figure 1: Comparison of Initial Visit to Follow-Up Visit

