

# Lessons from LF Transmission Interruption in Haiti: Are 5 Rounds of Annual MDA Necessary in Low-Prevalence Settings?

## Authors

Franck Monestime<sup>1</sup>, Carl Fayette<sup>1</sup>; Lior Miller<sup>2</sup>, Cudjoe Bennett<sup>2</sup>, Sarah Craciunoiu<sup>2</sup>, Luccene Desir<sup>3</sup>, Abdel Direny<sup>4</sup>, Ryan R. Hemme<sup>3</sup>, Alain Javel<sup>1</sup>, Aaron M. Samuels<sup>5</sup>, Thomas G. Streit<sup>3</sup>, Caitlin Worrell<sup>6</sup>, Kim Won<sup>6</sup>, Marie-Denise Milord<sup>7</sup>, Valery E. Madsen Beau de Rochars<sup>8</sup>, Patrick Lammie<sup>9</sup>, Jean-Frantz Lemoine<sup>10</sup>

- 1—IMA World Health, Port au Prince, Haiti;
- 2—IMA World Health, Washington, D.C., USA;
- 3—Hopital Ste. Croix/University of Notre Dame (UND), Leogane, Haiti;
- 4—RTI International, Washington, DC, USA;
- 5—U.S. Centers for Disease Control and Prevention (CDC), Kisumu, Kenya;
- 6—U.S. Centers for Disease Control and Prevention (CDC), Atlanta, Georgia, USA;
- 7—University of Notre Dame, South Bend, Indiana, USA;
- 8—University of Florida, Gainesville, Florida, USA;
- 9—The Task Force for Global Health, Atlanta, Georgia, USA;
- 10—National Program to Eliminate Lymphatic Filariasis, Ministry of Public Health and Population, Port au Prince, Haiti.

## Introduction

Lymphatic filariasis (LF) is endemic throughout Haiti. In line with World Health Organization's (WHO) LF elimination targets, the Haiti Neglected Tropical Diseases Control Program (HNTDCP) has a goal to eliminate LF as a public health problem by 2020. Currently WHO recommends 5 rounds of consecutive annual mass drug administration (MDA) achieving  $\geq 65\%$  coverage among at risk populations to achieve a break in disease transmission; followed by a transmission assessment survey (TAS) to determine whether transmission is interrupted, and can be stopped. Ile de la Tortue, a commune in the Northwest department, is a remote island that had an antigen prevalence of 6.0% in 2000 and only 0.8% by 2006 sentinel site evaluation.

## Methods

Two rounds of MDA were conducted in Ile de la Tortue 2003 and 2005 with 110% and 87% reported coverage, respectively. MDA was then suspended due to resource constraints. A sentinel site evaluation was carried out in 2006. In 2012, the HNTDCP with assistance from CDC and UND carried out TAS1 in order to determine if additional rounds of MDA were necessary to reduce antigen prevalence to below 2%. TAS guidelines recommend community-based surveys when school enrolment in 6-7 year olds is less than 75%. Due to the spatial distribution of houses and the difficult terrain, a simple random sample of households from the community was not deemed feasible for TAS1. We chose to perform a school-based survey in 11-12 year olds—the first age group that enrolment exceeded 75%. This choice increased the chance for TAS criteria failure, as older children have more time to acquire infection than younger children, but would give us more confidence in the results if TAS criteria were met. In 2016, school-based TAS2 was carried out among 6-7 year olds.



IMA World Health/ENVISION staff carry out TAS2 on Ile de La Tortue, Northwest Department, Haiti, March, 2016.

Table 1. Trends in *Wuchereria bancrofti* prevalence in Ile de la Tortue, Northwest Department, Haiti 2000-2016.

Year of Evaluation and Type of Survey	Percent Positive
2000 Baseline Survey	6%
2006 Sentinel Site Survey	0.80%
2012 TAS1	0.99%
2016 TAS2	0%

## Results

In 2012, school-based TAS was carried out on a sample of 1,308 11-12 year olds, with 13 immunochromatographic card test (ICT) positive cases (0.99%), which was below the calculated critical cut-off for sample size of 14.

In 2016, the HNTDCP and IMA World Health/ENVISION carried out a school-based TAS2 in Ile de la Tortue. A total of 928 6-7 year old children were tested, of which none were ICT-positive.

## Discussion

These results indicate that 12 years since the last treatment, there is no evidence of ongoing LF transmission and additional MDA is not indicated. These results suggest that 5 rounds of annual consecutive MDA may not be necessary in some areas with low baseline prevalence that achieve adequate

MDA coverage. Further research is warranted to determine if in some circumstances it is possible to reduce the number of rounds of MDA required, potentially reducing the cost for achieving global 2020 LF elimination goals.

## About ENVISION

ENVISION is an eight-year project funded by the U.S. Agency for International Development (USAID) aimed at providing assistance to national NTD control programs for the control and elimination of seven targeted NTDs: lymphatic filariasis, trachoma, onchocerciasis, schistosomiasis,

and three soil-transmitted helminths (roundworm, hookworm, whipworm). ENVISION contributes to the global goal of reducing the burden of targeted NTDs so that they are no longer a public health problem.

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