Lymphatic filariasis (LF) is a disabiliy, mosquito-borne disease of humans caused by the parasitic filarial nematodes *Wuchereria bancrofti*, *Brugia malayi*, and *Brugia timori*. In 2000, the Global Program to Eliminate LF (GPELF) was established with the objective of eliminating LF as a public health problem by 2020. At that time, 80 countries had ongoing transmission, with an estimated 1.34 billion persons at risk for infection and 120 million infected. This report describes the LF elimination program in Togo, one of the 39 LF-endemic countries in the World Health Organization (WHO) African Region. Togo’s approach to interrupt LF transmission included screening for infection to identify LF-endemic districts and mass drug administration (MDA) of ivermectin and albendazole in LF-endemic districts. MDA coverage and the impact of MDAs on the prevalence of infection were monitored throughout the program. In 2000, seven of 35 districts were LF-endemic, with baseline prevalence rates ranging from 1% to 22%. By 2009, MDAs had been conducted at least six times in each LF-endemic district. At that time, the decision was made to stop MDAs because reported drug coverage in LF-endemic districts exceeded 80% and no microfilaremia was detected in LF. Post-MDA surveillance is continuing nationally; the next step will be to certify elimination. The successful Togo program demonstrates that LF elimination can be achieved in countries with limited resources.

In 1997, the World Health Assembly (WHA) called for the elimination of LF as a public health problem (WHA resolution 50.29). In Africa, LF is caused by *W. bancrofti*, which is the cause of approximately 90% of the estimated 120 million LF cases worldwide. The threadlike adult worm lives in lymphatic tissues, and in 30% of infected persons LF infection can lead to permanent disability from swollen limbs and breasts (lymphedema), damage to the genitals (hydrocele), or swollen limbs with thickened, hardened skin (elephantiasis). An estimated 40 million persons have chronic clinical disease, making LF the second most common cause of permanent disability worldwide. In 2000, GPELF established two major strategies to achieve the goal of eliminating LF as a public health problem by 2020: 1) interrupting transmission through annual MDAs and 2) reducing the burden of disease through morbidity management.

In 2000, the Togo Ministry of Health mapped the prevalence of LF by district using the Rapid Assessment of the Geographical Distribution of Filariasis methodology developed by the WHO Special Programme for Research and Training in Tropical Diseases. Togo, a West African country of 6.1 million inhabitants with a gross national income per capita of $440 in 2009, is divided into 35 districts. At least one village per district was selected to be included in the national LF mapping. Additional villages were selected when the distance between sampled villages was greater than 50 km to ensure that no large geographic areas were missed. In each village, a convenience sample of 50 to 100 persons aged ≥15 years was selected and invited to provide a drop of blood to be screened for filariasis using an immunochromatographic test (ICT) specific for *W. bancrofti* circulating antigen (BinaxNow Filariasis; Alere, Inc.). Districts in which ≥1% of ICTs were positive were considered LF-endemic. The LF-endemic district was the intervention unit within which all eligible residents received MDA.

Togo used a network of community health workers to distribute antiparasitic drugs house-to-house. Ineligible residents were pregnant women, children <35.4 inches (<90.0 cm) in height (a proxy for children aged <5 years), and severely ill persons. Ivermectin and albendazole tablets were donated by Merck & Co., Inc. and GlaxoSmithKline, respectively. MDA was monitored through reported and surveyed coverage. After each annual MDA, reported drug coverage was calculated by dividing the number of persons who were observed to take the drugs during the MDA by the total targeted population. In 2004, population-based cluster drug coverage surveys were conducted in six districts to validate reported coverage.

The impact of MDAs on prevalence in LF-endemic districts was assessed in seven villages (sentinel sites) in 2000 (baseline) and before the third and fifth years of MDA, and in 14 other villages (spot-check sites) during 2005–2009. Sentinel sites remained the same during the course of the program, whereas each year different spot-check sites were selected. Spot-check sites were used to minimize the risk for greater drug coverage in sentinel sites leading to overestimation of impact. During each survey, capillary blood samples for thick blood smear examinations were obtained by finger prick from a convenience sample of 500 volunteers (aged ≥5 years) in each sentinel and spot-check site. Each thick smear was examined under a microscope for the presence of microfilariae, the larval stage of the parasite produced by adult worms in the human host that circulate in peripheral blood. Because *W. bancrofti* in Africa is present in peripheral blood in much higher concentrations at night than in the day, samples were drawn during the hours of 10:00 p.m. to 2:00 a.m.*

A total of 61 villages were included in the baseline mapping in 2000. Of the 5,009 persons tested during the mapping, 89 (1.8%) had a positive ICT, indicating LF infection. The infection rate was ≥1% in seven of the 35 districts, where approximately 1.1 million persons lived (Figure). During 2001–2009, six to nine MDAs were conducted in each LF-endemic district. Since 2003, approximately 80% of the population of the seven LF-endemic districts were administered drugs, according to reports. The population-based cluster drug coverage surveys conducted in 2004 in six LF-endemic districts indicated a drug coverage that exceeded 70% of the total population, validating the reported coverage. Since 2004, microfilaria prevalence from sentinel and spot-check sites has been <1% in all LF-endemic districts. By 2009, no microfilaraemia was detected in persons sampled in sentinel or spot-check sites of five of the seven districts. Additional MDA campaigns were conducted in 2009 in the two districts with microfilaraemia prevalence >0% to <1%. Subsequent surveys in these districts showed no microfilaraemia in persons sampled.

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**Editorial Note**

WHO recommends a stepwise approach to interrupt LF transmission, beginning with mapping the distribution of LF to identify areas in need of MDAs, followed by ≥5 years of MDAs, a period of post-MDA surveillance, and ultimately, verification of LF elimination (7). In Togo, six to nine rounds of MDA in each LF-endemic district have succeeded in reducing levels of microfilaraemia to a point where no microfilaraemia could be detected in tested persons living in all districts that were LF-endemic in 2000. The last LF MDAs were conducted in 2009. The decision to cease MDAs was based on criteria established by WHO that included the successful implementation of MDAs in LF-endemic districts during at least 5 consecutive years, the high proportion of the population that received antiparasitic drugs as part of MDAs, and the demonstrable reduction of microfilaraemia prevalence to levels below those expected to be needed to sustain transmission (<1%).

Post-MDA surveillance is crucial to monitor for resurgence of infection or importation, and it will continue in Togo by monitoring data from 40 laboratories and 18 dispensaries geographically dispersed throughout the country, including in districts considered nonendemic for LF after the 2000 mapping. Although LF transmission is not efficient (which is the basis for believing reduction of population prevalence to <1% will eliminate transmission), reemergence might occur if foci of transmission were missed during the initial mapping or if the disease were reintroduced from LF-endemic areas of neighboring countries (Burkina Faso, Benin, and Ghana). In 2009, Burkina Faso had implemented at least five rounds of MDAs in all LF-endemic areas, Ghana had implemented fewer than five rounds of MDAs in all LF-endemic areas, and Benin had implemented MDAs in some but not all LF-endemic areas (9);
however, in Benin, MDA is ongoing in all districts adjacent to Togo. A substantial amount of cross-border movement of persons occurs among the four countries. Surveillance should be carried out for at least 5 years after the last MDA has taken place before verification and certification of LF elimination is considered.

The success of the Togo program demonstrates that LF elimination can be achieved in countries with limited resources using existing technologies and WHO guidance, and with the help of strong partnerships. The Togo experience also has stressed the need for improved protocols and serologic tests for determining when MDAs can be stopped, for post-MDA surveillance, and for certifying elimination in countries in the African Region where LF is endemic.