The Dominican Republic is working to reach zero malaria mortality and completely eliminate malaria from Hispaniola by 2020.

Overview

Hispaniola reported 18,192 malaria cases in 2014, with 3 percent of the cases occurring in the Dominican Republic and the remainder in Haiti. Nearly all malaria cases on the island are due to Plasmodium falciparum. The primary malaria vector is Anopheles albimanus, which prefers to bite outdoors at night and breeds near stagnant water and vegetation. Transmission of malaria peaks following the two rainy seasons, with a primary peak from November through January and a second peak from May through July.

The Dajabón River creates a natural border between Dajabón Province in the Dominican Republic and Ouanaminthe Province in Haiti; the bridge between the two is the most important commercial avenue for both countries. In 2008, 563 (30 percent) of the Dominican Republic's cases occurred in Dajabón Province, followed by 281 cases in San Juan Province. Sixty-four percent of the Dominican Republic's cases that year occurred in males between the ages of 15 and 49, and less than 4 percent were in children under 5 years old. Fifty-five percent of cases occurred in rural areas in 2008, which represents a decline from 2002 when 83 percent of cases were in rural areas. Of the cases reported in 2008, 25 percent occurred in Haitians employed by the sugarcane or construction industries in the Dominican Republic. There were 4 malaria deaths in 2014, and the government is working

At a Glance

- **496** Reported cases of malaria (99% *P. falciparum*)
- **4** Deaths from malaria
- **48** % of population at risk (total population: 10.4 million)
- **0.05** Annual parasite incidence (cases/1,000 total population/year)
- **0.12** % Slide positivity rate

Malaria Transmission Limits

*Plasmodium falciparum*

*P. falciparum* malaria risk is classified into no risk, unstable risk of <0.1 case per 1,000 population (API) and stable risk of ≥0.1 case per 1,000 population (API). Risk was defined using health management information system data and the transmission limits were further refined using temperature and aridity data. Data from the international travel and health guidelines (ITHG) were used to identify zero risk in certain cities, islands and other administrative areas.
to update its guide on malaria diagnosis and treatment for health staff to prevent future malaria-related mortality.1, 3

Following a reduction in the number of cases between 1999 and 2000, financial support for malaria-control activities from the government decreased between 2002 and 2004. Subsequently, malaria cases reached a peak of 2,461 by 2005 and the government responded by increasing funding for malaria-control activities including indoor residual spraying.3

Since 2008, the governments of the Dominican Republic and Haiti, with assistance from the Carter Center, have been actively pursuing the goal of malaria elimination from Hispaniola by 2020.4

Progress Toward Elimination

The Dominican Republic’s pursuit to eliminate malaria began in 1964 when the National Service for the Eradication of Malaria was established. Until the mid-1970s, the agriculture industry represented 60 percent of the country’s exports, and agricultural workers were at high risk of contracting malaria because of their proximity to mosquito breeding grounds, work in deforested areas, and habitation in temporary housing structures.5 In 1991, there were only 377 cases of malaria and no malaria deaths, but by 1995 the number of cases increased to 1,808.6 Hurricane George hit Hispaniola in 1998 and is considered responsible for the spike to more than 3,500 reported malaria cases in 1999.7

Malaria elimination has been a priority on Hispaniola since the Carter Center’s International Task Force for Disease Eradication (ITFDE) stated in 2006 that a “program to eliminate both malaria and lymphatic filariasis from the island of Hispaniola is technically feasible, medically desirable and would be economically beneficial to both the Dominican Republic and Haiti.”8 The economic benefit of elimination for the Dominican Republic is significant: an outbreak of malaria starting in 2004 cost the Dominican Republic an estimated $200 million in tourism revenue.9

In 2009, the Carter Center and the two ministries of health on Hispaniola launched a joint Dominican Republic-Haiti initiative that announced a $194 million binational plan to eliminate malaria on Hispaniola by 2020.4 The initiative includes health education, free malaria diagnosis and treatment, epidemiological surveillance, and vector control using indoor residual spraying and long-lasting insecticide-treated nets (LLINs).9 The Carter Center launched a pilot program on

Reported Malaria Cases

![Graph showing reported malaria cases from 2000 to 2014.](source: World Health Organization, World Malaria Report 2015)

**Goal:**4–5 Eliminate malaria from the island of Hispaniola by 2020.
the border towns of Dajabón and Ouanaminthe to provide opportunities for Haitians to learn from their counterparts in the Dominican Republic about policies for reducing over-treatment, and increasing surveillance and vector control methods.10 Within a year and a half, the collaborative team had trained community health workers, distributed 1,200 bed nets, purchased four microscopes, and trained three microscopists.

Currently, the government spends US$5 million per year on malaria control in addition to a Global Fund Round 8 grant (2009–2013) of nearly US$8 million.9 The Dominican Republic has outlined a strategy in its 2008–2012 national strategic plan for malaria control to: 1) implement a malaria surveillance system to enable local decision making; 2) improve diagnosis to ensure prompt treatment; 3) establish entomological surveillance and vector control systems at the local level; 4) develop a community participation strategy to prevent malaria; 5) reduce malaria transmission among highly vulnerable populations through use of LLINs; and 6) improve collaborative initiatives with Haiti for island-wide malaria control.5

**Challenges to Eliminating Malaria**

**Post-earthquake migration from Haiti**
The January 2010 earthquake in Haiti left more than 500,000 people internally displaced. The Dominican Republic opened its borders, and within one month of the earthquake an estimated 30,000 to 50,000 Haitians entered the Dominican Republic.15 The migration of Haitians has presented a challenge to the health system of both countries, and the migration from Haiti, a high-endemic malaria area, to the Dominican Republic, a low-endemic area, may increase malaria transmission in the Dominican Republic.5

**Health system weaknesses**
Seventy-five percent of the population in the Dominican Republic lives within two kilometers of health services, yet many of these health facilities do not provide diagnosis and treatment of malaria.5 With assistance from the Carter Center and the Global Fund, the Dominican Republic is working to address this challenge as well as overcoming the following health-system challenges: a decentralized epidemiological surveillance system; shortage of supplies and human resources to diagnose and treat malaria; delayed health-system response to outbreaks; lack of access to rapid diagnostic tests for mobile populations; lack of education on LLINs; and the absence of community participation in prevention and control strategies.

**Conclusion**
Support provided by the Carter Center and the Global Fund, along with collaborative strategies with Haiti, will be instrumental in helping the Dominican Republic make substantial progress towards malaria elimination by 2020. Cross-border migration between Haiti and the Dominican Republic and overall health-system weaknesses will present challenges to eliminating malaria, and many strategies are now underway to address these challenges. Hispaniola, the only remaining island in the Caribbean with endemic malaria, has the distinct advantage of a greatly reduced risk of reimportation once malaria transmission is interrupted.10
Sources

Transmission Limits Map Sources
David Joa (2009), Centro de Control de Enfermedades Tropicales, Ministerio de Salud Publica y Asistencia Social, Santo Domingo (DN), Dominican Republic (Data year 2008).
About This Briefing

This Country Briefing was developed by the UCSF Global Health Group's Malaria Elimination Initiative (MEI). To send comments or for additional information about this work, please email Anne.Bulchis@ucsf.edu.

The Global Health Group at the University of California, San Francisco is an ‘action tank’ dedicated to translating new approaches into large-scale action that improves the lives of millions of people. Launched in 2007, the UCSF Global Health Group’s Malaria Elimination Initiative (MEI) works at global, regional, and national levels to accelerate progress toward malaria elimination in countries and regions that are paving the way for global malaria eradication. The MEI believes that global eradication of malaria is possible within a generation.

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The Malaria Atlas Project (MAP) provided the malaria transmission maps. MAP is committed to disseminating information on malaria risk, in partnership with malaria endemic countries, to guide malaria control and elimination globally.

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