

VENEZUELA, BOLIVARIAN REPUBLIC OF

Venezuela is one of the few countries in the Americas that has had an increase of cases since 2000 and ranks as the country with the highest increase at 205% of cases. There were 90,708 cases reported in 2014, which is more than the country has reported in over 50 years (Figures 1 and 2). In the 1950s, Venezuela actually served as a model for elimination efforts and was certified by WHO to have eliminated malaria in its northern part. Despite the current alarming morbidity, the death rates have not mirrored the morbidity trends and there has been a 79% decrease since 2000.

Malaria mostly occurs in the southern states of Amazonas and Bolivar. Sifontes, a municipality in Bolivar state that shares a border with Guyana, has reported

Figure 1. Malaria by Annual Parasite Index (API) at municipality level (ADM2), Venezuela 2014

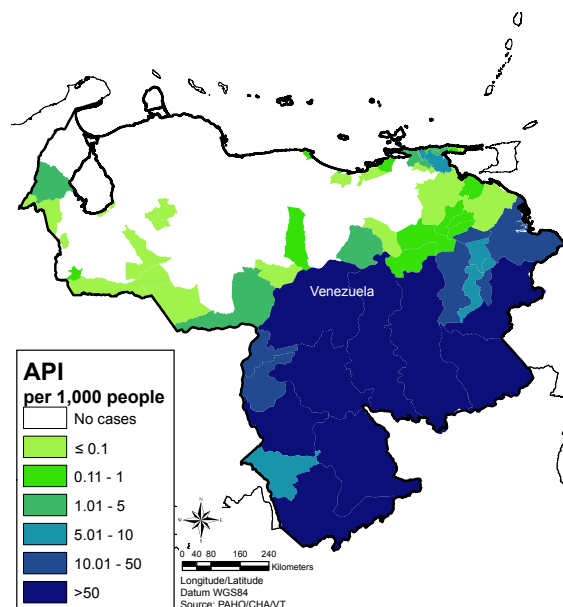
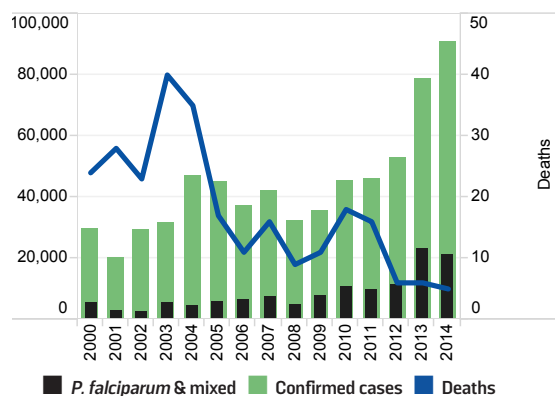


Figure 2. Number of cases and deaths due to malaria in Venezuela, 2000-2014



58% of all cases in the country (Figure 3). The areas most affected are those where gold mining occurs. The large population in mining areas, poor living conditions, and lack of development have all led to the increase of malaria in this area.

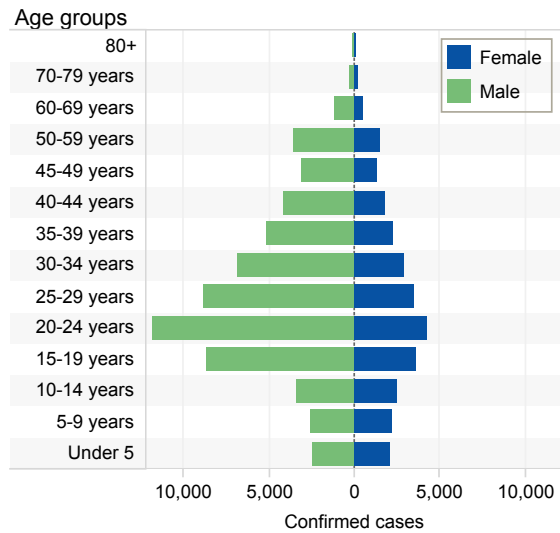
In 2014, *P. vivax* caused 69.3% of malaria infections in the country, while *P. falciparum* caused 23.2% of cases. There were also 15 reported cases of *P. malariae* in 2014. *Anopheles darlingi* is the predominant vector in the country.

Figure 3. Municipalities with the highest number of malaria cases in Venezuela, 2012-2014

Municipality	State	2012	2013	2014
Sifontes	Bolivar	31,396	46,610	52,509
Atures	Amazonas	2,269	4,377	5,897
Cedeno	Bolivar	3,604	5,057	5,289
Gran Sabana	Bolivar	2,985	5,195	5,224
Raul Leoni	Bolivar	1,363	2,844	5,130
Sucre	Bolivar	1,916	2,691	3,490
Piar	Bolivar	2,272	2,642	2,089
Manapiare	Amazonas	378	818	1,776
Antonio Diaz	Delta Amacuro	807	395	1,403
Atabapo	Amazonas	757	829	1,263

■ Decrease ■ Increase

Figure 4. Malaria cases by age and sex in Venezuela, 2014



Generally, young men between the ages of 20-24 years were the most affected (Figure 4). The malaria incidence in women (14.5 cases per 100,000) was less than half of that in men (36.5 cases per 100,000 men) in 2014 (Figure 5). Occupation is a risk factor for men. The incidence in pregnant women was 69 malaria cases per 100,000 pregnant women in 2014, which was significantly lower than that in non-pregnant women of child-bearing age (267 cases per 100,000 women for that year). This is perhaps because malaria transmission largely happens outdoors.

Priority Groups

Gold miners are the principal population of concern as well as those who live in populated areas near gold mines. There is also a significant amount of indigenous people that are affected including the Guahibos and Yanomamis who reside in the Amazon area near the Colombian and Brazilian borders.

Figure 5. Malaria incidence by age and sex in Venezuela, 2014

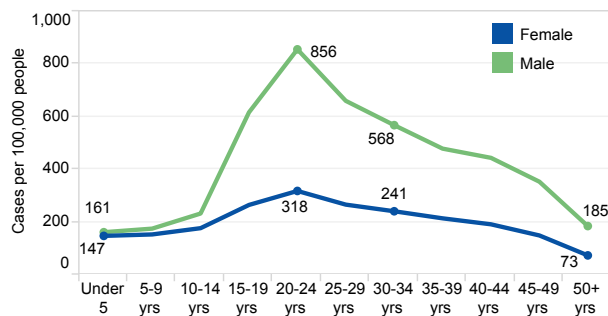
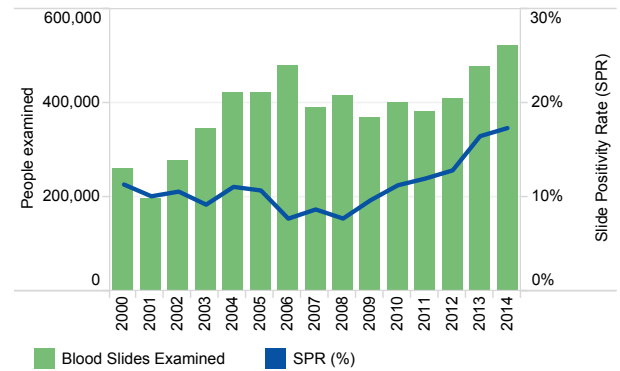


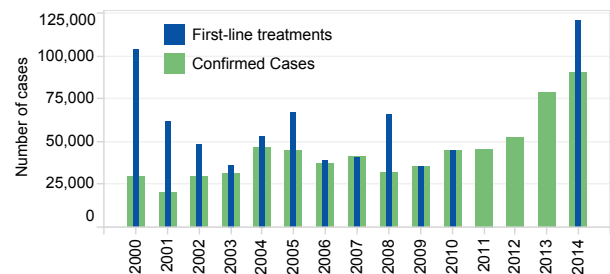
Figure 6. Blood slides examined and SPR in Venezuela, 2000-2014



Diagnosis and Treatment

Microscopy is used to diagnose malaria, though the Global Fund via PAMAFRO donated RDTs in 2007 for a pilot study conducted in the Amazon forest area (Figure 6). In 2014, the SPR was 17.36% which, has risen in the past few years along with the incidence rate. Medication is free in the public health system, but stock-outs have been reported. A 14-day treatment of chloroquine and primaquine is the first-line treatment for *P. vivax* infections, while the combination drug of artesunate-mefloquine-primaquine is used for *P. falciparum*. Drug efficacy studies have not been reported in the past 10 years even as the probability of development of resistance to artemisinin remains high in the Guiana Shield area.

Figure 7. Number of malaria cases and those treated with first-line treatment in Venezuela, 2000-2014



*Data for first-line treatment unavailable for 2011-2013.

Vector Control

Vector control interventions have been used extensively in the past 7 years. In 2014, more than 4 million people were estimated to be protected by IRS (Figure 8). Insecticide-treated nets have also been used as a means of vector control, but usage has been declining since 2008 and only protected an estimated 5,400 people in 2014.

Funding

Financial resources for malaria have mostly come from government during the past 5 years (Figure 9). Venezuela is currently not eligible for funding from the Global Fund. Since 2010, governmental funding has decreased by US\$11 million, though the reported decrease in funding during 2009–2010 could be due to inconsistencies in reporting. Funding increased thereafter between 2012 and 2014. However, the funding reported in 2014 is less than that reported in 2000, while malaria incidence has reached a record high. The increase in funding reported during 2012–2014 is not proportional to the dramatic increase in malaria cases.

Figure 8. People protected by IRS and by ITNs in Venezuela, 2000–2014

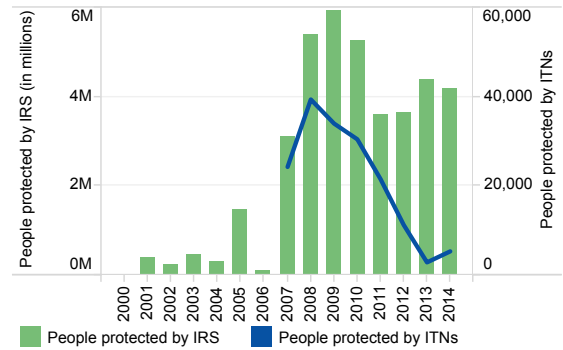
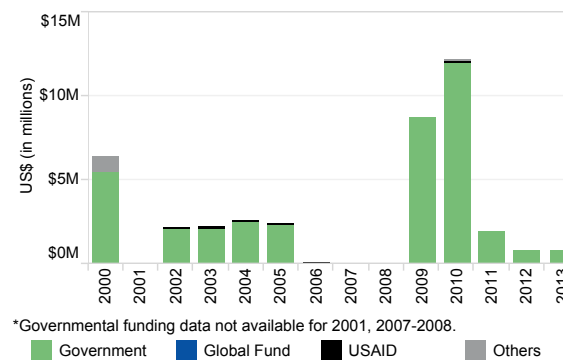


Figure 9. Funding for malaria in Venezuela, 2000–2014



*Governmental funding data not available for 2001, 2007–2008.