

COSTA RICA

Costa Rica has met the WHA 58.2 target for MDG 6C and reported only 6 malaria cases in 2014, a 99.7% decrease since 2000 (Figures 1 and 2). The country is currently in the elimination phase and has reported less than 10 cases since 2012. There have been no deaths reported since 2009.

Cases are dispersed throughout the country and all cases except one were imported in 2014 (Table 1 and Figure 3). Three *P. falciparum* cases were imported from Africa and two *P. vivax* cases were imported from Nicaragua. One case of recrudescence of *P. malariae* was also reported. The provinces of Huetar Atlantica and Huetar Norte have transformed since 2000 due to agricultural developments, particularly in banana and citrus farms. The transformation has led to an increased risk of

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

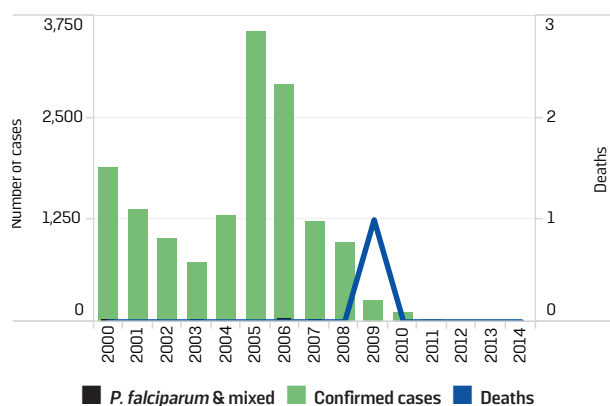
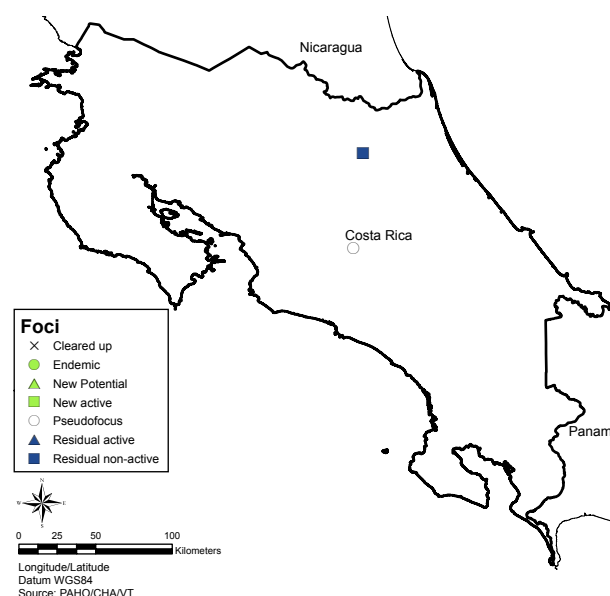


Figure 1. Malaria in Costa Rica by foci, 2014



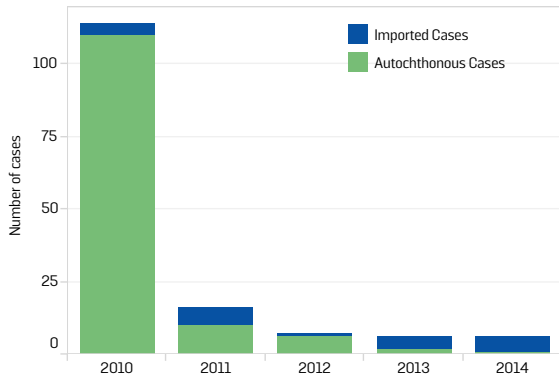
malaria due to vector habitat changes and an increase in human migration to work in these areas. Most cantons of Costa Rica have not reported local transmission in the last 3 or more years (stratum 1) (Figure 4). The last autochthonous case of malaria was reported in the canton of Puntarenas in 2013. This is the only malaria endemic area of the country in recent years. Strangely, a few autochthonous cases of *P. malariae* have been reported during 2012-2014, although records indicate no transmission since 1962.

Anopheles albimanus and *An. pseudopunctipennis* are the primary malaria vectors.

Table 1. Cantons with malaria in Costa Rica, 2012-2014

Canton	Province	2012		2013		2014	
		Total cases	Imported cases	Total cases	Imported cases	Total cases	Imported cases
Desamparados	San Jose	0	0	0	0	1	1
Guacimo	Limon	0	0	0	0	1	1
Nandayure	Guanacaste	0	0	0	0	1	1
Sarapiquí	Heredia	0	0	0	0	1	0
Siquirres	Limon	0	0	0	0	1	1
San Carlos	Alajuela	1	0	1	0	1	1
Puntarenas	Puntarenas	3	0	2	1	0	0
La Cruz	Guanacaste	0	0	1	1	0	0
Upala	Alajuela	0	0	1	1	0	0
Carrillo	Guanacaste	1	1	0	0	0	0
Golfoito	Puntarenas	1	0	0	0	0	0
San Jose	San Jose	1	0	0	0	0	0
Talamanca	Limon	1	0	0	0	0	0

Figure 3. Autochthonous and imported cases in Costa Rica, 2010-2014



Diagnosis and Treatment

Fewer blood slides have been examined due to the decrease in cases over the years, amounting to about 4,500 slides in 2014 (Figure 6). The country has recently been in the process of transitioning microscopic staining techniques from modified Romanowsky to Giemsa. Chloroquine and primaquine are used as first-line treatment for both *P. falciparum* and *P. vivax* infections.

Figure 5. Malaria cases by age and sex in Costa Rica, 2012-2014

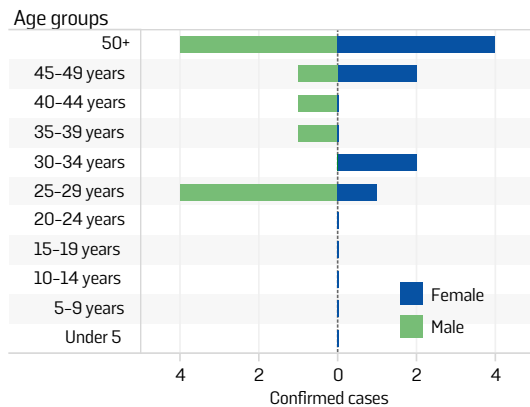
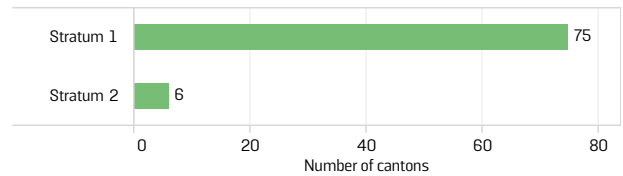


Figure 4. Number of cantons by strata in Costa Rica, 2012-2014



*Stratum 1: No autochthonous malaria case in 2012-2014;
 Stratum 2: <1 case per 1000 inhabitants in 2012-2014;
 Stratum 3: >1 case per 1000 inhabitants in \approx 1 year

Despite the small amount of cases in the past 3 years, access to diagnosis and treatment is estimated to be relatively quick, owing to the unique model of health system in Costa Rica (Figure 8). Apart from the hospitals and clinics, basic teams for comprehensive healthcare provide last-mile connectivity, increasing access to healthcare through periodic home visits. Cases of *P. falciparum* imported from countries with documented chloroquine resistance are treated with ACT.

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

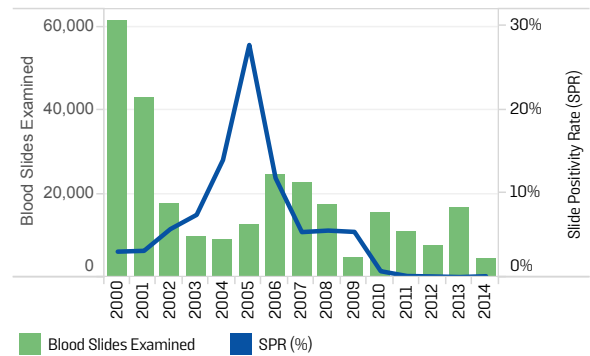


Figure 7. Number of malaria cases and those treated with first-line treatment in Costa Rica, 2000-2014

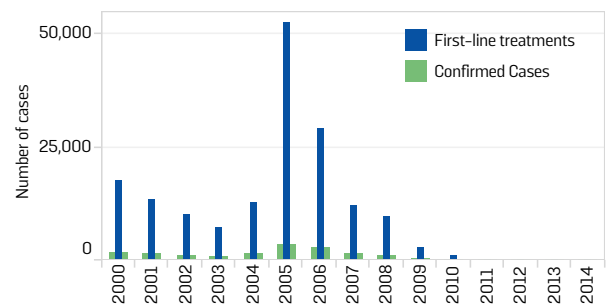


Figure 8. Time from first symptom to treatment in Costa Rica, 2010-2014

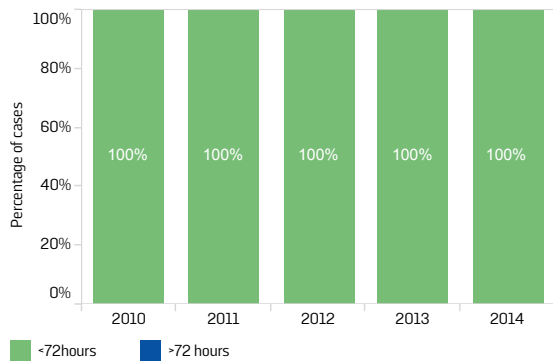
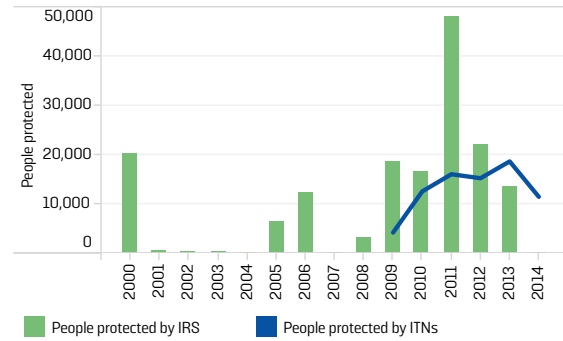


Figure 9. People protected by IRS and by ITNs in Costa Rica, 2000-2014



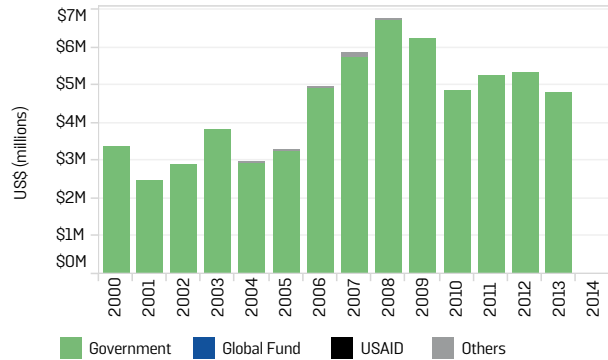
Vector Control

The last distribution of ITNs occurred in 2013 and currently protect an estimated 11,500 people (Figure 9). Vector control by IRS was not reported in 2014, but has decreased since 2011 as a result of the decline in malaria cases.

Funding

For decades, the government has provided millions of dollars in funding for malaria prevention and elimination (Figure 10). While governmental funding was not reported in 2014, no less than US\$2.5 million have been spent every year since 2000. Although US\$200,000 were available from the Global Fund as startup funding through the multi-country EMMIE project, around US\$20,000 were reported to have been used for malaria at the end of 2014.

Figure 10. Funding for malaria in Costa Rica, 2000-2014



*Data unavailable for 2014.