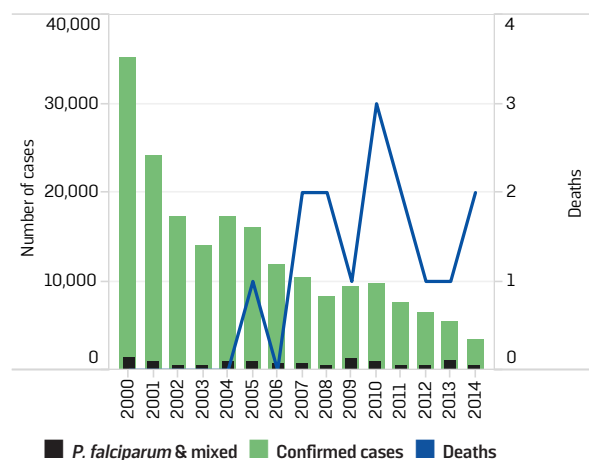


## HONDURAS

Since 2010, malaria in Honduras has continuously declined after having increased in previous years. Honduras successfully accomplished the WHA58.2 target for MCG 6C, and in 2014, achieved a 90% decrease in morbidity compared to 2000 (Figures 1 and 2). A reduction of 37.7% of cases was reported in 2014 from the previous year. About 31 municipalities had more than 1 case per 1,000 inhabitants in one or more years (stratum 3), while 90 municipalities had less than 1 case per 1,000 inhabitants in all 3 years during 2012-2014 (stratum 2) (Figure 3).

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



The northeastern rainforest area of La Moskitia lies along the Atlantic coast and has the highest incidence of malaria in the country as well as the Mesoamerican sub-region. Combined, the departments of Gracias a Dios and Colón reported 69.1% of all cases in the country in 2014. The municipality of Puerto Lempira in Gracias a Dios had the highest number of cases in Honduras (Figure 4).

Figure 4. Municipalities with the highest number of malaria cases in Honduras, 2012-2014

Municipality	Department	2012	2013	2014
Puerto Lempira	Gracias A Dios	870	1,769	742
Tocoa	Colon	513	332	460
Trujillo	Colon	1,376	466	290
Villeda Morales	Gracias A Dios	274	390	238
Sonaguera	Colon	560	442	217
Brus Laguna	Gracias A Dios	167	234	182
Saba	Colon	244	126	179
Danli	El Paraiso	54	181	155
Olanchito	Yoro	279	147	86
Roatan	Bay Islands	149	119	80

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

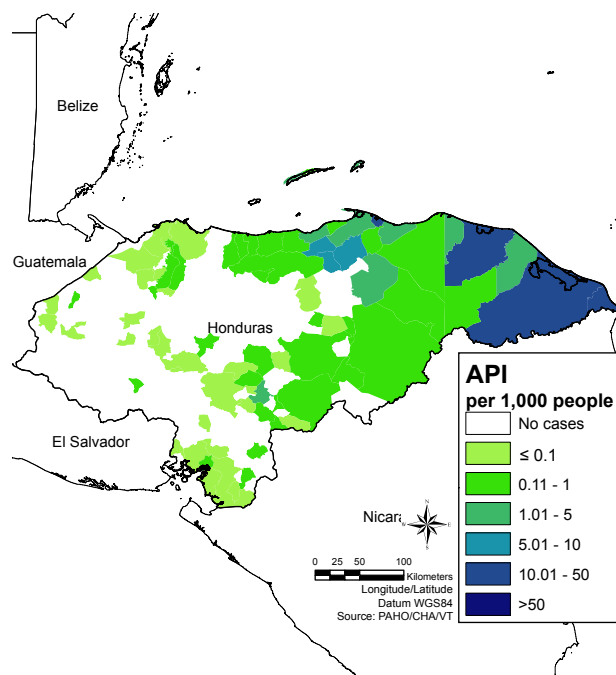
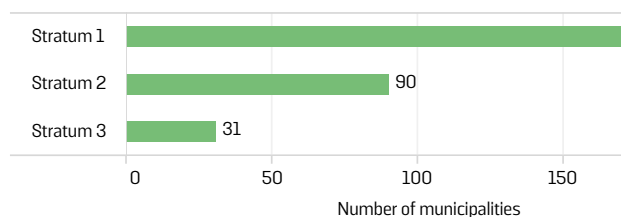
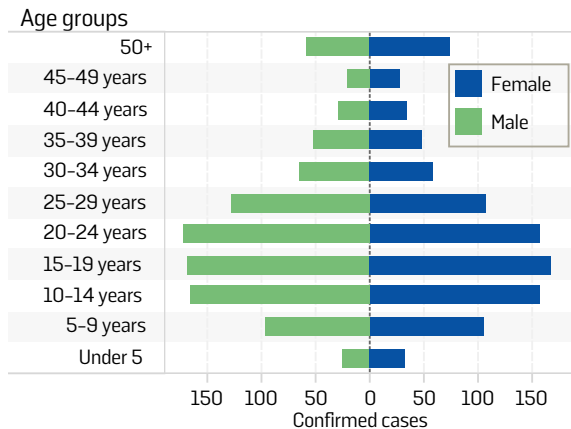


Figure 3. Number of municipalities (ADM2) by strata in Honduras, 2012-2014.



\*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 2012-2014.

**Figure 5. Malaria cases by age and sex in Honduras, 2014**



\*58% of cases were classified in the presented age groups.

Particularly, the municipality of Wampusirpi in Gracias a Dios and Jose Santos Guardiola in the Bay Islands have shown significant decline in malaria: from 702 cases in 2009 to 2 cases in 2014 and from 184 cases to 11 cases, respectively. This has been achieved through a massive distribution of LLINs coupled with improved quality of surveillance and community participation in both municipalities. The agrarian conflict in the valley of Bajo Aguan and ensuing social unrest led to an outbreak of malaria in 2012 in Colon and Yoro departments.

*Anopheles albimanus* is the main malaria vector species. Malaria due to *P. vivax* is predominant, though Honduras has the highest amount of *P. falciparum* cases in the Mesoamerican sub-region. The number of *P. falciparum* cases, however, reduced by 52.4% during 2013-2014. Lately, *P. falciparum* transmission has expanded and been established in Tocoa municipality of Colon department.

The number of cases in males was only slightly higher than females in 2014 with both sexes having an incidence rate of nearly 22 cases per 100,000 people (Figure 5). Younger age groups are more at risk for malaria particularly those aged 10-24 years old.

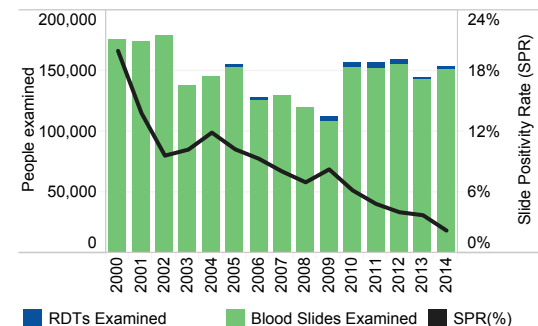
The malaria in pregnancy rate in 2014 was 34 cases per 100,000 pregnant women, which was lower than the rate for non-pregnant women of child-bearing age (50 cases per 100,000 women). Country guidelines indicate that all pregnant women should be tested for malaria at each prenatal visit in all endemic areas. The policy is largely followed in some departments but not in the entire country. The lower incidence in pregnant women, thus, seems due to inadequate quality of surveillance data. This can be further corroborated by the fact that

between 2010 and 2013 the number of malaria cases in pregnant women increased from 22 to 92 although the total number of cases decreased, implying that surveillance has improved in recent years.

### Priority Groups

The most affected populations in Honduras are the indigenous peoples, especially those of the Miskito ethnic group who reside in Gracias a Dios. Other affected ethnic groups are the Tawaka in Wampusirpi and the Pech in Olancho. Migratory populations, especially along the Nicaraguan border, report a high number of cases. These are mostly the Miskito people who have families in both countries.

**Figure 6. Blood slides examined, RDTs examined, and SPR in Honduras, 2000-2014**

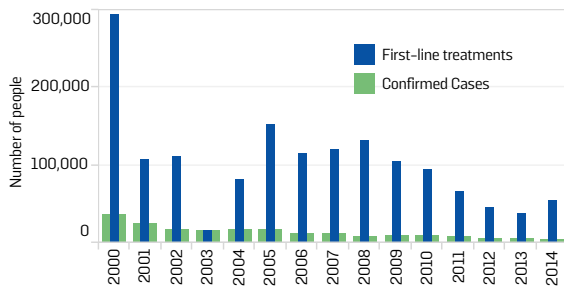


### Diagnosis and Treatment

Microscopy is the primary method for diagnosis (Figure 6). In 2013, the country embarked on a process of establishing community health posts with voluntary collaborators using RDTs for diagnosis in Puerto Lempira. This is being expanded to other areas in the department of Gracias a Dios. The number of people examined through active case detection has more than doubled in 2014 from the previous year. The SPR has continued to decrease in recent years (consistent with case reporting) and was 2.23 in 2014.

Chloroquine with primaquine is used as the first-line treatment for both *P. falciparum* and *P. vivax* infections. A 2009 study found chloroquine to be an efficacious treatment for *P. falciparum* in Honduras (14). Since then, antimalarial resistance surveillance through molecular markers has demonstrated that the *P. falciparum* parasite continues to be sensitive to chloroquine. Deaths in recent years have occurred in people returning from Africa with malaria resistant to chloroquine.

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

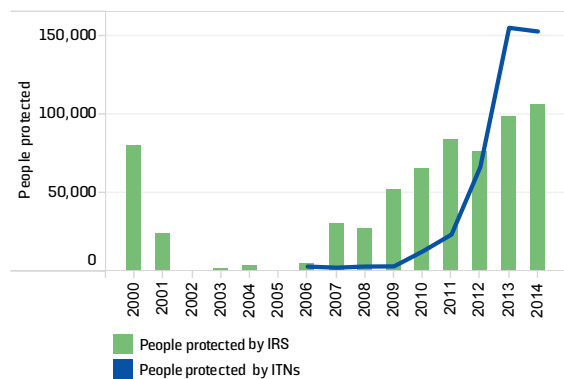


The percentage of cases treated in a timely manner appears to have worsened since 2012 (Figure 8); however, measurements of time changed throughout these years, thereby biasing the data. Therefore data from previous years cannot be compared accurately.

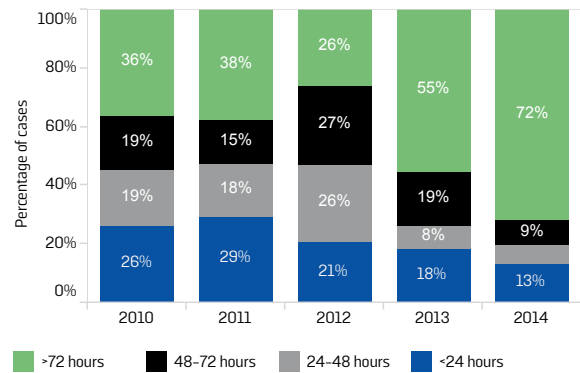
**Vector Control**

A campaign to distribute ITNs in the departments of Gracias a Dios and Colon occurred in 2013, which most likely contributed to the reduced incidence in these departments (Figure 9). The use of IRS has also increased in recent years and currently protects more than 100,000 people. Confirmed resistance to pyrethroid insecticide was found in Catacamas, Olancho and in Comayagua departments among *An. albimanus* in 2013 and 2014. No resistance has been found to pyrethroids elsewhere in the country.

**Figure 9. People protected by IRS and by ITNs in Honduras, 2000-2014**



**Figure 8. Time between first symptom and initiation of treatment in Honduras, 2010-2014**



**Funding**

The government has allotted funds for malaria control. The Global Fund has been the main contributor of external funding since 2003 (Figure 10). Additional funding has been provided by USAID through the AMI/RAVREDA project since 2008. PAHO/WHO has continuously provided technical support and financial resources for specific activities.

**Figure 10. Funding for malaria in Honduras, 2000-2014**

