

Malaria characteristics and trends, University Hospital, Tegucigalpa, Honduras 2000-2014.



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BACKGROUND

The University Hospital is the main public health hospital in Honduras. Parasitology Service, Clinical Laboratory Department, performs malaria diagnosis using Giemsa stained thick/thin smears/slide, Mon-Fri, 6 am – 1 pm.

OBJECTIVE

To describe malaria characteristics and trends from cases diagnosed at the University Hospital, Tegucigalpa, Honduras, period 2000-2014.

METHODS

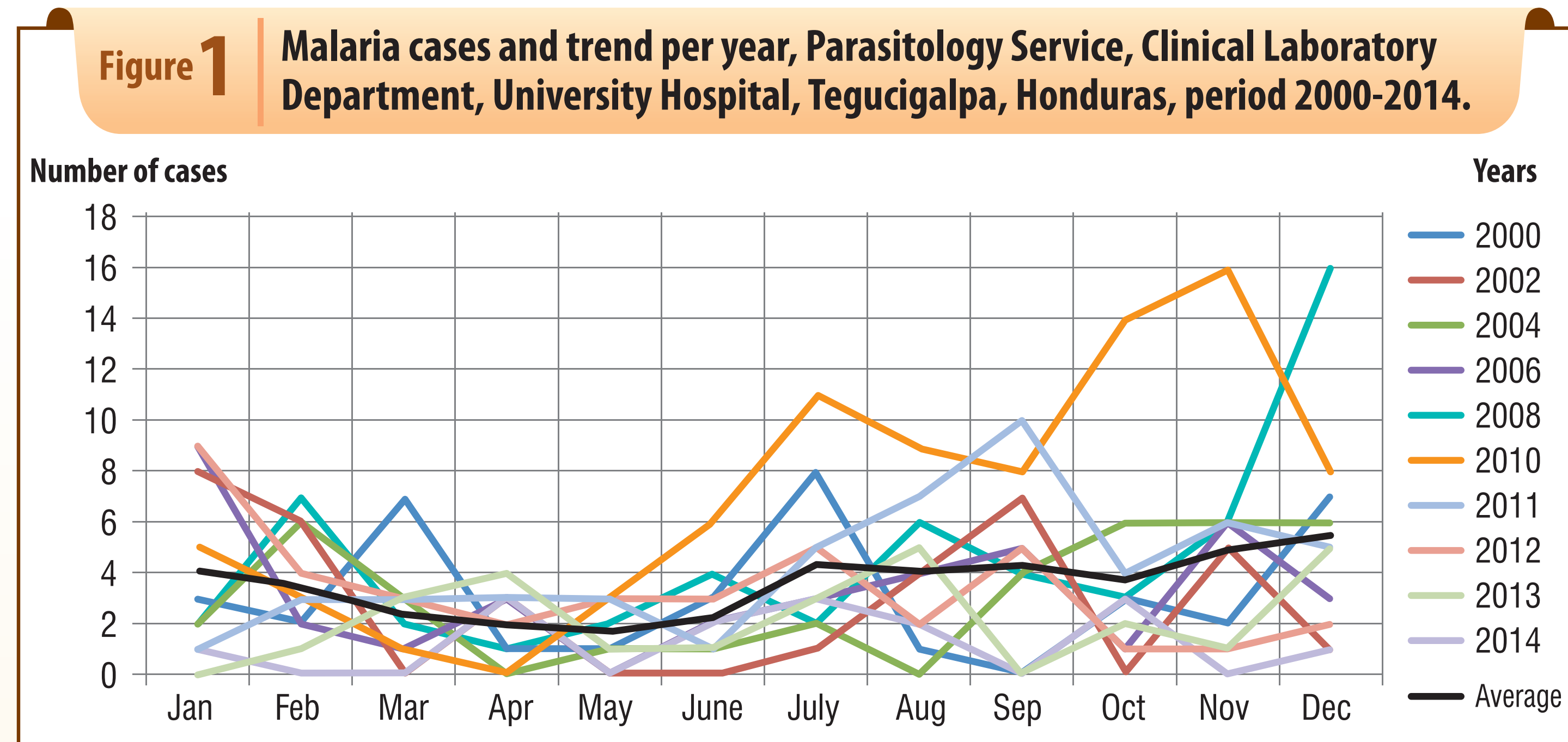
For the period 2000-2014, patient registration forms were reviewed and a database was prepared from daily/monthly registration reports. Microscopic diagnosis is described as number and average examined blood smears and positive smears by parasite species/year. For the period 2007-2014, epidemiologic and clinical characteristics of positive patients are described, including age, sex, origin of infection, pregnancy status, and therapeutic response.

RESULTS

Results are presented for the period 2000-2014, if not specified a different period.

Slide Examination. 723 annual average requests were analyzed (range 333-1043), including 677 average new requests (301-962), and 30 average post-treatment controls (9-59).

Malaria cases and characteristics. 44 annual average malaria cases were diagnosed (range 15-84); an average of 39 (range 14-75) *Plasmodium vivax* cases and 5 (range 1-18) *P. falciparum*/mix infection cases. The average number of cases per age groups was 28 in > 15 years old, 9 in 5-14 years old, 3 in 1-4 years old and 2 in < 1 year old; on average there was no age information in 2 cases. An increased number of cases is diagnosed in the second semester of the year; 2010 was the year with the highest number of cases (**Figure 1**).



In the period 2009-2014, from a total of 228 malaria cases, the origin of infection was traced to Francisco Morazán 38.6% (88), other departments 48.7% (111); Congo, Africa 0.4% (1); blood transfusion 0.9% (2), and no information 11.4% (26) (**Figure 2**). In 2007-2014, there were 27 cases in pregnant women, average age 21.4 years (range 14 – 42), 92.6% (25) *P. vivax* cases (**Table 1**).

Therapeutic response. From the 228 malaria cases diagnosed in the period 2009-2014, the therapeutic response was evaluated in 127 (55.7%); *P. vivax* 118 (51.8%), *P. falciparum* 8 (3.5%) and mix infection 1 (0.4%). All cases showed good clinical and parasitological response to chloroquine 25 mg/Kg in 48 hours plus primaquine 0.3 mg/kg for 14 days, when indicated, except one recurrent case. This was a recrudescence case due to sub-therapeutic dose in a 40-days-old girl, who had good response to a second chloroquine cycle (**Table 2**).

Table 1 Malaria cases in pregnant women, Parasitology Service, Clinical Laboratory Department, University Hospital, Tegucigalpa, Honduras, 2007 – 2014, n= 27.

YEAR	TOTAL NUMBER OF CASES	CASES IN PREGNANT WOMEN			AVERAGE AGE (YEARS) (RANGE)
		Pv	Pf	TOTAL	
2007	59	5	0	5	23.2 (18-30)
2008	55	3	1	4	25 (17-42)
2009	40	2	1	3	18.6 (16-22)
2010	84	6	0	6	22.3 (16-34)
2011	51	4	0	4	20.7 (14-24)
2012	40	3	0	3	24 (20-28)
2013	26	1	0	1	21
2014	15	1	0	1	17
Total (%)	370	25 (6.8)	2 (0.5)	27 (7.3)	
Average (Range)	46 (15-84)	-	-	3 (1-6)	21.4 (14-42)

Pv = *P. vivax*, Pf = *P. falciparum*

Figure 2 Malaria cases and origin of infection, Parasitology Service, Clinical Laboratory Department, University Hospital, Tegucigalpa, Honduras, 2009 – 2014, n=228.

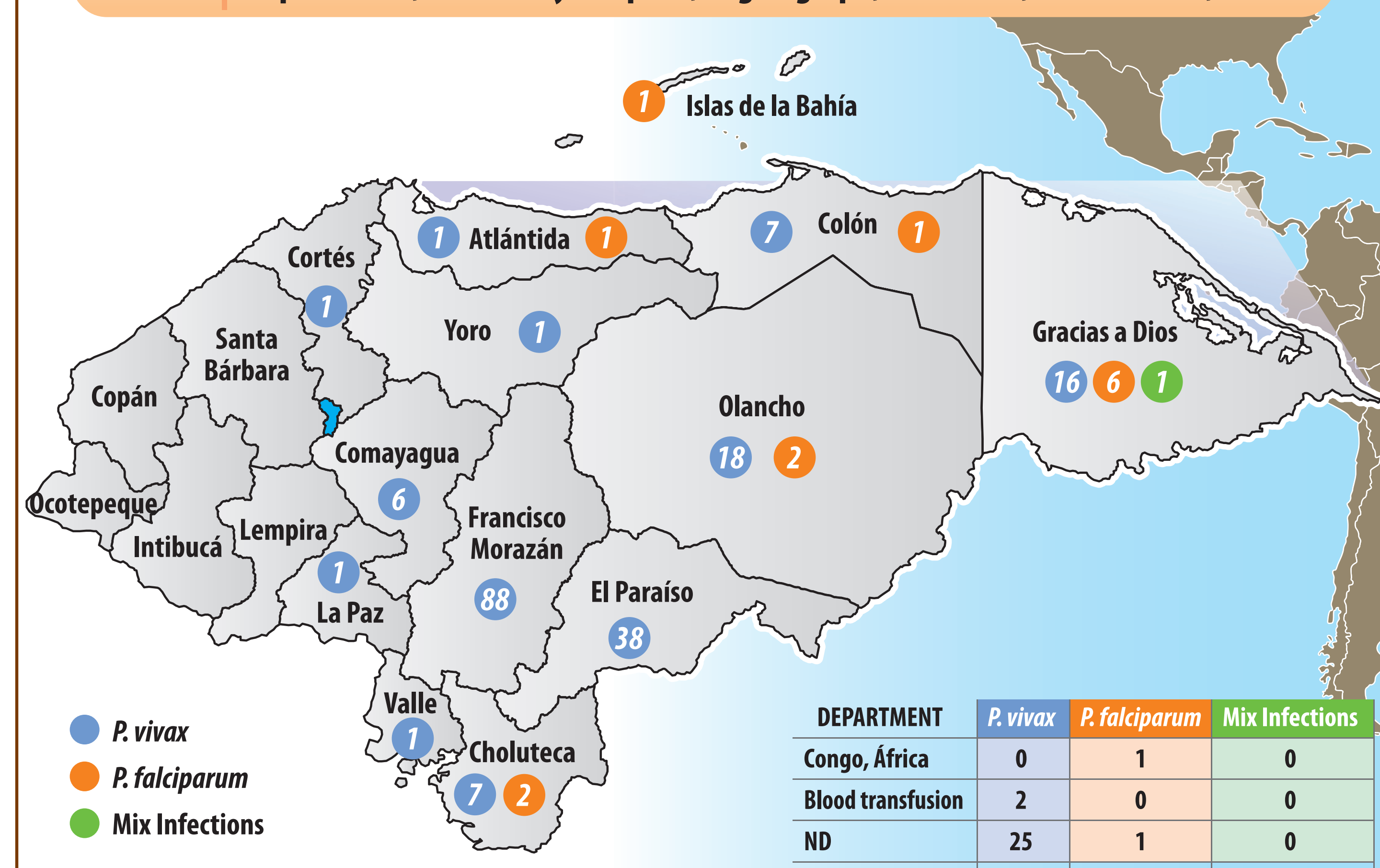


Table 2 Malaria cases and therapeutic response, Parasitology Service, Clinical Laboratory Department, University Hospital, Tegucigalpa, Honduras, 2009 – 2014, n= 228.

YEAR	TOTAL NUMBER OF MALARIA CASES	NUMBER OF EVALUATED CASES	
		TOTAL	THERAPEUTIC FAILURE
2009	12	7	1
2010	84	49	0
2011	51	32	0
2012	40	19	0
2013	26	13	0
2014	15	7	0
Total (%)	228 (100.0)	127 (55.7)	1 (0.4)

CONCLUSIONS

- During 2012-2014 period, the annual average number of cases, 40, 26 and 15, respectively, was below the 15-year period annual average number (44) and shows a decreasing trend.
- Evaluation of clinical and parasitological response showed that *P. vivax* and *P. falciparum* parasites from patients treated at the University Hospital remain susceptible to antimalarial treatment with chloroquine and primaquine.
- Because its characteristics and performance in clinical care, academic and research activities, the University Hospital plays an important surveillance and response role, contributing to the activities for malaria elimination in Honduras.

