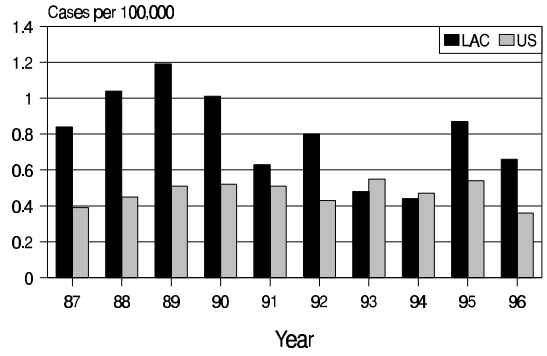
MALARIA

CRUDE DATA	
Number of Cases	59
Annual Incidence[a]	
LA County	0.66
California	1.08
United States	0.36
Age at Onset	
Mean	32
Median	26
Range	2-73 yrs
Case Fatality	
LA County	0.0%
United States	N/A

[a]Cases per 100,000 population.

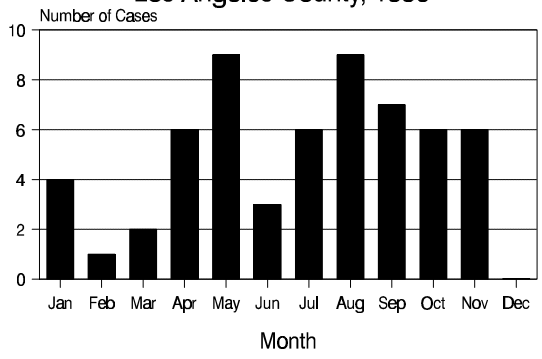
Figure 1
Malaria
Incidence Rate by Year
LAC and US, 1987-1996



ETIOLOGY

Malaria is caused by four species of the genus *Plasmodium*: *falciparum*, *vivax*, *malariae*, and *ovale*. Of the 59 malaria cases reported in 1996, the following species were identified: 37 (63%) were caused by *P. vivax*, 14 (24%) by *P. falciparum*, and 1 each (2%) by *P. malariae* and *P. ovale*; the species was unidentified in 6 cases (10%). Mosquito species of the genus *Anopheles* are the biological vectors of human malaria.

Figure 2
Malaria
Cases by Month of Onset
Los Angeles County, 1996



DISEASE ABSTRACT

Reported malaria incidence in 1996 was slightly lower than the 1995 rate. Malaria is a disease of travelers and immigrants; sociopolitical factors may influence

resurgence of malaria and other vectorborne infections such as dengue by interruption of local vector control programs.

STRATIFIED DATA

Trends: The 1996 malaria incidence fell midway between the 1994 and 1995 incidences, but remained below the five-year 95% upper confidence level limit of 88 cases (Figure 1).

Seasonality: Because malaria is not transmitted locally, seasonality is not significant (Figure 2).

Age: The incidence of malaria was greatest among children 5-14 years (0.91 per 100,000) and those over 64 (0.87 per 100,000) (Figure 3). In previous years young and middle-aged adults had the highest rates.

Sex: The male-to-female rate ratio was 1.1:1.

Race/Ethnicity: Malaria incidence was greatest among Asians (1.94 per 100,000) and African nationals and Black Americans (1.80 per 100,000 population) (Figure 4). Rates fell in each group except among Asians.

Figure 3

Malaria
Incidence Rates by Age Group
Los Angeles County, 1996

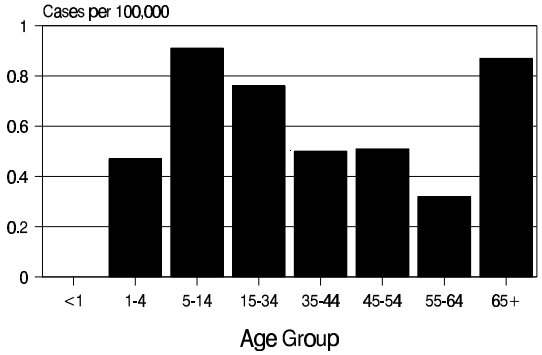
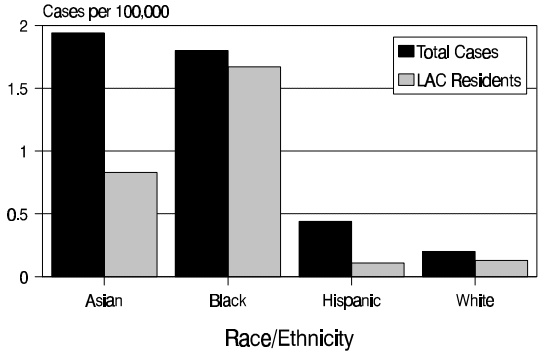


Figure 4

Malaria
Incidence Rates by Race/Ethnicity
Los Angeles County, 1996



Hispanic cases were most likely to have started traveling from a country other than the US (13/17, 76%) compared to other races (Asians, 11/21, 57%; Whites, 2/6, 33%; and Blacks, 1/15, 7%).

Location: The East Valley and Hollywood Wilshire Health Districts each reported 7 malaria cases (rates 1.8 and 1.4 per 100,000, respectively). Since numbers of cases per district are so low, rates should be interpreted cautiously. Also, inclusion of foreign travelers

among cases in rate calculations falsely increases the local incidence rates.

PREVENTION

Many of the malaria cases reported in LAC are not preventable because they occur in newly arrived immigrants or foreign travelers to the US (see Race/Ethnicity section above). Most of the travel-related cases among American residents could be prevented through use of appropriate prophylaxis. Preventive measures other than chemoprophylaxis include using insect repellents, sleeping under a mosquito net, wearing long pants and long-sleeved shirts, and remaining indoors between dusk and dawn.

COMMENTS

No local transmission of malaria, excluding congenital transmission, has occurred in LAC since 1949.

Among the 58 cases (98%) for whom a travel history was obtained, 27 (47%) were known to be visitors or newly arrived immigrants to LAC from countries endemic for malaria. Countries or regions of origin included Central America, 11 (Honduras, Guatemala, Belize, El Salvador); India, 10; and one case each from Nepal, Pakistan, Indonesia, Nigeria, French Guyana, and Mexico. Calculation of incidence rates that include immigrants and foreign nationals leads to an overestimation of the risk to US residents (Figure 4).

Of the 31 travelers whose trips started in the US and for whom information on prophylaxis is available, only 8 (26%) took antimalarial prophylaxis. Regions of exposure of these Los Angeles residents included Africa, 19 (Cameroon, Ethiopia, Kenya, Liberia, Nigeria), India, 5; Pakistan, 3; Central America, 7 (Belize, Honduras, Guatemala, Nicaragua); Mexico, 1; and Vietnam, 1. As in 1995, the single most common country visited by these malaria cases was Nigeria (7). Ten cases (32%) had a history of malaria in the past. Better education of LAC travelers visiting malarious areas is warranted.