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Control and pre-elimination of malaria in the Yunnan Province of China from 1983 to 2013

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Background: Malaria remains a significant public health problem in the border areas of Yunnan Province, China. Yunnan faces an increasing risk of imported malaria cases from its border countries of Myanmar, Laos and Vietnam. Imported malaria has slowed efforts to eliminate malaria in the province.

Aim: The aim of this study is to understand the past and present malaria situation in Yunnan Province and to identify the challenges involved in controlling the disease.

Methods: A retrospective study was conducted of the past 30 years of surveillance data from relevant sources on malaria in Yunnan. Researchers collected data on malaria cases from 1983 to 2013 from the China Information System for Disease Control and Prevention, as well as from case investigation reports.

Results: From 1983 to 2013, a total of 375,602 malaria cases were reported in Yunnan Province; 739 of these resulted in death. Of the total number of malaria cases, 72.7% were infected with *Plasmodium vivax*, 21.2% with *P. falciparum*, 0.02% with *P. malariae*, 1.4% with mixed infection cases, and 4.7% of untyped cases. Of the total number of reported cases, 207,956 were reported from the 25 border counties, comprising 55.4% of the total malaria cases, and 44.6% (167,646) were reported from the mainland counties (the other 104 counties) of the province. The annual malaria incidence rate decreased from 64.8 per 100,000 in 1983 to 0.9 per 100,000 in 2013. Among the 25 border counties, the malaria incidence rate decreased from 179.8 per 100,000 in 1983 to 4.5 per 100,000 in 2013. Malaria incidence rates in the mainland counties decreased from 45.4 per 100,000 in 1983 to 0.3 per 100,000 in 2013. In 1983, malaria was prevalent in the northwest of Yunnan, Zhaotong City (northeast of Yunnan), and in the Yuanjiang-Honghe River Valley and border areas; it remained prevalent in the western and southern border areas of Yunnan in 2013. The population segment at high risk of contracting malaria consisted of young male farmers and migrant workers. People often contract malaria in summer and fall. An analysis of the control measures showed that interventions have been effective in preventing and controlling malaria.

Conclusion: From 1983 to 2013, malaria control has been effective in Yunnan Province. Malaria has almost been eliminated in the mainland areas. Future control interventions should focus on the border areas.

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