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ABSTRACT	Malaria is currently a major public health problem in Sri Lanka. During the period 1981- 1991, a considerable proportion, ranging from 8-18per cent, of the country's health budget was allotted for malaria control. The disease is endemic in the dry zone, while the wet zone is traditionally non malarious but is subjected to periodic outbreaks specially during droughts. This study was carried out in the Upper Mahaweli Basin (UMB) to evaluate human migratory behavior as a risk factor in the initiation of such malaria outbreaks. The study also attempted to identify more cost-effective strategies to control or prevent such outbreaks. During the four year study period from 1989-1992, five malaria outbreaks were detected in the UMB. These were at Hatlaha, Illagolla, Nugawela, Gangasirigama and at Bogolla. Each focus was identified by an index case, which was the first detected malaria positive case without a history of migration to a malarious area. Malaria cases were identified using current surveillance methods of the Anti Malaria Campaign. All malaria cases and migrants were investigated to study the history of malaria, migratory behavior, risk factors and with respect to cost incurred in seeking health care. Investigations showed that, at all five malaria foci, local malaria transmission was initiated by migrants. Of the migrants, 21 per cent gave a history of malaria following their visit to malarious areas. Incidence of malaria was significantly more in those who travelled to the districts of Anuradapura (29per cent), Matale (33.per cent) and Moneragala-Ampare (42per cent) and least in those who travelled to Polannoruwa (15per cent) or only to Ampare (10per cent). Migrants having a long history of migration and those engaged in regular and frequent visits were significantly less affected by malaria. Migrants with behavior patterns of fully covered 'sleeping habits, those using bed nets, drug prophylaxis and those having a high malaria awareness were also significantly less affected. The incidence of malaria among migrants was not significantly. associated with age, sex, level of education, occupation, reason for visit, duration of stay, indoor-outdoor, closed or open (windows or doors) sleeping habits and use of mosquito repellents. Of the migrants, 19per cent sought medical treatment on the first day of fever due to malaria. Of the malaria cases amongst migrants, 55per cent had visited the nearest government hospital at their first visit for treatment while 18per cent had visited government hospitals elsewhere. The majority of these two groups (62per cent) had been treated for malaria on the first visit. However none of those who had sought private

medical treatment had been treated for malaria on the first visit. This study focuses on the recent trend in the increased occurrence of malaria outbreaks in the UMB which is a cause for concern. It is evident that the recent development activities in the area associated with dams, reservoirs and hydropower schemes have contributed to the occurrence of these outbreaks. However the associated population mobility between the endemic and non endemic zones appears to be the major determining factor with migrants playing the key role of transporting the parasite to these areas. Although the current malaria outbreak control strategies of the Anti Malaria Campaign have prevented major epidemics in the non malarious areas, large sums of money have been spent on these control activities. Similarly patients have incurred expenditure in seeking health care and sustained heavy losses in work days for themselves and those accompanying them for treatment. From the findings of this study it is proposed that these resources be diverted more profitably to target the migrants. This could be achieved by establishing malaria diagnosis and control centres in the border zones of the endemic areas along major trunk routes. Further, there is an urgent need for strengthening malaria diagnosis and treatment facilities with updating knowledge among medical practitioners in the nonendemic areas. This is particularly applicable to high risk areas with development projects in order to ensure early treatment of malaria and to limit parasite carriage to non endemic areas. Well planned health economic studies need to be undertaken to evaluate the costeffect-tiveness:of such alternative strategies to prevent occurrence of malaria outbreaks in non-endemic areas such as the UMB.