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Sustaining malaria free status despite the introductionof urban malaria vector *Anopheles stephensi* in a previously malaria endemic area in Sri Lanka: Importance of coordinated parasitological and entomological surveillance

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After successfully eliminating malaria, Sri Lanka is now in the "Prevention of Reintroduction" phase of malaria. However, Sri Lanka is still at a high risk of reintroduction of the disease since the receptivity is high in many of the early endemic areas. Recently, a new malaria vector *Anopheles stephensi*which is considered as an urban vector has been recorded from Northern Province. This finding has given a wide attention for proactive and passive surveillance of entomological investigations along with parasitological examination among risk populations. Therefore, the present study was carried out as a retrospective analysis to determine the efficacy of combined parasitological and entomological surveillance in a previously malaria endemic area where *An. stephensi* invasion was recorded recently. Parasitological and entomological data for the Mannar District from January 2015 to December 2017 were evaluated to determine the efficacy of surveillance activities. The Annual Blood Examination Rate (ABER) and Monthly Blood Examination Rate (MBER) by different parasitological surveillance methods were calculated. Monthly entomological surveillance to monitor vector densities, and man biting rates (indoor and outdoor) as indicators for receptivity and trends were compared with blood examination rates of risk population. The results indicate the presence of *An. culicifacies* throughout the study period with seasonal abundance and *An. stephensi* in high densities in the dry months. A low indoor resting rate of *An. culicifacies* throughout the period and higher outdoor man biting (than indoor) mainly from January to March and June to September was observed. The ABER was 28% during 2015 and 2016, and 23% in 2017 after the introduction of *A. stephensi.* The average MBER during that period was 2%. No cases were detected. The high blood examination rates and the absence of malaria cases shows absence of local transmission in Mannar District, despite high vulnerability and receptivity. Considering the vulnerability for importation of human and vector mosquitoes harboring the parasites due to close proximity to India and the evidence of importation of *A. stephensi*, current surveillance and control measures carried out in that region need to be continued.

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