

Malaria Elimination-Outdoor Transmission A Major Challenge

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ABSTRACT

Malaria elimination aimed to achieve zero indigenous transmission is based on core strategy of surveillance to detect parasite, treat the patient to kill the parasite and interrupt the transmission through integrated vector management (IVM). The roadblocks in implementation of these strategies are migration of people, prevalence of asymptomatic malaria, its detection and radical treatment and above all persistence of residual transmission. Residual malaria transmission occurs in various situations especially with the prevalence of exophilic and exophagic or endophagic and exophilic vectors. The invasion of vectors to newer areas and spread of influence of multiple vectors are also serious challenges for preventive measures. Several new primary and secondary vectors have been identified over time which however need to be established through multi-site pilot studies in different geographical areas. Such changes in bionomics of local vectors especially their resting and biting habits possibly due to ecological succession and insecticide pressure pose a threat to elimination. The vector control tools like insecticidal nets, indoor residual spray, larval source management and enforcement of urban byelaws against deliberate defaulters for creating mosquitogenic conditions are designed against the vectors which are primarily endophilic and endophagic and to some extent for exophagic but endophilic. These strategies of vector control may not be effective against outdoor transmission being sustained by exophagic and exophilic vectors. The study on bionomics is limited due to shortage of entomologists who can guide on bionomics and facilitate the decisions for the use of newer tools and technology. WHO has identified vector control products targeting outdoor malaria transmission as an unmet public health need. Such tools are brought under a separate category known as preferred product characteristics (PPC). A number of interventions with the potential to control mosquitoes outdoors, such as outdoor-deployed attractive targeted sugar baits and spatial repellents, have already been developed but need to be evaluated for their epidemiological impact in different situation. The various stakeholders in vector control are expected to focus for such interventions to control outdoor malaria transmission which is a need under international cooperation to address specific challenges in outdoor malaria transmission.

Keywords: Integrated vector management, Exophagic, Mosquitogenic, Preferred product characteristics

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