

Outdoor Insecticide-Impregnated Barriers: A New Intervention for Malaria Control in the Solomon Islands

Malaria is a mosquito-borne disease that affects millions of people each year, with over 600,000 deaths globally in 2012. Recently, Solomon Islands set a goal of nationwide malaria elimination. Decades of long-lasting insecticidal nets (LLIN) and indoor residual spraying (IRS) interventions have greatly reduced, but not eliminated malaria in Solomon Islands. Instead, the primary malaria vector, *Anopheles farauti*, has undergone a shift from late-night endophagic bloodfeeding to early-evening exophagic bloodfeeding. Presumably, these behaviors are selected for by LLINs and IRS, which may have reached the limit of their effectiveness. Thus, behavioral resistance could be a contributing factor to the persistence of malaria transmission. Our project will test the effectiveness of a novel outdoor intervention called insecticide-impregnated barriers (IIBs) at reducing malaria transmission in Western Province, Solomon Islands. In summer 2014, we mapped study villages using geographic information system (GIS) devices, constructed IIBs in intervention villages, and distributed radical cure treatment to members of our incidence-monitoring cohorts. The incidence of malaria infection in the cohorts will be monitored over the next 2 years and compared between IIB villages and control villages. Mosquitoes are also being collected in human landing catches to determine species composition, infection rates, and changes in age structure over the ensuing study period. We hypothesize that the IIBs will reduce malaria transmission to almost zero over the study period as a result of the strategic placement of the interventions. In my talk I will share results of a baseline human malaria prevalence survey in Western Province, as well as preliminary data from our mosquito collections and malaria incidence monitoring.