A recently-established facility for studies of *Plasmodium* spp. transmission to mosquitoes in London

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The Malaria Transmission Facility was established in December 2020 at the London School of Hygiene and Tropical Medicine (LSHTM), supported by a Biomedical Resources grant from the Wellcome Trust. The facility provides access to malaria parasite transmission for both research groups within LSHTM and external collaborators both in the UK and wider afield. Our specialist team works with these collaborators to design and execute studies relating to the transmission of *Plasmodium* parasites. The facility boasts a recent history of successful transmission experiments through vigorous optimisation of methods, with control feeds of P*lasmodium falciparum* NF54 to *Anopheles stephensi* carried out in 2023 averaging an infection prevalence of over 70% and an average infection intensity of 24 oocysts per infected midgut. Experiments can be designed to interrogate various stages of the malaria transmission cycle using *Plasmodium* gametocytes grown *in vitro* in the laboratory or collected directly from clinical samples received in the UK HSA Malaria Reference Laboratory and fed to insectary-reared *Anopheles* mosquitoes via artificial membrane-feeding. Depending on the study, different *Anopheles* strains can be set up and maintained to meet the demands of a particular scientific question. A variety of experimental end points can be analysed, which includes but is not limited to imaging of ookinetes, prevalence and intensity of oocysts in the midgut lining and sporozoite positivity and intensity within the salivary glands of an infectious mosquito. The facility is currently supporting studies of the impact of knock out (including conditional KO) transgenic *P. falciparum* lines on transmission capabilities, insecticides exposure on malaria transmission, xeno-monitoring of parasite prevalence in non-vector blood-feeding insects and parasite resistance and its impact on transmission. The malaria transmission facility welcomes wider collaboration with any interested parties and opportunities are eagerly sought to work on transmission-related research with UK and international collaborators. Data from some of our current projects will be presented, as well as a summary of experimental approaches available in the Facility.