

The REACT randomised controlled trial to assess whether addition of complementary vector control strategies to long-lasting insecticidal mosquito nets provides additional protection against clinical malaria in areas with pyrethroid-resistant vectors in rural Burkina Faso and Ivory Coast

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The fight against malaria faces now the challenge of the emergence and expansion of the resistance to both curative (drugs) and preventive (vector control) tools. Vector control which relies primarily on mass distribution of long lasting pyrethroid-treated nets contributes to the reduction of malaria transmission. The resistance of Anopheles vectors to pyrethroids, the only insecticide class recommended to treat bed nets, is threatening the considerable progresses made over the last decade.

The REACT project aims to assess whether addition of complementary vector control strategies to long-lasting insecticidal mosquito nets provides additional protection against clinical malaria in areas with pyrethroid-resistant vectors in rural Burkina Faso and Ivory Coast. The tested strategies are 1) Indoor residual sprayings of insecticide; 2) intensive communication for human behavioural changes; 3) larviciding with natural toxins of *Bacillus thurengiensis israelensis*; 4) Use of Ivermectin both in human and cattle.

These tools are at late-stage of development or are already available within the arsenal of vector control tools in order to complement the current massive LNs distribution scaled up by national malaria control programs (NMCPs). Nevertheless as far as we know, except for Indoor residual sprayings of insecticide, there is no epidemiological data evidencing the benefit to use such complementary tools in high resistance areas. Methods and states of progress of this 5 arms randomised control trial will be presented.