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Publication

Automated innovative diagnostic, data management and communication tool, for improving malaria vector control in endemic settings

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Malaria is a life-threatening disease that caused more than 400,000 deaths in sub-Saharan Africa in 2015. Mass prevention of the disease is best achieved by vector control which heavily relies on the use of insecticides. Monitoring mosquito vector populations is an integral component of control programs and a prerequisite for effective interventions. Several individual methods are used for this task; however, there are obstacles to their uptake, as well as challenges in organizing, interpreting and communicating vector population data. The Horizon 2020 project "DMC-MALVEC" consortium will develop a fully integrated and automated multiplex vector-diagnostic platform (LabDisk) for characterizing mosquito populations in terms of species composition, Plasmodium infections and biochemical insecticide resistance markers. The LabDisk will be interfaced with a Disease Data Management System (DDMS), a custom made data management software which will collate and manage data from routine entomological monitoring activities providing information in a timely fashion based on user needs and in a standardized way. The ResistanceSim, a serious game, a modern ICT platform that uses interactive ways of communicating guidelines and exemplifying good practices of optimal use of interventions in the health sector will also be a key element. The use of the tool will teach operational end users the value of quality data (relevant, timely and accurate) to make informed decisions. The integrated system (LabDisk, DDMS & ResistanceSim) will be evaluated in four malaria endemic countries, representative of the vector control challenges in sub-Saharan Africa, (Cameroon, Ivory Coast, Ethiopia and Zambia), highly representative of malaria settings with different levels of endemicity and vector control challenges, to support informed decision-making in vector control and disease management.