

Malaria Epidemiology Modeling Using Volunteer Computing

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Malaria may account for as much as 40% of public health expenditure in developing countries, and more than one million deaths every year. To help decide on how to rationally allocate resources for malaria control, predictive models are needed to assess their likely impact. We have embarked on a project to generate such predictions using an individual-based discrete-time computer simulation approach. Running such models is computationally expensive. We use a volunteer computing approach to access the necessary computing power. malariaccontrol.net is a BOINC-based volunteer computing project that has delivered to date more than 10,000 CPU years. Here we give an overview of the simulation approach. We report on the work that was required in porting the simulation application to BOINC, setting up and running the malariaccontrol.net server. We present selected results obtained from the simulation models.

