Funding our research

Current interventions, such as drug treatments, bed nets and insecticide spraying have helped to lower malaria cases but have not been able to eradicate the disease in many countries, particularly in Africa.

The burden of malaria largely derives from the hundreds of millions of cases every year, the hundreds of thousands of deaths[1], and the many billions of dollars of lost economic activity in Africa alone[2], a heavy burden for developing countries where domestic resources are least available to fight the disease.

The current need for malaria interventions is in excess of US$5.1 billion per year and has been predicted to rise to US$9 billion per year by 2030[3]. The reality is that less than half of the needed US$5.1 billion is currently available, despite the fact that 3.4 billion people – half the world's population – are at risk from malaria.

To end this disease, we need new tools that will work to complement existing methods and address current challenges[4]. Target Malaria's aim is to be part of this toolkit against malaria, working towards our vision of a world free of malaria.

Target Malaria has received generous funding to support its innovative research since it started in 2005, as part of a global effort to develop new and improved tools to achieve malaria elimination.

These new tools will be essential to support the WHO Global Technical Strategy for Malaria 2016-2030 to achieve the goal of elimination by 2050. While the investments needed to reduce malaria incidence are high, the benefits will be even greater, with many billions of cases averted and millions of lives saved.

Investing in a novel tool for vector control

Between 2005 and 2025, Target Malaria will have received a total of US$173 million or an average of US$11.5 million per year in funding to advance research into the use of gene drive for malaria elimination. Funding has come from the Bill & Melinda Gates Foundation (US$155.5 million) and from the Open Philanthropy (US$17.5 million).

This funding has been supporting research at more than a dozen institutions since 2005, currently with more than 180 experts across three continents. The funding is not just for staff salaries, it also covers investments in facilities that could be used for other research in the future (in particular the renovation and construction of insectaries and research laboratories in Burkina Faso, Italy, Mali, and Uganda), equipment, and other costs. The building of local capacity is a significant direct impact of the project that has so far been supporting 35 PhDs, 55 MSc and 7 internships. It is a substantial investment in co-development between African, European and American scientific institutions.

Individual teams have also received additional funding from a variety of sources to support their work, including:

- European Commission,
- United Kingdom Department for the Environment, Food and Rural Affairs (DEFRA),
- United Kingdom Medical Research Council (MRC),
- United States National Institutes of Health (NIH),
- United States Defense Advanced Research Projects Agency (DARPA),
- Wellcome Trust,
- The World Bank,
- Uganda National Council for Science & Technology (UNCST),
- Uganda Ministry of Health.

With annual world R&D funding for malaria at about US$670 million (averaged over the 3-year period 2014-2016), the US$11.5 million per year Target Malaria receives equates to approximately 1.7% of total R&D funding on malaria[5].

Increasing cost-effectiveness of global malaria efforts

Target Malaria's funding represents an important investment that could yield a formidable new and complementary tool to fight malaria. This investment in genetic technologies is similar to investment into new medicines or insecticides. For example, the cost of developing a new vaccine can range from US$500 million to US$2 billion, while developing a new insecticide costs around US$280 million[6]. The US$173 million that will have been received by Target Malaria by 2025 is significant, and is representative of the level of investment that is required to make a stand against this disease which continues to have such a devastating impact on humanity.

The self-sustaining nature of gene drive approaches should also help address some of the challenges posed by the high cost (relative to the resources available) of current malaria tools. For many malaria control interventions, the roll-out cost is much higher than the development cost.

New and complementary tools that are cost-effective to implement, such as gene drive approaches, could help ensure more people are protected while limiting the need to dramatically increase malaria programme funding. Implementation costs will likely vary from country to country and depending on the characteristics of the gene drive mosquitoes developed, but ensuring cost-effectiveness is one of Target Malaria's core objectives.

Proceeding with an intentional release across borders of LMOs requires national regulatory approval in each country where the releases are meant to occur. The national Competent Authority for Biosafety in the territory where a gene drive mosquito or its offspring may be expected to disperse will define the relevant regulatory processes.

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The African Union's report on "Gene Drives for malaria control and elimination in Africa" *https://www.nepad.org/publication/gene-drives-malaria-control-and-elimination-africa*

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