

# **Effectiveness of UK AID**

## Submission by Medicines for Malaria Venture

Medicines for Malaria Venture (MMV), a leading product development partnership (PDP) in global health and a proud recipient of DFID funding since 2001, hereby submit to the International Development Committee a summary of evidence documenting 1) the profound impact of DFID's investment on international malaria eradication efforts, and 2) what we consider to be the irrefutable case for continued investment.

### Executive summary:

- DFID's investment in MMV directly contributes towards global public health agendas set out by the United Nations (UN) and World Health Organization (WHO) ([Section 1](#))
- Every year, malaria kills around 400,000 people: in 2018, 94% of all malaria-related deaths occurred in Africa, and 67% occurred in pregnant women and young children<sup>1</sup> ([Section 2](#))
- DFID's early investment in MMV helped to kick-start a revolution in antimalarial drug discovery and development ([Section 3](#))
- Supported by DFID, MMV is uniquely placed to catalyse antimalarial R&D efforts through the flexible allocation of unrestricted funding to projects that are likely to have the biggest impact on malaria mortality and morbidity ([Section 4](#))
- Since 1999, MMV co-developed medicines – for both the treatment and prevention of malaria – are estimated to have saved at least 2.2 million lives worldwide ([Section 5](#))
- The impact of DFID's investment in MMV stretches far beyond the number of lives saved, contributing to the economic security of developing countries, as well as academic and industry capacity, in the UK and abroad ([Section 6](#))
- A reduction, withdrawal or change in the conditions of DFID investment in MMV would dramatically affect MMV's ability to tackle malaria effectively, and could lead to a catastrophic resurgence of the disease ([Section 7](#))

### **1. DFID's investment in MMV directly supports the global health agenda**

In 2015, the UN published its [Sustainable Development Goals \(SDGs\)](#),<sup>2</sup> the blueprint to achieving a better and more sustainable future for everyone – by the year 2030. DFID's investment in MMV, a leading PDP working to help countries achieve their malaria elimination agendas, contributes to several of the 17 SDGs, which are deeply interconnected. As part of SDG 3, 'Ensure healthy lives

---

<sup>1</sup> WHO World Malaria Report, 2019: <https://www.who.int/publications-detail/world-malaria-report-2019>.

<sup>2</sup> The UN SDGs build on the Millennium Development Goals (MDGs), published in 2000.

and promote well-being for all, at all ages', DFID's support of MMV contributes directly to Target 3.3, 'End the epidemics of AIDS, TB and malaria by the year 2030'. However, by investing in the fight against malaria, DFID also indirectly contributes to other SDGs that are inextricably linked to public health, such as SDG 1 ('End poverty in all its forms everywhere'), SDG 5 ('Achieve gender equality and empower all women and girls'), SDG 8 ('Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all'), and SDG 10 ('Reduce inequality within and among countries'). DFID's investment in MMV therefore has a far wider impact on society beyond immediate malaria-related outcomes, tackling gender inequality, helping to lift people out of poverty, and boosting the economic growth of developing countries.

DFID's investment in MMV directly contributes to the global agenda for malaria eradication. In 2015, the WHO published a 'Global Technical Strategy (GTS) for Malaria 2016–2030', an ambitious call that targets a reduction in malaria case incidence and mortality of 90% by 2030 compared with 2015 levels, the elimination of malaria in 35 countries, and the prevention of disease resurgence in areas that are already malaria-free.<sup>3</sup> MMV is working with its extensive network of partners to reach this goal, but it can only do so with sustained funding from donors like DFID, who provide valuable unrestricted funding that can be channelled into the projects likely to have the biggest impact.

In order to reach these ambitious, but much needed, global targets, the WHO has stated that annual funding for malaria will need to **triple** over the next 15-year period, from the current level of funding (USD 2.5 billion), to USD 8.7 billion by 2030.<sup>1</sup> Given the uncertain long-term impact of COVID-19 on malaria elimination efforts, this figure could be even higher. There remains, therefore, a significant role for PDPs such as MMV, who fill an extremely important gap in the global health innovation pipeline. Typically, PDPs have a strong international network of collaborators (scientists, clinicians, industry partners, government agencies and non-governmental organisations), which they can draw upon, as needed, to address global health challenges in a collaborative manner, supported by the funding of private and public sector donors such as DFID. As such, PDPs are flexible, agile organisations, which bring a ready-made package of international expertise to bear on the global health security agenda.

## **2. Malaria exerts a heavy health and economic burden on developing countries**

According to the WHO's World Malaria Report 2019, an estimated 228 million cases of malaria occurred worldwide in 2018, resulting in 405,000 deaths.<sup>1</sup> The WHO region of Africa still bears the largest burden of malaria morbidity, accounting for a staggering 94% of cases in 2018.<sup>1</sup>

---

<sup>3</sup> WHO GTS for Malaria: [https://www.who.int/malaria/areas/global\\_technical\\_strategy/en/](https://www.who.int/malaria/areas/global_technical_strategy/en/).

Malaria disproportionately affects young children and pregnant women, the two groups most at risk of the disease (in part because of their lower immunity compared with the general population). Alongside pneumonia, diarrhoea and birth defects, malaria is one of the leading causes of death in young children.<sup>4</sup> Tragically, children in low-income countries are more than 100 times more likely to die from infectious diseases than those in high-income countries. Life expectancy at birth in low-income countries is 18.1 years lower than in high-income countries (62.7 vs. 80.8 years), and malaria is one of the 10 conditions that contribute most to this discrepancy.<sup>5</sup>

The UK government and research funders have a proud record in supporting global efforts to tackle malaria, having contributed 9.2% of total international funding over the period 2010–2018, second only to the USA (37.3%) and endemic-country governments (30.5%).<sup>6</sup> The UK has strong economic, political and cultural links with many of the countries most affected by malaria, not least through membership of the Commonwealth (10 of the 20 countries most affected by malaria are part of the Commonwealth).<sup>7</sup> By supporting malaria elimination, the UK can potentially improve the economic performance of these nations, increasing its own scope for trade and investment.

### **3. DFID's early investment in MMV helped to kick-start a revolution in antimalarial drug discovery and development**

Historically, investment in neglected and poverty-driven diseases has been almost entirely lacking because of the absence of an effective financial market to incentivise the private sector (R&D for new drugs, vaccines and diagnostics is time-consuming, costly and risky – with a typical failure rate of around 95% for the development of a new drug).<sup>7</sup>

Twenty years ago, the malaria drug pipeline was all but empty and existing front-line drugs were failing due to drug resistance. This dire situation led to the formation of MMV, a PDP whose mission was to reduce the burden of malaria in disease-endemic countries by discovering, developing and facilitating delivery of new, effective and affordable antimalarial drugs. With its extensive network of private and public sector collaborators (150 active partners worldwide), MMV has completely refreshed and reloaded the antimalarial pipeline, making it the largest in history –

---

<sup>4</sup> Children over 28 days of age.

<sup>5</sup> WHO, World Health Statistics 2019. Monitoring health for the SDGs: [https://www.who.int/gho/publications/world\\_health\\_statistics/2019/en/](https://www.who.int/gho/publications/world_health_statistics/2019/en/).

<sup>6</sup> WHO, World Malaria Report 2019: <https://www.who.int/publications-detail/world-malaria-report-2019>.

<sup>7</sup> US Department of Health & Human Services. About new therapeutic uses: <https://ncats.nih.gov/ntu/about>.

thanks, in large part, to the significant contributions of DFID since 2001 and, most recently, since 2017 (£65 million of unrestricted funding pledged for the period 2017–2021).

Today, MMV manages a [strong portfolio](#), which includes 13 approved, launched antimalarial drugs. However, new and innovative treatments are urgently needed to combat the ongoing threat of antimalarial drug resistance, which, concerningly, has already taken hold in parts of South East Asia.<sup>8</sup> In pursuit of next-generation treatments for malaria, MMV's portfolio has over 65 projects, containing 10 new compounds in clinical development that address unmet medical needs in malaria (including new medicines for children, pregnant women and relapsing malaria), as well as new compounds that are not susceptible to resistance.

#### **4. MMV and DFID: effective partners in global health leadership**

DFID is a long-standing and committed funder of malaria elimination efforts, and is one of MMV's biggest donors – second only to the Bill & Melinda Gates Foundation (BMGF). Since 1999, almost a fifth of MMV's funding has come from DFID, contributing to a substantial reduction in malaria morbidity and mortality. As such, MMV's success also represents the success of DFID and the UK government's Official Development Assistance (ODA) investment strategy, for without such sustained and committed funding, many more thousands, if not millions, of people living in malaria-endemic countries would have lost their lives.

Central to the success of the relationship between DFID and MMV is the nature of the investment itself. The allocation of unrestricted, core funding allows MMV maximum flexibility in terms of how and where to channel DFID's investment, focusing on projects that are likely to have the biggest impact on malaria mortality and morbidity, ensuring a high return on investment for the UK government. A move towards more restrictive funding would reduce MMV's ability to be agile, innovative and responsive to the unmet needs of the malaria community. Likewise, it would negatively impact MMV's flexibility in allocation of funds to high-value R&D projects, which naturally evolve as new data and strategic insights emerge from the field.

DFID is recognised as a global leader in health, and malaria-endemic countries with less developed scientific infrastructure rely heavily on the direction, procedural guidance and reviews/reports issued by DFID. On the ground, MMV and DFID have formed strong relationships with country-level experts to implement post-launch (Phase IV) studies of new medicines, to ensure their safe and effective deployment in a variety of settings. As such, DFID's investment in MMV, and its direct involvement in clinical trials, helps malaria-endemic countries to improve their scientific capacity and expertise.

---

<sup>8</sup> WHO Q&A on artemisinin resistance: [https://www.who.int/malaria/media/artemisinin\\_resistance\\_qa/en/](https://www.who.int/malaria/media/artemisinin_resistance_qa/en/).

DFID and MMV deliver value for money. MMV is a virtual organisation, headquartered in Geneva, with a total headcount of less than 100. Its lean structure and extensive partner network allow it to provide excellent value for money: direct and in-kind support from MMV's public and private partners more than **triples** the value of each donor dollar for R&D.

MMV ensures value for money by:

- ensuring stringent portfolio management (twice yearly, MMV convenes an independent advisory committee<sup>9</sup> to assess projects at key milestones, allowing prioritisation of the best projects)
- lowering R&D costs through collaboration with global centres of excellence
- increasing capacity and infrastructure in malaria-endemic countries by investing in drug discovery and clinical study sites
- reducing the cost of clinical development compared with mainstream pharmaceutical companies, by using staged financing and partnering strategies
- leveraging assets for the global community, e.g. open-source libraries (such as the Pandemic Response Box, which is currently being used by research organisations investigating potential therapeutics for COVID-19).

## 5. The direct impact of DFID's investment in MMV: 2.2 million lives saved since 2009

DFID funding supports MMV's critical research and development that has delivered significant benefits for malaria-endemic countries over the past 20 years. To date, **13 new antimalarial medicines** for the treatment and prevention of malaria have been brought forward by MMV and its partners, thanks to the sustained investment of DFID and other donors:

- **four** artemisinin-combination therapies (ACTs), the WHO-recommended gold standard treatment for acute, uncomplicated malaria – the most common manifestation of the disease – in adults and children
- **two** ACTs formulated specifically as palatable, child-friendly medicines to increase rates of treatment compliance and improve outcomes for young children<sup>10</sup>
- **four** treatments/pre-referral interventions for severe malaria – a life-threatening form of the disease that can develop within hours if uncomplicated malaria is not treated in good time (three of these achieved WHO approval within the current DFID grant timeframe, 2017–2021)

---

<sup>9</sup> Expert Scientific Advisory Committee: <https://www.mmv.org/about-us/people-governance/expert-scientific-advisory-committee-esac>.

<sup>10</sup> Previously, children received adult tablet formulations of antimalarial drugs, crushed up and added to water, which resulted in a bitter, unpalatable treatment that would often be vomited back up by the children.

- **two** medicines for the protection of children living in areas of highly seasonal malaria transmission in the Sahel region<sup>11</sup> of sub-Saharan Africa (one of these achieved approval of The Global Fund to Fight AIDS, Tuberculosis and Malaria within the current DFID grant timeframe, 2017–2021)
- **one** medicine for the prevention of malaria relapses caused by *P. vivax*, a species of malaria that lies dormant in the liver, reactivating periodically after the initial infective mosquito bite to cause disease symptoms (this medicine achieved regulatory approval within the current DFID grant timeframe, 2017–2021).<sup>12</sup>

Conservatively, MMV estimates that to date, close to **1 billion** of the ACTs in MMV’s portfolio have been distributed globally, as well as **125 million** treatments for severe malaria, and over **350 million** treatments for the seasonal protection of at-risk children living in areas of high transmission. These figures are testament to the dramatic evolution of the treatment landscape for malaria over the past 20 years – all made possible thanks to the ongoing commitment of DFID and other donors.

## 6. The indirect impact of DFID’s investment: economic benefits and research collaboration

The impact of DFID’s investment goes far beyond the number of lives saved from malaria, or the number of new drugs launched onto the market. Investing in malaria has profound indirect effects on the economic security and prosperity of developing countries, as well as both domestic and international research capacity.

Since its inception in 2000, Gavi, the non-profit Vaccine Alliance Partnership,<sup>13</sup> has calculated that it has saved an estimated 13 million lives, resulting in over USD 150 billion generated in economic benefits. Using this same methodology, MMV estimates that it has generated USD 28.5 billion in economic benefits by saving over 2.2 million lives.<sup>14</sup>

DFID’s funding also helps to build networks. With MMV’s extensive network of 150 active partners, which spans the private and public sectors of endemic and non-endemic countries, the solution to any given problem is rarely more than one or two phone calls away. In this capacity as a bridge between the private and public sectors, MMV is able to align and focus international R&D efforts, dramatically amplifying the impact of anything that a single organisation could do

---

<sup>11</sup> A narrow geographic belt that spans the 5,400 km from the Atlantic Ocean to the Red Sea, including countries such as Senegal, Niger and Chad.

<sup>12</sup> Tafenoquine, approved by the US Food and Drug Administration (FDA) and Australian Therapeutic Goods Administration (TGA) in 2018.

<sup>13</sup> Formerly the Global Alliance for Vaccines and Immunisation.

<sup>14</sup> Developed by the Vaccine Impact Modelling Consortium and available to view [here](#).

alone. MMV's philosophy is best expressed by the African proverb, "If you want to go fast, go alone. If you want to go far, go together."

In the UK, MMV has formed long-lasting collaborations with several world-leading institutions within the academic, pharmaceutical and charitable sectors. The list includes universities that are currently studying malaria outcomes in pregnant women treated with ACTs (London School of Hygiene and Tropical Medicine; Liverpool School of Tropical Medicine), academic centres screening compounds using novel assays and platforms (Imperial College London and Dundee University's Drug Discovery Unit), pharmaceutical companies developing new treatment options to address unmet needs in malaria (GlaxoSmithKline), and not-for-profit organisations providing solutions to operational challenges in the field (Transaid).

Globally, MMV's extensive and diverse network of 150 active partners includes pharmaceutical companies, universities and academic centres of excellence, contract research organisations and manufacturers. Importantly, by partnering with institutions in malaria-endemic countries, DFID's investment in MMV supports research and operational capacity-building in developing countries. This empowers the countries most affected by malaria to implement national and regional initiatives to support malaria elimination efforts, under the global strategic and financial support of MMV and others.

Lastly, DFID investment in MMV contributes to several large-scale, international research networks. This includes the Malaria Drug Accelerator ([MalDA](#)), a collaboration between 15 scientific laboratories supported by DFID and the BMGF, whose aim is to advance the development of new antimalarial drugs. It also includes the Malaria Drug Development Catalyst, a new legal and scientific platform designed by MMV to promote effective collaboration between industry partners (not otherwise common in the pharmaceutical sector) and accelerate development of next-generation drug combinations.

## **7. The fight against malaria is not over: DFID must continue to invest**

Since 2000, encouraging progress has been made in the fight against malaria. According to the WHO's World Malaria Report 2015, malaria incidence rates (new malaria cases) fell by 37% globally and by 42% in Africa between 2000 and 2015. During this same period, malaria mortality rates globally and in Africa fell by 60% and 66%, respectively.<sup>15</sup> However, in recent years, the global health community has reached a concerning plateau. The case incidence rate of malaria declined globally between 2010 and 2018 (from 71 to 57 cases per 1000 population at risk), but in recent years the rate of change has slowed dramatically, reaching 57 in 2014 and remaining at similar levels until 2018.<sup>1</sup>

---

<sup>15</sup> WHO World Malaria Report, 2015: <https://www.who.int/malaria/publications/world-malaria-report-2015/report/en/>.

Given the progress made so far, MMV believes complacency is ethically indefensible. A failure to remain committed to eliminating malaria could lead to a catastrophic resurgence of the disease, wreaking untold havoc on human life and the economies of developing countries. The world needs DFID to continue to play its crucial role in global health leadership, and to maintain its investment in R&D for malaria. The unrestricted, core funding provided by DFID is instrumental in allowing MMV to deliver maximum impact on malaria-related mortality and morbidity by responding to evolving challenges in the field. Any change in the conditions of DFID's investment, such as a move towards more restrictive funding, could dramatically hinder the effectiveness of MMV's operations. Above all, malaria must remain high on the political agenda of the UK government and of other G7/G20 countries, many of whom are already part of the PDP Funders Group – a network of donors who fund PDPs working in global health. If malaria does not remain on the agenda, we will all pay the price – and we will all be responsible.