Defeating malaria while reinforcing diversity, equity and inclusion in our efforts

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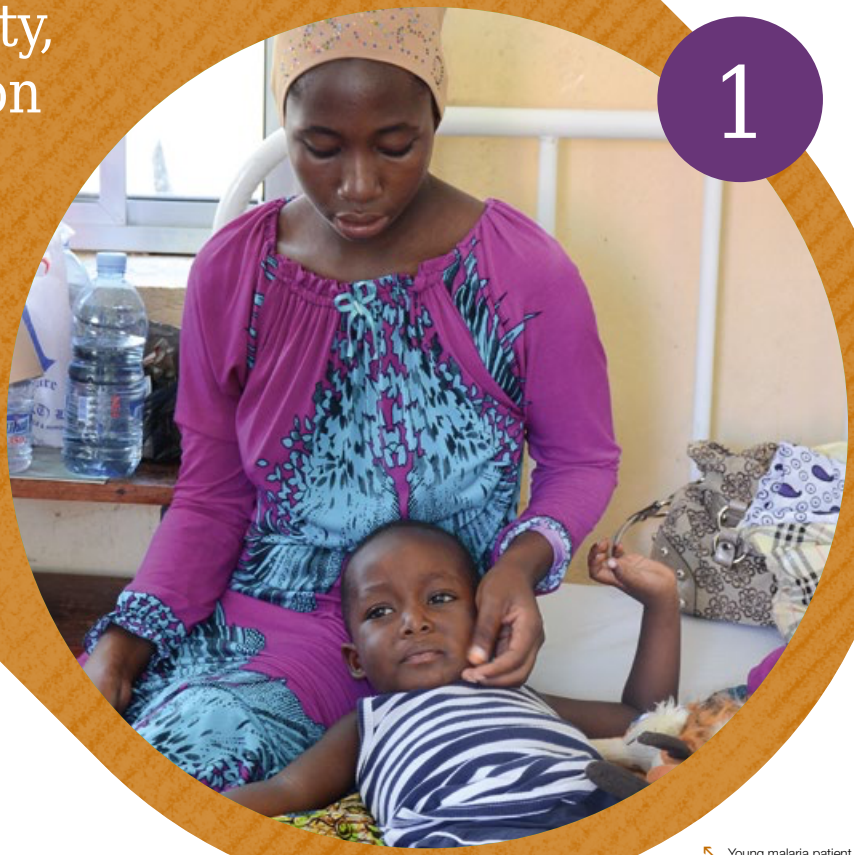


↖ Young malaria patient and mother, Bagamoyo, Tanzania

Message from the Chairman and CEO

Medicines for Malaria Venture's (MMV's) mission is to bring forward antimalarials to protect and cure the world's most underserved populations, enhancing control efforts, leading to local and regional malaria elimination and contributing to the eventual eradication of the disease.

Achieving this mission requires working with our partners to address key unmet medical needs in prevention and clinical management, while simultaneously addressing long-standing challenges to equitable access to healthcare, ensuring the tools and technologies we develop are suitable for diverse populations, and ensuring inclusion in research and knowledge sharing. COVID-19 brought many of these challenges to the fore, with low-income countries experiencing significant delays in access to COVID-19 interventions (personal protective equipment, diagnostic tests and vaccines) versus high-income countries. These challenges negatively impacted ongoing public health programmes which, in the case of malaria, led to an overall increase in infections and deaths.

This 23rd edition of our Annual Report highlights how, in 2022 and over the past years, we have worked tirelessly towards the goal of a malaria-free world, tackling these issues along the way.

The fruit of research for diverse populations

MMV's end-to-end '3D' (discover, develop, deliver) strategy continues to prioritize the search for antimalarials to protect and treat vulnerable populations at highest risk of malaria. Due to safety issues with new compounds and a dearth of evidence, these populations – mainly children and pregnant women – have insufficient treatment options. Other research priorities include therapies for people with *Plasmodium vivax* malaria (often indigenous populations, forest workers and displaced persons) and those at risk of drug-resistant malaria. In 2021–2022, MMV celebrated several triumphs in these areas:

- **48 million children protected by seasonal malaria chemoprevention (SMC) in 2022**. Since 2013, over 700 million doses of SMC have been distributed to young children in Africa's Sahel region, safeguarding their lives. Today, 14 countries are implementing regular SMC campaigns in the rainy malaria season and are considering ways to broaden the reach of this cost-effective intervention (p. 27).
- **Paediatric tafenoquine approved**. The work of MMV and partners resulted in approval from the Australian Therapeutic Goods Agency for single-dose tafenoquine for the radical cure of *P. vivax* malaria in children over 2 years of age (p. 31).
- ***P. vivax* protocol assessed in Brazil**. The protocol, deploying tafenoquine and quantitative glucose-6-phosphate dehydrogenase (G6PD) testing concomitantly, was studied in the Amazon region in Brazil over 18 months via the landmark MMV-backed Tafenoquine Roll-Out Study (TRuST). As a next step, Brazil's Ministry of Health will evaluate the evidence and make a policy decision on nationwide roll-out (p. 31).
- **Ganaplacide/lumefantrine to progress to Phase III clinical trials**. This decision was based on its highly promising efficacy reported in Phase IIb. If all goes to plan, this novel non-artemisinin combination therapy for both adults and children will offer a once-daily alternative to current malaria treatments, and to artemisinin combination therapies (ACTs) should they succumb to resistance (p. 11).

Collaborating on equitable access and uninterrupted drug supply

Through the year, World Health Organization (WHO) guidelines and strategies helped us accelerate access to vital antimalarial treatments and preventions for people who need them most.

- **Inclusion in the WHO Malaria Treatment Guidelines.** In 2022, we celebrated the inclusion of two vital antimalarials – **Pyramax®** (pyronaridine-artesunate) for uncomplicated malaria and **artemether-lumefantrine** for pregnant women in the first trimester, with strong recommendations for broader use. This is an important way to increase uptake and procurement of quality malaria medicines.
- **Strategy to stop the spread of resistance**. WHO's antimalarial drug resistance strategy for Africa recognized the value of new tools like *Pyramax* and the new combination ganaplacide/lumefantrine (in development), as well as multiple first-line therapies (MFTs) designed to reduce drug pressure on ACTs. MMV has long advocated for MFTs and, in 2021, supported pilots of this approach in Kenya and Burkina Faso (p. 10).
- **Diversity of suppliers**. With MMV's support, Kenya's Universal Corporation Ltd (UCL) became the first African manufacturer to gain WHO prequalification of sulfadoxine-pyrimethamine (SP) that protects pregnant women from malaria (p. 25). Two other SP manufacturers in Nigeria are awaiting WHO approval. To further fortify supply security and equitable access to antimalarials, MMV and the Africa Centres for Disease Control and Prevention (Africa CDC) signed a Memorandum of Understanding to strengthen and increase the quality-assured drug production capability of African manufacturers (p. 25).

Prioritizing the needs of women

Equity issues can be a matter of life and death, especially where access to antimalarials for pregnant women and adolescents is concerned, as they have insufficient treatment options. This is one of our priorities. We produced a patient-centred film[1] and co-authored several articles on malaria in pregnancy to raise awareness of the disease's impact on this group.

With the recent inclusion of artemether-lumefantrine in the WHO Malaria Guidelines, women in early pregnancy now have the very first WHO-approved treatment option for uncomplicated malaria. This is a welcome step towards preventing adverse outcomes of malaria for first-trimester pregnant women and their unborn babies. However, much more needs to be done.

The effect of antimalarials in pregnancy is still largely unknown. A key part of MMV's response to this issue, and of its MiMBa (Malaria in Mothers and Babies[2]) strategy, is to collect and analyse evidence for existing antimalarials via pregnancy registries. These will provide insight into expanding the range of malaria treatment options for pregnant women. Registries have been established in Kenya and Burkina Faso. Almost 58,000 women of child-bearing potential had consented to enter the registry by end 2022, with 11,200 pregnancies already recorded. Analysis is expected by end 2024 (p. 22).

Furthering access to knowledge

Bolstering the case for greater sharing of knowledge, MMV-led projects, such as the West African Network for Clinical Trials of Antimalarial Drugs (WANECAM) and PAMAfrica[3] are investing in workshops and studentships for next-generation African scientists. PAMAfrica is supporting five PhD students and six MSc students attached to consortium partners. In addition, the newly instituted Prof. Ogobara K. Doumbo Fellowship will provide hands-on training and skills to young African scientists in the field of malaria-related research.

R&D through open innovation

Meanwhile, MMVOpen[4] continues to take drug discovery to the next level (p. 19). The wealth of data, findings and results emanating from its Open Box initiatives is as diverse as the connections and collaborations they have inspired.

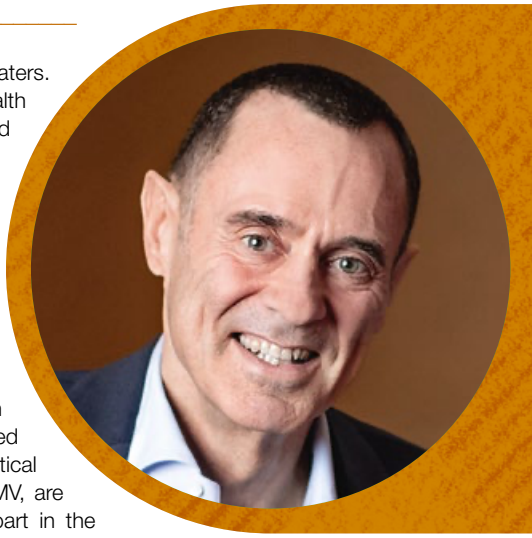
Our open access tool for early dose and pharmacokinetics prediction, MMVSola, has been awarded Project of the Year 2022. Its expansion holds significant promise for use in drug development for underserved populations in other therapeutic areas besides malaria (p. 34).

Gender parity on the Board

Spurred by the 2018 Global Health 50/50 Report,[5] MMV continues to develop and deploy appropriate gender-related policies and practices in-house. As a result, the 2022 report[6] rates MMV a 'very high performer' and a 'fast riser', highlighting the gender parity achieved on our Board. This year we were delighted to welcome three new Board members, all from malaria-endemic countries: Dr Lucille H Blumberg, Dr Ngashi Ngongo and Mr Gustavo Murgel. MMV's Board comprises equal numbers of men and women.

Bridging troubled waters

Global health is currently in troubled waters. It urgently needs improved health systems for greater resilience and a robust R&D pipeline to serve diverse at-risk populations. This requires continued funding from the global community, at a time when countries are stretched economically. It was heartening to see that the Global Fund replenishment raised USD 15.7 billion for the next 3 years through increased commitments from an expanded donor base that included malaria-endemic countries. This critical work must continue and we, at MMV, are just as committed to playing our part in the drive to eliminate malaria (SDG3.3[7]).



Despite COVID-19 and the numerous challenges encountered in 2022, our work has borne fruit. MMV's focus on diversity, equity and inclusion at so many levels is seen as a source of unity, trust and inspiration leading to creative dialogue, decisions, and outcomes. Ever grateful for the sustained support and guidance of our partners and donors, we aspire to build on our strengths as we bring forward high-quality, affordable antimalarials, and facilitate their delivery to those most in need. Stronger, broader trusted partnerships are the way forward.

1.
2. "MiMBa" means "pregnancy" in Swahili.
3. https://www.pamafrica-consortium.org/
4. MMVOpen. http://www.mmv.org/mmv-open
5. Global Health 50/50 Report (2018). https://globalhealth5050.org/report/
6. Global Health 50/50 Report (2022). https://globalhealth5050.org/2022-report/
7. SDG Target 3.3 Communicable Diseases. https://www.who.int/data/gho/data/themes/topics/sdg-target-3_3-communicable-diseases

Mr Alan Court ↙
Chairman of the Board

Dr David Reddy ↖
CEO