

GSK's Commitment to Fighting Malaria



An estimated 3.3 billion people – more than half the world's population – are at risk of contracting malaria, and each year there are around 250 million cases of malaria globally. The disease kills nearly 900,000 people annually, the vast majority of whom are children under the age of five living in sub-Saharan Africa.

Malaria takes a devastating toll on communities and economies across Africa. The battle against the disease must be fought on all fronts using a wide range of interventions, including insecticide-treated bed nets, indoor residual spraying, effective medicines and treatments and, eventually, a vaccine.

GlaxoSmithKline (GSK) has been involved in the fight against malaria for decades through our malaria research and development (R&D) programmes. We work hand-in-hand with organisations at the local, regional and international levels to ensure that our products complement existing malaria interventions.

GSK's malaria control strategy has three areas of focus:

- **R&D** for new malaria treatments and vaccines
- **Community investment activities** through the African Malaria Partnership (AMP)
- **Preferential pricing for anti-malarials** in the least-developed countries and sub-Saharan Africa

Research and Development

Vaccines

GSK's RTS,S – the world's most advanced malaria vaccine candidate – is now in a Phase III clinical trial that includes 11 sites in seven African countries: Burkina Faso, Gabon, Ghana, Kenya, Malawi, Mozambique and Tanzania. RTS,S aims to protect infants and young children living in malaria-endemic areas of sub-Saharan Africa against malaria. If approved, the vaccine could be administered through national immunisation programmes to complement currently available malaria control measures.

Results of clinical studies to date have shown that RTS,S has a promising safety and tolerability profile, reduced the risk of clinical episodes of malaria in young children by 53 percent over an eight-month follow-up period and decreased by 65 percent the risk of infection in infants over a six-month follow-up period. Recently a study demonstrated that the vaccine candidate provided a clinical benefit against malaria disease for up to 45 months after initial vaccination. A partially effective vaccine would have the potential to save hundreds of thousands of lives.

The development of RTS,S has been spearheaded by a team that spans the globe, including scientists from across Europe, North America and Africa. In 2001, GSK partnered with the PATH Malaria Vaccine Initiative (MVI) to advance the development of RTS,S for paediatric use in sub-Saharan Africa. GSK also partners with the Clinical Trials Partnership Committee (CPTC), a consortium of world-class African researchers who lead the Phase III trial on the ground. Further partnerships and collaborations will be necessary to ensure that, once available, the vaccine is delivered and implemented across Africa as quickly as possible.

Malaria Treatment

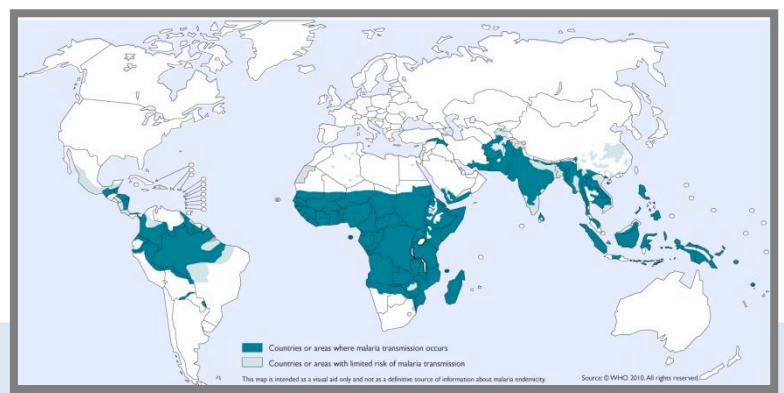
At Tres Cantos, Spain, GSK has dedicated a research facility to conducting R&D for diseases of the developing world, primarily malaria and tuberculosis. At this facility, drug development projects are prioritised primarily by their socio-economic and public health benefits, rather than by their commercial returns. There are over 100 GSK scientists at Tres Cantos, 25 of whom are supported by the not-for-profit Medicines for Malaria Venture (MMV).

As resistance to current malaria treatments increases, GSK is committed to developing new drugs to treat the disease. In partnership with MMV, GSK researches potential therapies to address two of the most pressing needs in malaria drug research: treatments for drug-resistant strains of the *Plasmodium falciparum* malaria parasite and treatments for *Plasmodium vivax*, the strain of malaria that is predominant in Asia and Latin America.

Areas at Risk of Malaria Transmission

Malaria kills nearly 900,000 people annually, the vast majority of whom are children under the age of five living in sub-Saharan Africa.

Source: World Health Organization, 2010



GSK's Open Innovation Strategy

GSK is adapting its business model further to adopt a more open approach to R&D for diseases of the developing world, including malaria. Given the scale of the task we all face, we must find new ways for industry, academia, NGOs and governments to work together. We are calling this our 'open innovation' strategy for the developing world, which is designed to foster and facilitate more R&D for neglected tropical diseases. This strategy has three core elements:

Being more flexible with our intellectual property & know-how:

In March 2009, GSK put many of our important resources – including a pool of patents, research 'know-how' and technology assets – into an open 'knowledge pool.' Researchers outside of GSK can now use this information, which will hopefully stimulate cutting-edge research on medicines for neglected diseases, including malaria. The knowledge pool is now being administered by the not-for-profit BIO Ventures for Global Health.

Enabling access to our resources:

GSK is creating an open laboratory at Tres Cantos with capacity for up to 60 independent researchers to pursue their own projects that could lead to new medicines for neglected diseases. A not-for-profit foundation will be established with £5m of seed funding from GSK to support these research projects.

Sharing our compounds and data:

GSK screened more than two million of our 'compounds' – the building blocks of all new medicines – and found 13,500 that showed potential efficacy against the malaria parasite. To speed the development of malaria drugs, we will release this information to researchers around the globe who can use it to further their own research.

Community Investment Activities

Through our African Malaria Partnership (AMP), GSK works at the local level to improve the prevention and treatment of malaria in sub-Saharan Africa. Since 2001, we have committed over £3 million to community initiatives and have partnered with organisations on the ground to promote the use of existing interventions, such as bed nets, indoor residual spraying and current treatments.

Initial activities focused on behavioural change programmes across eight African countries. In partnership with the Malaria Consortium, we support the 'Mobilising for Malaria' initiative, which builds awareness, political commitment and sustained funding for malaria control through advocacy initiatives. National Coalitions Against Malaria have now been launched in the UK, Belgium, France, Ethiopia, Cameroon and Mozambique.

In late 2009, the AMP announced new partnerships to build the capacity of community health workers and encourage behaviour change. With a total commitment of £1.5 million over three years, the new projects include:

- **African Medical and Research Foundation (AMREF) in Mtwara province, Tanzania:** The partners will train community health workers and mobilise communities to become frontline advocates in the fight against malaria.
- **Family Health International (FHI) in the Brong Ahafo region of Ghana:** Working with community health workers and household caregivers, the project aims to improve early recognition of malaria and provision of appropriate treatment, and to encourage health-seeking behaviours and community mobilisation.
- **Planned Parenthood of Nigeria in six selected communities:** This project will promote a community response to malaria through partnership with community committees, government agencies, vendors, community health workers and peer educators in schools.
- **Save the Children in North East province, Kenya:** Through community campaigns, education, bed net distribution and community health worker trainings, the project aims to ensure targeted communities receive effective coverage and have access to diagnosis and treatment services.

Preferential Pricing for Anti-Malarials

GSK provides its anti-malarials at deeply discounted prices in malaria-endemic countries throughout sub-Saharan Africa and elsewhere. Our anti-malarial pricing aligns with GSK's innovative tiered pricing model, which guarantees that our drugs and vaccines are priced according to a purchaser's ability to pay to expand access to our products globally.