

The PATH Malaria Vaccine Initiative

The PATH Malaria Vaccine Initiative (MVI) is a vaccine development program of PATH, a global health nonprofit organization. Established in 1999 and funded primarily by the Bill & Melinda Gates Foundation, MVI works to accelerate the development of malaria vaccines and to ensure their availability and accessibility in the developing world. MVI's vision is a world free from malaria.

Situation

Malaria is a parasitic infection transmitted by mosquitoes. More than one-third of the world's population is at risk of malaria, with 300 million to 500 million cases occurring every year. The resulting disease can damage the nervous system, kidney, and liver, and severe cases can quickly lead to death. Most of the more than one million annual deaths from malaria are among children in Africa under the age of five. A malaria vaccine is desperately needed to help prevent these deaths.

“The malaria epidemic is like loading up seven Boeing 747 airliners with people every day, then deliberately crashing them into Mt. Kilimanjaro.” Dr. Wen Kilama, African Malaria Network (AMANET)

While consistent use of effective insecticides, insecticide-treated nets, and malaria drugs saves lives, eradicating or even reducing the impact of malaria will require additional interventions, such as vaccines. Immunization is one of the most effective and cost-effective health interventions available. Just as it was necessary to use vaccines in addition to effective drugs to control the two most common kinds of meningitis in the United States, vaccines will be needed as part of an effective malaria-control strategy in Africa. Vaccines against common childhood diseases such as polio and measles already save the lives of three million to four million children every year.

History of MVI

MVI was founded at PATH on the premise that while promising vaccine candidates existed, they required assistance to get out of the laboratory and on a path towards clinical



Accelerating vaccine development to save lives



trials. Scientists had long demonstrated that immunizing against malaria was theoretically possible. However, efforts in this direction were hampered by financial hurdles and the technical complexities of developing any vaccine against a parasite such as *Plasmodium (P.) falciparum* (the most deadly malaria parasite).

When MVI was created, several academic and governmental organizations and pharmaceutical companies had been working on approaches to developing malaria vaccines with the potential to have an impact on *P. falciparum*. MVI began providing funds as well as logistical and technical support to propel some of these candidates into clinical development.

Progress

Today, more malaria vaccine candidates are moving into clinical trials than ever. MVI has a portfolio of eight vaccine candidates. Four of these candidates are under clinical development in 2008. MVI and its partners are preparing to launch a Phase 3 clinical trial with one candidate, GlaxoSmithKline Biologicals' RTS,S, toward the end of 2008. All but one of the candidates supported by MVI target *P. falciparum*; one project in India is developing a vaccine against *Plasmodium vivax*, the malaria parasite found mainly in Asia. The *P. vivax* approach has the potential to be used in combination with candidates targeting *P. falciparum*. MVI's vaccine development partners include universities, corporations, intergovernmental organizations, and the U.S. government and military.

In addition to its direct support for vaccine development, MVI works to increase the flow of resources to the field as a whole, as well as to define acceptable product characteristics, ensure the availability of vaccines once licensed, and to identify the information decision-makers want prior to introducing a vaccine.

The future of malaria vaccine development is promising. Despite much progress, however, increased attention to research and development (R&D) is still needed. The 2005 landmark study, *Malaria Research & Development: An Assessment of Global Investment*, on global malaria R&D shows that in 2004, global spending on malaria R&D represented less than one-half of one percent of the world's total health-related R&D investments. Many more donors are needed at the malaria R&D table.



Increased funding for malaria research and development is still needed.



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