

POLICY BRIEF

This project set out to explore the possibility of developing malaria vaccines to protect women against malaria during pregnancy and to prevent severe malaria in infants and children. This was done through a series of biomedical research activities involving work at Tanzanian hospitals, in Tanzanian villages and at laboratories in Tanzania and Denmark.

Investments into malaria vaccine development are risky and done with the view that a return in form of a deployable product at the earliest will be available about 10 years after the investment is made. On the other hand, the investment is worth making because the potential benefit is huge. Effective vaccines could save millions of lives and increase the economical output in malaria-affected countries. Thus, malaria vaccine research is not undertaken to inform short-term policy change.

The main scientific outcomes of this project have been the formulation of the first prototype vaccine for pregnancy malaria, which with considerable investments from the Danish Foundation for Advanced Technology and The European Commission entered into the first clinical trials in Germany and Benin in 2016 and 2017. Secondly, the project has identified the molecular interaction between a malaria parasite protein and its binding partner on human blood vessels responsible for initiating the diseases processes leading to development of severe childhood malaria. This game-changing discovery has removed a road-block for vaccine development. The finding was published in Nature and is internationally recognized as a major break through.

In terms of scientific output, the work was published in papers in international journals, (including papers in Nature, New England Journal of Medicine and PNAS) and presented at many international meetings.

Building of Tanzanian research capacity was a central part of the scientific process. This included upgrading and performing central experiments in Tanzanian laboratories, and staff training at all levels (from upgrading driver certificates to completed PhD studies). The project was part of the management structure of the Joint Malaria programme (JMP) – a collaboration between Kilimanjaro Medical Christian University College, National Institute

for Medical Research, London School of Hygiene and Tropical Medicine and University of Copenhagen. The JMP coordination committee of has met twice annually and annual JMP conferences were held 2009, 2010, 2011 and 2012. The JMP annual conference was attended by DMOs, RMOs and representatives from the Malaria Administration (Ministry for Health and Social Welfare).