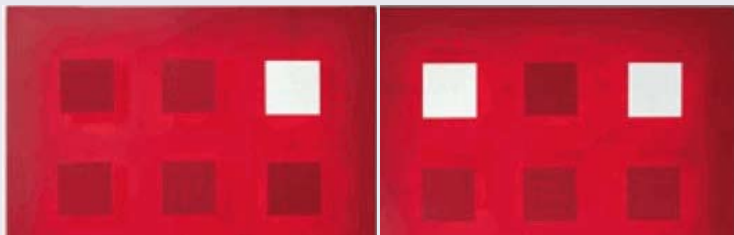


Foreword



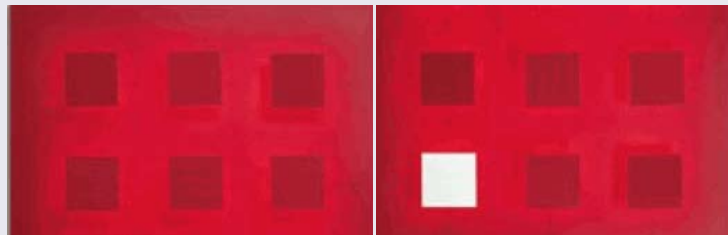
Malaria remains one of the major diseases of poverty in Africa, Asia and South America. The London School of Hygiene & Tropical Medicine (LSHTM) has a long tradition of conducting malaria research to support the fight against this major but avoidable and treatable disease of the most vulnerable. LSHTM remains committed to this fight and there is clear evidence of success in many areas of the world, with falling incidence of malaria in many areas and introduction of new prevention and treatment strategies, many of which are underpinned by research done at the School.

This report highlights the broad range of research undertaken here from fundamental research in parasite and vector biology, and immunology through to social and economic studies with the majority of studies having clear and direct implications for public health. One of the unique strengths of LSHTM malaria research is its multi-disciplinary nature. The Malaria Centre brings together those researching in malaria from all disciplines to ensure an integrated approach. The success of this approach is acknowledged both in the conventional academic measures of major high-profile publications and grants, and also in the many members of the Malaria Centre who advise the WHO, governments and major institutions. The LSHTM is committed to continuing to build on the strength of the integrated approach of the Malaria Centre.

Professor Sir Andrew Haines
Director of LSHTM



Introduction



The two years covered by this report have been very positive for malaria research and control and the work of the Malaria Centre. There has been evidence from several countries including Rwanda, The Gambia, Zanzibar and Zambia of significant declines in malaria. This demonstrates that systematic application of control and treatment measures such as those highlighted in this report, can have a substantial impact on health.

Political and financial commitment to malaria continued, boosted by the commitment of the Director General of WHO and Bill and Melinda Gates, to the eventual eradication of malaria. In the UK, there has been sustained commitment to malaria research from DFID and the All-Party Parliamentary Malaria Group.

Scientifically, the two years covered by this report have been very successful for the Malaria Centre across the wide range of scientific disciplines represented within it. The pages of the Report should give some indication of the breadth and depth of the research undertaken.

The success of the cross-disciplinary model of the Malaria Centre in research and capacity building has been recognized by the recent award of several major grants including a grant for US\$39.7 million from the Bill and Melinda Gates Foundation for the ACT Consortium, a grant of £7.3 million from the Wellcome Trust for training and research capacity development and major grants from the Medical Research Council, Wellcome Trust, Gates Foundation, DFID, European Union and others.

Malaria remains one of the most important yet most defeatable diseases of poverty and the Malaria Centre aims to continue to play a leading role in all aspects of the attack on malaria, from the initial basic science to development of new tools through to final field-testing, operational and economic evaluations of interventions and assisting policymakers and those involved in tackling malaria on the ground.

Christopher Whitty
Director, Malaria Centre

Policy Relevance



The Malaria Centre conducts research across the range from basic science through to applied and translational research. The ultimate aim of this research is to provide best evidence for policy and practice in the prevention, diagnosis and treatment of malaria throughout the world. Members of the Malaria Centre from all disciplines provide technical support for the policy process for WHO, DFID and the Department of Health in the UK and for major philanthropic foundations, as well as providing technical assistance to malaria control programs in the countries in which the Malaria Centre works.

In this report, earlier sections concentrate on the basic science through to the early trial stages of interventions. We hope the majority of these studies will eventually lead to interventions which can have an impact on malaria. The second half covering Clinical Trials & Clinical Studies, Vector Control and Social & Economic studies have direct policy relevance as they are testing interventions which have been developed through basic science from many disciplines in the field. This report includes studies across a range of geographical and policy settings.

Examples of studies with direct policy relevance in the *case management and prevention* of malaria are:

- Studies on the new intervention on the intermittent preventive treatment in infancy (IPTi) and intermittent preventive treatment in children (IPTc) across a range of geographical and social settings, particularly in Africa.
- The often overlooked problems in the management of vivax malaria, particularly in areas where health services are fractured. This includes trials in the North-West Frontier Province of Pakistan and Afghanistan.
- Diagnostic strategies for malaria and associated anaemia, including rapid diagnostic tests, laboratory studies testing sensitivity and specificity of tests, through to operational studies determining how diagnostic tools are used in practice (often not as anticipated) and the potential economic impact of deploying these tests in Africa.
- Mapping the extent of drug resistance and then testing new drugs where drug resistance is a problem.
- Studies on severe malaria and malaria in pregnancy.
- The spread of insecticide-resistance and the development of long-lasting net technology, along with renewed interest in the elimination of malaria in some settings, means that *vector control* is going through a very exciting period and

a wide-range of studies in this report have policy relevance for vector control. These range from tests for detection of synthetic pyrethroids on bed-nets and walls, through to the effects of long-lasting nets in practice and their cost-effectiveness. There is a major program for the development of new insecticides and investigation of innovative methods such as use of fungi for adult malaria mosquito control.

- A particular strength of the LSHTM Malaria Centre is the combination of practical field and laboratory studies with an internationally recognized group of scientists working in *economic and social* issues. Cost effectiveness and cost benefit studies of drugs, diagnostic tests and vector control measures are combined with real life studies in health systems research in Africa and Asia. This includes studies in countries which are highly endemic for malaria, such as Tanzania, and those where malaria can be underestimated, such as Yemen and the Philippines.
- An effective malaria *vaccine* is still some way off deployment but in addition to immunological studies helping to develop vaccines and clinical studies assessing current vaccine candidates, social and economic studies of how they could be deployed once they are developed are already underway.
- *Surveillance* of malaria is vital for malaria reduction programmes. Centre projects are monitoring changes in transmission with sensitive molecular and serological techniques suitable for scale-up to regional and national level.
- The Malaria Centre has engaged strongly with the scientific questions that would need to be answered in any attempt to *eliminate* malaria, which would need a multi-speciality approach.

The Malaria Centre members aim to package and present data in ways which are most useful to policy makers where it is policy-relevant. This includes authoring reports on behalf of bodies such as DFID and the All-Party Parliamentary Malaria Group, which pull together data both produced by the Malaria Centre itself and from other sources. Individual members of the Malaria Centre working in malaria endemic countries maintain very close relationships with national malaria control programs to ensure that all research conducted is policy-relevant in the local environment and that the results are fed back as quickly as possible to assist policy makers in their decisions.