**RAM Scientific Committee Coordinator Report May 2021**

**Scientific Developments (not exhaustive):**

**Vaccines**: A malaria vaccine called R21 has [proved to be 77% effective at preventing the disease in children](https://nature.us17.list-manage.com/track/click?u=2c6057c528fdc6f73fa196d9d&id=89171e7b12&e=38c764c091) in a small, early trial in Burkina Faso. R21 has been in the works for several years, and it informed the development of the Oxford–AstraZeneca COVID-19 vaccine, which came out of the same group at the University of Oxford. The vaccine is believed to be the first candidate to reach a WHO goal of at least 75% efficacy. Larger trials involving 4,800 children in 4 countries in Africa are being launched and consideration is being given to early release of the vaccine for emergency use.

Link:  [The Guardian reports](https://globalhealthnow.us14.list-manage.com/track/click?u=eb20503b111da8623142751ea&id=f51d3cf404&e=b5e93a730d)

**Relevance to RAM**: The COVID-19 crisis stimulated an extraordinary increase in research into novel approaches to vaccine development, raising the prospect that we will finally get effective malaria vaccines that could not be developed by traditional methods.

For a useful article on the possible application of the new RNA vaccines to malaria vaccination follow this link: [The malaria vaccine isn’t super effective. RNA technology might change that. - Vox](https://www.vox.com/future-perfect/22307700/malaria-rna-vaccines-covid-19)

**Drug Resistance**: New research shows troubling signs that drug-resistant mutations in a malaria parasite may be gaining traction in Rwanda. The study, examining treatment outcomes for 224 children under-5 with P. falciparum infections, documents for the first time that the mutations are associated with delayed parasite clearance.

* 3 days post-artemisinin treatment, ~15% of participants in 2 different parts of the country still had detectable parasites.
* The mutations are more prevalent than previous studies report—indicating likely transmission of the mutations and spurring concern about greater spread geographically.

 Drug efficacy remains high so far, the authors emphasized—at 94–97%—but they stressed that along with increased monitoring, additional antimalarials should be considered for Rwanda.

Link: [The Lancet Infectious Diseases: First clinical evidence of drug-resistant malaria mutations gaining | EurekAlert! Science News](https://www.eurekalert.org/pub_releases/2021-04/tl-tli041421.php)

**Relevance to RAM**: No direct relevance except that malaria elimination will be difficult unless we use all available, and emerging, tools at our disposal. Undue reliance on antimalarial drugs will always carry a risk of development of drug resistance so we cannot rely on drug use alone.

**Funding**: The Global Health Innovative Technology (GHIT) Fund announced on March 30 a total of approximately 2.3 billion yen (US$21 million\*) would be invested in four partnerships to develop new lifesaving drugs for malaria, tuberculosis, Chagas disease and visceral leishmaniasis, a vaccine for malaria and diagnostics for tuberculosis. This includes four new projects and six projects that will receive continued funding including "AnAPN1”, a new transmission-blocking vaccine (TBV) candidate that could block parasite transmission of P. falciparum and P. vivax in different Anopheles species from humans to mosquitoes, is currently preparing for Phase I human trials in Gabon, Africa. The development of a TBV is essential to prevent the spread of antimalarial drug-resistant parasites, and as a next-generation malaria vaccine that can directly support the malaria eradication effort. The GHIT Fund is a Japan-based international public-private partnership fund (PPP) between the Government of Japan, multiple pharmaceutical companies, the Bill & Melinda Gates Foundation, the Wellcome, and the United Nations Development Programme (UNDP).

Link: [GHIT Fund Announces New Investments: A Total of 2.3 Billion Yen in Drugs for Malaria, Tuberculosis, Chagas Disease and Visceral Leishmaniasis, Vaccine for Malaria and Diagnostics for Tuberculosis (prnewswire.com)](https://www.prnewswire.com/news-releases/ghit-fund-announces-new-investments-a-total-of-2-3-billion-yen-in-drugs-for-malaria-tuberculosis-chagas-disease-and-visceral-leishmaniasis-vaccine-for-malaria-and-diagnostics-for-tuberculosis-301259088.html)

**Relevance to RAM**: The injection of funds into malaria research is always welcome, and in this case some of the partners (for example, the Bill & Melinda Gates Foundation) are well known to Rotary. Recent efforts to coordinate communication between Rotary action groups world-wide and various partners such as the Global Fund need to continue and be extended to prospective new partners such as GHIT.

**Climate Change**: The slowdown in global warming that was observed at the end of last century was reflected by a decrease in malaria transmission in the Ethiopian highlands. For several years there has been a heated debate on the impact of global warming on malaria incidence. It is believed that the largest effect could occur in the highlands, where lower temperatures limit vector abundance, leading to intermittent and seasonal disease outbreaks. Using mathematical modelling, the research team analysed the association between malaria cases, regional climate (local temperatures and rainfall) and global climate (in particular the effect of El Niño and the Pacific Decadal Oscillation on the Pacific Ocean). The results show that the variation in malaria cases correlates extremely well with changes in regional temperatures: These results emphasise the value of considering climate conditions when evaluating public health interventions aimed at disease control, and of integrating them into early warning systems.

Link: [8b9a0b35-6d56-46b6-a296-5ec6aeca2e50 (isglobal.org)](https://www.isglobal.org/documents/10179/8761301/NdP_malaria_Ethiopia+eng.pdf/8b9a0b35-6d56-46b6-a296-5ec6aeca2e50)

**Relevance to RAM**: Given that RAM operates in areas with highlands (for example, PNG) we may need to factor climate effects into our assessments of the effectiveness of our intervention measures.

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