Malaria Policy Advisory Group (MPAG)

Declaration of Interests report for MPAG virtual meeting held from 18 to 20 April 2023

All 19 MPAG members participating in the meeting updated their declarations of interest in advance of the meeting, which were assessed by the WHO Secretariat. Thirteen (13) members reported interests, which are summarized below. No MPAG members have reported specific interests regarding agenda topics for decision. It was assessed that all members could fully participate in all sessions.

All the reported interests are summarized below:

1. **Professor Evelyn Ansah, University of Health & Allied Sciences, Ghana**
   - Research Support – Ghana Co-Investigator on funding from PATH for the Health Utilization Study on a qualitative assessment of the pilot implementation of RTS,S. This interest was assessed as non-personal, non-specific and financially significant.*

2. **Professor Graham Brown**
   - Consulting – WHO/Global Malaria Programme contract to write the interim draft of the Executive Summary of Strategic Advisory Group on malaria eradication (SAGme) report (2019). This interest is assessed as personal, non-specific and financially significant.*

3. **Professor Thomas Burkot**
   - Consulting with Global Good Fund to provide technical advice on trials of a vector control product (improved housing) and developed a vector control strategy while on a fellowship with them from 2017-18 and multiple short contracts up to 2019. This interest is assessed as personal, non-specific and financially significant.*
   - Consulting work with PATH to provide technical advice on writing grants to support the design and evaluation of vector control product trials of Attractive Toxic Sugar Bait (ATSBs). This consultancy work began in 2017 and is current. This interest is assessed as personal, non-specific and financially significant.*
   - Research support from Verily Life Sciences for evaluation of a male Aedes sound trap in 2021-2022. This interest is assessed as personal, non-specific and financially significant.*

4. **Professor Umberto d'Alessandro**
   - Consultant – Development of M5717 new antimalarial drug for Merck Health care KGaA (2022 – ongoing). This interest is assessed as personal, non-specific and non-financially significant.*
   - Research support - principal investigator in a clinical trial on the safety and efficacy of pyronaridine-artesunate (Pyramax) in asymptomatic malaria-infected individuals. The Medical Research Council Unit (MRC), The Gambia, received funding from Medicines for Malaria Venture (MMV) for this work in 2018-2019. This interest is assessed as non-personal, non-specific and financially significant.*

5. **Professor Abdoulaye Djimde, Head, Molecular Epidemiology Drug Resistance Unit, University of Mali, Mali**
   - Research support
     a) DELTAS Africa – Professor Djimde is the Principal Investigator for Developing Excellence in Leadership and Genetics Training for Malaria Elimination (DELGEME) with funding from the Wellcome Trust (2016 – 2021). This interest is assessed as non-personal, non-specific and financially significant.*

b) PAMGEN study funded by the African Academy of Sciences looking at genetic interactions between human populations and malaria parasites in different environmental settings across Africa (2018 – 2022). non-personal, non-specific and financially significant.*
c) WANECAMII – Professor Djimde is the Principal Investigator of the West African Network for Clinical Trials of Antimalarial Drugs with funding from EDCTP (2019 – 2024). This interest is assessed as non-personal, non-specific and financially significant.*
d) Clinical evaluation of ASAQ+Atovaquone-Proguanil tri-therapy for malaria treatment in African children funded by EDCTP (2019-2023). This interest is assessed as non-personal, non-specific and financially significant.*
e) Funding from the Medical Research Centre, UK for using single-cell RNAseq to deeply investigate human malaria parasite transmission dynamics (2020- 2021). This interest is assessed as non-personal, non-specific and financially significant.*
f) MalariaGEN Resource Center - Software Development Support (2021-2022). This interest is assessed as non-personal, non-specific and financially significant.*
g) RTS,S – SMC trial – sub-investigator on trial which contributed minimal salary support through the London School of Tropical Medicine & Hygiene. This interest is assessed as non-personal, non-specific and financially significant.*

6. Professor Chris Drakeley

- Research support – All interests assessed a non-personal, non-specific and financially significant.
  a) Support from BMGF up until 2025 for programme grant Vivax serology partnership (VISPA). Multicomponent grand attempting to provide umbrella for those working on vivax serology. Two components have been funded so far, manage and oversight (including policy) largely delivered by WEHI and a set of biobanking studies which include Brazil, Ethiopia and Pakistan. Professor Drakeley is co-Principal Investigator with Professor Ivo Mueller with key support from Michael White and Leanne Robinson. The grant is held by WEHI. (https://vispa.online/about-vispa/).
  b) UK funded component (UKRI) of an EU Horizon 2020 study up until 2027. Award for a study on P. vivax serology test and treat in Madagascar. Professor Drakeley is co-Principal Investigator and LSHTM is an external recipient. The study centres around a randomised controlled trial with the intervention based on treatment of those serology-positive in the assay developed by WEHI/Pasteur for the identification of the hypnozoite carriers compared to the standard of care alone. Other aspects are social acceptability, digital health related to G6PD testing and capacity building. Partners are AHRI Ethiopia, Pasteur Madagascar, FIND, University of Galway, Medea Italy and WEHI.
  c) Research support from BMGF up until 2025 to fund study to evaluate the effect of increasing the age range of SMC on malaria transmission.
  d) Research support from UKMRC funded up until 2023 to study the transmissibility of malaria infections in pregnant women.
  e) Research support – BMGF funded up until 2023 to examine the effect of malaria co-infection on COVID disease progression.

7. Professor David Fidock, Columbia University, USA

- Consulting – Served on the Malaria Advisory board for Novartis to advise on the clinical development program for KAE609 and KAF156 and received an honorarium in 2020. This interest is assessed as personal, non-specific and non-financially significant.*
- Research support – from Merck (Switzerland) from 2019 to 2022 supporting research into an antimalarial compound, M5717, which is being developed as a candidate antimalarial

medicine. The research explores the mode of action as an inhibitor of protein translation. This interest is assessed as non-personal, non-specific and financially significant.*

- Research support – from Medicines for Malaria Venture in 2021 supporting studies of drug resistance risks in their portfolio of antimalarials in late discover or undergoing development. The research assesses whether compounds are prone to resistance and studies the mechanisms of resistance and modes of action. This interest is assessed as non-personal, non-specific and financially significant.*
- Research support – from Novartis in 2020 to examine whether a mutation in PfATP4, the target of their clinical candidate KAE609, changed the transmission capacity of *P. falciparum*. This interest is assessed as non-personal, non-specific and financially significant.*
- Research support – from the Bill & Melinda Gates Foundation for work on the Malaria Drug Accelerator Consortium (MalDA) which works to define the 'drug-able genome' of *P. falciparum* parasites to develop new target-based drug screens from 2021-22. This interest is assessed as non-personal, non-specific and financially significant.*
- Research support – from the Bill & Melinda Gates Foundation on antimalarial drug resistance using genetic crosses and studies to accelerate the throughput of laboratory-based experiments that define the resistance risks of antimalarial compounds in early discovery in 2021-22. This interest is assessed as non-personal, non-specific and financially significant.*

8. Professor Azra Ghani, Infectious Diseases Epidemiology, Imperial College, UK

- Consulting – WHO European Office support related to COVID-19 vaccination introductions (current). This interest is assessed as personal, non-specific and non-financially significant.*
- Consulting – HSBC Panel discussion on the COVID-19 pandemic (current). This interest is assessed as personal, non-specific and non-financially significant.*
- Consulting – to support a COVID-19 steering group at GSK (2021-22). This interest is assessed as personal, non-specific and non-financially significant.*
- Research support – Service contract to Imperial College from the Global Fund on different projects related to modelling impact estimates for malaria including global scenarios that incorporate RTS,s from 2016 to 2019 and in 2021. This interest is assessed as non-personal, non-specific and financially significant.*
- Research support - Academic grant funding from multiple organizations for work on malaria and COVID-19 research including Bill & Melinda Gates Foundation (BMGF), MVI, MMV, IVCC, MRC, Wellcome Trust, NIH over three years (current). Included data analysis and modelling of public health impact of routine implementation and assessment of seasonal implementation related to RTS,s; modelling to support subnational tailoring of malaria interventions; and modelling of elimination focusing on *P. knowlesi*. This interest is assessed as non-personal, non-specific and financially significant.*
- Charity trustee (non-monetary) - Malaria No More, UK (current). This interest is assessed as personal, non-specific and non-financially significant.*
- Research support – working with Oxford team in collaboration with the Jenner Institute to undertake public health impact modelling and cost-effectiveness for R21. This interest is assessed as personal, non-specific and non-financially significant.*

9. Professor Caroline Jones, Senior Social Scientist, KEMRI-Wellcome Trust Research, Kenya

- Research support - Senior social scientist on the project funded by UNITAID called the "Broad One Health Endectocide-based Malaria Intervention in Africa (BOHEMIA)". This clinical trial of ivermectin mass drug administration (MDA), which runs from February 2019 to February 2024, is being conducted in Mozambique and Tanzania. Professor Jones is the lead social scientist and is investigating community and local stakeholder perceptions and responses to ivermectin MDA for malaria control. It aims to understand the local context

and possible influences on uptake. This interest is assessed as non-personal, non-specific and financially significant.*

- Research support - Senior social scientist on a household-randomized controlled trial which is multi-organization grant with Department for International Development (DFID) UK, MRC, Wellcome Trust Global Health trials grant on "*Can improved housing provide additional protection against clinical malaria over current best practice?"* from 2014 to 2019. This interest is assessed as non-personal, non-specific and financially significant.*
- Research support - Senior social scientist on a Wellcome Trust Collaborative award on improving the efficacy of malaria prevention in Insecticide Resistant Africa from 2016 to 2019. This interest is assessed as non-personal, non-specific and financially significant.*
- Research support – Mentor for post-doctorate student on the study conducted in collaboration with PATH entitled *"Dynamics of health care utilization strategies in the context of RTS,S/AS01 vaccine introduction: a qualitative longitudinal study in Kenya"* (2018-2020). The institution received support for the post-doc who has now left the institution. This interest is assessed as non-personal, non-specific and non-financially significant.*

10. Professor S. Patrick Kachur, Columbia University Medical, Center Heilbrunn Department of Population and Family Health, Columbia University Mailman School of Public Health, USA

- Consultant - Consultancy with the Clinton Health Access Initiative (June 2020 – current) providing technical assistance for developing and completing malaria surveillance assessments in collaboration with WHO/GMP and national malaria control programs in multiple countries. This interest is assessed as personal, non-specific and financially significant.*
- Advisory - Advisory roles on the Zanzibar Malaria Elimination Advisory Committee and the Board of Directors of Medical Care Development, Inc. This interest is assessed as personal, non-specific and non-financially significant.*
- Advisory – Board member for Medical Care Development, Inc. a global non-profit organization that works to improve the health of vulnerable populations through integrated, sustainable and locally driven interventions. This interest is assessed as personal, non-specific and non-financially significant.*
- Guest editor - special issue of American Journal of Tropical Medicine case management project activities between August 2020 to April 2022. This interest is assessed as non-personal, non-specific and financially significant.*

11. Doctor Fredros Okumu, Director of Science, Ifakara Health Institute, United Republic of Tanzania

- Employment – with Ifakara Health Institute. This interest is assessed as non-personal, non-specific and financially significant.*
- Consulting – for WHO Vector Control Product Prequalification as a consultant assessor ending in December 2020. This interest is assessed as personal, non-specific and financially significant.*
- Research support – grants received from the Bill & Melinda Gates Foundation; WHO-TDR programme; Wellcome Trust; Foundations of the National Institutes of Health, USA; Africa Research Excellence Fund; UKRI/EPSRC, UK; Rudolf Geigy Foundation, Switzerland; Hanako Foundation, Singapore; The Royal Society, London; The British Academy, London, UNITAID, Medical Research Council, UK; Swiss National Science Foundation, USAID, Innovative Vector Control Consortium, Grand Challenges, Canada, Scottish Funding Council and Consortium for Advanced Research Training in Africa. All grants were awarded to Ifakara Health Institute and are assessed as non-personal, non-specific and financially significant.*
- Patent Applications held by Ifakara Health Institute and assessed as non-personal, non-specific and non-financially significant.*

a) World Intellectual Property Organization. Patent number WO 2010/101462-A2: *Behavior modifying odorant mixture for malaria mosquitoes* (Joint patent by Ifakara Health Institute, TZ and Wageningen University, The Netherlands): https://patents.google.com/patent/WO2010101462A2/en
b) World Intellectual Property Organization. Patent number WO 13187690.6-1656: *A complex of structures for delivering pesticidal agents to arthropods.* (Joint patent by Ifakara Health Institute, TZ & In2Care Holding B.V, The Netherlands): https://patents.google.com/patent/EP2859794A1/en?q=A&q=complex&q=structures&q=delivering&q=pesticidal+agents&q=arthropods&oq=A+complex+of+structures+for+delivering+pesticidal+agents+to+arthropods

- Expert opinions: contributed to the following assessed as personal, non-specific and non-financially significant.*
  a) Currently serves as a member of the Malaria Strategic Advisory Panel for the Bill & Melinda Gates Foundation
  b) Contributed in Research and Draft team for Africa Union on: African Union High Level Panel on Emerging Technologies (2018): Gene Drives for Malaria Control and Elimination in Africa. https://www.nepad.org/publication/gene-drives-malaria-control-and-elimination-africa
  c) Contriuted as a co-chair of malERA Refresh Consultative Panel on Tools for Malaria Elimination. (2017). malERA: An updated research agenda for diagnostics, drugs, vaccines, and vector control in malaria elimination and eradication. PLoS Med. 2017 Nov 30;14(11):e1002456.doi: 10.1371/journal.pmed.1002456. eCollection 2017 Nov. Review: https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1002455
  d) Contributed as a member of this panel: James S, Collins FH, Welkhoff PA, Emerson C, Godfray HCJ, Gottlieb M, Greenwood B, Lindsay SW, Mbogo CM, **Okumu FO,** Quemada H, Savadogo M, Singh JA, Tountas KH, Touré YT (2018). Pathway to Deployment of Gene Drive Mosquitoes as a Potential Biocontrol Tool for Elimination of Malaria in Sub-Saharan Africa: Recommendations of a Scientific Working Group†. Am J Trop Med Hyg. **2018** Jun;98(6_Suppl):1-49. doi: 10.4269/ajtmh.18-0083. https://pubmed.ncbi.nlm.nih.gov/29882508/

12. Doctor Aranxta Roca Feltrer, Malaria Consortium

- Employment with the Malaria Consortium (non-profit organization). This interest is assessed as personal, non-specific and financially significant.*
- Research grants from the Bill & Melinda Gates Foundation on surveillance strengthening in Mozambique. This interest is assessed as non-personal, non-specific and financially significant.*

13. Professor Dyann Wirth, Richard Pearson Strong Professor and Chair, Harvard T.H. Chan School of Public Health, USA

Research grant support to Harvard University received from the following organizations (all current):

- National Institute of Health, USA – Principal Investigator or Co-PI on four grants on new drug discovery and drug resistance (DHODH/mitochondrial targets, ProRS and targeting parasites in mosquitoes, and ACT resistance). This interest is assessed as non-personal, non-specific and financially significant.*
- Bill & Melinda Gates Foundation – Support for Genetic epidemiology of malaria, Rethinking malaria global leaders initiative, and Malaria drug accelerator (MalDA) consortium. MalDA consortium ia a global consortium of researchers and drug developers identifying and sharing compounds deemed to be effective candidates for the drug pipeline for malaria

treatment and prevention. These interests are assessed as non-personal, non-specific and financially significant.*

- PATH – Principal Investigator for Mal095 using RTS,S to look at the issue of allele specific immunity. This interest is assessed as non-personal, non-specific and financially significant.*
- Educational support to Harvard University for the Eradication of Malaria Leadership course provided by BMGF, JC Flowers Foundation, Sumitomo Corporation and ExxonMobil. This interest is assessed as non-personal, non-specific and financially significant.*

Advisory roles (assessed as personal, non-specific and non-financially significant*):

- Medicines for Malaria Venture (MMV) Expert Scientific Advisory Committee (ESAC); honorarium and travel provided
- Board of Trustees of the Marine Biological Laboratories, Wood Hole, MA; no honorarium or travel expenses received.
- Warren Alpert Foundation Scientific Advisory Committee for the annual award; honorarium received.
- PATH/PMI Insights initiative which is a collaborative body of global experts on malaria research and policy to increase access and information to forward the goal of malaria elimination.
- Reviewer for National Institutes of Health (NIH) grants. No salary or honorarium received.
- Reviewer of research and development projects for Global Health Innovative Technology Fund (GHIT). No salary or honorarium received.

Due diligence (internet search)

Nothing significant was found that was not already declared by MPAG members.

* According to WHO's Guidelines for Declaration of Interests (WHO expert), an interest is considered "personal" if it generates financial or non-financial gain to the expert, such as consulting income or a patent. "Specificity" states whether the declared interest is a subject matter of the meeting or work to be undertaken. An interest has "financial significance" if the honoraria, consultancy fee or other received funding, including those received by expert's organization, from any single vaccine manufacturer or other vaccine-related company exceeds 5,000 USD in a calendar year. Likewise, a shareholding in any one vaccine manufacturer or other vaccine-related company in excess of 1,000 USD would also constitute a “significant shareholding”.