

**SORT IT: MALARIA ELIMINATION SUPPLEMENT****EDITORIAL****To reach elimination one needs to think and act locally, to support the global vision**

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**T**he elimination of an infectious disease is a desirable goal and an implementation challenge. Unlike disease control, where a few effective interventions implemented universally can achieve major gains, the end game, elimination, requires segmented, localised responses, often over a sustained period of time.

In 2015, the new Global Technical Strategy for Malaria 2016–2030 (GTS),<sup>1</sup> with its partner document, Action for Investment in Malaria (AIM),<sup>2</sup> were launched. These supported the ambition of attaining, by 2030, a reduction in malaria mortality rates and malaria case incidence globally by at least 90% from the 2015 levels; elimination of malaria in at least 35 countries with malaria transmission in 2015; and prevention of the re-establishment of malaria in all countries that are malaria-free. In 2016, the African Leaders Malaria Alliance (ALMA) adopted the Catalytic Framework to End AIDS, TB and Eliminate Malaria in Africa by 2030 during the 27th African Union, which provides a comprehensive new roadmap to eliminate malaria in Africa by 2030.<sup>3</sup> As part of Agenda 2063 (<https://au.int/agenda2063>), the leaders have also expressed their collective political aspiration to achieve a malaria-free Africa.

The GTS listed some of the challenges that need to be met to achieve these ambitions: inadequate performance of health systems; weak systems for surveillance, monitoring and evaluation; inadequate capacities in technical and human resource areas to support scale-up efforts; and the need to address people who are often not served by existing health services, such as migrants and people living in border zones and rural/remote communities, who often have a disproportionate risk of malaria.<sup>1</sup> The recently published malERA refresh paper, on a research agenda for health systems and policy research in malaria elimination and eradication,<sup>4</sup> identified some of these implementation issues: optimisation of delivery strategies to meet the changing and dynamic needs for system requirements, environments and successes and/or community perceived needs; effective strategies and tools to sustain engagement in malaria activities during intensive control and elimination; mechanisms to support effective integration of communicable disease surveillance; building management strengths required at decentralised levels; addressing the readiness of health systems structures for malaria elimination in different settings; and health information system capacities and tools to effectively capture and use information at community and local levels, amongst many topics.

Implementation research helps identify what modifications need to be made for the various contexts—ecosystems, social, political, geographical, health systems, cultural—to reach a pre-elimination and then an elimination phase. Building local capacity to address local problems and challenges is important to inform nuanced implementation of the national and international evidence-based guidelines in these local contexts. Wirth et al. identified four major training gaps globally in capacity to eliminate malaria.<sup>5</sup> One of these was in research. They note: ‘the potential for innovation is greatest when researchers with different perspectives and backgrounds come together to solve a complex problem’.<sup>5</sup> One initiative that focuses on building sustainable capacity in operational research is the Structured Operational Research and Training Initiative (SORT IT), whose aim is that the evidence derived from these research activities will assist countries to make evidence-informed decisions for improving programme performance. A global partnership led by the Special Programme for Research and Training in Tropical Diseases at the World Health Organization (WHO/TDR), SORT IT includes a teaching component developed jointly by the International Union Against Tuberculosis and Lung Disease (The Union) and Médecins sans Frontières (MSF) (<http://www.who.int/tdr/capacity/strengthening/sort/en/>).

With a focus on those southern African countries that have the goal of eliminating malaria within the next decade, a specific SORT IT programme was implemented by WHO/TDR; the WHO Global Malaria Programme (GMP); WHO/AFRO; the Operational Research Unit (LuxOR), MSF, Brussels Operational Center, Luxembourg; the Centre for Operational Research, The Union, France; and the University of Nairobi, Kenya. The papers here represent a major capacity building effort using the SORT IT model; the commitment by the facilitators and mentors to support the strengthening of this capacity in Botswana, Namibia, South Africa and Swaziland; and a range of responses to implementation challenges identified by programme staff and researchers in these settings. What is rewarding to see is the breadth of partnerships developed within each country for this research—a collaboration in every paper between in-country and regional universities, the Ministry of Health, WHO country offices, international organizations working in the country and/or regionally, non-government organisations, and in one country another ministry and another the mining private

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sector. As iterated in the AIM document,<sup>2</sup> broad-based partnerships are required to achieve and sustain elimination, and the steps taken in this programme of research augurs well for the future.

Many of the research teams involved in the project focused on the health information systems linked to malaria surveillance and response and passive case finding (Dlamini S et al., Dlamini N et al., Zulu Z et al., Nghipubmwa et al., Motlaleng et al., in this supplement).<sup>6–10</sup> Quality data are critical for programme planning, implementation, monitoring and evaluation. The AIM document discussed the importance of quality collection and use of data from a range of information sources, such as country health information systems, periodic surveys and surveillance, to initiate timely targeted responses and as a monitoring and evaluation tool.<sup>2</sup> The GTS and subsequent documents on malaria programmes highlighted the need to have surveillance and response implemented and evaluated as an intervention.<sup>1</sup> It was noted in AIM: 'Increasing access to reliable malaria information will strengthen transparency and foster greater accountability for progress towards the 2030 malaria goals'. The above-mentioned research teams in Swaziland and Namibia identified challenges in maintaining information systems to support these objectives, such as data integrity, poor capacity and commitment to use of the data, logistical barriers to mounting a timely and quality response, poor attention to quality record keeping at the front-line—especially a problem in the private sector and hospitals, and challenges associated with people living in the border areas who may move across those borders for work and treatment.

Many of the researchers found weakness in implementation of the detect and treat component of the programme at the health services (Dlamini S et al., Dlamini N et al., Makadzange et al., Moakofhi et al., Nghipubmwa et al., in this supplement),<sup>6,7,9,11,12</sup> which affects both treatment outcomes and malaria transmission, as well as issues around the quality, timeliness and integrity of the data (Motlaleng et al.).<sup>10</sup> Some of this stems from a reliance on old practices to diagnose malaria, and poor compliance with the new treatment protocols, with the latter at times compromised by logistical problems such as stock-outs. A population group of particular interest were travellers—whatever their reason for travelling. As noted above, malaria parasite-positive population mobility can be a vehicle for re-establishment of malaria if cases are not detected and treated early and effectively, and if preventive practices are not implemented at scale in the 'host' communities. Dlamini N et al. found particular implementation issues for case detection and follow-up at the borders in Swaziland,<sup>7</sup> and Makadzange et al. found low uptake of preventive practices and low awareness of risks among travellers returning to Swaziland.<sup>11</sup>

When malaria cases are at low levels, there is a risk that competency among frontline health staff, such as in community health centres, hospitals and in the private sector, diminishes. This was found in Swaziland and Botswana (Makadzange et al., Moakofhi et al.),<sup>11,12</sup> and has the potential to undermine progress towards elimination and prevention of the re-establishment of malaria. In addition, successfully implemented malaria control interventions, such as indoor residual spraying (IRS) and other vector control programmes, can result in changes in vector epidemiology and behaviours. Mbokazi et al. highlight both the need for ongoing field entomological surveys and capacities as they re-

corded the rise in cases due to *An. merus*, not the formerly primary incriminated vector, as well as the adaptation of this species to new environments such as freshwater and inland areas, as seen in other southern African nations.<sup>13</sup> In Namibia, the critical importance of maintaining community support of and commitment to IRS was identified as critical to achieving the end game, as well as being increasingly targeted in the locations of implementation of IRS, supported by quality information (Mumbengewi et al.).<sup>14</sup> In Botswana, the need to consider a role for a complementary vector control intervention, such as larviciding (Obopile et al.), was investigated, identifying potential localities for targeted responses, but also highlighting the need to consider the cost-effectiveness of the intervention packages.<sup>15</sup>

The lessons learnt are important both locally and globally. Globally, because these authors demonstrate the role of implementation research and investment in human capital needed to reach the end game, as well as the local implementation issues many others may face as they work towards the GTS goals, and even the global ambition of eradication by 2040.

## References

- 1 World Health Organization. 2015 Global Technical Strategy for Malaria, 2016–2030. Geneva, Switzerland: WHO, 2015. <http://www.who.int/malaria/publications/atoz/9789241564991/en/> Accessed March 2018.
- 2 Roll Back Malaria. Action and Investment to defeat Malaria, 2016–2030, for a malaria-free world. Geneva, Switzerland: RBM, 2015. [https://www.rollbackmalaria.org/files/files/aim/RBM\\_AIM\\_Report\\_A4\\_EN-Sept2015.pdf](https://www.rollbackmalaria.org/files/files/aim/RBM_AIM_Report_A4_EN-Sept2015.pdf) Accessed March 2018
- 3 African Leaders Malaria Alliance. African heads of state adopt roadmap to eliminate malaria in Africa by 2030. ALMA, 2016. 17 July 2016. <http://alma2030.org/content/african-heads-state-adopt-roadmap-eliminate-malaria-africa-2030> Accessed March 2018.
- 4 The malERA Refresh Consultative Panel on Health Systems and Policy Research. An updated research agenda for health systems and policy research in malaria elimination and eradication PLoS Med 2017; 14(11): e1002454.
- 5 Wirth D F, Casamitjana N, Tanner M, Riech M R. Global action for training in malaria elimination. Malar J 2018; 17: 51.
- 6 Dlamini S V, Kosgei R J, Mkhonta N, et al. Case management of malaria in Swaziland, 2011–2015: on track for elimination? Public Health Action 2018; 8 (Suppl 1): S3–S7.
- 7 Dlamini N, Zulu Z, Kunene S, et al. From diagnosis to case investigation for malaria elimination in Swaziland: are reporting and response timely? Public Health Action 2018; 8 (Suppl 1): S8–S12.
- 8 Zulu Z, Kunene S, Mkhonta N, et al. Three parallel information systems for malaria elimination in Swaziland, 2010–2015: are the numbers the same? Public Health Action 2018; 8 (Suppl 1): S13–S17.
- 9 Nghipubmwa M H, Ade S, Kizito W, et al. Moving towards malaria elimination: trends and attributes of cases in Kavango Region, 2010–2014. Public Health Action 2018; 8 (Suppl 1): S18–S23.
- 10 Motlaleng M. Edwards J K, Namboze J, et al. Driving towards malaria elimination in Botswana: progress on case-based surveillance, 2013–2014. Public Health Action 2018; 8 (Suppl 1): S24–S28.
- 11 Makadzange K, Dlamini N, Zulu Z, et al. Low uptake of preventive interventions among malaria cases in Swaziland: towards malaria elimination. Public Health Action 2018; 8 (Suppl 1): S29–S33.
- 12 Moakofhi K, Edwards J K, M. Motlaleng M, et al. Advances in malaria elimination in Botswana: a dramatic shift to parasitological diagnosis, 2008–2014. Public Health Action 2018; 8 (Suppl 1): S34–S38.
- 13 Mbokazi F, Coetzee M, Brooke B, et al. Changes in the density of *Anopheles merus* breeding sites in Mpumalanga Province, South Africa, 2005–2014. Public Health Action 2018; 8 (Suppl 1): S39–S43.
- 14 Mumbengewi D R, Sturrock H, Hsiang M, et al. Is there a correlation between malaria incidence and IRS coverage in Western Zambezi Region, Namibia? Public Health Action 2018; 8 (Suppl 1): S44–S49.
- 15 Obopile M, Segoea G, Waniwa K, et al. Did microbial larviciding contribute to a reduction in malaria cases in eastern Botswana in 2012–2013? Public Health Action 2018; 8 (Suppl 1): S50–S54.

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