

**COVID-19 and the malaria elimination agenda in Africa:  
Re-shifting the focus**

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## **ABSTRACT**

The global Coronavirus disease 2019 (COVID-19) pandemic has resulted in public health, political, scientific, and the private sector response at an unprecedented scale. However, this shift in focus has caused widespread disruption to global health services and has the potential to reverse gains made in efforts to control malaria. If health systems are not able to maintain malaria control interventions while managing the response to the COVID-19 pandemic, malaria cases will increase, thereby placing even more strain on already overtaxed systems. Using a Narrative Review Approach, this commentary explores the impact of COVID-19 on progress made with malaria control and prevention strategies in Africa; and discusses possible mitigation steps to aid community resilience building, through proactive planning and implementation of integrated, inclusive and sustainable strategies to re-shift the focus to attain the malaria elimination goals. We propose strengthening community partnerships, where academia and communities should collaborate and these knowledge sharing strategies be implemented in order for awareness and interventions to become more networked, inclusive, resilient, and effective. Communities should be viewed as “thought partners”, who challenge conventional strategies and aid in developing innovative approaches to community resilience building.

**Keywords:** Malaria elimination; COVID-19, public health, community engagement resilience

## INTRODUCTION

South Africa's malaria strategic plan 2019-2023, envisages moving South Africa towards malaria elimination (National Department of Health, 2019), while keeping in mind the ambitious United Nations Sustainable Development Goals, particularly SDG3.3, which aims to “end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases” by 2030 (Saxena et al., 2021). Recent reports by the United Nations and the World Health Organization (WHO) highlight that during the era of the Corona Virus Disease 2019 (COVID-19), the focus on the SDGs require new kind of multilateralism (United Nations, 2020). On the African continent, various countries have formed alliances and are pursuing a common goal of malaria elimination, such as the Elimination 8 countries (Angola, Botswana, Eswatini, Mozambique, Namibia, South Africa, Zambia and Zimbabwe). While each country has its own malaria elimination strategy, a unified goal is key to eliminate malaria in these regions (Elimination 8, 2021). At a recent high level UN meeting that discussed the progress of the SDGs, the participants recognized the 2030 Agenda for Sustainable Development as a “blueprint and roadmap for a more resilient, fairer and greener recovery and for using the Decade of Action and Delivery of the SDGs to leave no one behind” (Economic and Social Council, 2020). So, what does that mean in the current COVID-19 pandemic?

Malaria elimination is possible and ten countries have been certified “malaria-free” in the past few years, including China (Feng et al., 2020). There are 241 million cases of malaria and 627,000 deaths worldwide, with Africa having 90% of the malaria burden and progress towards malaria elimination has stalled (World Health Organization, 2021b). Interestingly, the COVID-19 pandemic has spurred the rapid

development of vaccines and diagnostics, showing the capacity to develop novel and highly effective treatments to mitigate major public health threats (Organization for Economic Cooperation and Development, 2021); which is what the malaria elimination agenda is currently lacking. Recently, the WHO recommended the widespread use of the RTS,S/AS01 (RTS,S) malaria vaccine among children in sub-Saharan Africa. This is a positive step and we have seen the rapid commitment in creating several COVID-19 vaccines in a short period of time, highlighting the global commitment to universal immunization.

Thus, the lessons learned from the COVID-19 pandemic should assist in rethinking the approaches to malaria control and elimination strategies. The COVID-19 pandemic has shown a stark reality of the limitations and inequities of our national and global health systems in addressing malaria and COVID-19; particularly issues related to governance, service delivery and the need to actively engage communities.

## **PROGRESS IN MALARIA ELIMINATION**

Malaria is one of the world's best known infectious diseases and the majority of the cases and deaths are primarily concentrated in sub-Saharan Africa (World Health Organization, 2021b). The persistence of malaria in sub-Saharan Africa may be attributed to factors such as insecticide and drug resistance (Amimo et al., 2020) and inadequate access to insecticide-treated nets and chemoprevention strategies (World Health Organization, 2016). However, there are still numerous challenges hindering the success of malaria programs in Africa. To sustain the progress, Africa needs to systematically strengthen health systems, improve surveillance responses, and increase the investment for malaria elimination.

Reports suggest that there is both an ethically and economically rewarding benefit to malaria elimination (Njau et al., 2021) and that the return on investment are estimated at 40:1 globally, and up to 60:1 in sub-Saharan Africa . (World Health Organization/Roll Back Malaria, 2015) A report by the Lancet Commission for Malaria Eradication argued that eradication by 2050, though ambitious, is achievable and necessary (Feachem et al., 2019). However, the WHO Strategic Advisory Group on Malaria Eradication (SAGME), while advocating for greater malaria control investments argued that, there would still be 11 million cases by 2050, even under the most optimistic scenarios (World Health Organization, 2020c). Some countries, including South Africa, remain optimistic and have set specified target dates and key objectives for malaria elimination (African Union, 2016).

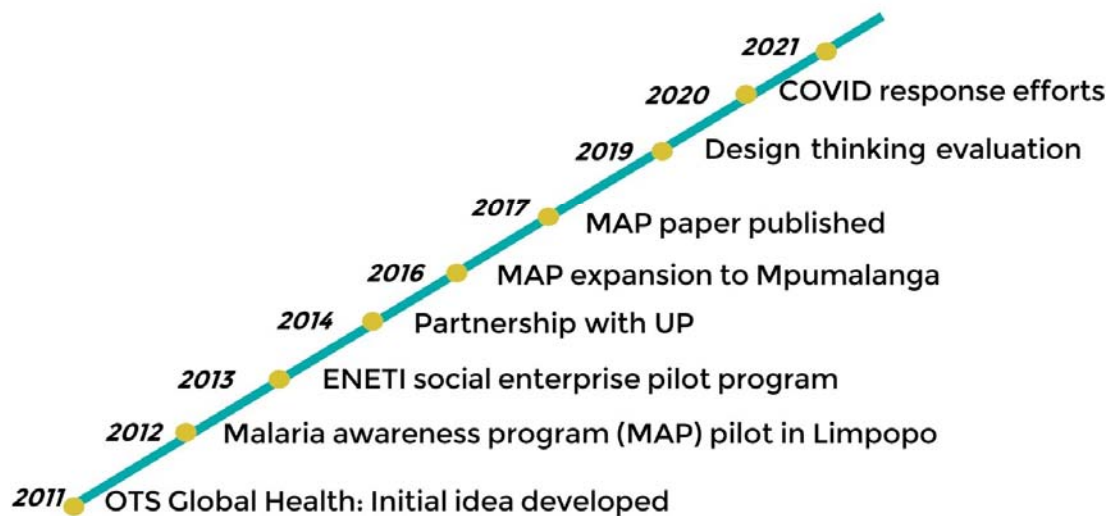
Health promotion is highlighted as a key objective of South Africa's Malaria Elimination Strategy (Brooke et al., 2020), which is aimed at behaviour change. Additionally, knowledge and awareness is one of four key indicators included in Roll Back Malaria's Behaviour Change Communication intervention strategy to initiate, promote, and sustain desired behaviour change (Nyunt et al., 2015; Roll Back Malaria, 2014). In order to achieve behaviour change communication integration, it is essential to improve malaria prevention in malaria control programs (Koenker et al., 2014). As South Africa moves toward malaria elimination, investment in community health promotion, behaviour change and evaluative research, are vital to increasing malaria understanding and compliance with prevention and treatment measures (Cox et al., 2018).

At the University of Pretoria, the University of Pretoria Institute for Sustainable Malaria Control (UP ISMC) has made numerous strides in using trans-disciplinary approaches for malaria control (Birkholtz et al., 2012). A main focus of malaria

control and elimination is strategic partnerships, and in the era of the Sustainable Development Goals, this is becoming increasingly important. Globally, there are a number of initiatives that aim to advocate for malaria control and elimination, these include the Civil Society for Malaria Elimination (CS4ME), and groups such as Malaria No More and Zero Malaria. In South Africa, one such partnership is between the UP ISMC and One Sun Health (Figure 1).

## Introduction to OSH: Timeline

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**Figure 1. Timeline of One Sun Health Malaria elimination initiatives in South Africa.**

One Sun Health (OSH) is a 501(c)3 non-profit organization and South African non-profit company that aims to promote sustainable, locally driven solutions to public health challenges through community health education and social entrepreneurship initiatives in South Africa (One Sun Health, 2017). The Malaria Awareness Program (MAP) is one of OSH's flagship initiatives that facilitates training

of home-based care workers, creating partnerships and leading education sessions with community members to improve knowledge surrounding malaria. Since the HBC workers partner with local health care facilities and are known by the community, they become ideal advocates to develop, inform, and lead MAP in order to promote long-term malaria awareness campaigns (Cox et al., 2018).

Work done by the UP ISMC and OSH highlights the success of a participatory health education program to increase malaria knowledge and awareness, as well as the implications for future malaria programming and capacity building in rural settings. In communities with complex governance structures, it is critical that malaria programming engage stakeholders at all levels—local, regional, and national—appropriately. Interactive educational curricula, involving song, theatre, and other forms of active discussion, appear to be an effective method to engage community members and increase knowledge and awareness about malaria. Improved knowledge of malaria transmission and prevention after MAP was positively correlated with attendance at workshops, indicating the effectiveness of a multistep education process. As malaria prevalence decreases and subclinical cases persist, health promotion will play an imperative role in maintaining community participation in malaria control efforts toward malaria elimination (Cox et al., 2018)

While malaria education programs can empower community members to better understand, prevent, and treat disease, education is just one of many control strategies that should be explored to effectively combat malaria and other infectious diseases. Globally we are in the midst of a pandemic, but the syndemics of Malaria, HIV, TB and now COVID-19 are alarming (Shi et al., 2021; Velavan et al., 2021).

## **COVID-19 PANDEMIC IN AFRICA**

COVID-19 was first reported in China in December 2020 and soon the disease spread across many other countries outside on China (Di Gennaro et al., 2020). The first case of COVID-19 in Africa was reported on the 20<sup>th</sup> February 2020 in Egypt (Africa Centre for Disease Control and Prevention, 2020). Globally as of the 12<sup>th</sup> August, there have been 585,950,085 confirmed cases of COVID-19, including 6,425,422. (World Health Organization, 2022).

Several nations have enforced stringent lockdown rules to combat the COVID-19 epidemic, such as restricting people's movement, and launched health awareness campaigns to stop the disease's spread (Greyling et al., 2021). Billions of people have given up their autonomy, health, work, business, recreation, and education to comply with government rules in the fight against COVID-19 (Paul et al., 2020). Still, these measures have resulted in escalating public fear as the case numbers continue to increase (Bardosh et al., 2022). The efficacy of these mitigating measures is heavily reliant on all members of society's cooperation and compliance with the imposed measures (Auton & Sturman, 2022).

Mitigation and suppression are the two primary techniques for combating a pandemic (Organization for Economic Cooperation and Development, 2020). Mitigation focuses on slowing, albeit not necessarily stopping the spread of the epidemic – reducing peak healthcare demand while protecting high-risk populations. Alternatively, suppression aims to reverse epidemic growth, reduce case numbers to low levels, and maintain that situation indefinitely. A combination of multiple interventions is necessary to impact transmission substantially; no sole intervention will be successful by itself (Ferguson et al., 2020).



In Africa, a robust COVID-19 response is needed include community engagement, health leadership, and involvement of youth and religious leaders to drive mitigation strategies (Kaseje, 2020). While some mitigation strategies like lockdowns are effective at reducing transmission, the stringent restrictions have taken a serious economic and societal toll across sub-Saharan Africa. Lockdowns resulted in increased food insecurity, teenage pregnancy, gender-based violence, and disruptions in treatment of malaria, TB and HIV (Ezeh et al., 2021).

### **COVID-19 EFFECTS ON MALARIA ELIMINATION**

Malaria remains a notable public health threat in South Africa, with the majority of incident cases and deaths occurring within the Mpumalanga and Limpopo province. The response to COVID-19 in South Africa may reduce the ability to deliver malaria prevention interventions (Hogan et al., 2020). COVID-19 has stalled progress towards malaria control; threatening progress towards malaria elimination targets by impacting access to malaria testing, treatment and preventative services (Rogerson et al., 2020) and reducing South Africa's ability to hold educational campaigns. For example, mandatory stay-at-home orders have restricted community gatherings during which malaria awareness/implementation programs were typically delivered prior to the pandemic (Hussein et al., 2020; Teboh-Ewungkem & Ngwa, 2021). Indoor residual spraying (IRS) is encouraged annually; however, stay-at-home mandates have decreased access to this service (National Department of Health, 2018). Additionally, several symptoms typical to the contraction of COVID-19 are similar to the symptoms observed among patients with malaria. Therefore, misdiagnosis of either malaria or COVID-19 is a very real threat (Shi et al., 2021). A study of the prevalence and characteristics of malaria among COVID-19 individuals

found that one of the serious outcomes of coinfection was a pregnant woman who experienced fetal abortion due to the initial misdiagnosis of malaria (Wilairatana et al., 2021).

Community members may contract both COVID-19 and malaria and get diagnosed/treated for one and not the other which can lead to increased rates of infection and mortality. It is also important to understand the occurrence of syndemics, when an individual contracts both malaria and COVID-19, and how coinfection can increase the severity of infection of either virus (Hussein et al., 2020). To date there has not been survey assessing perceptions of risks related to malaria during COVID-19. An integrated approach towards promoting both malaria and COVID-19 treatment/prevention at the same time is needed in order to curb mortality rates (Teboh-Ewungkem & Ngwa, 2021).

## **RE-SHIFTING THE FOCUS**

### ***Renewed Malaria Elimination Strategies***

Since 2000, approximately 1.5 billion cases and 7.6 million malaria deaths have been averted and in Africa, the malaria deaths have been reduced by over 40% over the same period (World Health Organization, 2021b). Despite this progress, the global 2020 target for reducing malaria cases was missed by 37% and the mortality reduction target was missed by 22% (World Health Organization, 2020d). Reduced funding for malaria since 2010 (Rannan-Eliya, 2022) and now with the COVID-19 pandemic, is further hindering progress. COVID-19 continues to cause devastation in various countries worldwide and continues to claim thousands of lives, increasing mortality and disrupting lifestyles. In Africa, infectious disease response programmes should take into account the unique socio-economic, demographic, political,

ecological and climatic contexts (Ezeh et al., 2021; International Monetary Fund, 2021; World Health Organization, 2021a). The WHO raised concerns that even moderate COVID-19-related disruptions in access to effective malaria treatment could lead to a considerable loss of life and that a 25% disruption in access to effective antimalarial treatment in sub-Saharan Africa could lead to 46,000 additional deaths (World Health Organization, 2020a).

This message was reinforced in the April 2020 report of the WHO Strategic Advisory Group on malaria eradication, which highlighted six main areas of focus: Reinforcing the Global technical strategy for malaria 2016-2030; Research and development for new tools; Access to affordable, high-quality, people-centred healthcare and services; Adequate and sustained financing; Strengthened surveillance and response; and Engaging communities (World Health Organization, 2020b). This malaria elimination strategy aims to provide a vision and way forward on how the world and its health community need to respond to environmental health risks and challenges until 2030, and to ensure safe, enabling and equitable environments for health by transforming our way of living, working, producing, consuming and governing.

### **Governance**

Rethinking malaria governance requires considering the core governance components, which includes, who has the power, who makes the decisions, how role players make their voices heard and are held accountable (Institute of Governance, 2021). Then thinking of re-shifting the focus from COVID-19 to Malaria elimination (Rahi et al., 2020; Reich & Kazibwe, 2021; Rogerson et al., 2020; Shi et al., 2021), a few questions arise: “*Who makes decisions that shape malaria programs goals and strategies? Where does program funding come from? Who is held accountable for*

*pursuing the stated strategies and achieving goals? Who documents, measures and assesses progress? Who receives information about malaria control and elimination progress and setbacks?"*

Traditionally, the malaria community is held accountable for malaria control and elimination strategies, but this focus leaves other stakeholders out of malaria-related discussions and decisions that affect them, such as politicians, civil servants, farmers, traditional chiefs and local leaders, parents and children, and community members (Reich & Kazibwe, 2021). In order to have a more inclusive and transdisciplinary approach, the usual top-down approaches of disease control have proven to be ineffective during the COVID-19 pandemic. Existing malaria control approaches need to be revisited and necessary changes need to be made, that needs to be inclusive of affected communities.

*Change in the structure of accountability:* There needs to be a shift from a focus on accountability to external organizations and donors, rather to a focus on accountability within malaria-endemic countries, at both national and local levels. This would require engagement at a national and district level, which should include traditional leaders, with the aim of ensuring the malaria control program is well equipped to deliver results. The shift to a focus on local accountability could also include efforts to raise local resources for malaria and to count ongoing local efforts as part of the resource mobilization for malaria (Reich & Kazibwe, 2021). The national focus requires more effective structures and processes to hold governments and elected leaders accountable for addressing the barriers people face when seeking quality care for malaria. This shift could strengthen mechanisms of accountability between government, health-care providers, and users of services (Rahi et al., 2020).

*Change in the locus of decision-making:* To shift from global and external decision-makers, there needs to be an increased stronger focus and involvement of the leaders of the malaria control program and the local communities affected (Teboh-Ewungkem & Ngwa, 2021). The ongoing discussion of “decolonizing” global health has important implications for how global health institutions operate, but also for how decisions are made within countries for malaria (and other health issues) (Shretta R et al., 2017). Effectively engaging the local knowledge of communities and the collaboration of traditional chiefs and local leaders is a major challenge (Jamrozik & Selgelid, 2021), especially in most malaria-endemic countries. Communities are best placed to identify the local malaria barriers, and to participate in the solutions. Elimination and eventual eradication of malaria would require a paradigm shift from a medical perspective to a social determinant approach (Alonso et al., 2011). A social determinant approach to malaria would engender a sustained and systematic engagement with the whole spectrum of stakeholders in the communities (Reich & Kazibwe, 2021)

### ***Communities as Thought Partners***

A Thought Partner is someone who, “*Challenges your thinking and causes you to modify or change your paradigms, assumptions or actions*” (Petroni, 2019). Thus, a thought partnership is the practice of sharing ideas and experience with others to help them navigate complex challenges. Now more than ever we need to listen to the community and design strategies that are based on their perceptions of disease prevention and control. This process can potentially improve the knowledge of the community, re-shift traditional power dynamics in the research process, and these can directly benefit the communities involved by taking ownership of the research and intervention strategies (Balazs & Morello-Frosch, 2013).

Community-based participatory research has enabled scientists and community members to re-define knowledge production in ways that transform research from a top-down, expert-driven process into one of co-learning and co-production (Norström et al., 2020) Using this approach, there is a fusion of community-based knowledge with science-driven methodology, as seen through the UP ISMC-OSH collaborations (Cox et al., 2018), an opportunity arises to improve and shift the research process to better address community-identified concerns. (Corburn, 2005). This process is becoming exceedingly important in translational (Loorbach et al., 2017) and sustainable research approaches (Schneider et al., 2019), with findings applicable to community stakeholders and policymakers. The benefits of this approach can be applied to build on previous inroads made in malaria awareness and this generates enhanced community empowerment, co-learning between community members and scientists, informing community organizing efforts, and linking research to policy action (Israel et al., 1998; Minkler et al., 2008).

Participation of the community in the COVID-19 pandemic response and strengthening their trust and acceptance of various initiatives is necessary for increased effectiveness of any future awareness campaigns. We should learn from the rapid interventions and systems put into place mitigate the COVID-19 pandemic and apply these to the malaria elimination agenda. Sensitization campaigns that have been found to impact attitudes toward disease understanding are more effective when the community and local leaders are actively engaged in any pandemic response (Gilmore et al., 2020). The community can help by supplying support and improving screening referrals. Follow-up contact monitoring of the outbreak and communication activities. To prevent escalating fears about the

epidemic, it is critical to address the rumours, misinformation and fake news (Barua et al., 2020).

With the aid of community leaders, the community conversation has aided in understanding views, adapting required communication, and informing and combating rumours. There should be measures in place to deal with the fallout from persistent political tensions and unexpected confrontations. Working with research organizations that specialize in applied anthropology in global health gives practical contextual subtleties, particularly when engaging with individuals in those areas and their existing healthcare practices—in addition, collaborating with epidemiologists to ensure that medically correct information was delivered to communities (Campbell, 2011).

## **RESILIENT HEALTH SYSTEMS BEYOND THE COVID-19 PANDEMIC**

In his opening remarks at the media briefing on COVID-19 on the 6 May 2020, the WHO Director-General stated that, “Strong and resilient health systems are the best defence not only against outbreaks and pandemics, but also against the multiple health threats that people around the world face every day. Health gaps can have a range of consequences and gaps like these don’t just undermine the health of individuals, families and communities. They also put global security and economic development at risk. The COVID-19 pandemic will eventually recede, but there can be no going back to business as usual.” (World Health Organization, 2020e)

While many nations have varying success in their malaria control initiatives, the current global trends and the already stressed fragile health system, threaten to derail any progress towards malaria control targets. Echoing the statement by the WHO Director General, the importance of a strong and resilient health system is essential. Not only do we need to hone health services and behaviours to offer a

significant opportunity to achieve malaria control, but we need to build on the current investments made during the COVID-19 pandemic. Key themes that need to be addressed are integrated service delivery that can advance malaria control via strengthening health systems, increasing visibility and use of high-quality data at all levels, ensuring equity, promoting research and innovation for new tools, expanding knowledge on effective implementation strategies for interventions, making the case for investing in malaria among stakeholders, and engaging impacted communities and nations (Reich & Kazibwe, 2021; Shi et al., 2021). We need a health system that has an integrative and comprehensive approach to improve service delivery, stakeholder engagement and better diagnostic tools, especially as we are striving towards universal health coverage (UHC) (Lacina, 2020).

Diagnostic tools are critical to the control of infectious diseases, but diagnostic tools alone cannot solve the whole problem. Local research institutes in high-burden settings must promote research and innovation, particularly around tools that will facilitate service integration. For example, several diseases present akin to malaria and can only be differentiated using diagnostic tools. The COVID-19 pandemic posed a diagnostic dilemma (Rogers et al., 2020) at outpatient departments in malaria endemic areas, since patients presenting with fever might have malaria, COVID-19, both, or a different cause of fever altogether such as urinary tract infection or pneumonia. We therefore need a point-of-care test that can differentiate between malaria and other common causes of fever including those caused by viruses such as COVID-19. Such a tool would ensure accurate diagnoses while also serving as a multiplex point of entry for primary care (Chanda-Kapata et al., 2020). The world is currently dealing with the impact of a global pandemic on all aspects of our lives. The policies and regulations instituted during the state-of-emergency, rely



on local and international trends and are guided by various health and governing authorities. During a time of crisis, we are encouraged to adhere to the regulations and to practice the new norms in order to prevent the spread of the disease.

The COVID19 pandemic also illustrated important lessons about the limitations of public health strategies that rely on individual behaviour change (Haug et al., 2020). It similarly may be reductionist to conceptualize the fight against malaria as being merely about product delivery, although the temptation to do so may be exacerbated by some global donors' tendency to monitor and reward based on commodities as it is easier and more immediate to count program outputs (e.g., product distribution, uptake, or coverage) than behaviour (e.g., usage or adherence) or health outcomes.

The interventions and control measures seek to provide a sense of comfort and require the individual to adapt to the so-called “new normal”. It is vital is to understand the knowledge, attitudes and practices surrounding COVID-19 by asking informed questions to understand how COVID-19 has impacted attitudes and perceptions, health-seeking behaviour, and access to services, specifically related to malaria interventions. The information collected is important to support the implementation of specific programmatic interventions and policies in addition to the messaging necessary to encourage uptake of those measures. This is particularly important in health systems strengthening as South Africa (Senkubuge et al., 2014) and other countries are striving to achieve the global goal of universal health coverage.

Many disease-specific communities are grappling with what it will take, and what it will mean, to move toward UHC. We encourage the malaria community to leverage its broadly applicable knowledge and its unique position in the health

system to seize the opportunity to take a leadership role in these activities (Sambo & Kirigia, 2014). In numerous countries, the COVID-19 pandemic responses were led by their malaria experts, as they possessed the relevant experience and skills in surveillance and diagnostics. Incidentally, shifting malaria staff to another disease area for nearly two years may have unintended consequences on malaria control efforts – an area worthy of rigorous study (Ansah & Moucheraud, 2021). If the malaria community improves data systems and surveillance activities, strengthens supply chains and other health systems infrastructure, builds health worker expertise, and innovates new service delivery paradigms, these platforms could be used by other health programs—resulting in improved health outcomes for all. This has already manifested to a certain extent in integrated community case management programs (Karim et al., 2020), but much more remains to be done.

## **CONCLUSIONS**

The rapid global spread of COVID-19 has demonstrated the global vulnerability to new infectious diseases. While we are making progress in fighting COVID-19, we also face a stark reality that there will be future pandemics and now is the time to demonstrate leadership astute decision making and accountable actions. There needs to be an enhanced cooperation between health and finance ministries to coordinate disease prevention, detection, knowledge and data dissemination strategies that elicit impactful responses. Continued malaria prevention and treatment programs will be essential to reduce pressure on health systems during the COVID19 pandemic and it is important for the malaria community to contribute toward building strong, resilient, and sustainable health systems.

In as much as the top-down disease control and prevention strategies have varying degrees of success, the bottom-up approaches, the knowledge, attitudes, practices and perceptions of affected communities should not be disregarded. In order to re-shift the focus from COVID-19 to Malaria and other epidemics, communities should be seen as thought partners instead of participants. These steps will aid in establishing accountability and active involvement as community involvement and preparedness is essential for any pandemic response.

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