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COVID-19 in malaria-endemic regions: potential consequences for malaria intervention coverage, morbidity, and mortality



COVID-19 has had a massive impact on the populations and economies of the world. As of Sept 9, 2020, the virus has infected more than 27 million people in 216 countries and territories worldwide, and the number of deaths is approaching a million.¹ Although the spread of COVID-19 to Africa has been slow and its direct impact in Africa is below the level seen in other continents, the potential effects of COVID-19 on strategies and methods to combat other diseases such as malaria—which pose significant burdens on substantial proportions of the world and the African population, and especially children—are a cause for great concern. Thus, understanding how the COVID-19 pandemic could indirectly affect malaria control intervention strategies is urgent in all malaria-endemic regions, and especially those that are part of WHO’s “high burden to high impact” initiative.²

Since 2010, active malaria intervention control strategies have had a positive effect on lowering malaria burden and morbidity in Africa and worldwide. These strategies include the use of long-lasting insecticide-treated nets (ITNs), indoor residual spraying,⁴ and timely access to antimalarial drugs, including the use of intermittent preventive treatment aimed at killing forms of the malaria parasite in infected individuals,^{5–7} in addition to the other mechanisms aimed at disrupting the transmission of malaria by exploiting the feeding behaviour and gonotrophic and reproductive cycles of mosquitoes.^{8–11} However, despite the progress of the past decade, evidence suggests that the rate of reduction in malaria mortality in the WHO African Region has slowed since 2016, although total deaths due to malaria decreased overall.³ In particular, from 2017 to 2018, among the ten African countries with the highest

malaria burden, Ghana and Nigeria reported absolute increases in the number of malaria cases, while case numbers did not change substantially in seven countries and only Uganda reported a decrease.³ Given that this deceleration could be compounded by the COVID-19 pandemic, there is an urgent need to quantify and analyse the potential impact of the pandemic on malaria control and intervention strategies.

In *The Lancet Infectious Diseases*, Daniel Weiss and colleagues¹² quantified the indirect effects of COVID-19 on the distribution of ITNs and on access to effective antimalarial drugs—two key components of malaria control in Africa. Using a range of counterfactual scenarios based on different levels of reduction in ITN and antimalarial drug coverage, the authors estimated the additional morbidity and mortality due to malaria that might be seen in the year 2020 across malaria-endemic Africa. Current data were used to generate geospatial estimates of malaria infection prevalence, clinical case incidence and mortality, *Plasmodium falciparum* parasite rates, ITN coverage, and effective treatment availability. The anticipated malaria burden in the absence of COVID-19 disruptions served as a baseline for comparison. On the basis of their estimates, Weiss and colleagues concluded that COVID-19-related disruptions to malaria control efforts in Africa could lead to significant reversals of the progress made over the past two decades in reducing malaria morbidity and mortality, with a possibility of a near doubling in mortality due to malaria under the worst case scenario (combined reductions of 75% in effective antimalarial treatment and 75% in routine ITN distribution, with no mass ITN distribution campaigns).¹²

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Weiss and colleagues' work is very relevant and timely, and serves as a call to action for policy makers not to ignore the control measures needed to fight the threat of malaria when considering strategies to combat the COVID-19 pandemic. The authors suggest that an integrated approach, in which equivalent efforts to ensure malaria control procedures are sustained amid the response to the COVID-19 pandemic, is essential to the goal of continuing the downward trend in malaria mortality and morbidity.

This work is important and urgent as it quantifies the potential increases in malaria-attributable morbidity and mortality in 2020 that might occur under plausible reductions in ITN and antimalarial drug coverage, serving to highlight the huge potential impact of COVID-19-related disruptions in malaria intervention and control strategies on malaria burden. Additionally, Weiss and colleagues' work prompts us to consider, in general, other indirect effects of the COVID-19 pandemic on malaria transmission dynamics. For example, given that fever is a common symptom in both diseases, it is important to educate both health-care providers and the population as a whole on the potential for misdiagnosis of malaria or COVID-19, as well as on the potential for co-occurrence of the two diseases. Guidance on the need for and importance of testing for malaria and other diseases during the pandemic should be communicated to health-care providers and resources made available to facilitate this. Furthermore, communication of these messages to communities is important to ensure that people with malaria are not scared to visit hospitals and community clinics in fear of misdiagnosis, which could limit their timely access to safe and legitimate antimalarials. In addition, it is worth asking whether there could be an increased risk of mosquito bites for individuals or families observing isolation or quarantine (whether either individually or in groups) that warrants them to stay in the same locality for extended periods,

especially if done so in the absence of ITNs. If so, then perhaps our concern with regard to malaria transmission should also extend to other mosquito-transmitted diseases.

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Good news from WHO on prevention of peripartum hepatitis B transmission

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In *The Lancet Infectious Diseases*, Anna Funk and colleagues¹ present their systematic review and meta-analysis on the efficacy and safety of peripartum antiviral

prophylaxis against the mother-to-child-transmission (MTCT) of hepatitis B virus (HBV). Peripartum antiviral prophylaxis is costly, unpractical, and should preferably