

Operational Considerations for Maintaining Essential Services for Malaria in Low-Resource Countries During the COVID-19 Pandemic

In 2018, there were about 228 million cases of malaria leading to an estimated 405,000 deaths worldwide; 94% of these deaths occurred in the World Health Organization (WHO) African Region [1], where malaria is a leading cause of death. While the past decade has seen a reduction in malaria incidence, particularly in sub-Saharan Africa, to maintain these gains, it is imperative for malaria-endemic countries to continue to focus on malaria control efforts in addition to efforts to combat the COVID-19 pandemic. [Modelling](#) analysis by WHO and partners suggests that if essential malaria interventions are significantly disrupted due to COVID-19 challenges, numbers of malaria cases will significantly increase, and death rates could double [2]. Ministries of Health and National Malaria Control Programs (NMCPs) need to ensure that malaria prevention and treatment activities are implemented while also protecting patients, health care providers, and public health officials from COVID-19 exposure. The following are some key considerations for continuing essential malaria prevention and control activities safely and effectively; these should supplement country Ministry of Health guidance.

Malaria/COVID-19 National Strategy

A representative from the National Malaria Control Program should be considered for membership on the country's National COVID-19 Incident Management Team to provide the malaria perspective for decision-makers.

Insecticide-Treated Nets ([ITNs](#))

Ensure continued access to ITNs and proper use of ITNs for populations at risk [3]. If areas previously planned for a mass campaign cannot be fully covered, consider prioritizing those areas with highest malaria burden. ITN distributions could continue, if travel restrictions permit. In implementing campaigns, avoid bringing together large groups of people, consider daily health checks for distribution teams, and allow for physical distancing of distributors and community members while adhering to local safety protocols [4]. Where planned ITN mass distributions are not feasible or may be delayed, consider expanding routine and continuous distribution channels.

Indoor Residual Spraying (IRS)

Countries may continue with planned targeted IRS in communities by maintaining physical distancing with home-owners, performing daily health checks for spray teams, and respecting local protocols for both sprayers and household safety [4]. Adjust spray team operations to reduce the number of staff transported to the field in a single motor vehicle.

Entomological Monitoring

Only essential routine entomological monitoring activities, such as vector bionomics, IRS spray quality and residual efficacy after initial quality assessment, and ITN durability monitoring may be conducted with the consent of the NMCP and when it can be assured that all COVID-19 precautions can be followed, including minimizing the numbers of people involved, maintaining physical distancing, wearing [cloth face coverings](#) as appropriate, ensuring appropriate personal protective equipment ([PPE](#)) is available, ensuring appropriate cleaning/ disinfecting of field and laboratory entomological equipment, and avoiding the use of mouth aspirators, or, where mouth aspirator use cannot be avoided, ensuring aspirators are fitted with a HEPA filter [4].



[cdc.gov/coronavirus](https://www.cdc.gov/coronavirus)

www.cdc.gov/coronavirus/2019-ncov/global-covid-19

Case Management

It is important that countries continue to encourage the general population to seek care early for fever and suspected malaria, particularly for children under age 5 and pregnant women, who are most at risk for adverse consequences of malaria, while taking into consideration physical distancing and COVID-19 policies and guidelines:

- Malaria diagnosis, using rapid diagnostic testing (RDTs) or microscopy, is an essential service for individuals suspected of having malaria.
 - A positive test for malaria does not exclude co-infection with COVID-19, thus healthcare providers should consider testing for both malaria and COVID-19 (or any other relevant illnesses) whenever possible.
 - When testing for both diseases is not possible, healthcare providers should consider recommending that the individual isolate for possible COVID-19 based on the current guidance and level of suspicion.
- Healthcare providers should wear appropriate personal protective equipment (PPE) and adhere to infection prevention and control (IPC) guidelines when caring for each patient [4].
- Healthcare providers should consider having patients wear a [cloth face-covering](#) for source control to prevent the spread of COVID-19.
- When treating confirmed malaria cases, healthcare providers should continue to follow national malaria case management guidelines.

Preventive Therapy Countries should strongly consider [continuing delivery of planned preventive services](#) targeting specific populations such as seasonal malaria chemoprevention (SMC) for young children, intermittent preventive treatment in infants (IPTi), and intermittent preventive treatment during pregnancy (IPTp) in currently recommended areas [5]. Health care workers should follow the national policy for prevention and containment of COVID-19 during these interventions [6].

Commodity Supply Chain

During the response to COVID-19, countries have seen delays in the production and supply of many malaria commodities, most notably rapid diagnostic tests for malaria (RDTs) but also antimalarial treatments. In addition, the costs of all malaria-related supplies have increased. Because of these disruptions to the supply chain, countries may need to modify how they plan and implement their malaria control activities. They may wish to proactively plan for changing commodity availability, potentially unreliable logistics systems, increased lead time for procurements, and increased demand for RDTs and antimalarial drugs if presumptive treatment is deemed necessary. To mitigate against running out of medication at the facility level in case of transport disruptions, countries may wish to consider allowing facilities to keep 1-2 months more of stock on hand than they normally would.

Exceptional Measures for Malaria Control

In situations where there is community-level transmission of COVID-19 and there are RDT stockouts or lack of appropriate personal protective equipment (PPE) to protect healthcare workers, [presumptive malaria treatment for febrile illness](#) may be required to minimize increased malaria illness and death while protecting against COVID-19 transmission [4, 5].

- Novel strategies, such as plexiglass shields, may be considered to minimize healthcare worker exposure and preserve PPE, allowing malaria testing to continue.
- As presumptive treatment will increase consumption of antimalarials, if RDTs or PPE are limited, consider targeting presumptive therapy to children under age 5, since they are at greatest risk for severe malaria and are at lower risk of symptomatic COVID-19. Presumptive treatment could be extended to school age children, who have the highest burden of parasitemia, with testing for malaria continuing as long as

possible for persons over 15 years; these individuals are less likely to develop fever as a result of malaria and more likely to have symptomatic illness with COVID-19.

- In situations where the burden of both malaria and COVID-19 are high, disruptions to the health system as a result of the pandemic could lead to dramatic increases in malaria morbidity and mortality, and programs may want to consider implementing [mass drug administration](#), as was done during the Ebola epidemic, to reduce the burden of malaria as well as the burden on facilities [2, 4]. It should be noted that the effects of mass drug administrations are transient, and for maximum impact, multiple rounds may be required.

These approaches should only be applied after carefully evaluating the public health situation in-country (both with respect to malaria and COVID-19, as well as availability of antimalarial drugs, PPE, and testing) and should always follow national COVID-19 guidance.

Information Systems

High-quality, timely routine health information — such as numbers of outpatient consultations, fevers, and malaria cases — is critical to monitor both malaria and COVID-19 illness in the population. However, reporting to health management information systems may be impacted by COVID-19 if surveillance staff are redirected to other activities, transportation of data reporting forms to and from facilities is disrupted, or data quality checks are reduced. To help ensure timely availability of surveillance data for decision-making, countries can take steps such as these:

- Prioritize staff time for surveillance activities.
- Proactively ensure staff have adequate supplies of reporting materials.
- Create contingency plans for data transport and entry.

Further, because both COVID-19 and malaria may cause fever, planning for continuous availability of RDTs in health care settings will help distinguish between the two diseases and allow better understanding of the burden of each and whether there are interactions between them [7]. Countries may consider adapting Integrated Disease Surveillance and Response (IDSR) reporting to include COVID-19 suspect cases, to provide weekly data.

Communications and Community Engagement

Countries should consider continuing efforts to actively engage social and behavior change experts and community leaders to promote community behaviors that will prevent malaria transmission and illness and encourage early treatment-seeking behavior. Community behaviors, especially around care-seeking, may change due to COVID-19 concerns. Ensure that people do not receive potentially contradictory messages regarding care-seeking behavior for febrile illness. For example, some COVID-19 messages encourage people with fever and otherwise mild illness to stay home, but if a person has malaria, it is critical that they seek care early. Therefore, messages to people who may have malaria must be clear and tailored to them:

- In malaria-endemic settings, it is important that people continue to have access to malaria testing and be encouraged to seek such testing early in case of fever **while** also taking appropriate precautions to prevent the spread of COVID-19.
- In addition, it is important to have messages that address the population's concerns regarding the safety of visiting a health facility during the pandemic to ensure they do not avoid seeking malaria care because of fears about COVID-19.

These recommendations must be evaluated in each individual country's context, but it is important that all countries recognize the need to continue to implement malaria interventions to prevent additional malaria illnesses and deaths during the COVID-19 pandemic.

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References

1. World Health Organization (WHO). World malaria report 2019. Geneva: WHO; 2019. <https://www.who.int/publications/i/item/world-malaria-report-2019>.
2. WHO. The potential impact of health service disruptions on the burden of malaria: a modelling analysis for countries in sub-Saharan Africa; 2020. <https://www.who.int/publications/i/item/the-potential-impact-of-health-service-disruptions-on-the-burden-of-malaria>.
3. AMP. Considerations for distribution of insecticide-treated nets (ITNs) amid COVID-19 concerns and in COVID-19 affected countries. Geneva: Alliance for Malaria Prevention; 2020. <https://allianceformalariaprevention.com/about/amp-guidelines-and-statements/>.
4. WHO. Tailoring malaria interventions in the COVID-19 response. 3 April 2020. Geneva: World Health Organization. <https://www.who.int/malaria/publications/atoz/tailoring-malaria-interventions-in-the-covid-19-response/en/>.
5. WHO. Community-based health care, including outreach and campaigns, in the context of the COVID-19 pandemic: interim guidance, 5 May 2020. Geneva: World Health Organization. <https://www.who.int/publications-detail/community-based-health-care-including-outreach-and-campaigns-in-the-context-of-the-covid-19-pandemic>.
6. WHO. Coronavirus disease (COVID-19) technical guidance: infection prevention and control / WASH. Geneva: World Health Organization; 2020. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/infection-prevention-and-control/>.
7. Gutman JR, Lucchi NW, Cantey PT, et al. Malaria and Parasitic Neglected Tropical Diseases: Potential Syndemics with COVID-19? AJTMH. 2020;10.4269/ajtmh.20-0516. doi:10.4269/ajtmh.20-0516