

## MEASURES TO ENSURE THE CONTINUITY OF THE RESPONSE TO MALARIA IN THE AMERICAS DURING THE COVID-19 PANDEMIC, 24 APRIL 2020

The PAHO Regional Malaria Program is aware of the imminent negative impact that the present COVID-19 pandemic is causing in the countries and their health systems, and consequently, in the fight against malaria in the countries of the Americas; considers that it is essential to guide national authorities; and draws attention to the main measures to be taken to maintain the continuity of actions against malaria, while protecting the health of healthcare workers and in line with national provisions for response to COVID-19. Malaria-specific guidance on the response to COVID-19 has been developed by WHO<sup>1</sup> and is the main reference for this document. This material is subject to updates by WHO and PAHO on malaria and on the COVID-19 response.

### SUMMARY

**Objective:** To sustain efforts to prevent, detect and treat malaria cases while preventing the spread of COVID-19 and ensuring the safety of service providers.

Main measures:

- Adapt malaria case detection to the situation of the healthcare network flows for COVID-19 at the local level, to ensure early treatment of malaria.
- Simplify malaria surveillance and control operations, according to local COVID-19 situation scenarios, to ensure essential actions.
- Ensure and optimize management of necessary malaria supplies (drugs, RDT, LLINs, and insecticides for IRS)
- Protect health workers and everyone involved in malaria interventions.

A three-step approach is proposed to guide action at national and local levels:

#### A. STEP 1. Understand the issues for malaria actions in the context of the COVID-19 pandemic

- Fever patients do not go to health services.
- Shortage of Rapid Diagnostic Tests (RDTs).
- Reduction in microscopy capacity due to the impact of COVID-19 on health personnel or the reassignment of functions to available personnel.
- Impediments for community agents to continue to diagnose and treat malaria.
- Shortage of chloroquine due to its use for COVID-19 case management and/or production and export problems from producing countries.
- Artemisinin Combination Therapy (ACT) shortage.
- Absence of active search and investigation of cases due to health personnel restrictions.
- Disruption of vector control actions due to mobility and staff restrictions.
- Problems in reporting and recording suspected and confirmed malaria cases.

#### B. STEP 2. Take action at the national level

- Articulate with the national entity responsible for response and guidance for COVID-19 to ensure and maintain early diagnosis of malaria in any case of fever in endemic areas.
- Accelerate the planned and ongoing processes of purchasing antimalarials, RDTs and LLINs including purchases in Global Fund projects<sup>2</sup>.

<sup>1</sup> Tailoring malaria interventions in the COVID-19 response. WHO 2020. <https://www.who.int/malaria/publications/atoz/tailoring-malaria-interventions-in-the-covid-19-response/en/>

<sup>2</sup> Global Fund Principal Recipients must submit requisitions by April 10, for expected delivery in 2020

- Ensure sufficient stocks in central, regional and hospital warehouses of ACT, CQ, PQ, IV artesunate, RDT, reagents and supplies for microscopy.
- Implement necessary malaria policy adjustments, such as the use of second-line drugs, in the face of the risk of antimalarial stock-outs (ACT for *P. vivax*).<sup>3</sup>
- Provide regulatory, financial and logistical solutions to maintain basic diagnostic, treatment and prevention actions in malaria while ensuring protection for health workers

**C. STEP 3. Understand basic information to guide malaria mitigation actions at the local level**

- Know (and adapt if necessary), the policy that is being applied locally on when to go to the health services, in the face of symptoms of COVID-19: messages to the community, fixed points of detection, symptoms that trigger the search for a diagnosis.
- Understand locally imposed restrictions on people's mobility.
- Establish the required amount and status of antimalarial (including additional ACT requirements in case of CQ shortages) and RDT stocks<sup>4</sup>.
- Map the available human resources of the local diagnostic network (microscopy and/or RDT) for detection of malaria cases and microscopy quality control, under the appropriate personal protection measures
- Update information on planned and executed LLIN or IRS actions
- Update information on the most affected areas and problems in the flow of information.

**D. STEP 4. Adopt and adapt mitigation measures at the local level according to scenarios** (These scenarios may vary according to the behavior of COVID-19 in malaria endemic areas).

- **Malaria-endemic area with no cases of COVID-19:** Malaria operations remain largely undisturbed at the local level, but with ensured protection of health workers. Adjust the process of malaria case management to changes in the local network and to the surveillance route of COVID-19, ensuring malaria diagnostic points within reach of the population consulting for fever. Communication to promote early health-seeking behavior by people with fever. Implementation of adjustments to antimalarial policies made at the national level. Maintain planned vector control actions.
- **Malaria-endemic area with imported cases of COVID-19 and/or local transmission in clusters.** Measures in scenario 1, plus: Take measures to optimize microscopy and use of RDT in case diagnostic capacity is affected. Align case management actions of community agents according to national guidelines for COVID-19 (suspension or adjustment of activities with personal protective equipment (PPE) and training). Simplification of treatment supervision and control processes. Investigation of cases only in situations of prevention of re-establishment of malaria transmission. Maintenance of planned vector control actions according to staff capacity. Simplification of notification and supervision processes to health units.
- **Malaria-endemic area with community transmission of COVID-19.** Measures in Scenario 2, plus: Limit malaria actions to essential actions, to provide early diagnosis and treatment with PPE-equipped fixed institutional or mobile points to protect health workers. Maintain surveillance to detect and respond to outbreaks. Consider measures for exceptional situations (presumptive treatment, MDA) in selected areas with high malaria burden and exceeded service capacity, according to national policy and sufficient stock of antimalarials.

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[https://www.theglobalfund.org/media/4754/psm\\_categoryproductlevelprocurementdeliveryplanning\\_guide\\_en.pdf](https://www.theglobalfund.org/media/4754/psm_categoryproductlevelprocurementdeliveryplanning_guide_en.pdf)).

<sup>3</sup> OPS. Note on the implications of covid-19 on policies for the use and procurement of antimalarial drugs in malaria-endemic countries in the Americas. 2020

<sup>4</sup> It also includes additional ACT requirements in the event of a shortage of RDTs, or recommendations for presumptive treatment if the capacity for microscopic diagnosis is exceeded.

## DETAILED INFORMATION

**Table 1. Potential problems and solutions for the impact of the COVID-19 pandemic on malaria operations**

IDENTIFIED POTENTIAL PROBLEMS	POSSIBLE SOLUTIONS AND PROPOSED APPROACH
<b>DETECTION and DIAGNOSIS</b>	
<p><u>Passive detection:</u> Patients with fever do not go to health services or known malaria diagnosis points, due to:</p> <ul style="list-style-type: none"> <li>• Service saturation</li> <li>• Risk of infection (of COVID-19) in the services</li> <li>• Mobility restrictions</li> <li>• Recommendation that people with fever and mild symptoms stay home</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage timely care-seeking for people with fever and ensure that national and local guidance for COVID-19 includes measures for potential malaria patients to receive early diagnosis and treatment.<sup>1</sup></li> <li>• Adjust/align the malaria diagnostic process to algorithms and triage and diagnostic process of COVID-19 in services and at fixed points (including quarantine centers). In malaria-endemic areas, all cases of fever should be tested for malaria (Notes 1 and 4)</li> <li>• Fixed points for diagnosis (microscopy or RDT) according to adjustments in algorithms and case definitions (Note 1) and measures to reduce the risk of exposure to COVID-19 (Note 4)</li> <li>• Institutional mobile agents with personal protection measures and equipment (PPE)<sup>5</sup>, for taking slides or carrying out RDTs with a strategy for reporting the presence of suspected cases of malaria (telephone, social networks, signs in homes)</li> <li>• Optimize the use of RDT (Note 3)</li> <li>• Communication to direct patient consult to fixed points of care, in accordance with local provisions on health care seeking in cases of fever in COVID-19. The communication strategy for malaria in malaria-endemic areas should be done in conjunction with any communication for COVID-19.</li> </ul>
<p><u>Diagnosis:</u> Malaria diagnostic capacity surpassed by increased number of fever patients attending health services</p> <ul style="list-style-type: none"> <li>• Saturation of the microscopy network</li> <li>• Risk of RDT stock-outs</li> </ul>	<ul style="list-style-type: none"> <li>• Improve case definitions and algorithms for malaria diagnosis (Note 1)</li> <li>• Optimize microscopy (Note 2)</li> <li>• Review stocks and reserves of RDTs and optimize their use (Note 3)</li> <li>• Consider presumptive treatment as an exceptional and temporary measure in the absence of diagnosis and only under sufficient national stock of antimalarials (at least 6 months' stock, including the need for artemisinin-based combination therapies (ACT) for <i>P. vivax</i>) (Note 7)</li> </ul>

<sup>5</sup> <https://www.paho.org/es/documentos/requerimientos-para-uso-equipos-proteccion-personal-epp-para-nuevo-coronavirus-2019-ncov>

<p><u>Diagnosis:</u> Shortage of Rapid Diagnostic Tests (RDTs)</p>	<ul style="list-style-type: none"> <li>• Avoid RDT shortage by reviewing estimated needs and expediting pending purchase processes</li> <li>• Optimize the use of RDT (Note 3)</li> <li>• Optimize microscopy (Note 2)</li> <li>• Consider presumptive treatment as an exceptional and temporary measure in the absence of diagnosis and only under sufficient national stock of antimalarials (at least 6 months' stock, including ACT requirements for <i>P. vivax</i>) (Note 7)</li> </ul>
<p><u>Diagnosis:</u> Impairment of microscopy network performance due to:</p> <ul style="list-style-type: none"> <li>• Effects of COVID-19 on health personnel</li> <li>• Reassignment of duties</li> <li>• Problems in sending reading sheets due to drastic restrictions in mobility</li> </ul>	<ul style="list-style-type: none"> <li>• Optimize the use of RDT (Note 3)</li> <li>• Optimize microscopy (Note 2)</li> <li>• Consider administration of presumptive treatment, as an exceptional and temporary measure in the absence of diagnosis and only under sufficient national stock of antimalarials (at least 6 months' stock) including ACT requirements for <i>P. vivax</i> (Note 7)</li> <li>• Consider targeted mass drug administration (MDA) actions in critical situations where the malaria burden is very high, health services are overwhelmed by the number of suspected cases and diagnostic capacity is impaired; and subject to sufficient stocks of antimalarials and <b>national level</b> provisions (Note 8)</li> </ul>
<p><u>Diagnosis:</u> Community agents/staff unable to continue diagnosis and treatment due to COVID-19 risk (Note 5)</p>	<ul style="list-style-type: none"> <li>• Adjust/align malaria diagnostic process to algorithms and diagnostic or triage process of COVID-19 in services and at fixed points (Note 1 and 4)</li> <li>• Fixed points for diagnosis (microscopy or RDT), with PPE and according to adjustments in algorithms and case definitions (Note 1) and measures to reduce the risk of exposure to COVID-19 (Note 4)</li> <li>• Institutional mobile agents with PPE, to take slides or do RDTs, in response to community information about the presence of suspected malaria cases (telephone, signs outside houses)</li> <li>• Optimize microscopy (Note 2), in case of reduced diagnostic capacity due to RDT shortage</li> <li>• Communication to guide patients with fever on seeking diagnosis and treatment for malaria at fixed points.</li> <li>• Brigades for the proactive detection of cases have PPE and are coordinated with COVID-19 actions according to analyses of risks and disruption of passive detection in rural areas.</li> </ul>
<p><u>Proactive detection:</u> Difficulties in carrying it out due to limitations in the movement of health personnel as well as saturation of activities</p>	<ul style="list-style-type: none"> <li>• Temporarily postpone activities <b>if there is no other possibility</b>. Where the country decides to maintain proactive searches, ensure the protection of staff with PPE.</li> <li>• Communication to direct consults to fixed diagnostic points in accordance with local provisions for care seeking in cases of COVID-19</li> <li>• All other points mentioned above with respect to passive detection.</li> </ul>

TREATMENT	
<p><u>Chloroquine treatment:</u> Chloroquine depletion due to:</p> <ul style="list-style-type: none"> <li>• Use in the management of patients with COVID-19</li> <li>• Access problems (production delays, export bans in producing countries, overall transportation/border closure problems)</li> <li>• Transportation problems and mobility restrictions at national or local level</li> </ul>	<ul style="list-style-type: none"> <li>• Accelerate the planned and ongoing procurement processes for chloroquine and other antimalarials (joint procurement 2020-2021).</li> <li>• Implement policy on treatment with Artemether-Lumefantrine or other ACTs with primaquine for both <i>P. vivax</i> and <i>P. falciparum</i> (see PAHO Technical Note on implications of COVID-19 on antimalarial policies and procurement<sup>3</sup>).</li> </ul>
<p><u>Treatment with Artemisinin-based combination therapy (ACT):</u></p> <ul style="list-style-type: none"> <li>• Production problems</li> <li>• Overall transportation constraints</li> <li>• Mobility restrictions at national or local level</li> </ul>	<ul style="list-style-type: none"> <li>• Update stocks and supply management actions between municipalities and health units</li> <li>• Advance ACT procurement processes after stock analysis</li> <li>• Rationalize the use of ACT depending on chloroquine stocks (prioritize ACT for <i>P. falciparum</i>)</li> <li>• Prevent any presumptive ACT treatment intervention</li> <li>• Estimate increase in cases of complicated malaria, review stocks of injectable artesunate and advance procurement processes.</li> </ul>
<p><u>Directly observed Treatment:</u> Supervised administration of treatment is not possible due to restrictions on movement of health personnel, activity saturation or lack of protective equipment (PPE)</p>	<ul style="list-style-type: none"> <li>• Abolish temporarily the policy of directly observed treatment: give the complete treatment, provide guidance to the patient on when to return (in case of deterioration with persistence of symptoms) and follow up by alternative mechanisms (phone calls).</li> </ul>
<p><u>Case tracking:</u> Clinical and parasitological follow-up of cases is not possible due to restrictions on the movement of health personnel, activity saturation or lack of PPE. It may also increase the risk of the malaria patient being infected with COVID-19 due to frequent visits to the health unit.</p>	<ul style="list-style-type: none"> <li>• Temporarily abolish parasitological monitoring policy with the exception of situations of prevention of re-establishment. In such cases, perform microscopic control only on the 28th day with the use of PPE or telephone follow-up if no PPE is available.</li> </ul>
CASE INVESTIGATION AND RESPONSE	
<p>Limited community-based malaria case investigation activities, including reactive (case) searches, due to restrictions on staff mobility and availability</p>	<ul style="list-style-type: none"> <li>• Simplify case investigation to one full interrogation at the time of diagnosis and follow-up by phone</li> <li>• Communication to orient contacts and new fever cases to fixed diagnosis points, in accordance with local provisions on seeking care in cases of fever in COVID-19</li> </ul>

	<ul style="list-style-type: none"> <li>• Fixed malaria diagnostic points (microscopy or RDT) at the same fever detection points for COVID-19, are with PPE and according to adjustments in algorithms and case definitions (Note 1) and measures to reduce the risk of exposure to COVID-19 (Note 4)</li> <li>• Institutional mobile agents with PPE, for taking slides or carrying out RDTs with a strategy for reporting the presence of suspected malaria cases (telephone, signs on the houses)</li> <li>• Optimize microscopy (Note 2), in case of reduced diagnostic capacity due to RDT shortage</li> </ul>
<b>MONITORING THE DIAGNOSIS AND TREATMENT OF CASES</b>	
Supervision and support visits to health posts and community workers may be affected by mobility restrictions and insufficient staffing (includes supply of medicines, collection of slides and information)	<ul style="list-style-type: none"> <li>• Simplified monitoring and use of alternative support channels (telephone)</li> <li>• Provide posts and community agents with medicines and inputs for longer periods</li> <li>• Use personal protection measures during supervision</li> <li>• Temporary suspension of supervision</li> </ul>
<b>ROUTINE VECTOR CONTROL</b>	
Long-lasting insecticide-treated nets (LLINs) distribution actions affected due to movement restriction, risk of COVID-19 infection and staff availability	<ul style="list-style-type: none"> <li>• Assess the degree of implementation of this activity in the foci to support decision makers in choosing the best strategy to mitigate the impact of pending actions.</li> <li>• Current and planned LLIN distribution campaigns should continue if possible, always implementing the measures recommended by WHO to minimize the risk of transmission of COVID-19<sup>1</sup> (Notes 9 and 10).</li> <li>• Distribution actions organized to avoid large gatherings of people, and to allow physical distancing of distributors and beneficiaries, following local security protocols<sup>1</sup> (Note 10).</li> <li>• Different situations should be considered to minimize the risk of exposure, especially if the activities may not be truly essential.</li> <li>• In areas where there is no planned distribution, communicate to the community about the importance of using, caring for and repairing available nets.</li> <li>• If there are control activities planned in the next few months, consider moving forward the implementation given that in the next 2-3 months the availability of vector personnel and their mobility will be more affected.</li> </ul>
IRS actions affected due to travel restrictions, risk of COVID-19 infection, and availability of personnel	<ul style="list-style-type: none"> <li>• Assess the degree of implementation of this activity in the foci to support decision makers in choosing the best strategy to mitigate the impact of pending actions.</li> <li>• Move forward with current/planned IRS campaigns by ensuring the safety of community and health teams, implementing the measures recommended by WHO to minimize the risk of transmission of COVID-19<sup>1</sup> (Notes 9 and 10).</li> </ul>
Entomological surveillance field actions are affected due to movement restriction, risk of COVID-19 infection and availability of personnel	<ul style="list-style-type: none"> <li>• It is recommended to temporarily suspend routine entomological monitoring activities for the IRS and LLINs until COVID-19 transmission decreases<sup>1</sup></li> </ul>

INFORMATION SYSTEMS AND DATA ANALYSIS	
<p>Delays in case notification and reporting affecting analysis for decision making in malaria. Due to:</p> <ul style="list-style-type: none"> <li>• The overload of services</li> <li>• Reduction of staff</li> <li>• Transportation and mobility restrictions at the local level</li> </ul>	<ul style="list-style-type: none"> <li>• Simplify collection, reporting and information flow processes</li> <li>• Develop alternative mechanisms for reporting aggregate data (telephone)</li> <li>• Make reporting rules and procedures more flexible</li> <li>• Maintain testing routines adapted to the conditions imposed by the pandemic (malaria cases and parasitological malaria tests performed)</li> </ul>

### Actions according to COVID-19 risk scenarios in malaria-endemic areas

- Scenario 1. Malaria-endemic area with no COVID-19 cases
- Malaria-endemic area with imported cases of COVID-19 and/or local transmission in clusters
- Malaria-endemic area with community transmission of COVID-19

**Table 2. Actions according to COVID-19 risk scenarios in malaria-endemic areas**

Scenarios	Potential problems	Actions
<b>Scenario 1</b>	<p>Possible shortage of medicines and RDTs due to access problems and potential increase in the use of CQ in the management of COVID-19 cases</p> <p>+ Reduction in capacity of malaria control teams due to mobility restrictions and/or dedication to COVID-19 actions</p>	<ul style="list-style-type: none"> <li>• Normal malaria actions with the necessary protection measures by health workers and community.</li> <li>• Fixed malaria diagnostic points at the same fever detection points for COVID-19 as adjusted in algorithms and case definitions (Note 1) with use of PPE and measures to reduce the risk of exposure to COVID-19 (Note 4)</li> <li>• Optimize microscopy (Note 2) in case of reduced diagnostic capacity due to RDT shortage</li> <li>• Introduce ACT+PQ for treatment of <i>P. vivax</i> malaria in case of problems with CQ supply</li> <li>• Community agents with personal protective measures and equipment (Note 4)</li> <li>• Brigades for the proactive detection of cases have PPE and are coordinated with COVID-19 actions according to analyses of risks and disruption of passive detection in rural areas.</li> <li>• LLIN distribution and IRS as planned. Move forward planned actions if there is a risk that they may not be carried out in a few months (Notes 9 and 10)</li> </ul>
<b>Scenario 2</b>	<p>Possible shortage of medicines and RDTs due to production and international transportation problems (and potential increase in use of CQ in COVID-19)</p>	<ul style="list-style-type: none"> <li>• Fixed malaria diagnostic points at the same fever detection points for COVID-19 as adjusted in algorithms and case definitions (Note 1) with use of PPE and measures to reduce the risk of exposure to COVID-19 (Note 4) Fixed points of malaria diagnosis at established key points and at additional points in case community agents need to be replaced, with use of PPE and measures to reduce the risk of exposure to COVID-19 (Note 4)</li> </ul>



	<p>+ Reduction in capacity and mobility restrictions of malaria teams (endemic control)</p> <p>+ Suspected malaria cases do not come to services</p>	<ul style="list-style-type: none"> <li>• Communication to guide consults to fixed points</li> <li>• Optimize microscopy (Note 2)</li> <li>• Optimize the use of RDT (Note 3)</li> <li>• Introduce ACT+PQ for treatment of <i>P. vivax</i> malaria in case of problems with CQ supply</li> <li>• Community agents for passive detection actions only, with personal protective measures and equipment. Suspension of activities according to risk analysis and in line with national and local provisions.</li> <li>• Brigades for the proactive detection of cases are with PPE and coordinated with COVID-19 actions according to analyses of risk and disruption of passive detection in rural areas.</li> <li>• Simplify, reduce or suspend treatment monitoring actions (telephone follow-up) and post-treatment controls</li> <li>• Investigate cases in situations at risk of reactivating or reintroducing transmission to prevent re-establishment</li> <li>• Reactive case search only for high-risk clusters according to surveillance data and by institutional staff with appropriate PPE use measures.</li> <li>• Current and planned IRS and LLIN distribution campaigns should continue if possible, always implementing the measures recommended by WHO to minimize the risk of transmission of COVID-19<sup>1</sup> (Notes 9 and 10). If they cannot be maintained, a risk analysis should be conducted to identify areas of increased malariogenic potential and ensure essential actions.</li> <li>• Simplify case notification processes</li> <li>• Simplify supervision of health units</li> </ul>
<p><b>Scenario 3</b></p>	<p>Possible shortage of medicines and RDTs due to production and international transportation problems (and potential increase in use of CQ in COVID-19)</p> <p>+ Suspected malaria cases do not come to services</p> <p>+ Health services overloaded by COVID-19</p> <p>+ Community agents at risk of infection or affected by COVID-19</p>	<ul style="list-style-type: none"> <li>• Fixed malaria diagnostic points at the same fever detection points for COVID as adjusted in algorithms and case definitions (Note 1) with use of PPE and measures to reduce the risk of exposure to COVID-19 (Note 4) Fixed malaria diagnosis points at established key points, and at additional points to replace the tasks performed by community agents with use of PPE and measures to reduce the risk of exposure to COVID-19 (Note 4)</li> <li>• Communication to direct consults to fixed points of diagnosis of malaria.</li> <li>• Optimize microscopy (Note 2)</li> <li>• Optimize the use of RDT (Note 3)</li> <li>• Introduce ACT+PQ for treatment of <i>P. vivax</i> malaria in case of problems with CQ supply</li> <li>• Community agents for passive detection actions only, with personal protective measures and equipment. Suspend activities according to analyses of risks and in line with national and local provisions.</li> </ul>



	<p>+ Inactivity of malaria teams (control of endemic diseases) due to involvement or dedication to COVID-19 actions</p>	<ul style="list-style-type: none"> <li>• Brigades for the proactive detection of cases are with PPE and coordinated with COVID-19 actions according to analyses of risk and disruption of passive detection in rural areas.</li> <li>• Suspend treatment monitoring and post-treatment control actions</li> <li>• Case investigation actions in situations at risk of reactivating or reintroducing transmission to prevent re-establishment, and consider alternatives like case investigation by telephone.</li> <li>• Reactive case search only for high-risk clusters according to surveillance. By institutional personnel with appropriate measures and use of personal protection equipment.</li> <li>• Current and planned IRS and LLIN distribution campaigns should continue if possible, always implementing the measures recommended by WHO to minimize the risk of transmission of COVID-19<sup>1</sup> (Notes 9 and 10). If these cannot be maintained, conduct a risk analysis to identify areas of increased malariogenic potential and ensure essential actions.</li> </ul> <p>Exceptional measures<sup>1</sup> (subject to decisions at national level)</p> <ul style="list-style-type: none"> <li>• Presumptive treatment. Only if there are sufficient antimalarials (minimum 6-month stockpile, including ACT requirements for <i>P. vivax</i> malaria) (Note 7) and if diagnostic capacity is impaired by other measures (Notes 2 and 3)</li> <li>• Mass drug administration (MDA): In critical situations where the malaria burden is very high, health services are overwhelmed by the number of suspected cases with impaired diagnostic capacity and malaria transmission cannot be reduced by other measures (subject to sufficient stocks of antimalarials and national arrangements (Note 8)</li> </ul>
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## **SPECIFIC ARRANGEMENTS**

**General provision:** Efforts to prevent, detect and treat malaria cases while preventing the spread of COVID-19 and ensuring the safety of service providers should be maintained.

The measures mentioned below should be considered in line with national provisions on health actions in the context of COVID-19.

### **Note 1. Algorithm and case definitions for detection of malaria and COVID-19 in malaria transmission areas**

The WHO definition of a suspected case of COVID-19 includes fever and a respiratory<sup>6</sup> symptom. PAHO recommends that countries reorganize their services so that pre-triage and triage actions can be taken to identify febrile patients with respiratory symptoms under appropriate safety conditions<sup>7,5</sup>. These points may be critical for malaria-endemic areas to test **feverish people with respiratory symptoms for malaria**. In malaria-endemic areas, measures should be taken to:

- Based on locally established triage flows for COVID-19<sup>7</sup>, adapt the malaria care flows to perform RDT for all cases of **fever with or without respiratory symptoms**, following the necessary safety measures for health personnel and the population.
- Develop and implement screening decision algorithms based on local risk of malaria, COVID-19 and other causes of fever, and on the set of possible symptoms
- Develop procedures to guide triage or treatment/case management based on RDT outcomes and symptom complex

### **Note 2. Optimization of microscopy**

This refers to a set of actions aimed at reorganizing locally the microscopy actions in view of a possible reduction in the number of diagnostic points available or reduction in the availability of RDTs or the suspension of actions carried out by community agents. The following measures are included: (i) organized action to induce demand for symptomatic cases, (ii) adoption of more specific case definitions and algorithms to ensure the capture of symptomatic cases, (iii) analysis of microscopy load between diagnostic points and redistribution of the load, (iv) simplification of slide review processes to free up dedicated quality control microscopists, v) temporary suspension of reading of control slides in cases with satisfactory clinical evolution, vi) prioritization of passive search over active search, vii) substantial reduction of active search with better case definition and less periodicity, and viii) prioritization for diagnosis only of symptomatic cases.

<sup>6</sup> [https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200329-sitrep-69-covid-19.pdf?sfvrsn=8d6620fa\\_4](https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200329-sitrep-69-covid-19.pdf?sfvrsn=8d6620fa_4)

<sup>7</sup> <https://www.paho.org/en/documents/recomendaciones-para-reorganizacion-ampliacion-progresiva-servicios-salud-para-respuesta>

### **Note 3. Optimization of the use of RDT**

This means that in situations where there is a risk of RDT shortage, criteria should be established to prioritize their use. The following criteria are suggested : i) prioritize areas where microscopists are overloaded, ii) prioritize remote areas that require mobility of personnel for the collection and reading of microscopy slides, iii) prioritize situations with high positivity in diagnosis, or high number of cases, iv) adopt more specific case definitions, v) distance periods for repeat slides in case of negative results and persistence of symptoms, and vi) optimize microscopy processes mentioned above.

### **Note 4. Measures to reduce the risk of exposure to COVID-19 during malaria diagnosis and treatment**

Maintain the quality of diagnostic and treatment actions for febrile and confirmed cases of malaria, while minimizing the risk of transmission of COVID-19 in the context of patient care. The following measures are included, always in line with national provisions on health care in the context of COVID-191:

- Protection of human resources since patient care could increase their risk of exposure to COVID-19. Health care workers should comply with national policies and procedures for personal protection.
- Protecting patients with the recommended mitigation and prevention measures, as they may face a higher risk of exposure to COVID-19 in health centers.
- Emphasize the use of RDT, as these tests allow for simple procedures, limited person-to-person contact, and rapid results
- Patients should be protected by maintaining appropriate physical distance upon arrival at point of care and while waiting for services.
- To facilitate patient flow in health facilities and ensure physical separation, tests can be performed in a special area away from other patients and staff should perform them using appropriate protective measures.
- Tests may be performed early in the patient flow so that results are available at the time of health worker contact with the patient.
- For case management in the communities, community agents should take the recommended precautions and approach patients away from other community members.

### **Note 5. Community agents**

In many malaria-endemic areas, especially in dispersed rural communities, community agents play a major role in detecting, diagnosing and treating cases. It is estimated that in areas with community transmission of COVID-19 this strategy will be affected due to limitations in the supply of PPE and the risk of exposure of people in the community to COVID-19 infection.

Countries are encouraged to consider alternative measures for early diagnosis and treatment based on the adoption of "no contact" (distancing) policies by community agents and reference to points where recommended personal protection measures exist or with actions based on

fixed or mobile diagnostic points by institutional staff with appropriate personal protection measures (Note 4) and intensive communication action using the same channels and messages as COVID-19 or exceptionally presumptive treatment (Note 7).

#### **Note 6. Situations of elimination and prevention of re-establishment of transmission**

In areas where malaria transmission has recently been interrupted, efforts must be maintained to prevent, detect and treat malaria cases while preventing the spread of COVID-19 and ensuring the safety of service providers. Countries that are moving towards malaria elimination must protect the progress made and thus prevent the resurgence of malaria. Proactive and reactive case detection actions should be maintained in situations where there is a risk of reactivation or reintroduction of malaria transmission, always ensuring the appropriate personal protection measures. Countries that have eliminated malaria must remain vigilant to any imported cases of malaria that may be occurring to prevent reintroduction of the disease.

#### **Note 7. Presumptive treatment<sup>18</sup>**

Presumptive malaria treatment refers to treatment of suspected malaria cases without the benefit of diagnostic confirmation (e.g., by RDT). Under normal circumstances, the management of fever cases includes a diagnostic test for confirmation of the malaria infection followed by recommended treatment. Under the exceptional situations that may arise in the context of the COVID-19 pandemic, reverting to presumptive treatment of fever with antimalarials may be the only available option. Triggers for such an action may include:

- RDT stockouts due to supply chain disruptions: In the absence of a point-of care diagnostic, it may be necessary to assume that fever cases are associated with malaria, and all febrile individuals should receive antimalarial treatment. Given that COVID-19 also leads to fever, these individuals should also be assessed for possible COVID-19 illness;
- Non-availability of health workers who would normally perform the malaria testing, or lack of access to health facilities.

If, in the face of reduced diagnostic capacity and shortages of RDT, measures to optimize microscopy and the use of RDT are insufficient and presumptive treatment is required as an exceptional measure,<sup>9,10</sup> steps must be taken to ensure that the intervention has the least possible impact on malaria operations and surveillance: i) focus the intervention on specific sectors, especially selected because of the high rate of positive slides in previous periods, ii) implement clear and rigorously enforced case definitions, and iii) monitor positivity with sentinel samples, which will then allow the estimation of malaria behavior from suspected cases and these percentages of positivity.

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<sup>8</sup> <https://www.who.int/news-room/q-a-detail/malaria-and-the-covid-19-pandemic>

<sup>9</sup> <https://www.who.int/news-room/detail/25-03-2020-who-urges-countries-to-ensure-the-continuity-of-malaria-services-in-the-context-of-the-covid-19-pandemic>

<sup>10</sup> <https://www.who.int/news-room/q-a-detail/malaria-and-the-covid-19-pandemic>

**Note 8. Mass Drug Administration (MDA)<sup>1</sup>pending WHO specific recommendation on MDA and COVID-19)<sup>8</sup>**

Mass drug administration (MDA) is a WHO-recommended approach for rapidly reducing malaria mortality and morbidity during epidemics and in complex emergency settings. Through MDA, all individuals in a targeted population are given antimalarial medicines – often at repeated intervals – regardless of whether or not they show symptoms of the disease.

In exceptional circumstances, MDA has the potential to reduce disease and death and thus reduce the pressure on the health system. MDA has the dual benefit of clearing infections in the population and providing an interval of prophylaxis that serves to prevent infection and reduce malaria transmission. While MDA is not generally recommended in stable malaria-endemic populations, the COVID-19 pandemic could lead to national programs needing to mitigate the malaria burden in populations.

Careful consideration will be required to ensure that the necessary supplies, logistics, training and supervision are in place and that the benefits outweigh any added risk of burdening the health system and putting health workers and the population at risk. Health workers providing MDA services should take recommended precautions to reduce their risk of exposure to COVID-19.

As with presumptive treatment, such special measures should only be taken after careful consideration of two key objectives: (i) reducing malaria-related mortality and (ii) keeping health workers safe. WHO is exploring concrete proposals on when and how to activate such measures; the guidance will be issued in due course.<sup>8</sup>

**Any presumptive treatment and/or MDA actions will be subject to the availability of sufficient stocks of antimalarials at the national level and should therefore be a measure guided by that level.**

**Such emergency efforts would also need to consider the availability of trained personnel, permits or approvals for such large-scale efforts in communities, and the availability and use of personal preventive measures to reduce the risk of COVID-19<sup>1</sup>.**

**Note 9. Prioritization of LLIN and IRS actions**

It is suggested that an analysis be made of the LLIN and IRS actions planned for the coming months to cover gaps in LLIN coverage or scheduled IRS cycles. At the local level, we suggest prioritizing the most important locations and foci in terms of malaria incidence, number of cases, and population vulnerability, and planning the implementation of the most important actions following the protection measures detailed below.

**Note 10. Measures to be considered when executing LLIN and IRS distribution actions<sup>1,8</sup>**

**Long-lasting Insecticide-Treated Nets (LLIN)**

Current and planned LLIN campaigns should go ahead if at all possible. The following key actions should be implemented:

- Daily reminders should be sent to all registration and distribution teams to wash their hands with soap and water, seek care if feeling sick, and avoid physical contact (handshakes, fist bumps).
- Morning health checks should be reinforced for all distributors, adding temperature checks where feasible.
- All LLIN campaign activities – e.g., training, registration, social and behavior change communication activities, fixed-site distribution, etc. – should be organized in a manner that minimizes the gathering of people (i.e., keeping 2 meters apart and limiting groups to 10 people), and participants should use available precautions for personal protection.
- Some campaign activities could expose workers and the public to COVID-19; countries should consider all opportunities to minimize risk of exposure, especially if the activities might not be truly essential (e.g., consider approaches for household registration that minimize person-to-person exposure). However, maintaining and increasing malaria protection does remain essential across the targeted populations.
- If necessary, rural areas with higher incidence of malaria and lower risk of transmission of COVID-19 can be prioritized for distribution of LLIN over actions in urban areas.

For a more detailed guide, see: Considerations for LLIN distribution in the context of COVID-19 and COVID-19 affected countries, available at:

<https://allianceformalariaprevention.com/about/amp-guidelines-andstatements/>

**Indoor Residual Spraying (IRS)**

Move forward with current/planned IRS campaigns, implementing the following key actions:

- Daily reminders should be sent to all spray teams/supervisors/personnel to wash their hands with soap and water, seek care if feeling sick, and avoid physical contact (handshakes, fist bumps).
- The number of handwashing stations and soap should be increased at all IRS operations sites.
- Morning health checks should be reinforced for all spray team members, adding temperature checks where feasible.
- IRS team members should be issued and should wear face masks (including N95 face masks if available in some programs) and use other routine PPE as soon as they enter operations sites.
- Teams should practice physical distancing, e.g., 2 meters between people, separation of teams, no more than 10 people in a training group.
- Vehicle passengers should be limited to one team at a time.

- Frequently touched surfaces (e.g., door handles, vehicle railings, etc.) should be wiped down daily with soap and water or bleach cleaning solution.
- IRS spray team meals, morning mobilization, deployment of teams, and end-of-day clean-up should be staggered to allow for physical distancing of at least 2 meters between personnel.
- Clear instructions should be given to families to also practice physical distancing from their neighbors while evacuated from their homes.
- Daily pre-spraying community sensitization campaigns should be reinforced with preventive messages related to malaria and COVID-19.

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