COVER PAGE

SCOPE OF WORK TO BE PERFORMED WHEN A MALARIA PATIENT IS REPORTED

Second Edition (2024)

Anti-Malaria Campaign, Ministry of Health,

Sri Lanka

SCOPE OF WORK TO BE PERFORMED WHEN A MALARIA PATIENT IS REPORTED

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This guideline has been developed for staff of the Anti-malaria Campaign. The guideline is available on the Anti Malaria Campaign (AMC) website http://www.malariacampaign.gov.lk/en/.

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2024

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List of Abbreviations

AMC-HQ	Anti Malaria Campaign-Head Quarters
BHT	Bed Head Ticket
CCP	Consultant Community Physician
CRC	Case Review Committee
ETU	Emergency Treatment Unit
MO	Medical Officer
LLIN	Long Lasting Insecticidal Net
MOH	Medical Officer of Health
MPRF	Malaria Patient Record File
PHFO	Public Health Field Officer
PHLT	Public Health Laboratory Technician
POR	Prevention of Re-establishment
QA/QC	Quality assurance and quality control
RDT	Rapid Diagnostic Test
RMO	Regional Medical Officer -Malaria
SOW	Scope of work need to be performed when a malaria patient is reported
TSG	Technical Support Group
World Health Organization	WHO

Background

The last indigenous malaria case in Sri Lanka was reported in November 2012 and the country is in the Prevention of Re-establishment (PoR) phase of malaria. Sri Lanka achieved certification as a malaria-eliminated country by the World Health Organization (WHO) in 2016. Despite this achievement, imported malaria cases present unique challenges in the country. Frequent travel to and from malaria endemic countries and the continued presence of Anopheles vectors increase the potential for onward transmission of the disease and fatalities due to malaria.

The Anti-Malaria Campaign (AMC) of the Ministry of Health was initiated as a vertical program and decentralized its operations in 1989, integrating Regional Malaria Officers (RMO) into the Provincial Health Authority to manage anti-malaria activities at the regional level. The 1-2-5-day strategy, involving immediate notification on day 1, initiating case investigation by day 2, and response by day 5 of detection of a case, underpins the AMC's swift action upon case management, investigation and response. The Case Review Committee (CRC) as a sub committee of the Technical Support Group (TSG) overseas and advise on case surveillance, notification, diagnosis, treatment, case investigation and response. The CRC reviews each case in depth prior to classification of cases as imported, induced, introduced, relapse or recrudescence.

This guideline on scope of work when a malaria patient is reported (SOW) outlines the activities to be performed at the level of medical institutions, RMO Offices, and AMC Headquarters (AMC HQ) when a malaria patient is detected in the prevention of malaria re-introduction/ re-establishment phase in Sri Lanka. The activities are targeted to achieve the required quality-assured diagnostic, treatment, management, and documentation procedures as specified by WHO to sustain the zero-malaria transmission status in Sri Lanka .

The parasitological surveillance and entomological surveillance following confirmed malaria case are described in detail in the *manual for parasitological surveillance in prevention of reintroduction /reestablishment of malaria* and in *guidelines for entomological surveillance for malaria* respectively.

The objectives of the SOW are:

(1) To ensure rapid and complete elimination of the malaria parasite from the patient's blood to prevent
- the progression of uncomplicated malaria to severe disease or death
- the emergence and spread of resistance to anti-malarial medicines.

(2) To prevent onward transmission of the infection to others by reducing the infectious reservoir and vector mosquitoes

1. Confirmation of diagnosis

In all suspected cases of malaria, it is mandatory to obtain laboratory confirmation through microscopic examination of blood smears and/or Rapid Diagnostic Test (RDT) before the initiation of anti-malarial treatment. When notified of a suspected case of malaria the on call Medical Officer (MO) should share the information immediately in the WhatsApp group of the technical members-AMC-HQ.

The MO or the RMO should immediately inquire whether the patient is in Intensive Care Unit (ICU) and vital clinical parameters to assure that patient is not apparently in severe clinical condition.

Laboratory confirmation of Malaria

- At the medical institute where the suspected patient is located, the Public Health Laboratory Technician (PHLT) or Public Health Field Officer (PHFO) should immediately prepare the thick and thin blood smears for microscopy.
    - The Rapid Diagnostic Test (RDT) should be conducted concurrently. The results of the RDT must be immediately communicated (after the specified testing period) to the AMC Hotline and/or the relevant RMO.

- The microscopic examination of blood smears must be performed as soon as possible, and the results must be communicated promptly via phone to the AMC Hotline and/or the relevant RMO where the case was reported.

    - The results should be documented in the standard lab report, which can be emailed or sent via WhatsApp to the relevant RMO or the on-call MO at the AMC HQ.
    - The on-call MO at AMC HQ must then share this report with the AMC HQ technical members immediately.
    - Diagnostic reports should include the parasite species, stages, and parasite count [Annexure-1: Template of the Diagnosis Report].

- After confirmation of the diagnosis and before starting the anti-malarial medicine, 2ml of venous blood should be collected to an EDTA bottle and refrigerated (at 4-8 degrees Celsius) until transported to the reference laboratory in the AMC headquarters.

    - The blood sample should be transported to AMC-HQ in a cooler within 72 hours of collection. This blood sample is collected for validation and other required tests. If venous blood cannot be taken, collect three blood spots (approx. 125 microliters) onto a filter paper for molecular assays.

Quality assurance and quality control

- When a case is reported in a district the relevant RMO should ensure that the positive microscopy result is validated by the regional PHLT trained in quality assurance/quality control (QA/QC) of malaria microscopy without any delay.

    - If no QA/QC PHLT is available in the RMO region, the slides should *immediately* be sent to AMC-HQ or the closest QA/QC PHLT in another district after informing them. The RMO should communicate about this arrangement with the Parasitologist and the Consultant Community Physician (CCP) of the AMC-HQ.

    - Even if the slides are tested for QA/QC at regional level still it is *mandatory* to send the slides for QA/QC at the AMC-HQ for reconfirmation of the results.

- Anti-malarial medicines can be started before quality assurance by QA/QC PHLT.

- The RMO should send the blood smear, RDT, and the blood for PCR to the AMC HQ reference laboratory.

- Laboratory-positive results of malaria in every patient reported in the country must be re-confirmed at the AMC HQ.

- All the positive slides prepared during the management of the patient should be sent to the AMC HQ without any undue delay.

- When the PHLT from AMC-HQ perform the diagnosis confirmation it is mandatory that those slides too assessed for quality assurance by QA/QC PHLT in AMC-HQ as soon as possible.

- All QA/QC reports of malaria patients must be immediately shared with all technical members of the AMC-HQ through email and if there are any discrepancies related to the parasite species and/or the parasite density they should be informed over the phone to the on call CCP in AMC HQ and to the on-call MO immediately by the PHLT who performs the test or by the Parasitologist.

- PCR should be performed for all positive cases, with the results shared within a week. PCR helps resolve any discrepancies with initial microscopy and/or regional validation results. Additionally, the PCR test confirms any mixed infections that may have been overlooked during the microscopy test.

- If the initial blood smear is negative and the RDT performed simultaneously is positive, cross-check the results at the AMC reference laboratory. If the discrepancy remains, verify the result using PCR.

Points to note

- In situations where patients need immediate treatment as a life-saving measure before the diagnosis is confirmed by the AMC, it is mandatory to take a blood sample in an EDTA bottle before administering anti-malarial medications.

- If there is a clinical suspicion of malaria and the initial tests are negative, a minimum of three consecutive blood smears and RDTs should be performed before excluding malaria.

2. Treatment

Following confirmation of the diagnosis, treatment should begin within 2 hours of confirmation of diagnosis. Patients should be treated according to the latest edition of the *Guidelines for the Management and Treatment of Patients with Malaria in Sri Lanka* issued by the AMC, Ministry of Health.

Patients should be treated as inpatients in a government or a private hospital with a consultant physician and be managed under a Long-Lasting Insecticidal Net (LLIN).

Documentation on the Bed Head Ticket

- The CCP at the AMC HQ should inform the consultant physician responsible for the patient's care in the hospital regarding the treatment for malaria. The consultant physician should be informed that the treatment will follow the latest edition of the *Guidelines for the Management and Treatment of Patients with Malaria in Sri Lanka* issued by the AMC Ministry of Health. Next, the CCP informs the on-call MO or the RMO that the consultant physician has been informed and instructs them to initiate treatment.

- The on call MO or the RMO should ask the ward MO to write a referral to the Director of AMC regarding the initiation of the patient's malaria treatment.

- Thereafter, the MO on call or RMO can begin documenting the treatment and management plan on the patient's Bed Head Ticket (BHT). The initial points to be included on the BHT are described in Annexure II

BOX-1: Reaching the patient by MO

- The MO/RMO should visit the patient with the latest edition of the Guidelines for the Management and Treatment of Patients with Malaria in Sri Lanka issued by the AMC Ministry of Health at hand.
- The MO/RMO should immediately obtain the contact number of the Consultant Physician and share it with the CCP on call to inform the Consultant physician before starting the treatment.
- The MO/RMO should make sure that the patient is given the initial dose of treatment without any undue delay.

- The MO/RMO should ensure that treatment plan is according to the latest edition of the Guidelines for the Management and Treatment of Patients with Malaria in Sri Lanka
- Anti-malarial drugs are made available in all Base Hospitals (BH) and higher facilities where a consultant physician is affiliated. If the patient is in a private hospital, the MO/AMCHQ or RMO should take the anti-malarial medicines when visiting the patient.
- The MO/RMO should take LLIN for the patient
- The MO /RMO should instruct and educate both the Nursing Officer of the ward and the patient to take anti-malarial medicines exactly at the time recommended.

3. Notification and record keeping

- Any patient who is suspected of having malaria / diagnosed with malaria should be immediately notified over the telephone to the RMO in the district and /or to the AMC Hot Line for confirmation of the diagnosis.

- Notifications can be from: the outpatient department of a government or private hospital, ward /ICU /Emergency Treatment Unit (ETU) of a government or private hospital, laboratory of a government or private hospital, general practitioner, and self-information by a patient.

- All malaria patients should also be notified to all RMO/ Medical Officer of Health (MOH) of the areas where patient had stayed at least one night during the present clinical illness, before the completion of initial three days of anti-malarial medicines and the two weeks preceding the onset of current clinical episode by the area RMO/MO case surveillance.

- In addition, it should be notified the MOH of the patient's residential area following standard notification procedures of the Epidemiology Unit of the Ministry of Health.

- AMC should be notified immediately to on call phone even partially treated cases in overseas (within 6 weeks of arrival in Sri Lanka). Managing patients who gives a history of malaria overseas within 6 weeks of arrival in Sri Lanka is described in Annexure III.

- PHLT should enter the details of the diagnosed malaria patients in the Positive case Register maintained at the institution/laboratory and complete the H/AMC/P4 and H/AMC/P5 forms as described in the manual for parasitological surveillance in prevention of reintroduction /reestablishment of malaria.

- Basic details of the diagnosed patients should be entered in the electronic information management system (DHIS2) within 24 hours of notification of confirmed malaria case by the RMO /MO case surveillance. The database should be completed within two months of diagnosis.
- the MO case surveillance should enter all cases in the National Malaria Case Register at AMC HQ and it should be endorsed by a CRC member following the CRC meeting in each month.
- Each case should be reviewed by the CRC of the Technical Supportive Group (TSG) and case classification should to be certified by them. Each malaria case is classified as imported/induced/introduced/relapse /recrudescence /indigenous by the CRC.
- All recrudescent cases are given a new case identification number.
- Information on all malaria patients should be entered in the Regional Malaria Case Register maintained at the RMO office with a unique identification number (National Malaria Case Number) assigned by AMC HQ.
- In AMC HQ, Parasitologist should enter the data into the Positive Case Register maintained at Central laboratory).
- A "Malaria Patient Record File" (MPRF) should be maintained for each case with all the relevant information. Information pertaining to all the patients reported /followed up in a particular RMO region should be maintained at the RMO office MPRF. A copy of this file should be sent to AMC HQ within 6 weeks. Contents of the MPRF is described in Annexure IV.
- If a patient is treated in a different RMO region other than his residence, MPRF should be initiated at the RMO region where the patient is diagnosed and treated. A copy of the MPRF should be also maintained at RMO region of patient's residence. Relevant details of electronic information management system should be completed by the region where the service is provided.

4. Case Investigation

- Case investigation should be initiated within 24 hours following the notification of the case.
- The RMO/MO should take a detailed history from the patient as the first step of the case investigation
- The discussion about the case management and the investigation among the AMC technical members will be conducted within 24 hours of case notification.

- As soon as a patient's diagnosis is confirmed the MO/Case surveillance in AMC-HQ should designate the National Malaria case number and disseminate to the relevant RMO and the technical team of the AMC-HQ.

    - The number should be Year/region/the case number for the particular year

      Eg : If the case is reported in 2024 in Colombo district and if that is the 10th case for the year then the case number is: 2024/10/COL

BOX-2 : Points that should be elicited in the patient's history

- Symptoms and date of onset of symptoms
- Past history of malaria and the date/month of affected by the disease. Obtain any documentary evidence of diagnosis and treatment if available.
- History of taking anti-malarial chemoprophylaxis. If taken the name of the medicine and the place obtained. Any use of other prophylactic methods like repellants/mosquito nets and covered clothes
- Date of departure and the date of arrival in Sri Lanka.
- The country /s visited in chronological order with periods of time. If possible, obtain the district /province as in some countries malaria transmission is limited to certain regions. This would help in deciding the probable country of origin of the disease.
- Purpose of travel
- Number of travel contacts and their contact details.
- History of blood transfusions
- The night stays in Sri Lanka two weeks before the onset of illness (The dates and the addresses of the places
- The names/addresses of medical institutions/medical practitioners and their contact numbers for which the patient has sought medical care before the diagnosis
- Passport number
- NIC number
- Patient's contact number and any other relevant contact numbers

Case discussion

- The on-call MO of the AMC-HQ should initiate an email chain using the National Malaria case number as the heading. The on-call MO/AMC is responsible for including all relevant individuals in the email chain. The individuals that need to be included in the email chain are listed in the Annexture V.

- The RMO and technical team of the AMC/HQ are responsible and accountable for timely updating this email. The points that should be shared in the email is described in Annexture VI.
- The MO on-call AMC HQ should organize the initial case discussion meeting to be implemented within 24 hours. The Power Point format for the presentation is included in Annexture VII.
- The minutes of the discussion should be shared immediately following the case discussion by the MO case surveillance.

Field investigation and response

Each notified case of confirmed malaria should lead to an investigation and response in the field level. The field level investigation consists of:

- Contacts screening:
- Reactive parasitological surveys: Active case detection in the populations in relation to the malaria case.
- Reactive entomological surveys: Obtaining information on potential malaria vectors from the vicinity of the case and vector control activities when it is indicated
- Health Education

Contact screening

- The contacts are the people who had been with the patient either at the work place, in the neighborhood or the family members in the malaria endemic country/s where the patient had been and currently returned to Sri Lanka. Every effort should be taken to test these individuals for malaria.
- In addition to the testing they should be educated that if they develop fever, malaise or any other symptoms to get tested for malaria.

Screening for malaria for high-risk individuals/groups

If the patient's history reveals that this patient is from a risk group for imported malaria, then the particular risk group should be screened for malaria.

- High risk screening should be performed to all returnees from malaria endemic countries in field or institutional setup.
- In all possible instances screening should be done using malaria microscopy. In instances where microscopy is not possible, screening can be done using RDT but microscopy should be done in an earliest possible day. Filter paper blood samples should be collected from all individuals for any confirmatory test.

Reactive Parasitological surveillance

- Parasitological surveillance activities should be performed according to the "*Manual for Parasitological Surveillance in prevention-of-reintroduction or reestablishment-of-malaria in Sri Lanka*"

- Parasitological surveillance is not indicated if the patent has arrived in Sri Lanka within 7 days of onset of symptoms. If indicated parasitological surveillance must be initiated within 24 hours of reporting the case.

- Screening for malaria parasites through the examination of blood smears and/or malaria antigen by RDT in all household contacts and neighborhood residents living in approximately one kilometer radius should be done in all receptive areas of patient's night stay within 2 weeks before the onset of symptoms.

- Screening should be repeated after 3-4 weeks (secondary parasitological surveillance) to detect secondary cases.

- If the area is not receptive according to previous entomological data, the primary survey can be postponed until an entomological survey. If there are positive results according to entomological survey primary survey should be commenced immediately. If the entomological survey result is negative, there is no need for parasitological surveillance.

- Steps should be taken to strengthen malaria surveillance among the fever patients visiting government and private health institutions in the respective area.

Reactive Entomological surveillance and vector control

- Entomological investigations and necessary vector control activities in the area should be performed according to the "*Guidelines on Entomological Surveillance and Vector Control when a malaria case is reported*" by relevant RMO/AMC HQ.

- The entomological investigation must be initiated within 48 hours of reporting the case, in an area of approximately 1 km radius of the residence of malaria patient.

- If adult or larvae of vector mosquito is detected in the entomological investigations, vector control activities should be conducted according to the said guidelines, after discussing the results with AMC HQ Entomologist, CCP and MO-Vector control.

- Vector control activities related to case should be completed within 10 days of detecting the vectors.

Health Education

- Health education should be provided on important aspects of malaria such as early detection, importance of compliance to anti-malarial treatment/follow up visits and protective measures against malaria – to patient/contacts/other relevant persons by relevant staff of AMC and the medical institution in which the patient is being treated.

- The GPS coordinates where the patient resided in, on the night prior to date of diagnosis and perimeter of screening must be recorded and informed, to AMC HQ.

5. Follow up of the Patient

- Patient should be tested daily for malaria parasite. A blood smear and a finger prick filter paper sample should be obtained daily over the three days that the patient was hospitalized. If parasitemia persists beyond 3 days, blood smears should be taken daily until parasitemia clears.

- On discharge, the patient should be made aware of the importance of
    - Subsequent follow-up visits arranged by the AMC
    - Taking primaquine for 07 days in the case of P. vivax / P. ovale patients.
    - Testing for malaria if they develop fever within the next 3 years
    - Refraining from blood donation within the next 3 years
    - Follow up arrangement should be arranged after discussing with the patient and a diagnosis card should be given to him/her with dates of follow up at the time of discharge .

- Subsequent examination of blood smears and collection of blood samples for PCR should be arranged by relevant RMO/MO case surveillance considering the date of diagnosis as the Day 0. In P. vivax /P. ovalae: Dat 7,14,21,28,42 and then monthly for one year. In P. falciparum: on day 7,14,21,28, and 42 and then followed up as a risk patient until one year.

- An assigned person preferably a PHFO from RMO office / AMC-HQ should be assigned to follow up the patient until scheduled follow up period is over

- If the patient is staying in different RMO region during the Follow up period, the relevant RMO of that area should be informed by the RMO of the patient's permanent residential / MO case surveillance to take over the follow up of the patient.

- H/AMC/P4 form should be completed during these visits.

- Check for malaria if patient develops fever in between these follow up visits.

- The completion of Primaquine treatment for 07 days by patients who had P.vivax / P.ovalae malaria should be ensured in the follow up visits. This should be done by assessing the number of tablets remaining with the patient and number of days left for the completion of the full course of Primaquine. It should be ensured that all doses of Primaquine are administered under direct observation

- The RMO should inform the results of the follow up within two days to AMC HQ Surveillance MO via email and should take necessary action to update the DHIS2

- In occasions where a patient is non traceable, relevant RMO should inform the surveillance MO at AMC HQ and CCP case management on default and should plan on further action. This should be informed to AMC HQ and CCP
    - Within 24 hours in a default follow up within 28 days period
    - Within 3 days in a default follow up after 28 weeks.

6. Maintaining the slide bank and genotyping

RMO

RMO should send the positive slide on which the diagnosis was based and at least two more slides taken prior to treatment, and follow-up slides with relevant H/AMC/P4 and 5 forms to the AMC HQ.

AMC HQ

Parasitologist AMC should maintain a slide bank of all positive malaria patients at AMC reference laboratory. All initial blood smears should be labelled according to the serial number of the National Malaria Case Register. All available follow-up slides should be maintained separately.

Genotyping of parasites to be done when relevant, consistent with the current WHO guidelines, for any suspected introduced or indigenous case, recrudescence, relapses and the index case.

Mapping

Following activities should be mapped, shared with surveillance medical officer at AMC HQ and filed in MPRF

- Case with 1 km buffer
- Parasitological surveillance activities

- Entomological surveillance activities
- Vector control activities
- Contact tracing activities and travel history within Sri Lanka

Annexures

Annexure -1 Template of the Diagnosis report

Anti Malaria Campaign
Ministry of Healthcare, Nutrition and Indigenous Medicine
Public Health Complex, 555/5, Elvitigala Mawatha, Colombo 5
Tele: (011) 2368173/4, (011) 7626626 (Hotline)

Requesting physician :

Institution :

Ward :

Identification No.:

Name of the Patient :

Age :

Sex :

Address :

AMC Reference No. :

Sample receipt date :

Test performed date :

Results

Microscopy: Species :
Stages :

Density :

RDT: Species :

PCR: Species :

Tests performed by : Microscopy
RDT
PCR

Certified by :

Annexure II

The initial points to be written in the BHT

The referral was done by the Intern Medical Officer/ Medical Officer (*Name of the Hospital and ward number*)

Seen by (*Name of the MO/RMO from AMC*)

On-call CCP (*Name*) contacted. CCP contacted the VP (*name of the VP*). Consent was obtained to provide treatment as per the guidelines for the management and treatment of patients with malaria, Anti Malaria Campaign, Ministry of Health Sri Lanka.

Pt complains of (symptoms)

Past history of malaria

Contact history of malaria

Chemoprophylaxis for malaria taken or not

Allergy history- Body weight-

Basic Investigations- FBC, UFR, SGOT, SGPT, S.Creatinine, CRP, Serum Bilirubin, BU

Monitoring-BP/RR/QHT/Urine output

Treatment:

Write the treatment based on the recommended malaria parasite species and according to the guidelines for the management and treatment of patients with malaria, Anti Malaria Campaign, Ministry of Health Sri Lanka

Microscopy is to be performed daily by the anti-malaria campaign (AMC).

Primaquine is to be given following the initial course of anti-malaria treatment and it will be issued to the ward by the AMC.

Annexure III

Managing patients who give a history of malaria overseas within 6 weeks of arrival in Sri Lanka

A person who has arrived in Sri Lanka following a stay abroad in a malaria endemic country, and who tests positive on microscopy or RDT within six weeks of arrival should be radically treated.

A person who is microscopy negative and RDT negative but gives a history of having malaria within six weeks in a foreign country and there is no evidence of a complete course of antimalarial treatment given (includes cases of partial treatment or no treatment), the patient should be treated radically as per national treatment guidelines. Such a patient though provided with radical treatment will not be considered a case.

A person who is microscopy negative and RDT negative but gives a history of having malaria within six weeks in a foreign country, and there is evidence of complete antimalarial treatment against asexual blood stages, but no evidence of treatment with primaquine, the patient should be treated with primaquine depending on the species after testing for G6PDd in the case of P.vivax and P.ovale infections. In cases where the infecting species is unknown, a decision on the dose and duration of primaquine therapy should be based on the prevalent species in the country in which the infection was acquired. Such a patient will not be considered a case.

Annexure IV

Managing patients who are non-Sri Lankans residents from malaria Endemic country and refuse to complete the treatment within Sri Lanka

A non-Sri Lankan resident from a malaria-endemic country who tests positive through microscopy or a rapid diagnostic test (RDT) should undergo radical treatment. If the individual is willing to be admitted to a hospital where a medical consultant is available, they should receive the full course of antimalarial treatment and be recorded as a case.

If the individual agrees to be admitted but plans to leave the country before completing the full course of antimalarial treatment, they should be provided with the remaining medication, along with clear instructions on the dosage and frequency. In this scenario, the individual should not be recorded as a case.

If the individual refuses hospital admission and plans to leave the country, they should be informed about the importance of completing the full course of treatment and the potential complications of untreated malaria. If the patient agrees to take the medication while leaving the country, informed consent should be obtained to ensure they receive the necessary information about the antimalarials. In this case, the individual should not be recorded as a case.

Annexure V

Contents of the MPRF

1.Summary and Checklist

2.Case investigation form

3.Parasitological investigation

4. Entomological investigation

5.Treatmemt

6.Diagnosis cards

7.Location of patients residence in GIS map.

8.Remarks-PP/Copy of air ticket if pt leaves the country/Any other necessary letters/documents relevant to the patient

Malaria case investigation form

H-M/ Sur-01

A	**General information**		
A.1	Date of notification to RMO/AMC HQ	A.3	Date of commencement of case investigation
A.2	District of detection	A.4	History provided by : Patient/Parent/ /Other specify

B	**Patient Information**		
B.1	Name of patient		
B.2	Age	Gender :M/F	Civil status : Married /Single
B.3	Nationality : Sri Lankan/Non Sri Lankan		If non Sri Lankan, Country of origin: purpose of travel to SL:
B.4	NIC		Passport No
B.5	Occupation		Place of work

B.6	Address in Sri Lanka	Present home address	Temporary address
B.7	District MOH Area GN Area GPS Cordinates		
B.8	Contact Details	Patient	Relative

C	**Place of clinical management: Health care institution/ Other (specify)**		
		Health Care Institution 1	Health Care Institution 2
C.1	Name & District of the Institution		
C.2	Name of the Consultant		
C.3	Ward		
C.4	Government/Private		
C.5	BHT No		
C.6	Date of Admission		
C.7	Date of Discharge		

<table>
<tr><td>D</td><td colspan="5">Clinical Presentation</td></tr>
<tr><td rowspan="2">D.1</td><td rowspan="2">Presenting complaint</td><td colspan="4">Symptoms:
Fever/ Chills/Rigor/ Headaches/Nausea and vomiting/Body aches/ reduced urine output/impaired consciousness
Other (specify)_____</td></tr>
<tr><td colspan="4">Signs:
Temperatures: _____Weight:_____ GCS:_____
BP:_____ Pulse Rate:_____Respiratory Rate:_____
Pallor: Yes/No Jaundice: Yes/No
Liver: enlarged/not spleen: enlarged/not Other (specify)_____</td></tr>
<tr><td>D.2</td><td colspan="5">Date of onset of current illness:</td></tr>
<tr><td>D.3</td><td colspan="5">Place of onset of symptoms</td></tr>
<tr><td rowspan="2"></td><td rowspan="2">Sri Lanka</td><td>District</td><td>GN Area</td><td>MOH area</td></tr>
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<tr><td></td><td colspan="2"></td></tr>
<tr><td>D.4</td><td colspan="2">Clinical condition of the patient at the time of case investigation</td><td colspan="3"></td></tr>
</table>

E	**Prior healthcare seeking behaviour**			
E.1	Whether the patient had sought medical advice before attending to the place where the diagnosis was made? Yes/No.			
	If yes, Place of seeking treatment	Places	Dates	Contact details (if available)

F	**Places visited during the current illness**		
F.1	Did the patient travel overnight away from home during; the 2 weeks prior to the onset of current clinical episode and during the current illness before completion of initial three days of anti malaria treatment?		
	Travel overnight away -Address	Dates	Contact details (if available)

G	**History of Risk factors during past 12 months**				
G.1	**Travel history**				
	Does the patient have recent travel history to known malaria endemic country(ies) Yes/No				
	If yes, Name the malaria endemic country/countries visited during past 12 months				
	Country	Region/State/Address	Date of Arrival in Sri Lanka	Date of Departure from Sri Lanka	Duration of stay in that country

	Type of preventive measures taken during above-mentioned travel to endemic countries : Mosquito nets /Mosquito repellent cream/Mosquito vaporiser/protective clothing/ chemoprophylatic medicines		
	Has the patient taken malaria chemoprophylaxis? Yes/No	If yes, Name of the medicine	
	Has the patient completed malaria chemoprophylaxis? Yes/No		
	If No Reason		
G.2	**Travel Contacts**		
	People travelled to the malaria endemic country and returned with the patient;		
	Name	Address	Phone No.
G.3	**Past history of malaria**		
	Does the patient have past history of malaria during past 3 years? Yes/No		
	If Yes, Where did the patient get the previous attack of malaria during past 12 months?		
	Country	state/province	
	What was the malaria species the patient had previous?		
	What is the clinical classification :Uncomplicated /Severe		
	Remarks		

G.4	**Blood transfusion**			
	Does the patient have blood transfusion within past 3 months? Yes/No			
	If yes, Where did the patient get blood transfusion within past three months?			
	Sri Lanka		Abroad	
	Place (If in SL specify)		Date of transfusion	
	Remarks			
G.5	**Contact history**			
	Any contact with a malaria positive patient within past three months? Yes/No			
	If yes, Where did that patient get malaria-Please specify? Place : Sri Lanka/ Abroad Date:_____			
	If that person(s) is/are living in Sri Lanka, please give the details of the person			
	Name	Relationship to the patient	Address	Contact No .

I	**Basic Investigations**			
I.1	WBC/DC Hb% Platelet count CRP	**Liver functions** SGPT SGOT GGT s.BIlirubin **Renal Functions** BU SCr	**Imaging** **CXR** **USS** **CT/MRI**	**Other**

H	**Detection of current malaria episode**
H.1	**Case detected by** MLT/PHLT/Other(specify)_____
H.2	**Type of detection** Passive case detection/ Active case detection/ APCD/ Contact screening/ Blood bank screening/ Population-based survey/ Other (specify)_____
H.3	**Place of detection** Govt. Hospital Lab/ Private Hospital Lab/ Medical Faculty Lab/ Ports of entry/ AMC-HQ /AMC-Regional Office/ Abroad/ Other (specify name of place)_____

J	**Laboratory diagnosis for malaria**				
J.1	Laboratory diagnosis for malaria before confirmation by AMC : Done/Not Done				
	If done what are the tests and results of the tests done for malaria				
	Test	**Results**	**Date performed**	**Place /Lab**	
J.2	Confirmation of diagnosis by AMC				
	Test	**Date**	**Results**		
	RDT		Positive/Negative/ Inconclusive	**If RDT positive** HRP2+/ pLDH+/Both+	
	Microscopy		Positive/Negative/ Inconclusive	**If microscopy positive**	
				Species	Stages / Density
	PCR		Positive/Negative	If PCR Positive Genus/Species	

K	Antimalarial treatment				
K.1	Antimalarial treatment after confirmation of the diagnosis				
	Antimalarial	Dosage	Date of commencement	Date of completion	Side effects
K.2	Remarks				
K.3	G6PD test	Normal/G6PD deficient/Inconclusive results/Not done			
K.4	Clinical classification	Uncomplicated/Severe: Features of severe malaria_____			
K.5	Treatment response	Responded/Resistant			
K.6	Treatment outcome	Cured/Resistant/Died			

History obtained By		
Name	Date	Signature

PART II

L	**Parasitological surveillance**				
L.1	**Primary screening**				
	High risk categories	Date screened	No. screened	No. with fever	Positives *
	Travel contact tracing				
	House hold members				
	Vicinity (within 1km)				
	Other possible sites for transmission				
	*If positive Identification No in the National Case Register				
	Comments				
L.2	**Secondary screening**				
	High risk categories	Date screened	No. screened	No. with fever	Positives *
	Travel contact tracing				
	House hold members				
	Vicinity (within 1 km)				
	Other possible sites for transmission				
	*If positive Identification No in the National Case Register				
	Comments				

M	Entomological Surveillance			
M.1	Places Identified	Location 1	Location 2	Location 3
M.1.1	District			
M.1.2	MOH area			
M.1.3	Localities investigated			
M.1.4	Dates of investigation			
M.1.5	GPS Coordinates			
M.2	**Finding of Primary or secondary vector from Entomological surveillance**			
M.2.1	**Adult Sampling** Primary vector Secondary vector	Positive/Negative Positive/Negative	Positive/Negative Positive/Negative	Positive/Negative Positive/Negative
M.2.2	**Larval Surveys** Primary vector Secondary vector	Positive/Negative Positive/Negative	Positive/Negative Positive/Negative	Positive/Negative Positive/Negative
M.2.3	**Response**			
M.2.4	**Recommendations given**			

N	**Summary and Classification (to be filled after Case Review Committee meeting)**
N.1	**Summary of Analysis**
	Duration from travel to Sri Lanka from malaria endemic country to onset of illness:
	Duration from onset of illness to first contact to health system:
	Duration from first contact to health system to diagnosis as malaria:
	Duration from diagnosis as malaria to notification:
	Duration from diagnosis of malaria to commencement of treatment:
	Treatment outcome: Cured/Died
N.2	**Evidence for local transmission**
	Summary of parasitological report
	Parasitological evidence for local transmission: Yes/No
	Summary of entomological report
	Entomological evidence for local transmission: Yes/No

N.3	**Final classification of malaria according to mode of transmission** : Indigenous/ Imported /Relapse/ Introduced/ Induced
	If Indigenous, District of origin of malaria:
	If Imported, Country of origin:
	If Relapse
	Date of onset of primary infection
	District/Country of transmission of primary infection
	Place of diagnosis of primary infection
	Place of treatment of primary infection
	Reason for relapse
	If Introduced
	Case number of the primary infection
	Country of transmission of primary infection
	Date of detection of primary infection
	Place of treatment of primary infection
	Place of case investigation of primary infection
	If induced
	Mode of transmission to this patient: Blood transfusion/Other(specify).....
	Reason for classification as above:-
	Date of Classification
	Classified by
	Reviewed by
	Remarks

Name & Signature of the Malaria Surveillance officer		
Name	Date	Signature

Annexure V

Individuals that need to be included in the Email Chain

Start an E-mail chain with the relevant case number as the heading on the day of diagnosis.

Following people should be included in the email chain:

- Technical members of the AMC -HQ
- Relevant RMO's-(Patient's Residential + current residence+ overnight stays in other areas over the past 2 weeks from onset of symptoms)
- If it's a case in the Colombo-MC area the PHI from the AMC_HQ should be included in the email chain.
- The relevant Regional Epidemiologist (CCP)

Annexure VI

The information that should be included and updated in the E-mail chain:

- ✓ The updated PowerPoint presentation of the case
- ✓ The minutes of the case discussion
- ✓ Lab reports related to the malaria parasite
- ✓ Other lab reports of the patient
- ✓ Daily updates on the patient's clinical status
- ✓ Entomological reports and information related to vector control
- ✓ Reports of the reactive parasitological reports

Annexture VII

The Presentation format for the case discussion

Details of the malaria patient
Case year/case no/District

Name	
Age	
Sex	
Nationality	
Passport No.	
Address (Permanent)	
(temporary)	
Contact No.	

Occupation	
Date of onset of current illness	
P/H of malaria	
Chemo prophylaxis	
If taken, details of the drug	
Body wt-	
BP/PR/RR/Temp.	
Use of covered clothing/ Nets/Repellants	
Hx of Blood transfusion	

Travel history

Date of departure from	
Date of arrival to SL	
Duration of stay	
Name of countries travelled	
Purpose of travel	
No.of travel contacts	

Place of overnight stays

Date	Place
02.05.24-15.02.24	

Health seeking behaviour prior to diagnosis

Date	Seen by Whom
14 .05.24	
14.05.24	
15.05.24 4.10 pm	
16.05.24	

Medical management

Diagnosis	
Place of admission	
Date and time of admission BHT No-	
Treatment	
Name and Number of Ward MO/HO	
Who informed Hotline & Time	

Investigations

	Date	RDT	Microscopy			Microscopy done by
			Species	Density (/µl))	Stages	
D1						
D2						
D3						
D4						

Other investigation

Investigation	Results
WBC	
Neutrophil	%
Lymphocyte	%
Eosonophils	%
Platelet	
PCV	
Hb	
SGOT	IU/L
SGPT	IU/L
S. Creatinine	mg/dl
CRP	mg/L
T.Bil	
UFR	

Surveillance plan

	Parasitological surveillance	Entomological surveillance
Date		
Responsibility(AMC/RDHS)		