The MalariaCare Toolkit

Tools for maintaining high-quality malaria case management services

Checklist for assessing management of severe malaria

This checklist was developed by the MalariaCare project for use in project countries. It can be adapted for use in specific national settings.

Download all the MalariaCare tools from: [www.malariacare.org/resources/toolkit](http://www.malariacare.org/resources/toolkit).
MalariaCare checklist for assessing management of severe malaria

Introduction

Checklists are used during outreach training and supportive supervision (OTSS) visits by supervisors to guide them in their role as mentors. Checklists help supervisors to focus on key steps in diagnosis, treatment, and overall management of patients with malaria. The checklists also serve as tools for collection of performance monitoring and facility readiness data to help stakeholders make decisions and effectively target resources.

The five MalariaCare checklists focus on:
- Assessing health facility readiness (including register review).
- Assessing clinical management of patients suspected of having malaria.
- Assessing management of severe malaria.
- Assessing malaria microscopy skills.
- Assessing rapid diagnostic test use.

All five checklists and more information about OTSS can be found in the Toolkit section of the MalariaCare website (www.malariacare.org/resources/toolkit).
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A. Health facility information

<table>
<thead>
<tr>
<th>Information</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Health Facility</td>
<td></td>
</tr>
<tr>
<td>Province/Region</td>
<td></td>
</tr>
<tr>
<td>District</td>
<td></td>
</tr>
<tr>
<td>Name of Head of Health Facility</td>
<td></td>
</tr>
<tr>
<td>Signature of Head of Health Facility</td>
<td></td>
</tr>
<tr>
<td>Date of Visit (DD/MM/YYYY)</td>
<td></td>
</tr>
<tr>
<td>Supervisor’s Name</td>
<td></td>
</tr>
<tr>
<td>Supervisor’s Cadre</td>
<td>☐ Clinical ☐ Lab ☐ Other</td>
</tr>
<tr>
<td>Supervisor’s Signature:</td>
<td></td>
</tr>
<tr>
<td>Supervisor’s Phone Number:</td>
<td></td>
</tr>
</tbody>
</table>
### B. Severe malaria: Diagnostics and adherence

<table>
<thead>
<tr>
<th>Question</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is malaria treatment based on lab diagnosis?</td>
<td>☐ Yes</td>
<td>☐ No</td>
<td>☐ N/A</td>
</tr>
<tr>
<td>If “Yes”, what diagnostic is used?</td>
<td>☐ RDT</td>
<td>☐ Microscopy thick smear</td>
<td>☐ Microscopy thin smear</td>
</tr>
<tr>
<td></td>
<td>☐ Microscopy thick &amp; thin smear</td>
<td>☐ Both RDT &amp; microscopy</td>
<td></td>
</tr>
<tr>
<td>Is blood glucose used to monitor patients with severe malaria in most (80%+) of the cases?</td>
<td>☐ Yes</td>
<td>☐ No</td>
<td>☐ N/A</td>
</tr>
<tr>
<td>Diagnostics: Is microscopy used to confirm the diagnosis of severe malaria in most (80%+) of the cases?</td>
<td>☐ Yes</td>
<td>☐ No</td>
<td>☐ N/A</td>
</tr>
<tr>
<td>Diagnostics (hospitals only): Is parasite density reporting used to confirm the diagnosis of severe malaria in most (80%+) of the cases?</td>
<td>☐ Yes</td>
<td>☐ No</td>
<td>☐ N/A</td>
</tr>
<tr>
<td>Has your facility had supplies of injectable artesunate in the last month?</td>
<td>☐ Yes</td>
<td>☐ No</td>
<td>☐ N/A</td>
</tr>
<tr>
<td>Which drug do you prescribe/administer to treat severe malaria?</td>
<td>☐ Injectable artesunate</td>
<td>☐ Injectable quinine</td>
<td>☐ Other (specify)</td>
</tr>
</tbody>
</table>
C. Severe malaria: Planning the dosing schedule

Type of provider being observed (tick one):

- Medical Officer  ☐
- Medical Intern  ☐
- Lab Tech  ☐
- Medical Assistant  ☐
- Nurse  ☐
- Lab Assistant  ☐
- Clinical Officer  ☐
- Student on Attachment  ☐
- Other (specify)  ☐

Has the provider been formally trained in malaria case management?  ☐ Yes  ☐ No

Has the provider received OTSS mentorship before?  ☐ Yes  ☐ No  ☐ N/A

If “Yes”, how many times? (Leave blank if not mentored) ____________________________

- **Ask the provider to describe his or her dosing plan.**
  - Tick “Yes” if the provider correctly completes the task.

Gives three parenteral doses of artesunate in the first 24 hours:  ☐ Yes  ☐ No
  - 1st dose: On admission.
  - 2nd dose: 12 hours after 1st.
  - 3rd dose: 24 hours after 1st.

After first 24 hours: Gives one parenteral dose daily for 6 days maximum or until oral medication can be given.  ☐ Yes  ☐ No

Prepares a fresh solution for each administration and discards any unused solution.  ☐ Yes  ☐ No

Records the dose, route, ml, and time given for each administration of artesunate.  ☐ Yes  ☐ No

Evaluates the patient’s progress regularly, in particular:
  - Level of consciousness, blood sugar, anemia, and the ability to tolerate oral fluids.  ☐ Yes  ☐ No

After first 24 hours and when patient can take oral medication, gives 3-day course of oral ACT.  ☐ Yes  ☐ No

Ensures peers follow the SOP and National Treatment Guidelines for the follow-up and case management of patients with severe malaria receiving injectable.  ☐ Yes  ☐ No
**D. Severe malaria: Managing complications**

Type of provider being observed (tick one):

- ☐ Medical Officer
- ☐ Medical Intern
- ☐ Lab Tech
- ☐ Medical Assistant
- ☐ Nurse
- ☐ Lab Assistant
- ☐ Clinical Officer
- ☐ Student on Attachment
- ☐ Other (specify)

Has the health worker been formally trained in malaria case management?  □ Yes  □ No

Has this worker received OTSS mentorship before?  □ Yes  □ No  □ N/A

If “Yes”, how many times? (Leave blank if not mentored)

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- **Ask the provider to describe how he or she manages the complications of severe malaria.**
  - Tick “Yes” if the provider correctly completes the task.

How do you manage the potential for bacterial co-infection in children?

Do you start all children on broad-spectrum antibiotic treatment at the same time as the antimalarial to manage the potential for bacterial co-infection?  □ Yes  □ No

Which of the following do you do to manage complications of severe malaria?

<table>
<thead>
<tr>
<th>Condition</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypoglycemia</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Convulsions</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Respiratory distress</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Severe anemia</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Hypovolemia</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
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E. Severe malaria: Ongoing case management

- Ask the provider to describe the management of complicated malaria cases when the patient is able to take medicine orally.

Supervisor: The description was
☐ Unsatisfactory ☐ Fair ☐ Satisfactory ☐ Excellent

Comments:

F. Severe malaria: Patient monitoring

- Review case notes (CNs) for three patients.

Do the records include monitoring:

<table>
<thead>
<tr>
<th>Enter “Yes” or “No” regarding whether or not HCW correctly completes task</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Level of consciousness (using coma score)</td>
</tr>
<tr>
<td>Vital signs every 4 hours (temperature, pulse, respiration, blood pressure)</td>
</tr>
<tr>
<td>Fluid balance (urine volumes, intake volumes—IV and oral—puffy eyes, chest crepitation, elevated jugular venous pressure)</td>
</tr>
<tr>
<td>Increasing anemia (pallor, heart failure with increasing liver size)</td>
</tr>
<tr>
<td>Convulsions</td>
</tr>
<tr>
<td>Blood glucose every 4 hours while unconscious</td>
</tr>
<tr>
<td>[Hb]/Packed Cell Volume—at least daily, or more often if anemia is suspected</td>
</tr>
<tr>
<td>Ability to suck, drink, eat, sit, and walk, and measures of overall strength</td>
</tr>
<tr>
<td>Anemia treatment with iron and folic acid for at least 3 months</td>
</tr>
<tr>
<td>Outpatient appointments for follow-up scheduled</td>
</tr>
</tbody>
</table>
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G. Administering injectable artesunate to a patient: Direct observation

Type of provider being observed (tick one):
☐ Medical Officer ☐ Medical Intern ☐ Lab Tech
☐ Medical Assistant ☐ Nurse ☐ Lab Assistant
☐ Clinical Officer ☐ Student on Attachment ☐ Other (specify)

Has the health worker been formally trained in malaria case management?
☐ Yes ☐ No

Has this worker received OTSS mentorship before?
☐ Yes ☐ No ☐ N/A

If “Yes”, how many times? (Leave blank if not mentored)
_____________________

- Observe the provider administering injectable artesunate.
  Tick “Yes” if the provider correctly completes the task.

Washes hands and puts on gloves before reconstituting artesunate.
☐ Yes ☐ No

Lines up the vials of artesunate powder and removes the vial covers.
☐ Yes ☐ No

Cleans the top of each vial with a disinfectant swab.
☐ Yes ☐ No

Breaks open the 1 ml ampoule of 5% sodium bicarbonate by using a swab and pressing the thumb on the blue dot.
☐ Yes ☐ No

If artesunate is not prepackaged with sodium bicarbonate ampoule, uses 1 ml of 5% sodium bicarbonate. Never uses saline or sterile water for reconstitution.
☐ Yes ☐ No ☐ N/A

Uses a 5 ml syringe to withdraw the full contents of the sodium bicarbonate ampoule into the syringe.
☐ Yes ☐ No

Injects the 1 ml of 5% sodium bicarbonate into the vial of artesunate powder.
☐ Yes ☐ No

Moves the needle back slightly so it is no longer touching the liquid and withdraws 5 ml of air from the vial to ensure adequate space in the vial to inject the saline solution for dilution.
☐ Yes ☐ No

Discards any vials that do not clear; replaces with a new vial and reconstitutes again.
☐ Yes ☐ No

Ensures that peers follow all of the steps in the SOP for reconstituting artesunate correctly.
☐ Yes ☐ No
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H. Direct observation: reconstituting artesunate with the correct amount of normal saline

- Observe the provider administering injectable artesunate. Tick “Yes” if the provider correctly completes the task.

Breaks open the 5 ml ampoule of normal saline by using a swab and pressing the thumb on the blue dot. □ Yes □ No

If artesunate is not prepackaged with normal saline ampoule, uses 0.9% sodium chloride or 5% dextrose solution. (Never uses sterile water for dilution.) □ Yes □ No □ N/A

Uses a 5 ml syringe to withdraw the required quantity of normal saline solution for each vial depending on the route of administration:

- 5 ml of normal saline solution for each vial for IV route. (The IV solution has a concentration of 10 mg/ml.) □ Yes □ No
- 2 ml of normal saline solution is required to dilute each vial for IM route. (The IM solution has a concentration of 20 mg/ml.) □ Yes □ No

Ensures all the air has been withdrawn from the vial and injects the correct amount of normal saline solution into the reconstituted vial. □ Yes □ No

Writes the time of dilution on the vial to ensure it is given within one hour. □ Yes □ No

Repeats the above steps for each additional vial of artesunate. □ Yes □ No

Ensures that peers follow all of the steps in the SOP for diluting artesunate correctly. □ Yes □ No
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I. Rechecking the dose calculation and withdrawing the required dose

- Observe the provider administering injectable artesunate. Tick “Yes” if the provider correctly completes the task.

Rechecks the dose calculation for the route of administration to ensure it is accurate. ☐ Yes ☐ No

Records the total number of milligrams and milliliters to be given. ☐ Yes ☐ No

Cleans the top of the vial with a disinfectant swab. ☐ Yes ☐ No

Withdraws all the required milliliters from all the reconstituted and diluted vials of artesunate solution for the route of administration using a new syringe and needle. ☐ Yes ☐ No

Helps to verify others calculations are correct and the correct amount of reconstituted and diluted artesunate is given. ☐ Yes ☐ No

Cleans the top of the vial with a disinfectant swab. ☐ Yes ☐ No
## MalariaCare checklist for assessing management of severe malaria

### J. Administering injectable artemisinin

- **Observe the provider administering injectable artemisinin.**
  
  Tick “Yes” if the provider correctly completes the task.

<table>
<thead>
<tr>
<th>Task</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administers artemisinin within one hour of preparation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discards any prepared solution not used within one hour.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If gloves have been removed, washes hands and puts on a new pair of gloves.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Is this an intravenous dose of artemisinin?**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

**If “Yes”:**

- Prepares one syringe with 6 ml of normal saline to flush the IV line with 3 ml before and 3 ml after IV injection.

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

- Cleans the IV port with an alcohol swab.

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

- Checks the patency of the IV line by pulling back on the syringe to check for flashback of blood.

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

- Flushes the IV line with 3 ml sodium chloride or 5% dextrose solution.

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

- Administers the dose of artemisinin slowly—20 seconds per ml.

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

- Flushes the IV line with 3 ml sodium chloride or 5% dextrose solution.

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

**Is this an intramuscular dose of artemisinin?**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

**If “Yes”:**

- Uses the vastus lateralis (anterior thigh) as the preferred site for children under 36 months. Avoids the gluteus as a site of injection in children.

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

- Spreads doses of more than 2 ml for children and more than 5 ml for adults over different sites to avoid tissue damage.

| Yes | No |
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For both intravenous and intramuscular injections:

Records the dose, route, ml, and time artesunate was given. □ Yes □ No

Ensures peers follow aseptic technique when administering artesunate. □ Yes □ No

Ensures that peers follow the SOP for administering artesunate and that all prepared artesunate that is not used within one hour of preparation is discarded. □ Yes □ No

K. Comments
L. Supervisor feedback and action plan

- If you found more than one gap during the last facility visit, or if you have identified more than one during the current visit, make a copy of this page for each gap.
- Leave a copy of the supervisor feedback and action plan at the health facility.

Date of facility visit: ______________________

Number of staff mentored on malaria case management:  Male _____  Female _____

1. What were the biggest gap(s) identified during the last facility visit?
   Briefly describe gap(s):

   Briefly describe the action plan laid out in the previous visit:

   Were these gaps addressed?
   ☐ Not addressed  ☐ Partially addressed  ☐ Completely addressed

   If addressed, explain action taken. If partially or not addressed, what is the new action plan to address the gap(s)?

2. What were the biggest gap(s) identified today?
   Briefly describe gap(s):

   Was immediate feedback provided? ☐ No  ☐ Yes
   If “Yes,” how was the feedback provided?
   ☐ Guideline review  ☐ Demonstration  ☐ SOP review  ☐ Lecture  ☐ Clinical mentoring
   ☐ Other (specify): ________________________________

   What is the action plan for assessing whether these gap(s) have been addressed?

3. Supervisor comments