
WHO Consolidated Guidelines for Malaria

Joint UNICEF-UNFPA-WHO Meeting with Manufacturers and Suppliers
30 November 2023 (Session 12)

Silvia Schwarte / WHO Global Malaria Programme / e-mail: schwartes@who.int

Outline

- ❑ Snapshot: Burden of malaria, goals, challenges and opportunities
- ❑ How to access WHO guidance
- ❑ What's new?
- ❑ What is needed?
What is available?
Where is the gaps?
- ❑ Ongoing reviews and upcoming guidance



Snapshot

Nearly half of the world's population is at risk of malaria

World Malaria Report (WMR) 2022*:

247 million cases

29 countries accounted for 96% of malaria cases globally.
4 countries accounted for almost half of all malaria cases globally in 2021: Nigeria (27%), the Democratic Republic of the Congo (12%), Uganda (5%) and Mozambique (4%).

WMR 2022*:

619 000 deaths

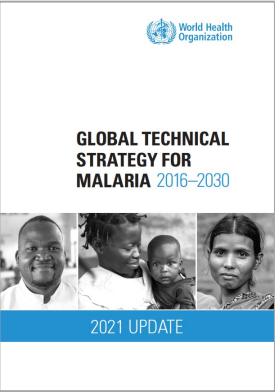
About 96% of malaria deaths globally were in 29 countries.
4 countries accounted for just over half of all malaria deaths globally in 2021: Nigeria (31%), the Democratic Republic of the Congo (13%), the Niger (4%) and the United Republic of Tanzania (4%).

Challenges

- ☐ Resistance to antimalarials
- ☐ Resistance to insecticides (spraying and bednets)
- ☐ HRP2/3 gene deletion
- ☐ An. stephensi
- ☐ Climate change
- ☐ Funding
- ☐ ...

Opportunities

- ☐ Vaccines (RTS/S, R21/Matrix-M)
- ☐ New tools (e.g. dual-ingredient nets, tafenoquine, G6PD tests)
- ☐ New WHO field guides to increase coverage (SMC, c-IPTp, RAS**)
- ☐ Progress towards elimination
- ☐ ...



Global Technical Strategy:

Goals are off track

Goals	Milestones		Targets
	2020	2025	2030
1. Reduce malaria mortality rates globally compared with 2015	At least 40% ✗	At least 75% ?	At least 90%
2. Reduce malaria case incidence globally compared with 2015	At least 40% ✗	At least 75% ?	At least 90%
3. Eliminate malaria from countries in which malaria was transmitted in 2015	At least 10 countries ✓	At least 20 countries	At least 35 countries
4. Prevent re-establishment of malaria in all countries that are malaria free	Re-establishment prevented ✓	Re-establishment prevented	Re-establishment prevented

Global Technical Strategy for malaria 2016-2030

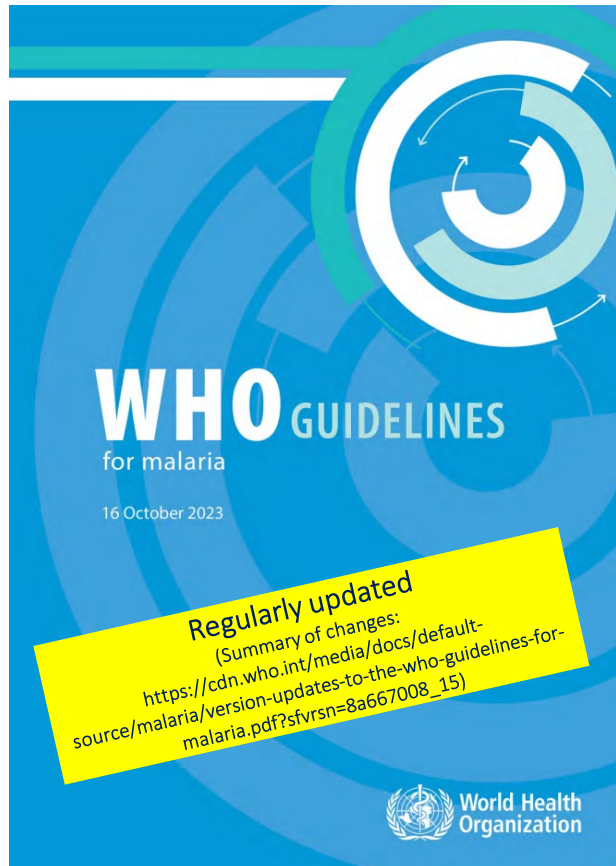
Attractive market

New medicines
New diagnostics
New tools / Innovation
Manufacturing capacity
Broader reach
...

* Release of WMR 2023:
30 November 2023, 3pm CET
COP28, United Nations Climate Change Conference

** SMC – Seasonal Malaria Chemoprevention
c-IPTp – Community-based Intermittent Preventive Treatment during pregnancy
RAS – Rectal artesunate for pre-referral treatment of severe malaria

How to access WHO malaria guidance



Consolidated Guidelines for malaria

<https://www.who.int/publications/i/item/guidelines-for-malaria>



WHO Malaria Toolkit app

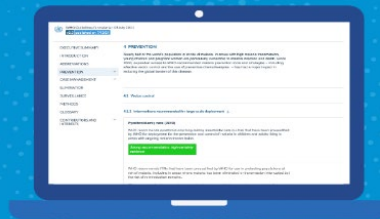
All the data and guidelines in one easy-to-access space

- Prevention
- Case management
- Surveillance
- Elimination
- World malaria report data



MAGICapp

All malaria recommendations in one user-friendly online resource



Global Malaria Programme web page

<https://www.who.int/teams/global-malaria-programme/guidance-tools>

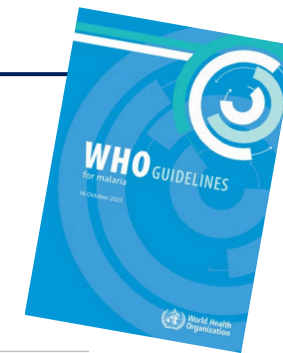
Malaria guidance videos

Animated videos across a range of technical areas



What's new since the last meeting?

Full listing of version updates available at
https://cdn.who.int/media/docs/default-source/malaria/version-updates-to-the-who-guidelines-for-malaria.pdf?sfvrsn=8a667008_15



31 March 2022

Revisions to the **vector control** guidance in the malaria prevention section

3 June 2022

Updates to **malaria chemoprevention** recommendations:

- **IPTp** - intermittent preventive treatment during pregnancy (scope of pregnancies, community deployment)
- **PMC** - perennial malaria chemoprevention, previously intermittent preventive treatment in infants (IPTi)
- **SMC** - seasonal malaria chemoprevention

New recommendations:

- **IPTsc** - intermittent preventive treatment in school-aged children
- **PDMC** - post-discharge malaria chemoprevention
- **MDA** - mass drug administration for malaria burden and transmission reduction, and mass relapse prevention

25 November 2022

Updates to the **case management** of malaria:

- Addition of **new molecules** for the treatment of uncomplicated malaria (artesunate-pyronaridine)
- Optimization of the dosage regimen for **anti-relapse** treatment
- Updates on the use of antimalarial medicines in special risk populations including **pregnant women** (use of ACTs in the 1st trimester)

14 March 2023

New **vector control** recommendations on **two classes** of insecticide-treated nets (ITNs) and guidance on ITN **prioritization under resource constrained conditions**

16 October 2023

Revised **vector control** information on **indoor residual spraying** and the conditional recommendation **against** the use of topical repellents to control malaria at the community level

Antimalarial commodities – What is needed / available?

Prevention

☐ Vector control

- Indoor Residual Spraying (IRS)
- Insecticide-treated nets (ITNs)

☐ Chemoprevention

- IPTp
- PMC
- SMC
- IPTsc
- PDMC
- MDA

☐ Vaccines

- RTS/S (WHO-prequalified)
- R21/Matrix M (under PQ assessment)

Case management

☐ Diagnostics

- Malaria infection
- G6PD status

☐ Chemotherapy

- ACTs
- Primaquine
- (Pf: reducing transmissibility; Pv, Po: relapse prevention)

☐ Severe malaria

- Artesunate
- (injectable: treatment; rectal: pre-referral treatment)
- Parenteral alternatives for treatment

Special risk groups

- Pregnant and lactating women
- Young children and infants
- Patients co-infected with HIV
- Non-immune travellers

WHO-prequalified medicines

(last updated on 9 November 2023)

API	Strength (mg) and Formulation	Companies / Manufacturers									
AL	20/120 dispersible tablets	x	x	x	x	x		x		x	
	40/240 dispersible tablets			x							
	60/360 dispersible tablets			x							
	20/120 tablets	x	x	x	x	x	x	x		x	
	40/240 tablets	x	x				x	x			
	60/360 tablets	x	x								
	80/480 tablets	x	x	x	x	x		x		x	
ASAQ	67.5/25 tablets		x	x	x	x	x		x		
	135/50 tablets		x	x	x	x	x		x		
	270/100 tablets		x	x	x	x	x		x		
ASMQ	25/50 tablets		x								
	100/200 tablets		x								
ASPy	20/60 granules for oral suspension									x	
	60/180 tablets, film coated									x	
DHA/PPQ	20/160 dispersible tablet			x							
	30/240 dispersible tablet			x							
	40/320 dispersible tablet			x							
	20/160 tablet, film coated	x									
	40/320 tablet, film coated	x		x	x						
	60/480 tablet, film coated			x							
	80/640 tablet, film coated			x							
AS	30 mg injection			x							
	60 mg injection			x	x	x					
	60 mg injection, co-pack			x							
	120 mg injection			x	x						
	100 mg rectal soft capsule		x								x
SP	250/12.5, dispersible tablet			x		x				x	x
	500/25, dispersible tablet			x		x				x	x
	500/25, tablet			x							
SPAQ	250/12.5 + 75, dispersible tablet									x	x
	500/25 + 150, dispersible tablet									x	x
	250/12.5 + 76.5, dispersible tablet			x		x					
	500/25 + 153, dispersible tablet			x		x					

22nd Invitation to Manufacturers of Antimalarial Medicines to Submit an Expression of Interest (EOI) for Product Evaluation to the WHO Prequalification Unit (PQT)


(19 October 2023)

1. Artemisinin-based fixed dose oral combination formulations

- Artemether/Lumefantrine
tablet 20 mg/120 mg
tablet 40 mg/240 mg
tablet 60 mg/360 mg
tablet 80 mg/480 mg

- Artesunate/Amodiaquine
tablet 50 mg/135 mg
tablet 100 mg/270 mg

- Artesunate/Mefloquine
tablet 100 mg/200 mg




- Artesunate/Pyronaridine
tablet 60 mg/180 mg

- Dihydroartemisinin/Piperaquine Phosphate
tablet 60 mg/480 mg
tablet 80 mg/640 mg


2. Artemisinin-based fixed dose combination oral paediatric formulations, preferably dispersible

- Artemether/Lumefantrine,
tablet 20 mg/120 mg
- Artesunate/Amodiaquine,
tablet 25 mg/67.5 mg
- Artesunate/Mefloquine,
tablet 25 mg/50 mg



- Artesunate/Pyronaridine
granules for oral suspension 20 mg/60 mg
- Dihydroartemisinin/Piperaquine, phosphate,
tablet 20 mg/160 mg (scored)
tablet 30 mg/240 mg
tablet 40 mg/320 mg

3. Artemisinin-based single-ingredient formulations



- Artemether, oily injection 20 mg/ml; 40 mg/ml; 80 mg/ml; 100 mg/ml
- Artesunate, powder for injection 30 mg; 60 mg; 120 mg; 180 mg (vial)
- Artesunate, suppositories 50 mg; 100 mg; 200mg


4. Combination antimalarial medicines in co-blistered formulations, preferably dispersible

- Amodiaquine+Sulfadoxine/Pyrimethamine
tablet 75 mg+250 mg/12.5 mg
tablet 150 mg+500 mg/25 mg

or

- Amodiaquine+Sulfadoxine/Pyrimethamine
tablet 76.5 mg+250 mg/12.5 mg
tablet 153 mg+500 mg/25 mg

5. Other antimalarial medicines

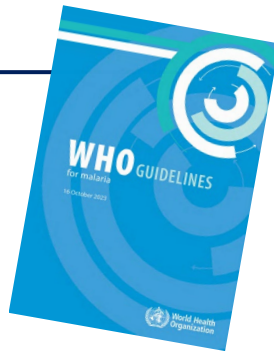


- Mefloquine tablet 250 mg
- Primaquine base
2.5 mg tablets (preferably dispersible for paediatric use)
5 mg tablets (scored) (preferably dispersible for paediatric use)
7.5 mg scored tablets (scored) (preferably dispersible for paediatric use)
15 mg tablets (scored)
- Sulfadoxine/Pyrimethamine
tablets 250 mg/12.5 mg (preferably dispersible for paediatric use)
tablets 500 mg/25 mg (scored, or scored and dispersible)
- Quinine Injection, 300 mg/mL (hydrochloride) in 2 mL ampoule
- Tafenoquine, 50 mg dispersible tablets, 150mg tablets

Product presentations which support adherence to treatment and rational drug use are strongly encouraged.

List is regularly updated, latest accessible via
<https://extranet.who.int/prequal/medicines/fpps-apis-eligible-prequalification-eois>

Core principles



Early diagnosis and prompt effective treatment

- ☐ Within **24-48 hours** of the onset of malaria symptoms
- ☐ **Avoid progression** to severe forms

Combination therapy

- ☐ Prevent or delay **resistance**
- ☐ **At least two** effective antimalarial medicines with different mechanisms of action

Rational use of antimalarials

- ☐ Reduce the spread of drug **resistance**
- ☐ Only to patients with **malaria infection**
- ☐ **Adherence** to full treatment course (ACT regimens should provide **3 days'** treatment with an artemisinin derivative)

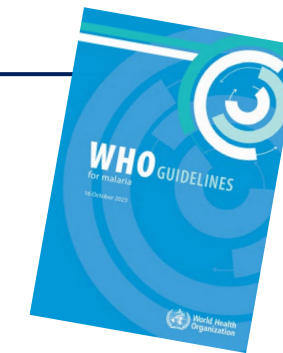
Appropriate weight-based dosing

- ☐ Prolong the useful **therapeutic life** of medicines
- ☐ **Rapid** clinical and parasitological **cure**
- ☐ Minimize **transmission**

Other considerations:

- ☐ Products that can be used at the **community level** with **minimal or no training** of the provider
- ☐ **Quality** of antimalarial medicines to be ensured
- ☐ **Climate change**: heat, humidity, carbon footprint
- ☐ **Maximise use of limited resources**, limit wastage

Ongoing reviews and upcoming guidance (Selection)



Tafenoquine / primaquine

Anti-relapse treatment of *P. vivax* malaria
Guideline Development Group meeting
14 – 15 October 2023

G6PD testing

G6PD quantitative or semi-quantitative point of care tests
Guideline Development Group meeting
30 November – 1 December 2023

HRP2/3 gene deletion

Evaluations of *Pfhrp* 2/3 gene deletions and implications for case management and policy: **Report of technical consultation;**
Updated HRP2 deletions **surveillance protocol and global response plan**

Preferred Product Characteristics (PPCs)

PPCs on **tests** to identify risk of *P. vivax* relapses

Other examples

- **Guiding principles for prioritizing** malaria interventions in resource-constrained settings to achieve maximal impact
- **Technical Expert Group meeting on climate change**
(also: new chapter on climate and malaria in WMR 2023)

Update of
guidelines
in 2024

Q4/2023 –
Q1/2024

2024

Thank you

For more information, please contact:
Silvia Schwarte
WHO Global Malaria Programme
e-mail: schwartes@who.int