

WHO Malaria Guidelines: Preventive Chemotherapies



October 2023

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Global **Malaria** Programme



**World Health
Organization**

Malaria Chemoprevention – principle and strategy

- The intermittent administration of a curative dose of antimalarial medicine during the malaria season, regardless of whether the individual is infected with malaria.
- The objective is to establish antimalarial drug concentrations in the blood that clear existing infections and prevent new ones during the period of greatest malaria risk.
- WHO recommends medicines (monotherapy or combination) that is different from nor part of the combination partner that is used for first-line malaria treatment.
- For combinations, the component medicines should have closely matched pharmacology, such that no component is present in the absence of other components for more than a minimal amount of time in order to reduce the risk of new infections encountering only a single drug.

Chemoprevention recommendations – shift in approach

- The updated chemoprevention recommendations provide greater flexibility to NMPs to adapt control strategies to suit their settings.
- No longer specify strict age groups, transmission intensity thresholds, numbers of doses or cycles, or specific drugs.
- NMPs are encouraged to consider local data to determine how best to tailor chemoprevention strategies to local needs and determine which age groups should be targeted where, for how long, how frequently, and with which drugs.
- Further guidance on specificities will be provided through implementation field manuals, based on current available evidence.

Summary of new and / or updated recommendations

Technical area	Strength & evidence	For/against	Recommendation	New/update
Chemoprevention	Conditional, moderate certainty	For	Perennial malaria chemoprevention (formerly IPTi)	Updated
Chemoprevention	Strong, moderate certainty	For	Seasonal malaria chemoprevention	Updated
Chemoprevention	Strong, moderate certainty	For	Intermittent preventive treatment of malaria in pregnancy	Updated
Chemoprevention	Conditional, low-certainty	For	Intermittent preventive treatment of malaria in school children	New
Chemoprevention	Conditional, very low-certainty	For	Post-discharge malaria chemoprevention	New

Strong recommendation for

Conditional recommendation for

Intermittent preventive treatment of malaria in pregnancy (IPTp)

4.2.1 Intermittent preventive treatment of malaria in pregnancy (IPTp)

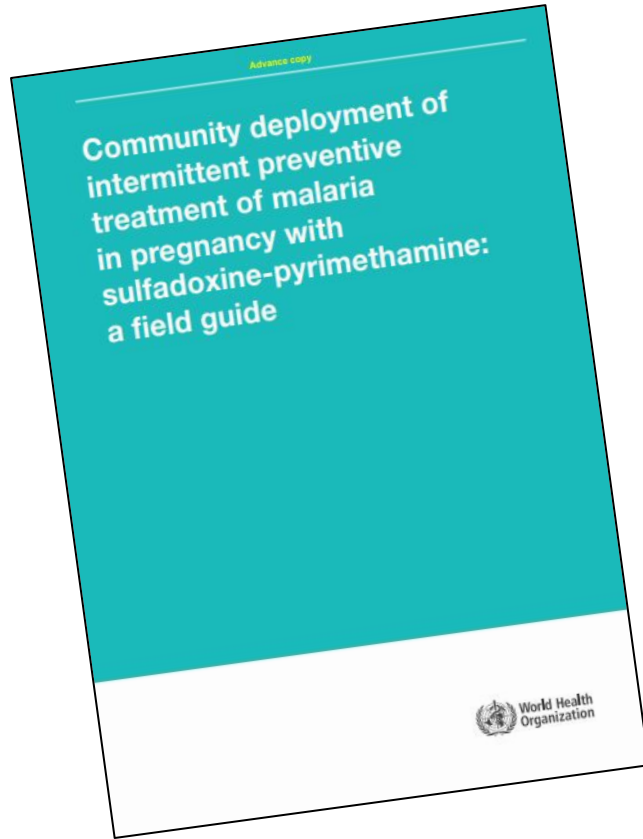
 Strong recommendation for , Moderate certainty evidence

Intermittent preventive treatment of malaria in pregnancy (2022)

In malaria-endemic areas, pregnant women of all gravidities should be given antimalarial medicine at predetermined intervals to reduce disease burden in pregnancy and adverse pregnancy and birth outcomes.

- Antenatal care (ANC) contacts remain an important platform for delivering IPTp. Where inequities in ANC service and reach exist, other delivery methods (such as the use of community health workers) may be explored, ensuring that ANC attendance is maintained and underlying inequities in ANC delivery are addressed.

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Expected publication in October 2023

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Perennial Malaria Chemoprevention (former IPTi)

4.2.2 Perennial malaria chemoprevention (PMC) - formerly intermittent preventive treatment of malaria in infants (IPTi)

Conditional recommendation for , Moderate certainty evidence

Perennial malaria chemoprevention (2022)

In areas of moderate to high perennial malaria transmission, children belonging to age groups at high risk of severe malaria can be given antimalarial medicines at predefined intervals to reduce disease burden.

PMC: Practical information

- Medicines for PMC should be different from that used for first-line malaria treatment.
- Evidence is limited on other medicines besides SP; including potential cumulative toxicity, efficacy, adherence to multi-day regimens, and cost-effectiveness in the context of PMC in young children.
- The EPI platform remains important for delivering PMC, especially in the first year of life, and it may be possible to make use of the EPI or other routine health visits or establish new contacts to reach children over 1 year of age. Research on alternative approaches for PMC delivery beyond the EPI schedules may be warranted.

Seasonal Malaria Chemoprevention

4.2.3 Seasonal malaria chemoprevention (SMC)

 Strong recommendation for , Moderate certainty evidence

Seasonal malaria chemoprevention (2022)

In areas of seasonal malaria transmission, children belonging to age groups at high risk of severe malaria should be given antimalarial medicines during peak malaria transmission seasons to reduce disease burden.



- Update implementation field guide (2013) to reflect current Guidelines recommendation
 - specify age groups, transmission intensity thresholds, numbers of doses or cycles, or specific drugs.

26 May 2023

<https://www.who.int/publications/i/item/9789240073692>

- **Target area:**
 - malaria transmission is highly seasonal and the majority (>60%) of clinical malaria cases occur within 4 consecutive months
 - the clinical attack rate of malaria (without SMC) is at least 0.1 episodes per child during the transmission season in the target group
- **Target population**
 - Children in age groups at high risk of severe malaria are eligible. In most countries with intense seasonal malaria transmission, these are children below 5 years of age.

- **Number of cycles**
 - SMC courses should be given at 28-day intervals, beginning at the start of the transmission season and continuing for 3–5 cycles, depending on the local context.
 - In some settings, three cycles may be sufficient.
 - Add a fifth cycle if a month on either side of the 4-month season contributes more than 10% of the annual burden
 - Gains from adding a sixth SMC cycle appear to be minimal and not cost effective
- **Recommended medicines**
 - The combination of SP+AQ is currently recommended for SMC.

Intermittent preventive treatment of malaria in school-aged children (IPTsc)

4.2.4 Intermittent preventive treatment of malaria in school-aged children (IPTsc)

Conditional recommendation for , Low certainty evidence

Intermittent preventive treatment of malaria in school-aged children (2022)

School-aged children living in malaria-endemic settings with moderate to high perennial or seasonal transmission can be given a full therapeutic course of antimalarial medicine at predetermined times as chemoprevention to reduce disease burden.

Post-discharge malaria chemoprevention (PDMC)

4.2.5 Post-discharge malaria chemoprevention (PDMC)

 Conditional recommendation for , Moderate certainty evidence

Post-discharge malaria chemoprevention (2022)

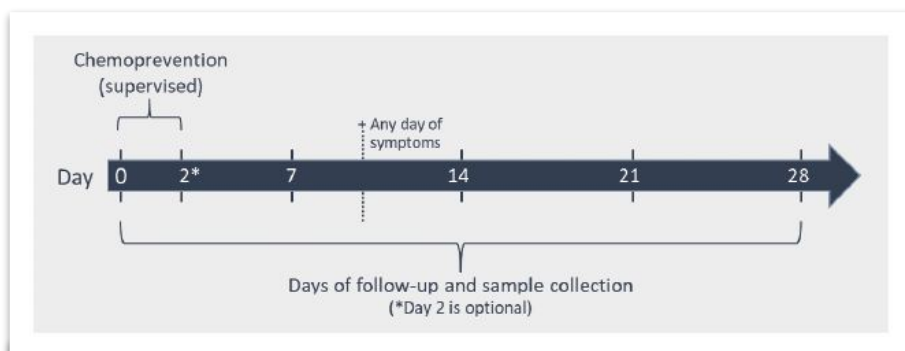
Children admitted to hospital with severe anaemia living in settings with moderate to high malaria transmission can be given a full therapeutic course of an antimalarial medicine at predetermined times following discharge from hospital to reduce re-admission and death.

Adoption and Implementation of Chemoprevention Recommendations

Adoption and adaptation of the chemoprevention recommendations will be guided by specificities provided through implementation field manuals, based on current available evidence.

- SMC
 - Implementation Field manual 2nd edition (*26 May 2023*)
- IPTp at community level
 - New field manual (*in process – expected October 2023*)
- PMC
 - Projects and early implementation underway to provide the evidence required for expansion of IPTi beyond the current recommendation and transition to PMC. – Development of updated implementation field manual – (*planned*).
- IPTsc and PDMC
 - Deployment studies and experience required to develop implementation guidance documents
 - Implementation Guidance – (*planned*)

Malaria chemoprevention efficacy study protocol (CPES)



Inclusion criteria

- Eligible for chemoprevention for SMC, PMC, IPTp and IPTsc as per the current recommendations
- All CPES**
- Able and willing to comply with the study protocol and follow-up schedule
 - Provides informed consent/parent or guardian provides informed consent on behalf of child

Additional intervention-specific inclusion criteria

- IPTp**
- For women ≥ 18 years^a after the first trimester of pregnancy

Exclusion criteria

- Symptoms of malaria (axillary fever ≥ 37.5 °C and/or history of fever in the past 48 hours)
 - Known allergy to the medicine provided
- All CPES**
- Sulfadoxine-pyrimethamine (SP) should not be given to individuals receiving a sulfa-based medication for treatment or prophylaxis, including co-trimoxazole (trimethoprim-sulfamethoxazole). This medicine is widely used in HIV-positive individuals (infants and pregnant women) as prophylaxis against opportunistic infections.
 - Individuals receiving azithromycin should be excluded from the study due to the antimalarial activity of azithromycin.

Additional intervention-specific exclusion criteria

- PMC, SMC, IPTsc**
- Presence of severe malnutrition according to WHO's child growth standards

- IPTsc^b**
- Females of menstruation age (> 12 years) unable or unwilling to take pregnancy test due to socio-cultural constraints

^a Could include adolescents between 12 and 17 years of age but may need specific ethical approval and informed consent from parents/guardian.

^b Could include adolescents between 12 and 15 years of age but may need specific ethical approval and informed consent from parents/guardian for pregnancy testing.

<https://gmp.cmail20.com/t/d-l-fhlikl-tyuykkotr-c/>

Summary - recommendations on malaria mass drug administration (MDA)

Technical area	Strength & evidence	For/against	Recommendation	New/update
MDA	Conditional, low-certainty	For	MDA in moderate-high transmission for short-term <i>P. falciparum</i> burden reduction	New
MDA	Conditional, low-certainty	For	MDA in emergency settings for short-term <i>P. falciparum</i> burden reduction	New
MDA	Conditional, low-certainty	For	MDA to reduce <i>P. falciparum</i> transmission in very low to low transmission	New
MDA	Conditional, very low-certainty	Against	MDA to reduce <i>P. falciparum</i> transmission in moderate to high transmission	New
MDA	Conditional, very low-certainty	For	MDA with antimalarial medicine to reduce <i>P. vivax</i> transmission	New
MDA	Conditional, very low-certainty	Against	MDA with 8-aminoquinoline alone to reduce <i>P. vivax</i> transmission	New

Conditional recommendation for

Conditional recommendation against

Mass Drug Administration (MDA) – Burden reduction

4.2.6.1 MDA for burden reduction

Conditional recommendation for , Low certainty evidence

MDA for burden reduction (2022)

Antimalarial medicine can be given as chemoprevention through mass drug administration (MDA) in areas of moderate to high transmission of *P. falciparum* to provide short-term reductions in disease burden.

4.2.6.2 MDA for burden reduction in emergency settings

Conditional recommendation for , Low certainty evidence

MDA for burden reduction in emergency settings (2022)

During emergencies or periods of health service disruption, antimalarial medicine can be used for mass drug administration (MDA) in defined geographical areas to provide short-term reductions in the burden of disease caused by *P. falciparum*.

Remark:

- MDA may quickly reduce clinical malaria incidence in settings with moderate to high *P. falciparum* transmission, but the effect wanes within 1–3 months. Therefore, if MDA is implemented, it should be one of several components of a robust malaria control programme (including good coverage of effective case management and appropriate prevention tools and strategies).
- Malaria programmes should judge the suitability of using MDA in their context based on the desired impact, level of endemicity, and resources required. MDA for burden reduction should be targeted at moderate to high transmission settings, regardless of seasonality.

Mass Drug Administration (MDA) – Transmission reduction

4.2.6.3 MDA to reduce transmission of *P. falciparum* in very low to low transmission settings

Conditional recommendation for , Low certainty evidence

MDA to reduce transmission of *P. falciparum* in very low to low transmission settings (2022)

In areas with very low to low levels of *P. falciparum* transmission, antimalarial medicine can be given as chemoprevention through mass drug administration (MDA) to reduce transmission.

4.2.6.5 MDA to reduce transmission of *P. vivax*

Conditional recommendation for , Very low certainty evidence

MDA to reduce transmission of *P. vivax* (2022)

In areas with *P. vivax* transmission, antimalarial medicine can be given as chemoprevention through mass drug administration (MDA) to reduce transmission.

Remark:

- MDA may quickly reduce transmission of *P. falciparum* in very low to low transmission areas or *P. vivax*, but the effect wanes within 1–3 months. Therefore, if MDA is implemented, it should be one of several components of a robust malaria elimination programme (including, at minimum, good coverage of case-based surveillance with parasitological diagnosis, effective antimalarial treatment (including treatment for hypnozoites in *vivax*), and appropriate prevention tools and strategies) in order to reduce the risk of resurgence after the MDA programme has ended.
- MDA should be considered only for geographical areas where there is limited risk of importation of malaria either from adjacent communities or through travel of the population to endemic areas.
- Malaria programmes should consider whether sufficient resources are available to implement MDA without affecting other components of a robust malaria elimination programme.

Mass Drug Administration (MDA) – Transmission reduction

4.2.6.4 MDA to reduce transmission of *P. falciparum* in moderate to high transmission settings

 Conditional recommendation against , Very low certainty evidence

MDA to reduce transmission of *P. falciparum* in moderate to high transmission settings (2022)

In areas with moderate to high levels of *P. falciparum* transmission, providing antimalarial medicine through mass drug administration (MDA) to reduce transmission is not recommended.

Remark:

- The studies included in the systematic review did not demonstrate evidence that MDA has either a short- or long-term effect on *P. falciparum* transmission in moderate to high transmission settings.

4.2.6.6 Mass relapse prevention (MRP) to reduce transmission of *P. vivax*

 Conditional recommendation against , Very low certainty evidence

Mass relapse prevention (MRP) to reduce transmission of *P. vivax* (2022)

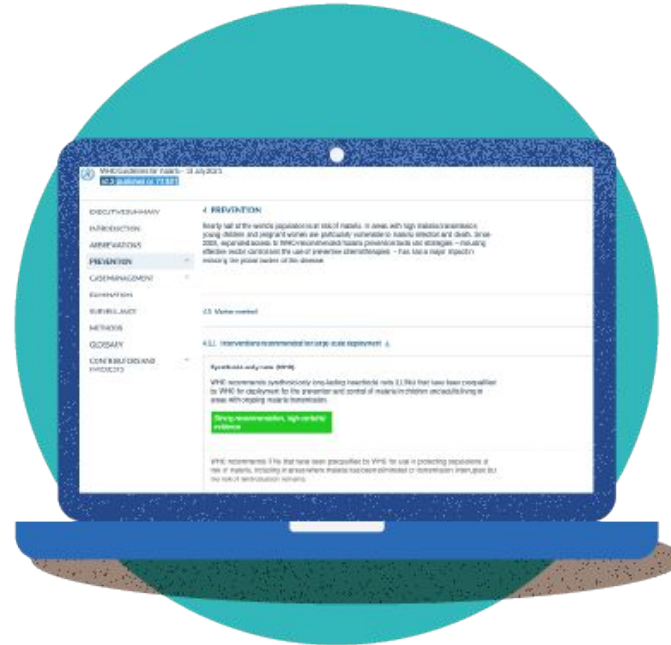
Mass treatment with an 8-aminoquinoline medicine alone to reduce the transmission of *P. vivax* is not recommended.

- Without testing for G6PD deficiency, the GDG noted the potential for severe harm from the use of a therapeutic dose of an 8-aminoquinoline for radical cure of *P. vivax* hypnozoites. However, conducting G6PD testing for a large population would significantly add to the complexity and cost of the intervention.

How to access WHO malaria guidance



1 [WHO Global Malaria Programme website](#)

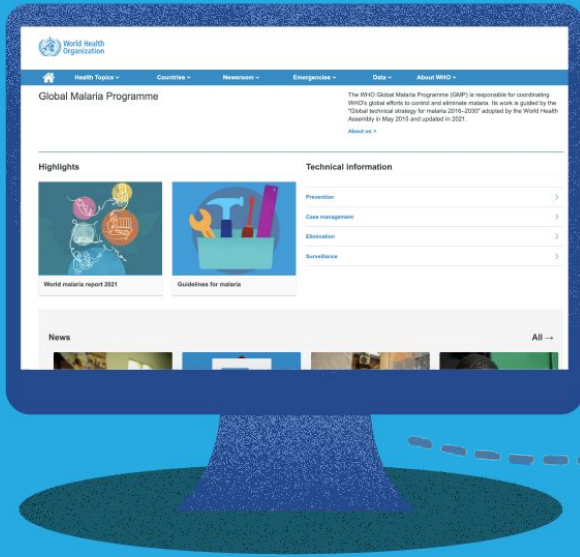


2 [MAGICapp](#)



3 [WHO Malaria Toolkit app](#)

Ways to access WHO malaria guidance



1

The [WHO Global Malaria Programme website](#) is the main gateway through which national malaria programmes and partners can access the most up-to-date malaria guidance.



The new consolidated [WHO Guidelines for malaria](#) bring together all current WHO recommendations on malaria in one easy-to-navigate web-based platform.

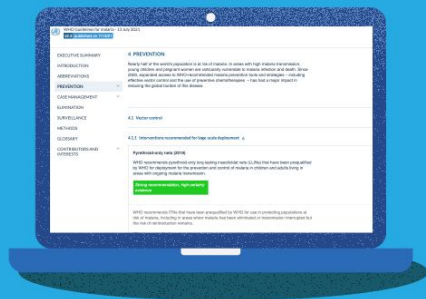


They are a living resource that will be updated periodically as new evidence becomes available.

Ways to access WHO malaria guidance

WHO's malaria guidance can also be found on 2 digital platforms:

2



Through [MAGICApp](#), you can access a consolidated set of all WHO malaria guidance, including:



All official WHO recommendations



Operational manuals



Handbooks



Frameworks



And links to other resources

3



All WHO recommendations can also be accessed through an easy-to-navigate mobile "[Malaria Toolkit app](#)".

The app is available for iOS devices and Android devices.

In addition to the WHO recommendations, it provides the latest data and trends from the *World malaria report*.

Thank you