

13th annual RBM Case Management Working
Group meeting

**Quality of care and referrals to
support the journey of severe
malaria patients**

Jean Okitawutshu, MD, MPH, PhD

Kigali, September 25th 2024

Outlines

1. Introduction

2. Severe malaria at Community/Primary level of care

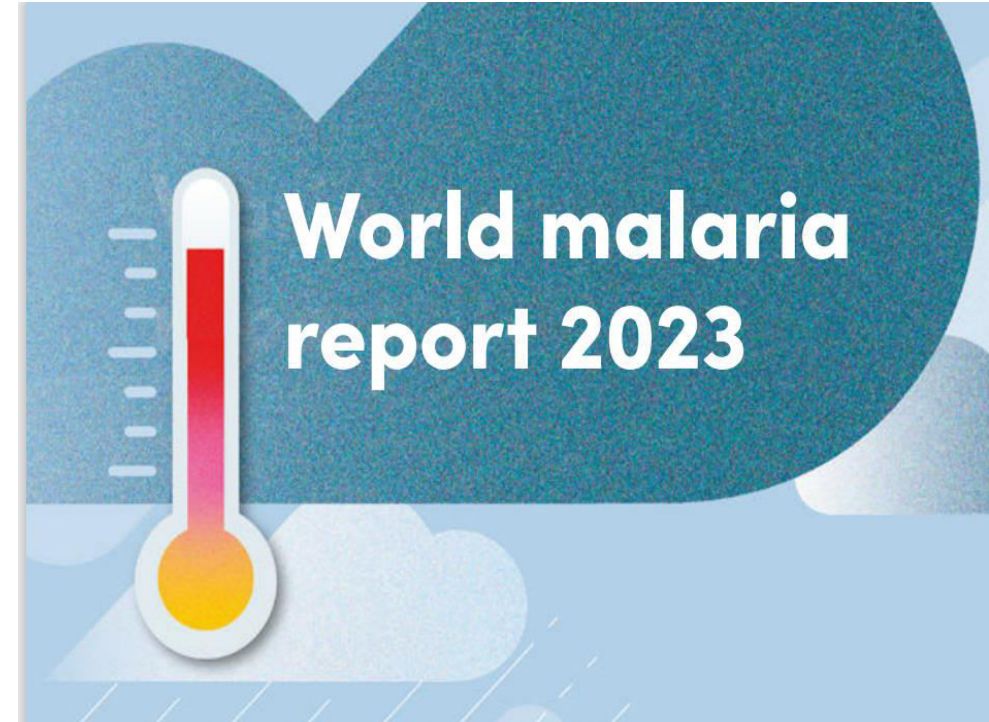
3. Referrals

4. Severe malaria at Referral level of care

5. Summary

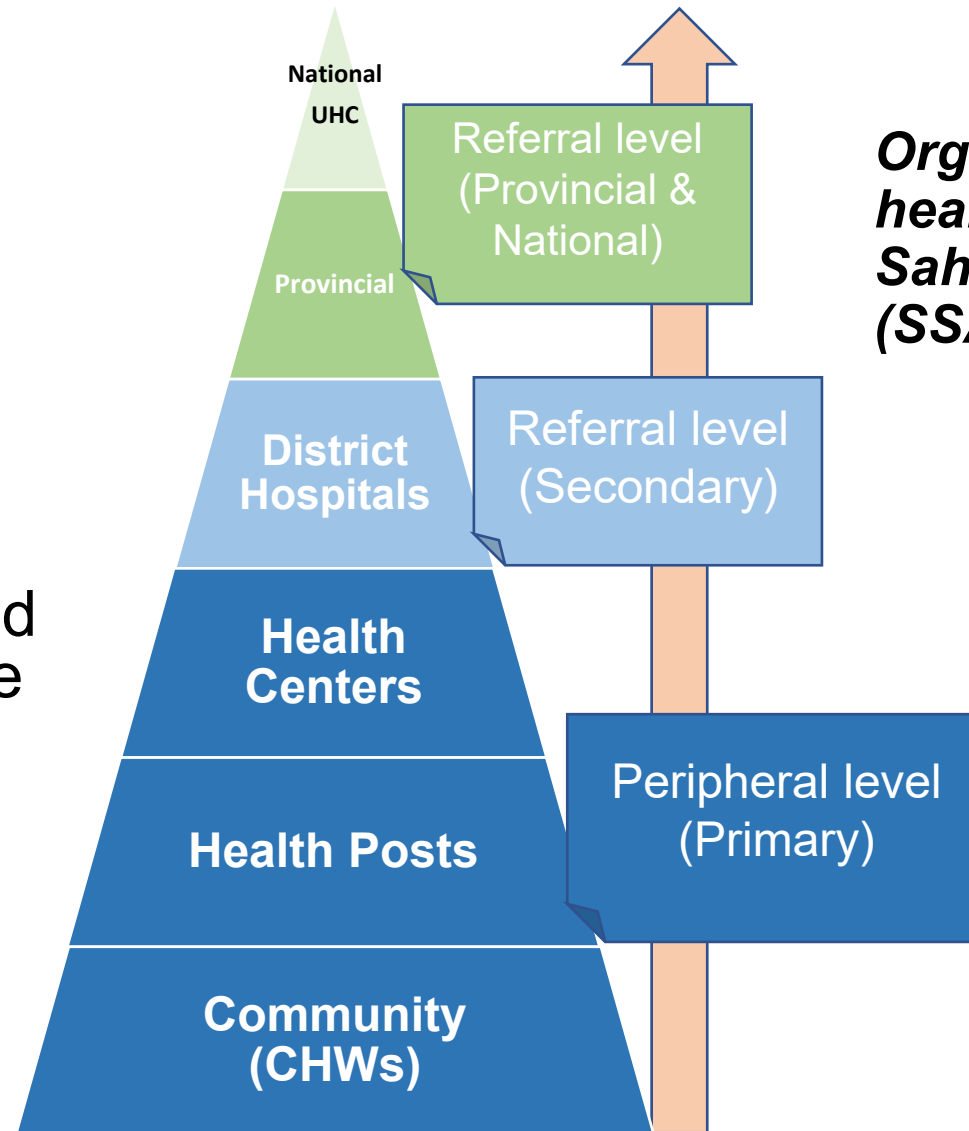
Introduction (1/2)

- Malaria : 249 million cases globally
- 608'000 deaths. Top 4 were all Sub-Saharan Africa countries accounted for over half of total deaths: Nigeria, DRC, Niger and Tanzania
- Although efforts with numerous strategies in place to reduce this unacceptable burden, malaria is still leading to huge number of cases and deaths every year
- Severe malaria constitutes an emergency and the greatest threat with an increased risk of death if not promptly managed with an effective treatment
- Need for additional efforts/innovation to ultimately tackle severe malaria outcomes, especially death



Introduction (2/2)

- Health systems organized in at least 3 levels of care in SSA



Organizational structure of health systems in Sub-Saharan Africa Countries (SSA)

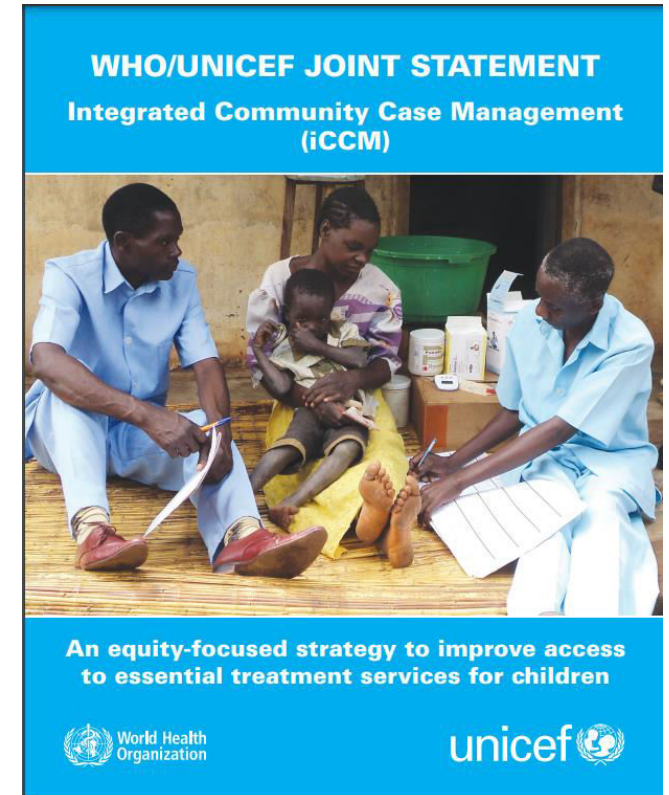
Severe malaria at Community/Primary level of care (1/6)

- Community and Primary levels of care are the most critical «starting point» in severe malaria case management
- >80% of severe malaria patients start their journey here
- No sophisticated equipment
- Logistic challenges



Severe malaria at Community/Primary level of care (2/6)

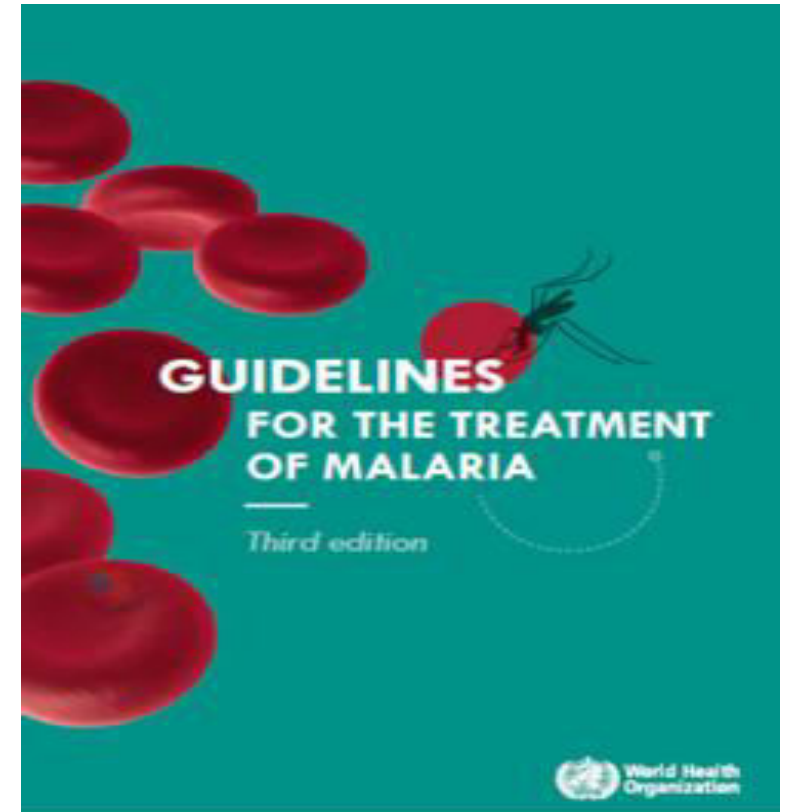
- **Treatment iCCM, or IMCI algorithms:**
 - clinical assessment of pneumonia, malaria, diarrhoea, and malnutrition
 - Identification of Danger signs including unusually sleepy/unconscious, convulsions, difficulty drinking or feeding, repeated vomiting, blood in stool, chest indrawing, ...
 - Referral of severe cases i.e. with at least 1 danger sign to high level of care for comprehensive case management



June 2012

Severe malaria at Community/Primary level of care (3/6)

- Malaria testing (RDT) but not systematically recommended across countries, especially in the presence of danger signs !
- Essential commodities and drugs: ACTs, ATB (amoxicillin), rectal artesunate, ORS solution and zinc, paracetamol



WHO 2015

Severe malaria at Community/Primary level of care (4/6)

- Challenges hampering proper case management at this level:
 - **Poor recognition of danger signs** by caregivers → delays in seeking care and subsequently in prompt diagnosis and early initiation of an effective severe malaria treatment
 - **Logistics:** stockouts of commodities and drugs → poor attendance, no prompt treatment initiation
 - **Adherence to referral advice often poor** in children with fast improvement of their condition, long distance and lack of mean of transport, ...

Lal et al. *BMC Health Services Research* (2018) 18:317
<https://doi.org/10.1186/s12913-018-3124-8>

BMC Health Services Research

RESEARCH ARTICLE

Open Access

Caregivers' compliance with referral advice: evidence from two studies introducing mRDTs into community case management of malaria in Uganda



Sham Lal^{1*} , Richard Ndyomugenyi², Lucy Paintain¹, Neal D. Alexander³, Kristian S. Hansen⁴, Pascal Magnussen^{5,6}, Daniel Chandramohan¹ and Siân E. Clarke¹

Severe malaria at Community/Primary level of care (5/6)

- Challenges hampering proper case management at this level:
 - Low specificity of the diagnosis → overdiagnosis : Approximately 1/3 of children diagnosed with SM have another condition, usually sepsis, as the cause of their severe illness
 - Definition of iCCM danger signs not specific to severe malaria
 - Poor CHWs coverage in countries such as the DRC
 - Inconsistent scale-up of quality assured rectal artesunate (QA RAS) in endemic countries

White Malaria Journal (2022) 21:284
https://doi.org/10.1186/s12936-022-04301-8

Malaria Journal

REVIEW

Open Access

Severe malaria

Nicholas J. White^{1,2*}



Abstract

Severe malaria is a medical emergency. It is a major cause of preventable childhood death in tropical countries. Severe malaria justifies considerable global investment in malaria control and elimination yet, increasingly, international agencies, funders and policy makers are unfamiliar with it, and so it is overlooked. In sub-Saharan Africa, severe malaria is overdiagnosed in clinical practice. Approximately one third of children diagnosed with severe malaria have another condition, usually sepsis, as the cause of their severe illness. But these children have a high mortality, contributing substantially to the number of deaths attributed to 'severe malaria'. Simple well-established tests, such as examination of the thin blood smear and the full blood count, improve the specificity of diagnosis and provide prognostic information in severe malaria. They should be performed more widely. Early administration of artesunate and broad-spectrum antibiotics to all children with suspected severe malaria would reduce global malaria mortality.

Danger signs requiring rectal artesunate

If in addition to fever or history of fever, you notice one or more of these danger signs, administer rectal artesunate.



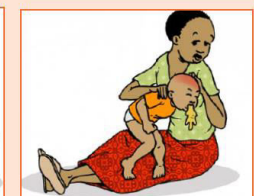
LETHARGY / UNCONSCIOUSNESS



REFUSAL TO FEED



CONVULSIONS



REPEATED VOMITING

Severe malaria at Community/Primary level of care (6/6)



RECTAL ARTESUNATE

- **Is an effective tool to reduce severe malaria mortality**

1. Scale-up it's use by CHWs and PHCs

1. Proven to be effective in saving lives
 2. Well accepted
- Strengthen the health systems to use QA RAS as part of the continuum of care
 - Strengthen community engagement to improve danger signs recognition by caregivers and health service use
 - Invest in supporting drugs and commodities supply chain
 - Start ACT provision once the child becomes able to drink, not necessarily injectable !
 - Regular staff training on RAS use!

BMC Infectious Diseases



Research article

Open Access

Rectal artemisinins for malaria: a review of efficacy and safety from individual patient data in clinical studies

Melba Gomes*¹, Isabela Ribeiro^{1,7}, Marian Warsame^{2,3,6}, Harin Karunajeewa⁴ and Max Petzold^{2,5}

Address: ¹UNICEF/UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases, World Health Organization, 20 Avenue Appia, Geneva 27, Switzerland, ²Division of International Health (IHCAR), Karolinska Institutet, Stockholm, Sweden, ³Rectal Artesunate Study Team, National Institute for Medical Research (NIMR), Dar es Salaam, Tanzania, ⁴University of Western Australia, Crawley, Western Australia and Papua New Guinea Institute of Medical Research, Goroka EHP 441, Papua New Guinea, ⁵Nordic School of Public Health, Göteborg, Sweden, ⁶Global Malaria Programme, World Health Organization, 20 Avenue Appia, Geneva 27, Switzerland and ⁷Drugs for Neglected Diseases – DNDi, Regional Office – Latin America, Rua Santa Luzia 651/11^o andar, 20030-041 – Rio de Janeiro, Brasil

Email: Melba Gomes* - gomesm@who.int; Isabela Ribeiro - iribeiro@dndi.org; Marian Warsame - warsamem@who.int; Harin Karunajeewa - harin@cyllene.uwa.edu.au; Max Petzold - max@nhv.se

* Corresponding author

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DOI: 10.1186/s12936-022-04348-7 • Corpus ID: 253448979

Acceptability of pre-referral rectal artesunate for severe malaria in children under 5 years by health workers and caregivers in the Democratic Republic of the Congo, Nigeria and Uganda

P. Awor, J. Kimera, +16 authors M. Hetzel • Published in *Malaria Journal* 10 November 2022 • Medicine

TLDR RAS acceptability was well accepted by health workers and child caregivers in DRC, Nigeria and Uganda and is unlikely to be an obstacle to the large-scale roll-out of RAS in the studied settings.

Referrals (1/2)


- Next critical step of the journey for patients severely ill seen at CHW/PHC → High level of care for comprehensive care of severe malaria
- Logistic challenges: bad roads
- Many other factors influencing it's successfully completion to high level of care



Original research

BMJ Global Health

Prereferral rectal artesunate and referral completion among children with suspected severe malaria in the Democratic Republic of the Congo, Nigeria and Uganda

Nina C Brunner ^{1,2} Elizabeth Omoluabi,³ Phyllis Awor,⁴ Jean Okitawutshu,^{1,5} Antoinette Tshetu Kitoto,⁵ Aita Signorell,^{1,2} Babatunde Akano,³ Kazeem Ayodeji,³ Charles Okon,³ Ocheche Yusuf,³ Proscovia Athieno,⁴ Joseph Kimera,⁴ Gloria Tumukunde,⁴ Irene Angiro,⁴ Jean-Claude Kalenga,⁵ Giulia Delvento,^{1,2} Tristan T Lee,^{1,2} Mark J Lambiris,^{1,2} Amanda Ross,^{1,2} Nadja Cereghetti,^{1,2} Theodoor Visser,⁶ Harriet G Napier,⁶ Valentina Buj,⁷ Christian Burri,^{1,2} Christian Lengeler,^{1,2} Manuel W Hetzel ^{1,2}

To cite: Brunner NC, Omoluabi E, Awor P, *et al*. Prereferral rectal artesunate and referral completion among children with suspected severe

ABSTRACT

Introduction Children who receive prereferral rectal artesunate (RAS) require urgent referral to a health facility where appropriate treatment for severe malaria can be provided. However, the rapid improvement of a

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Prereferral rectal artesunate reduces case fatality in children with suspected severe malaria in the context of high referral completion.

A European Journal
TMIH

Tropical Medicine &
International Health

 Free Access

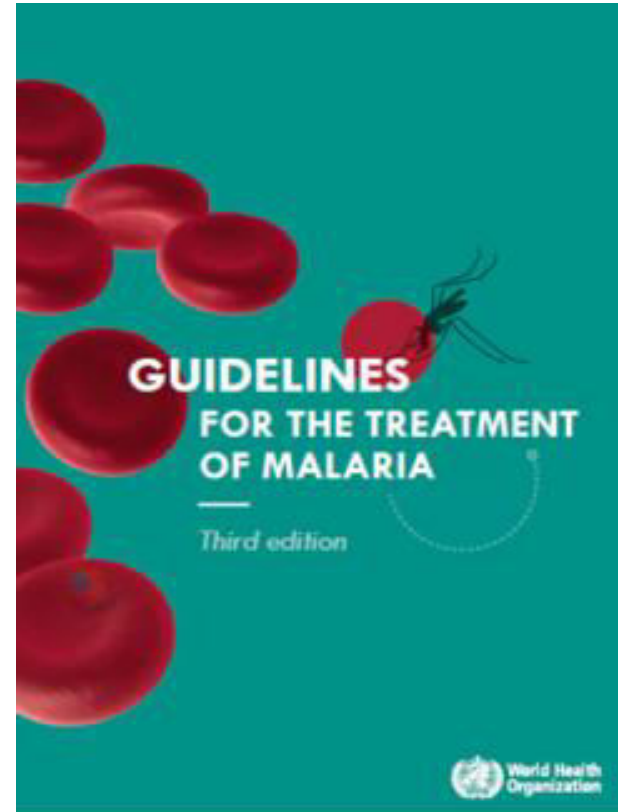
Factors influencing adherence to referral advice following pre-referral treatment with artesunate suppositories in children in rural Tanzania

Daudi O. Simba, Marian Warsame, Omari Kimbute, Deodatus Kakoko, Max Petzold, Goran Tomson, Zul Premji, Melba Gomes

First published: 08 July 2009 | <https://doi.org/10.1111/j.1365-3156.2009.02299.x> | Citations: 34

Referrals (2/2)

- Although this is a WHO recommendation and most country guidelines, especially for those treated with RAS at CHW/PHC:
- Is referral to high level of care indicated for all severe malaria patients?
- What to do for patients who not adhere to referral advice?



WHO 2015



Severe malaria patients at the Referral level of care

- Mostly the Endpoint of a severe malaria patient's journey
- What is available for proper SM treatment here?
Comprehensive care for SM?

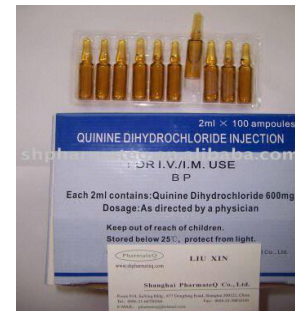
At referral level (hospitals)

Reanimation equipment

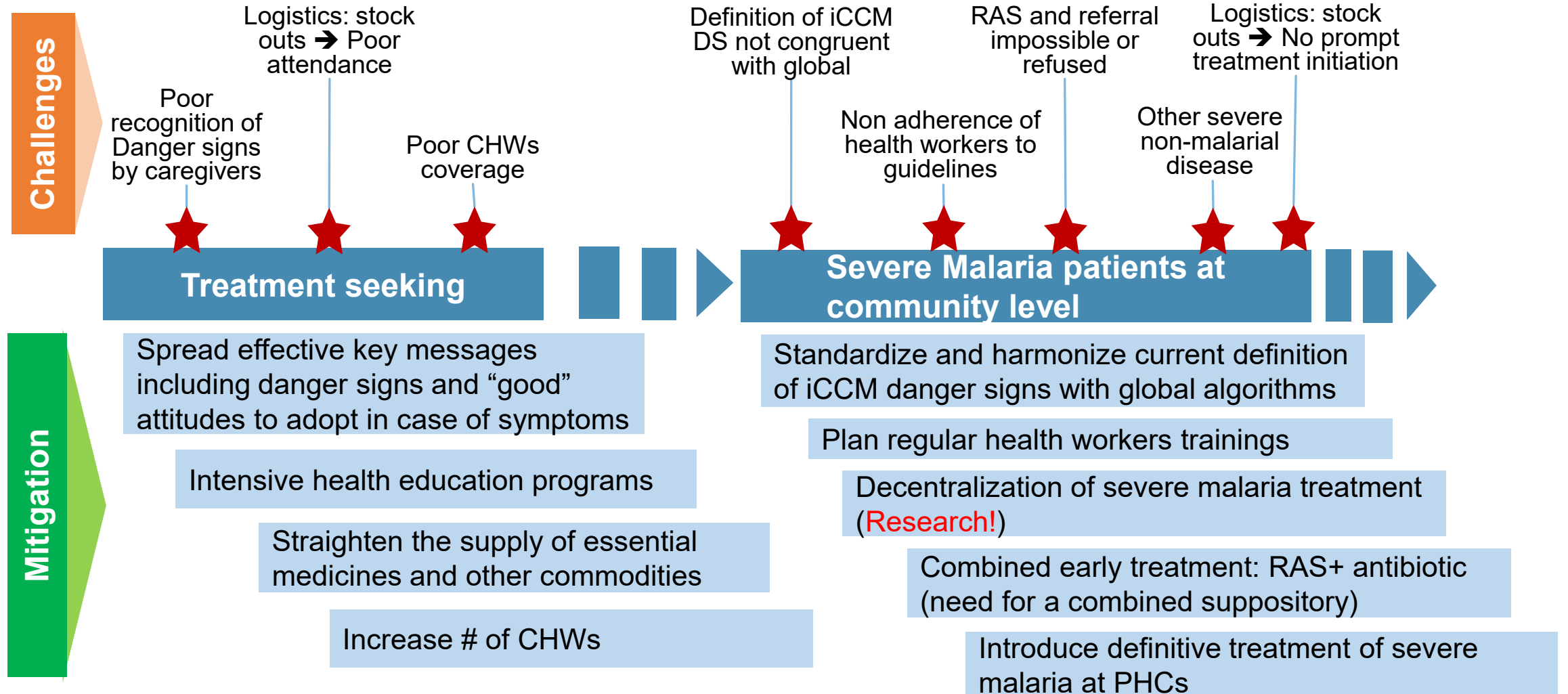
Antibiotics

Challenges:

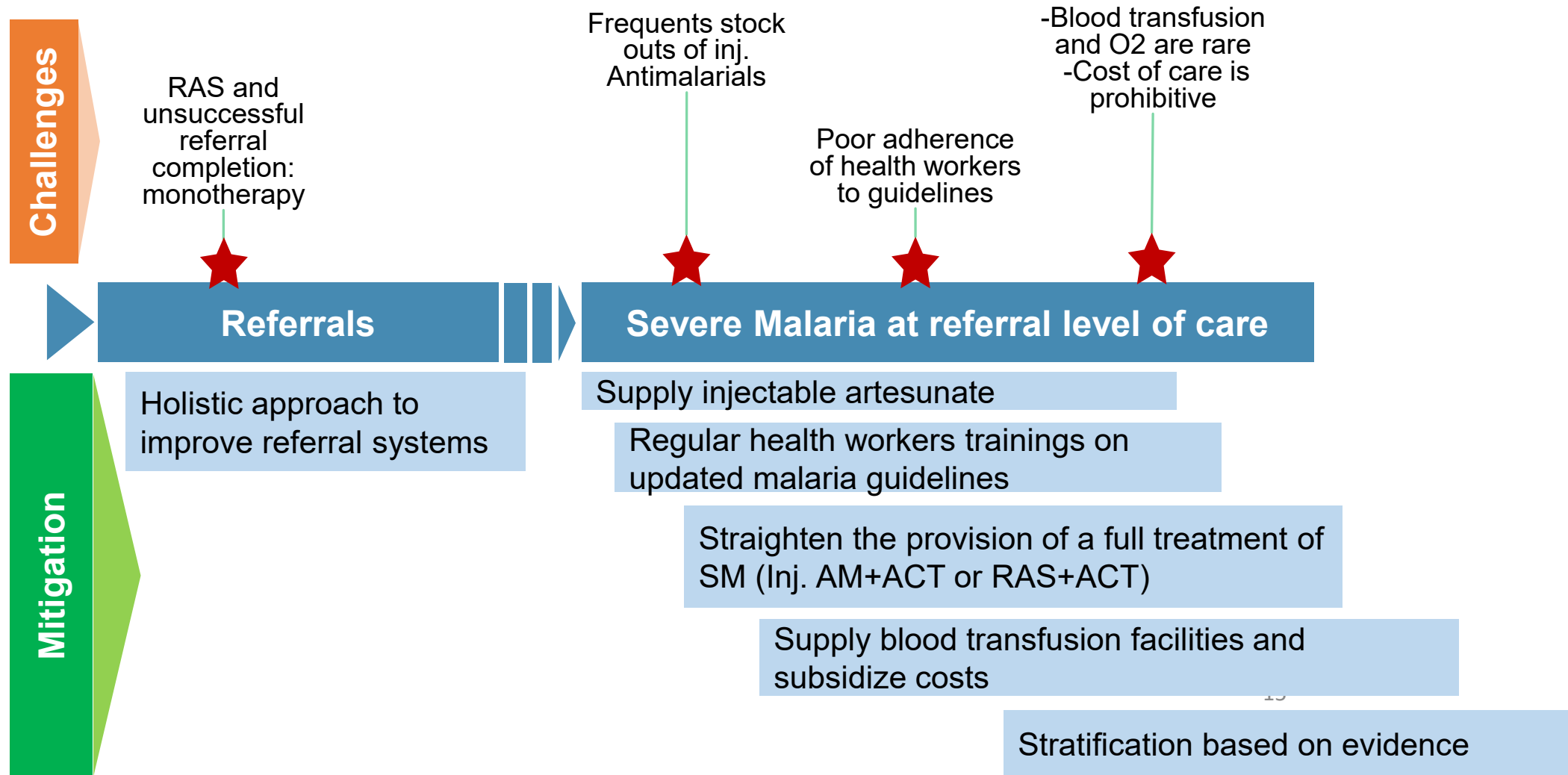
- Poor adherence of healthcare workers to guidelines
- Blood transfusion and Oxygen are rare;
- Cost of care is prohibitive
- Frequent stock outs of inj. Antimalarials



Summary (1/2)



Summary (2/2)



Take Home Message

- **Yes, we can promptly improve the quality of care and referrals to support the journey of severe malaria patients:**
 - Urgent political engagement required
 - Update current guidelines
 - Effective proven products are available (QA RAS, Inj AS) to treat severe malaria, we need just to make them available and to use them properly and smartly
 - Decentralization of severe malaria case management at primary level in light of the scientific evidence (continue with research)
 - Holistic approach to improve referral systems
 - Make essential products such as blood, O2 available in hospitals
 - Invest in community engagement

There is No standard model applicable in all endemic countries, adaptation to specific context is essential

Thanks for your attention