



**Some basic facts on
combination therapy**

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What are the problems with malaria?

- The disease
- The drugs
- The policies
- The finance

What are the problems with malaria (1)?

The disease

- Kills mainly children
- Pregnant women also at risk
- Majority of patients are poor
- Parasite has (can develop) ways of avoiding action of drugs

What are the problems with malaria (2)?

The drugs

- Availability
- Accessibility (physical/financial)
- Effectiveness (development of resistance to monotherapies)

Ways of addressing problem of resistance

- Discover new antimalarial drugs [slow, expensive]
- Rational use of what is available [= concept of **combination therapy**].



What is combination therapy (CT)?

COMBINATION THERAPY: DEFINITION

- CT is the simultaneous use of two or more blood schizonticidal drugs with independent modes of action and different biochemical targets in the parasites
- CTs can be either fixed ratio combinations or multiple-drug therapy, in which components are co-administered in separate tablets or capsules.

What is the ideal combination?

- Two or more drugs with different modes of action. One should kill gametocytes. No resistance to either component
- Rapid (within 24 h) achievement of EC_{99}
- Maintain MEC for 3-4 parasite life cycles

What is the ideal combination?

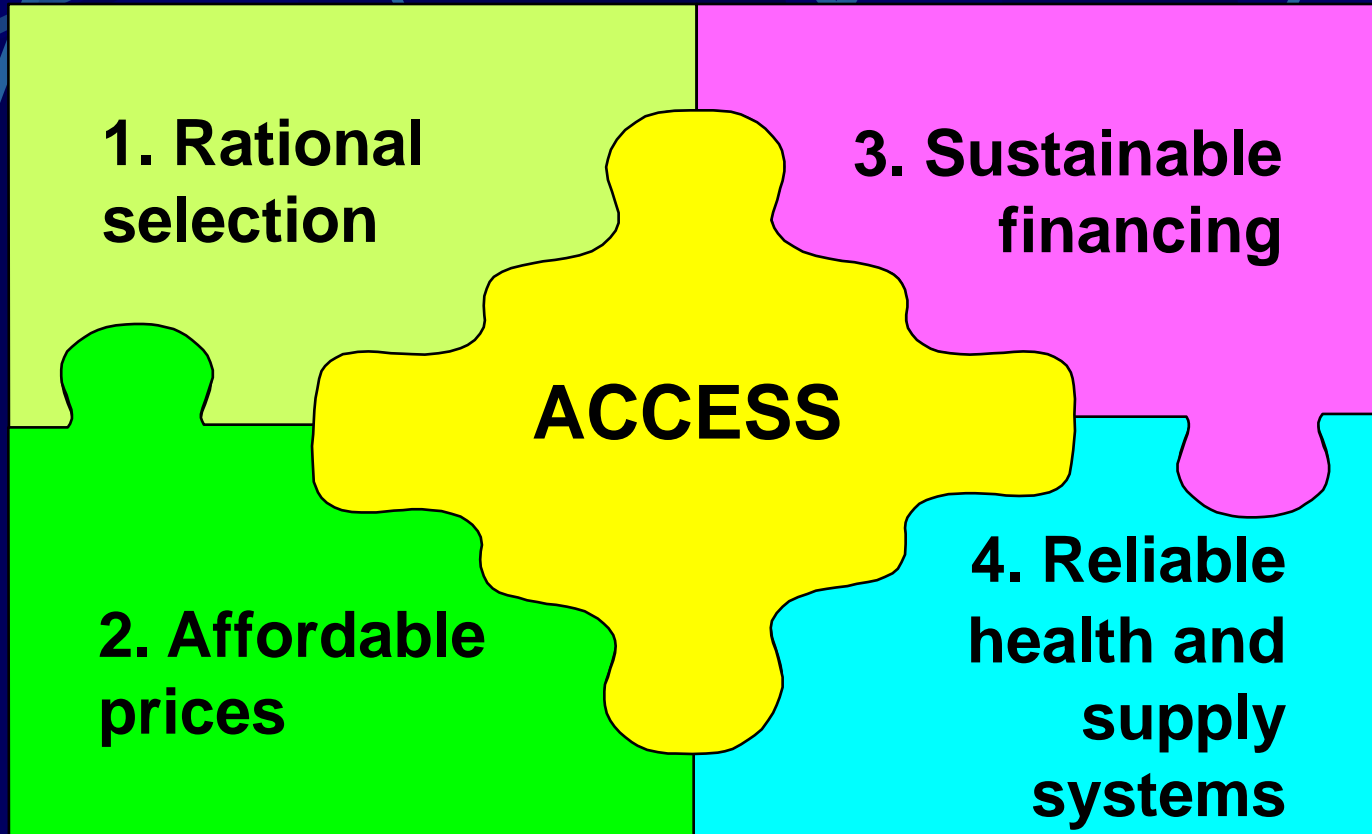
- Orally effective. Good oral bioavailability
- Duration of treatment \geq 3 days
- Simple dosing regimen
- Co-formulated; paediatric formulation
- Both components stable (reasonable shelf-life)

What is the ideal combination?

- Safe for use in all age groups
- No drug-drug interactions; (undesirable) drug-food interaction
- Affordable
- Effective against multi-drug resistant parasites (real life: adherence, quality, use, efficacy)

**Are combination
antimalarial drugs
necessary?**

Only if other factors are considered





Thank you