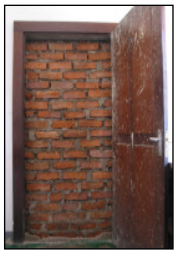
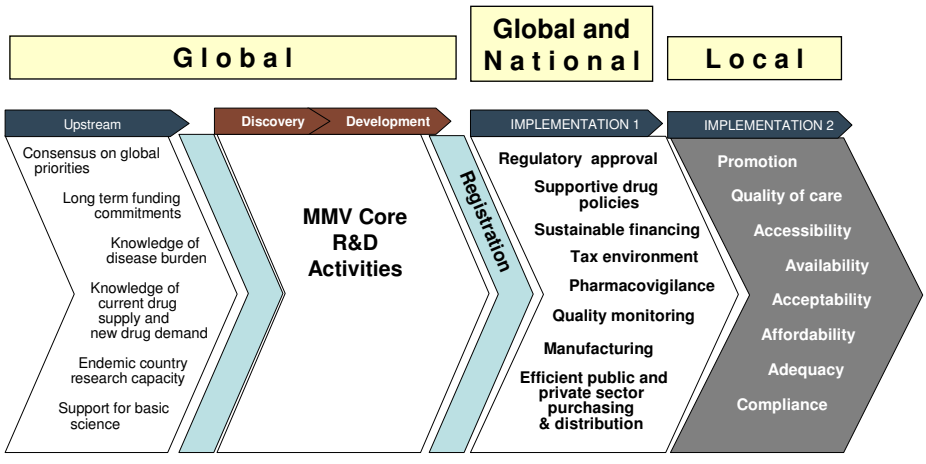
Barriers to prompt and effective malaria treatment : what matters

Christian Lengeler, Manuel Hetzel, Angel Dilip, Brigit Obrist, Sandra Alba, Nelly Iteba, Alex Schulze, Hassan Mshinda

Swiss Tropical Institute
Ifakara Health Research & Development Centre
Novartis Foundation for Sustainable Development



MMV 2003 -2007 Business Plan Update - modified



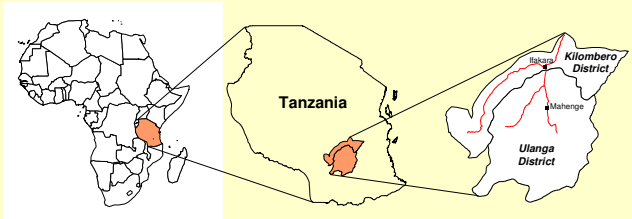
1. Discover & Develop ➡ 2. Deliver & use effectively "Access"

Extending drug development to the true finish Line…

The ACCESS Programme:

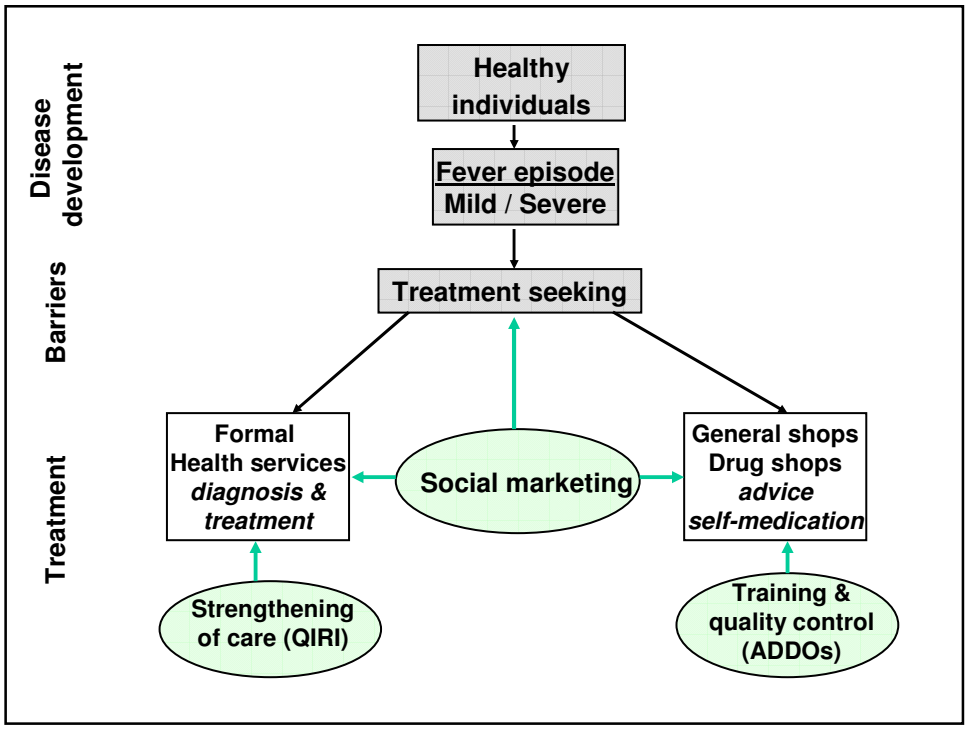
"*Understanding and improving **access to prompt and effective malaria treatment** and care for all malaria episodes in children and adults*"

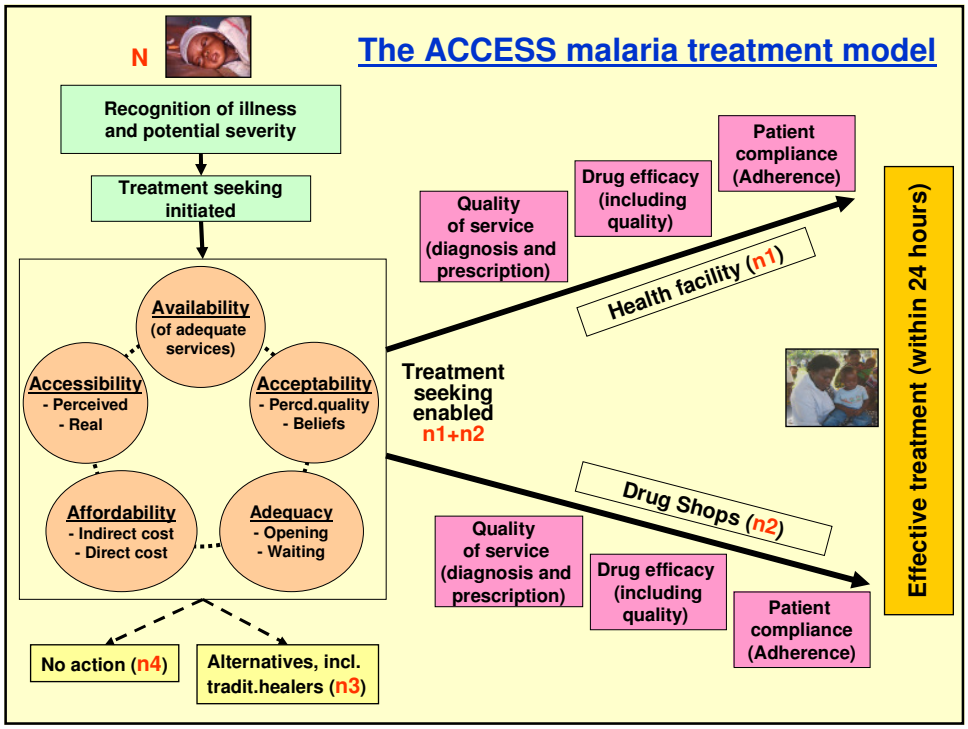
- **Intervention-based** programme in the Kilombero & Ulanga Districts of Tanzania
- Implemented 2004-2007 by the IHRDC and STI
- Supported by the Novartis Foundation for Sustainable Development
- Co-artem only introduced January 2007



IMPROVING ACCESS TO PROMPT & EFFECTIVE MALARIA TREATMENT
ACCESS PROGRAMME
IHRDC

Hetzel et al. 2007
Malaria Journal 6:83


Disease development
Barriers
Treatment
Healthy individuals
Fever episode
Mild / Severe
Treatment seeking
Formal Health services
diagnosis & treatment
Social marketing
General shops
Drug shops
advice
self-medication
Strengthening of care (QIRI)
Training & quality control (ADDOs)


The ACCESS malaria treatment model
N
Recognition of illness and potential severity
Treatment seeking initiated
Availability (of adequate services)
Accessibility - Perceived - Real
Acceptability - Percd.quality - Beliefs
Affordability - Indirect cost - Direct cost
Adequacy - Opening - Waiting
No action (n4)
Alternatives, incl. tradit.healers (n3)
Treatment seeking enabled n1+n2
Quality of service (diagnosis and prescription)
Drug efficacy (including quality)
Patient compliance (Adherence)
Health facility (n1)
Drug Shops (n2)
Quality of service (diagnosis and prescription)
Drug efficacy (including quality)
Patient compliance (Adherence)
Effective treatment (within 24 hours)

Treatment-seeking behaviour in 2004-2005 for fever episodes (no diagnosis)

Treatment sources	Children <5 years			Adults >12 years			P
	n	%	95% CI	n	%	95% CI	
AM* from health facility	43	53.8	42.2-65.0	17	29.8	18.4-43.4	**0.005**
AM from drug store	19	23.8	15.0-34.6	26	45.6	32.4-59.3	**0.007**
AM from general shop	8	10.0	4.4-18.8	4	7.0	2.0-17.0	0.761
Health facility visit	61	76.3	65.4-85.1	32	56.1	42.4-69.3	**0.013**

*AM = antimalarial

- Children use more health facilities than drug stores
- Adults use more drug stores than health facilities
- 89% of children and 82% of adults get an antimalarial
- Social marketing / health promotion seems to be working!

Source: Hetzel et al 2007

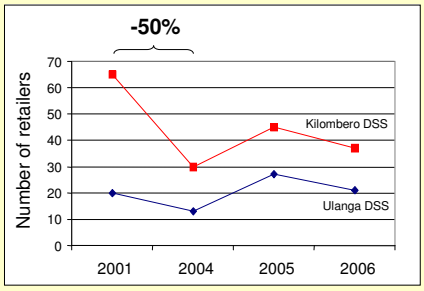
Availability: Drug stockouts in public health facilities

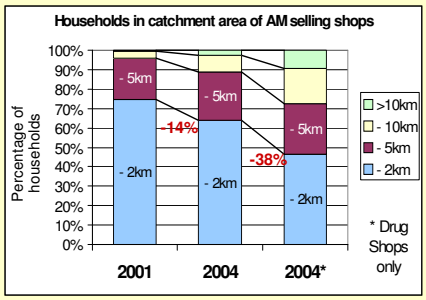
- Regular survey of 16 health facilities in 25 villages
- Antimalarial stock-outs October 2004 – May 2006:
  - In 10 health facilities (63%)
  - SP unavailable in 5 health facilities for over 5 months
  - May 2006: 7 of 10 HF without SP
  - Amodiaquine unavailable in 8 facilities for over 1 year
- Anecdotal evidence that co-artem availability (since January 2007) is also patchy, especially for first two weight categories

Accessibility of malaria treatment

- The 2001 policy change from chloroquine to sulphadoxine-pyrimethamine (SP) led to **reduced availability** because SP was not nearly so available any more in shops
- As a result, the number of HH less than 5 Km from a shop selling an antimalarial decreased
- 5 out of 25 study villages had **no health facility and no shop** as source of malaria treatment

Source: Hetzel et al 2007





Affordability

- Exemption of fees for children and pregnant women often do not apply
- Subsidized antimalarials are often not available in health facilities
- In 2004-2006, 84% children payed for consultation fee and SP - between USD 0.04 and USD 1.3 (average USD 0.40)
- Cost in drug shops: USD 0.20-0.40 child dose
- Cost of ACT completely unaffordable (USD 8-15)
- New initiative to lower cost of Co-artem in selected drug shops (Accredited Drug Dispensing Outlets – ADDOs) with support from PMI
- Similar initiative by the Clinton Foundation in another area

Quality of care

- Re-training of all health care providers in IMCI treatment guidelines did not bring any improvement
- Pilot implementation of rapid diagnostic tests (RDTs) started in September 2007 in 5 health facilities
- Initiated (Quality Improvement and Recognition Initiative - QIRI) in 2007: advocacy with CHMT members and key stakeholders, training of service providers on QIRI principles and application, baseline assessment in 53 health facilities.

Compliance (adherence) of patient

- Very high with SP since one-dose treatment and often taken at health facility or drug shop
- Co-artem and other ACTs: Studies so far show good compliance but few unsupervised observations under programme situation; study planned for 2008

Drug efficacy

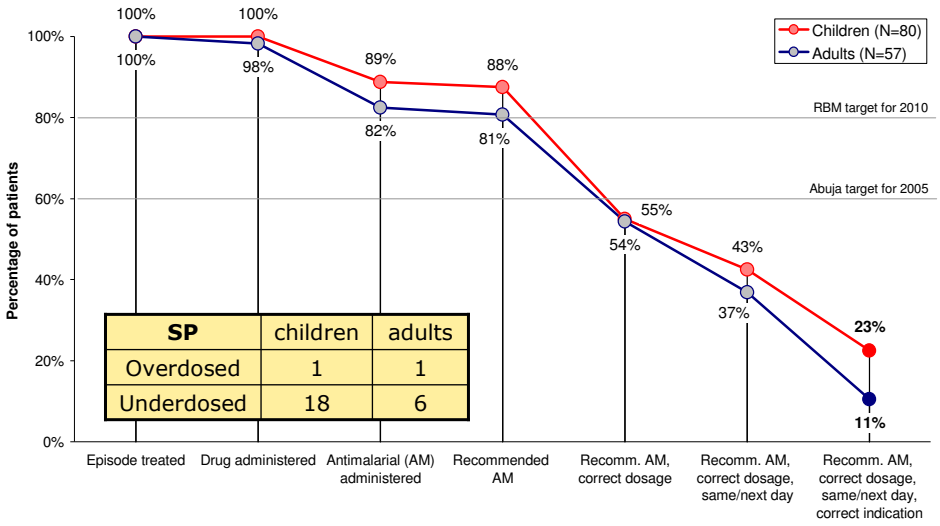
1) Drug efficacy

- Around 60-80% parasitological efficacy of SP just before switch-over to Co-artem
- Co-artem: around 95% efficacy

2) Quality of antimalarials available (study in 2005)

- Quality problems were detected in:
  - 33% of the tablets produced in Tanzania
  - 20% ....."......in India
  - 18% ....."..... in Europe
  - 9% of Amodiaquine tablets
  - 24% of SP tablets
  - 40% of Quinine sulphate tablets (used frquently as first line treatment)
- More substandard drugs were found in shops than in health facilities

Community effectiveness of treatment



Source: Hetzel et al 2007

More challenges: ACT

- Introduction of ACT in January 2007 (Co-artem)
  - More complicated dosage – effect on compliance
  - Availability in health facilities first => no provision for treatments obtained through drug shops
  - Training of health facility staff partially successful
- Global subsidy for ACT to come?

Conclusions

- High efficacy does only translate into effective treatment unless a number of access issues are adressed
- Access issues are multiple and arise at different levels
- In this area of Tanzania there is close to an adequate response in the case of fever episodes, but the quality of services is low
- Drug availability is a chronic problem