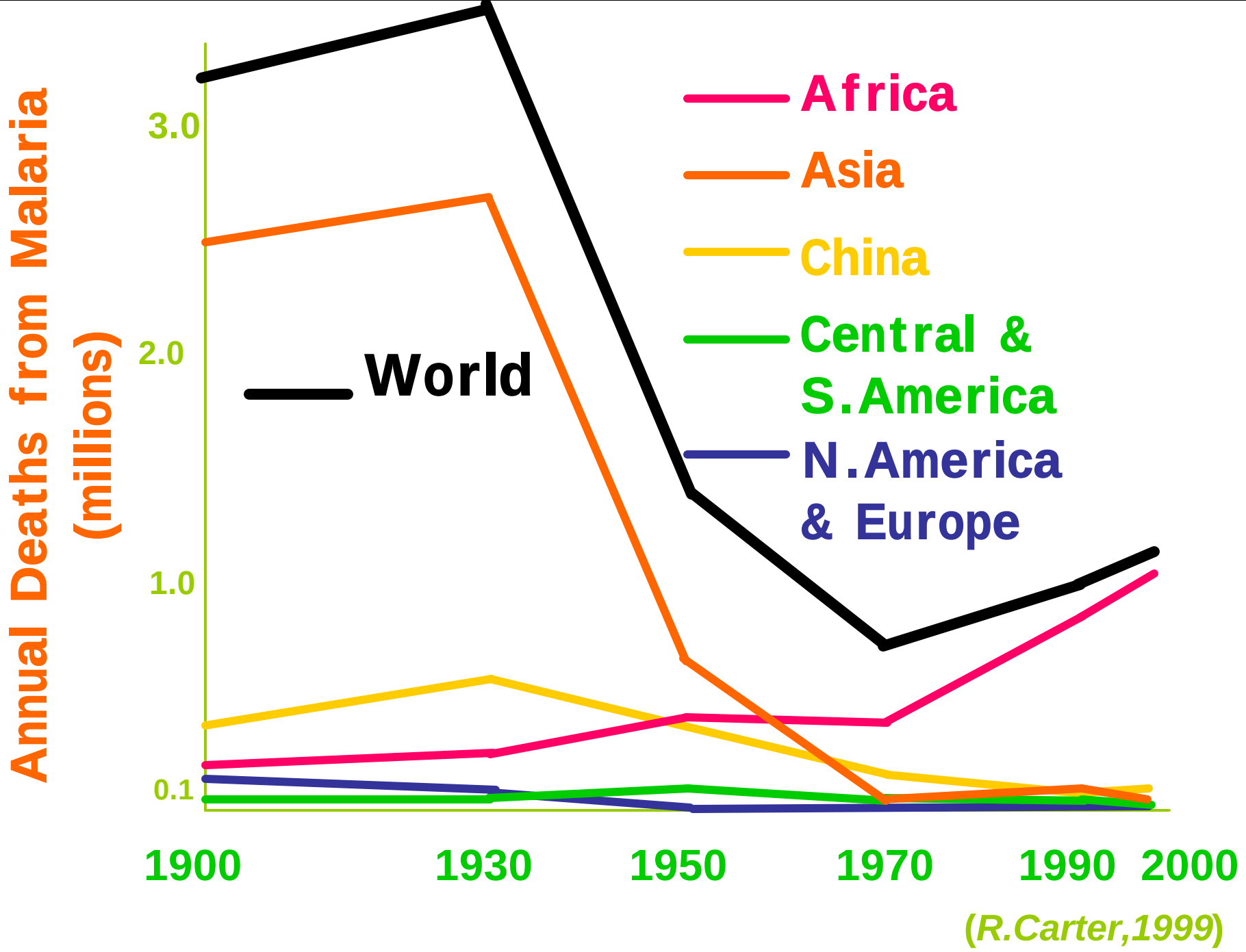
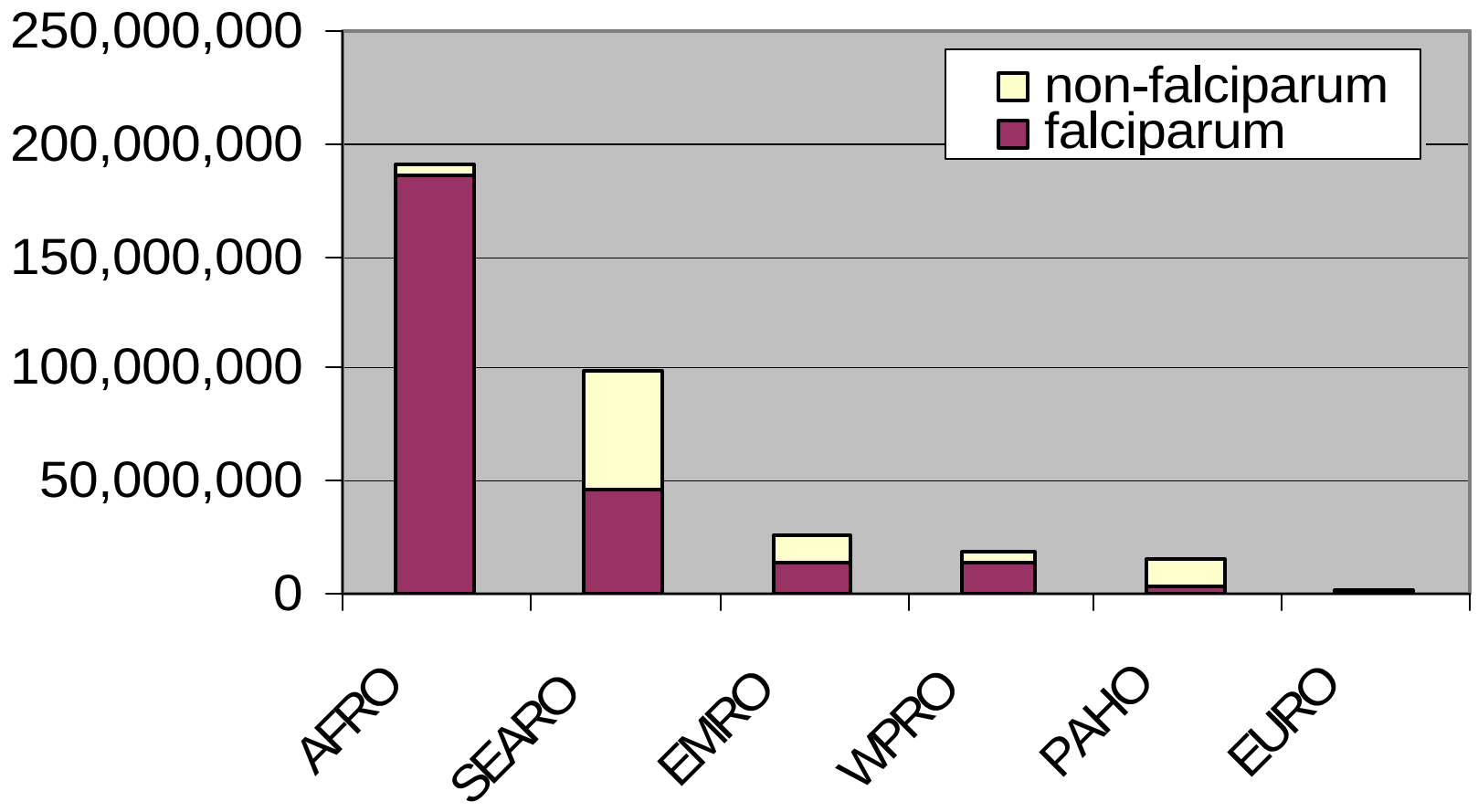
2005–2010 *Roll Back Malaria* Global Strategic Plan

Meeting of National Directors of Epidemiology and Malaria Programs
(San José, Costa Rica, 7–10 November 2005)

Dr Charles Delacollette
Roll Back Malaria Department
World Health Organization
Geneva


Annual Deaths from Malaria
(millions)
3.0
2.0
1.0
0.1
World
Africa
Asia
China
Central &
S.America
N.America
& Europe
1900
1930
1950
1970
1990
2000
(R.Carter,1999)

Malaria cases by Region (estimates)



Plasmodium falciparum – the parasite responsible for almost all malaria in Africa

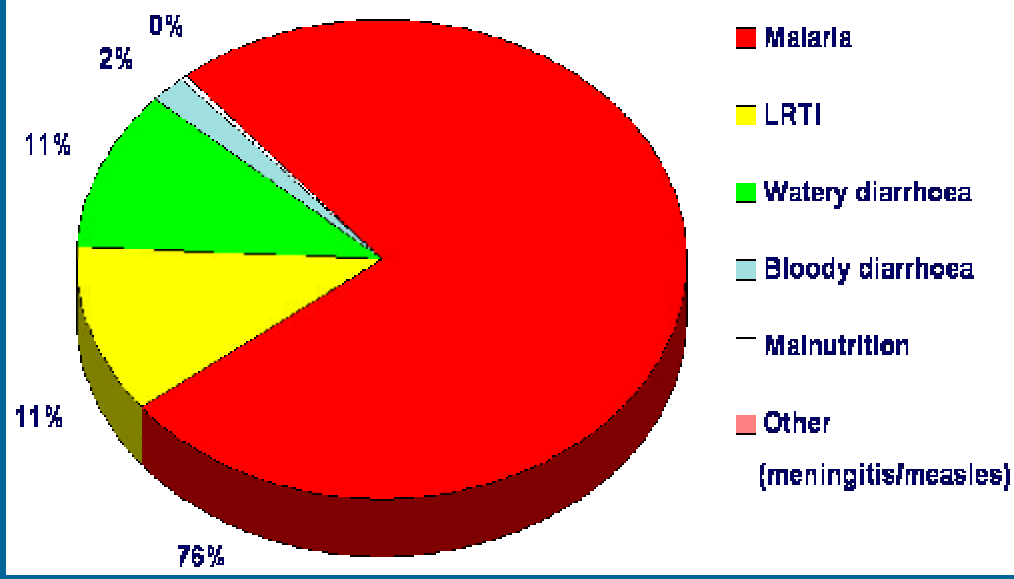
Cerebral malaria

Anaemia, especially in infants

Low birth weight, anaemia in pregnancy

Malaria in complex emergencies

OPD attendances by cause in 8 refugee camps
Kigoma, Tanzania , Nov 1997
Population 240,000



In Asia and the Americas

Poor, marginalized rural communities

Migrant population (legal or illegal) in remote areas

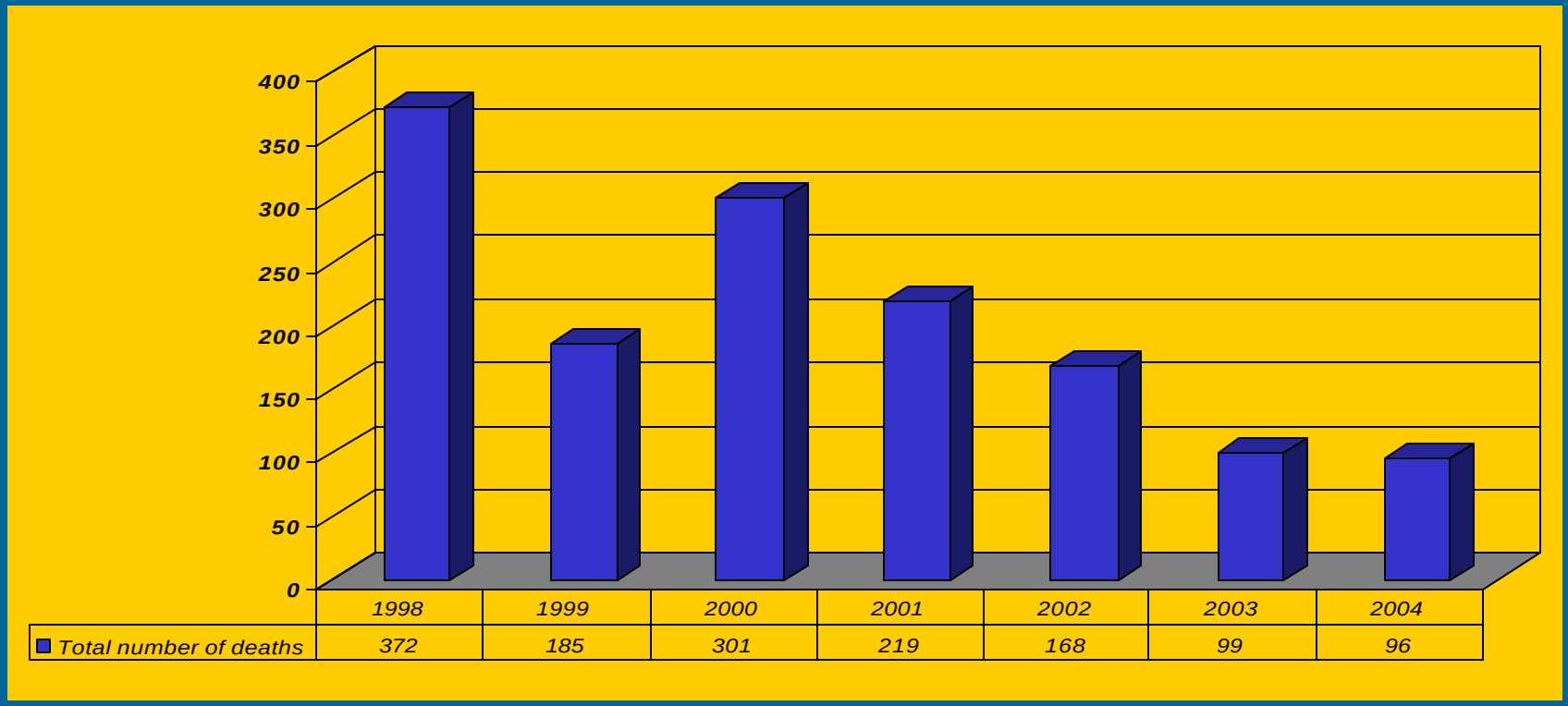
Ethnic Groups to Work with

Lave

Raglai

Kreung

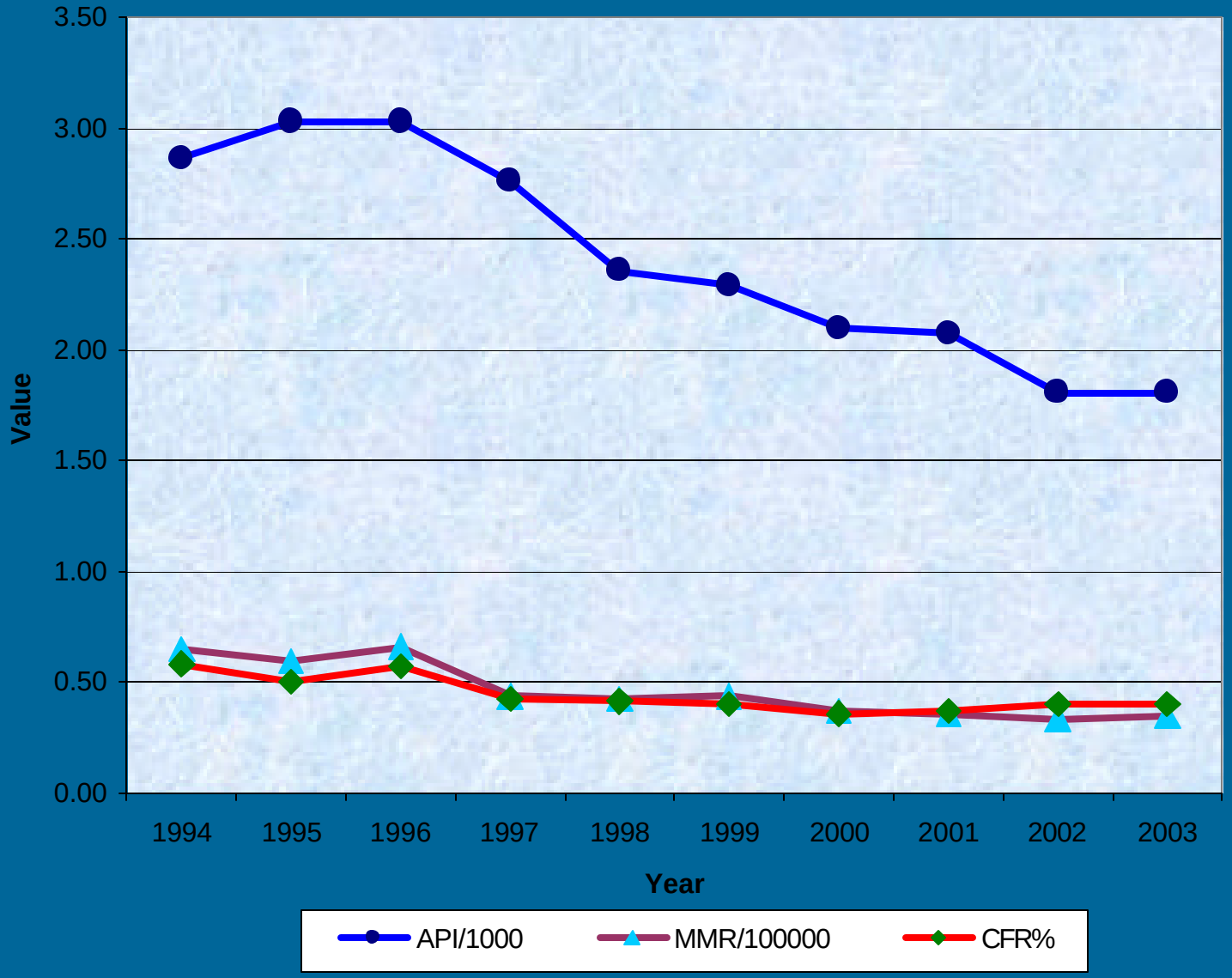
PAHO: Malaria-related deaths (1998-2004)



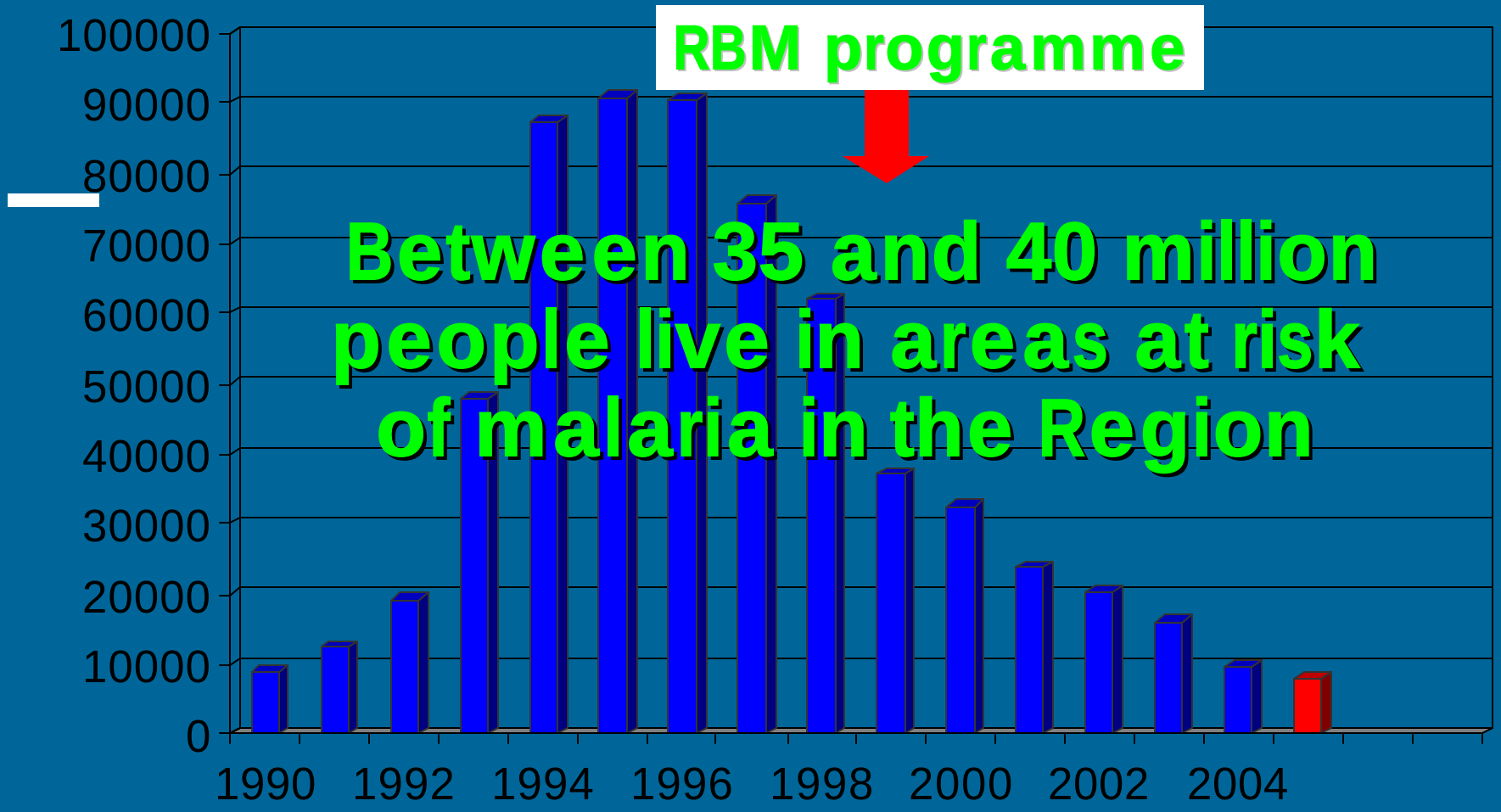
Mortality (2004): 96 deaths

- 68% decrease in malaria-attributed deaths since 2000

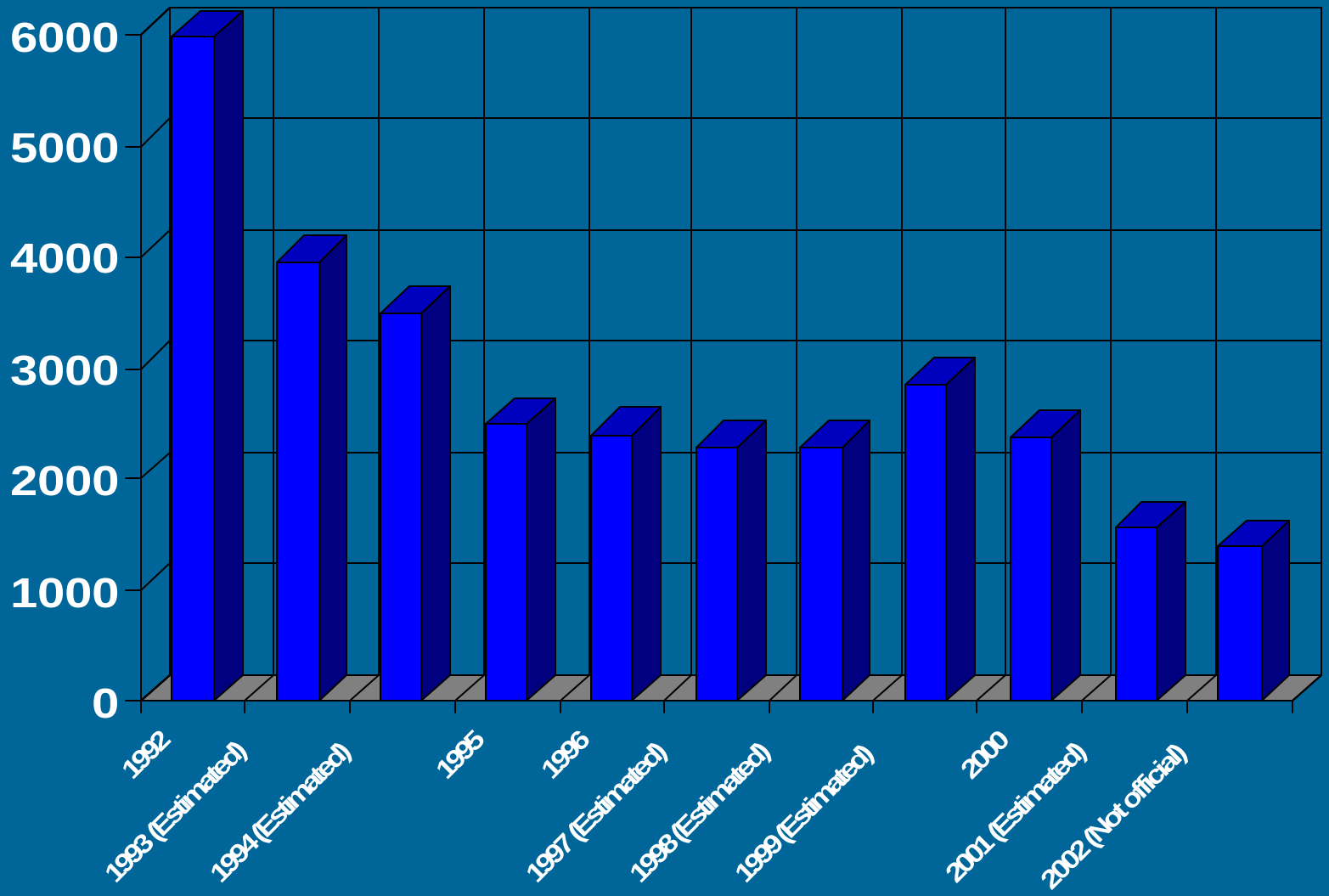
Trends of Malaria Morbidity & Mortality in SEA Region, 1994-2003



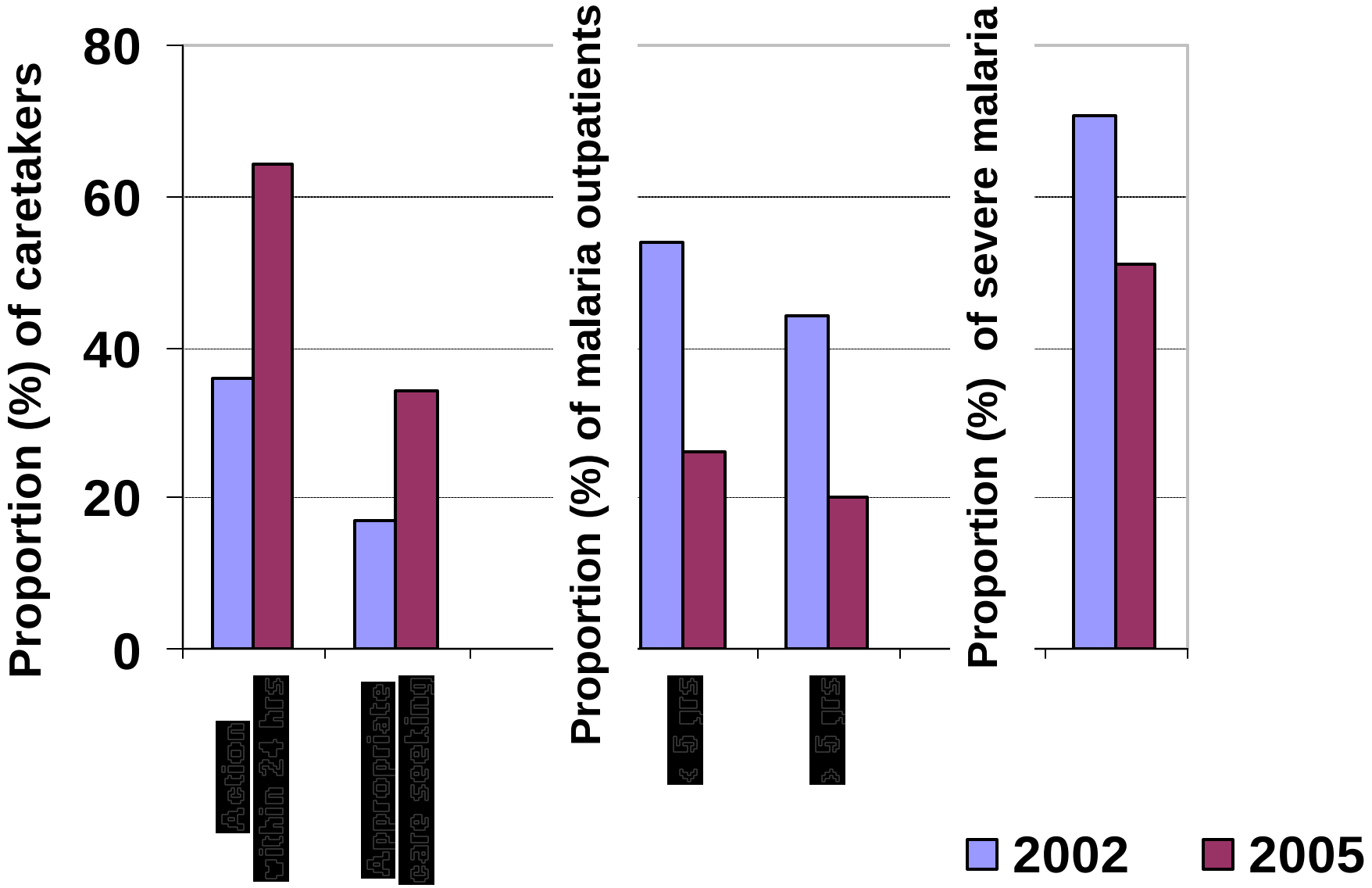
Reported number of autochthonous malaria cases in all countries of the WHO European Region, 1990–2005



WPRO: Regional Trend in Malaria Deaths, 1992–2002

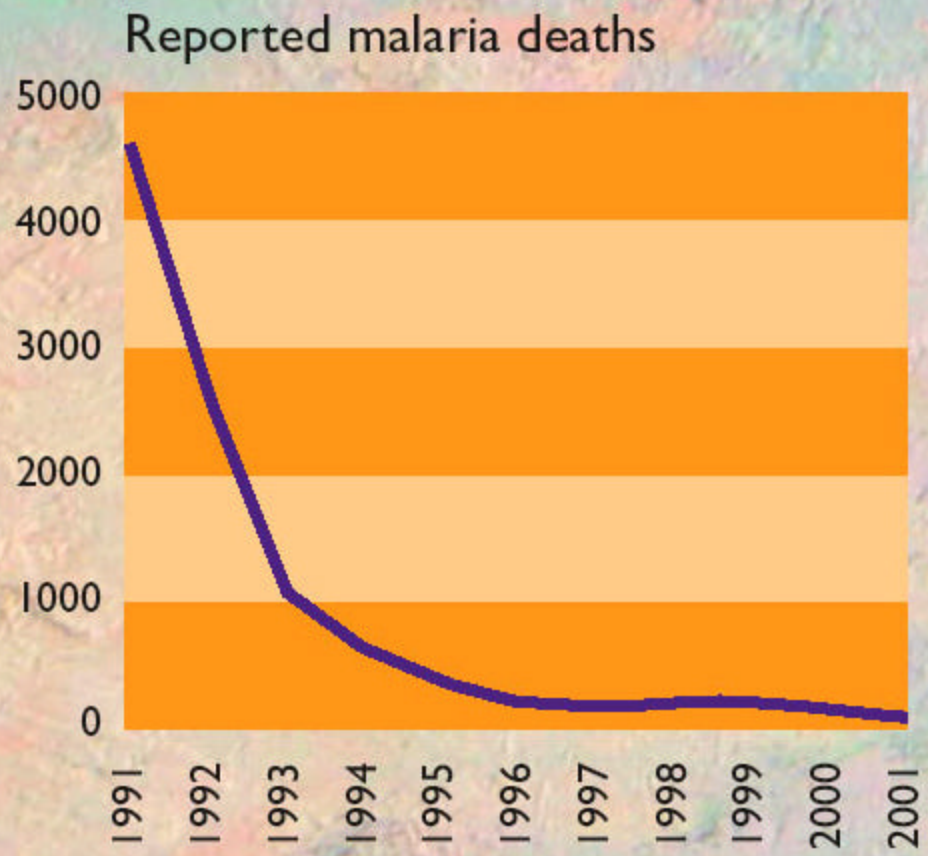


Zanzibar: Scale up of ACT use and ITNs began in 2003

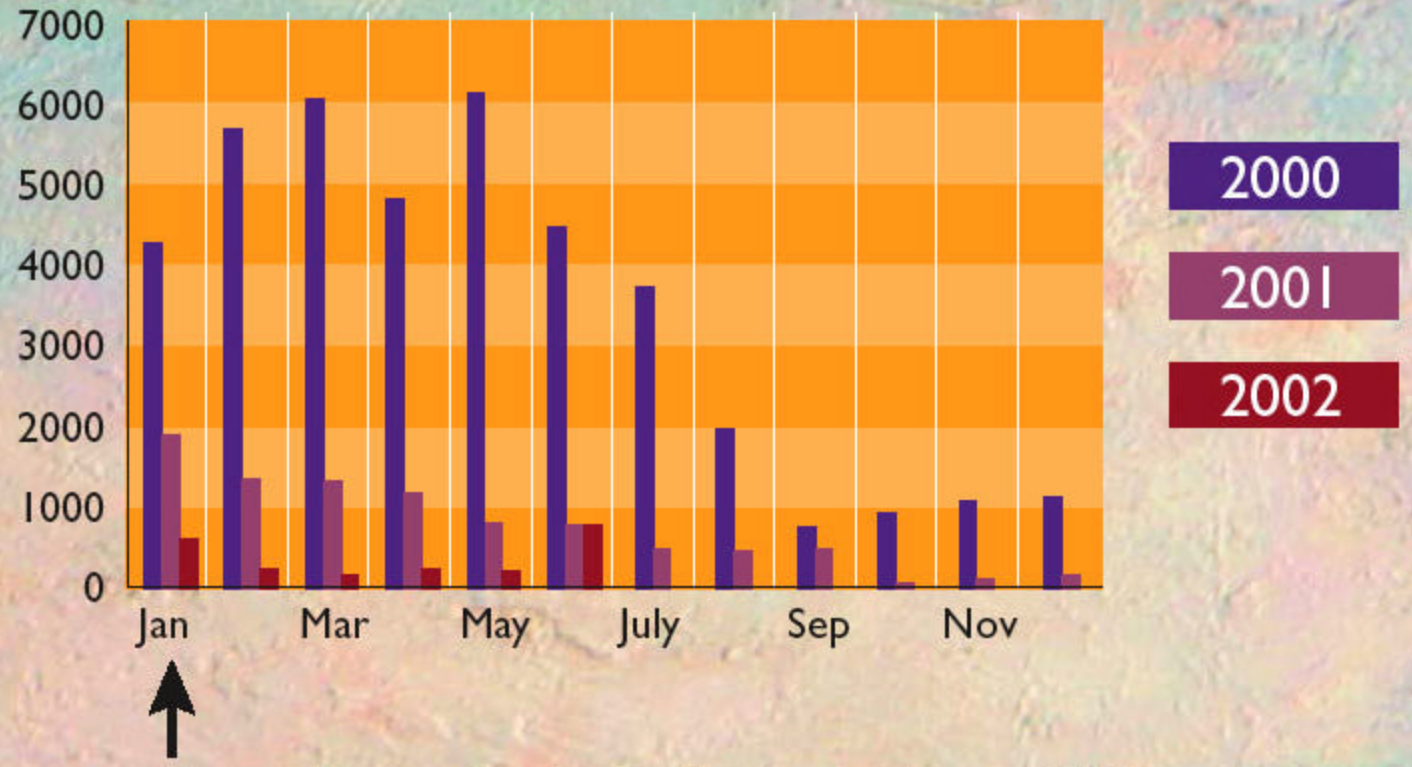


Impact on malaria deaths by intensive malaria control program in Viet Nam, 1991-2001

- High level political commitment
- Government production and distribution of bednets and anti-malarials
- Correct treatment policies providing free artemisinin to malaria patients
- Health education in schools, on radio
- Multi-sectoral involvement (traditional leaders, community groups, NGOs, and national industry)



Malaria Notifications in KwaZulu Natal before (2000) and after (2001-2002) effective residual spraying and implementation of artemether-lumefantrine



South East African Combination Antimalarial Therapy (SEACAT) Evaluation

KwaZulu Natal Department of Health

The RBM Partnership

Roll Back Malaria - launched in 1998 as a high profile health initiative

by founding partners WHO, UNDP, UNICEF and the World Bank

With the primary goal of halving the mortality by 2010 and 75% by 2015

www.rbm.who.int

The International Malaria Agenda

Roll Back Malaria Partnership

The aim (of Roll Back Malaria) will be to halve malaria-associated mortality by 2010 and further halving by 2015

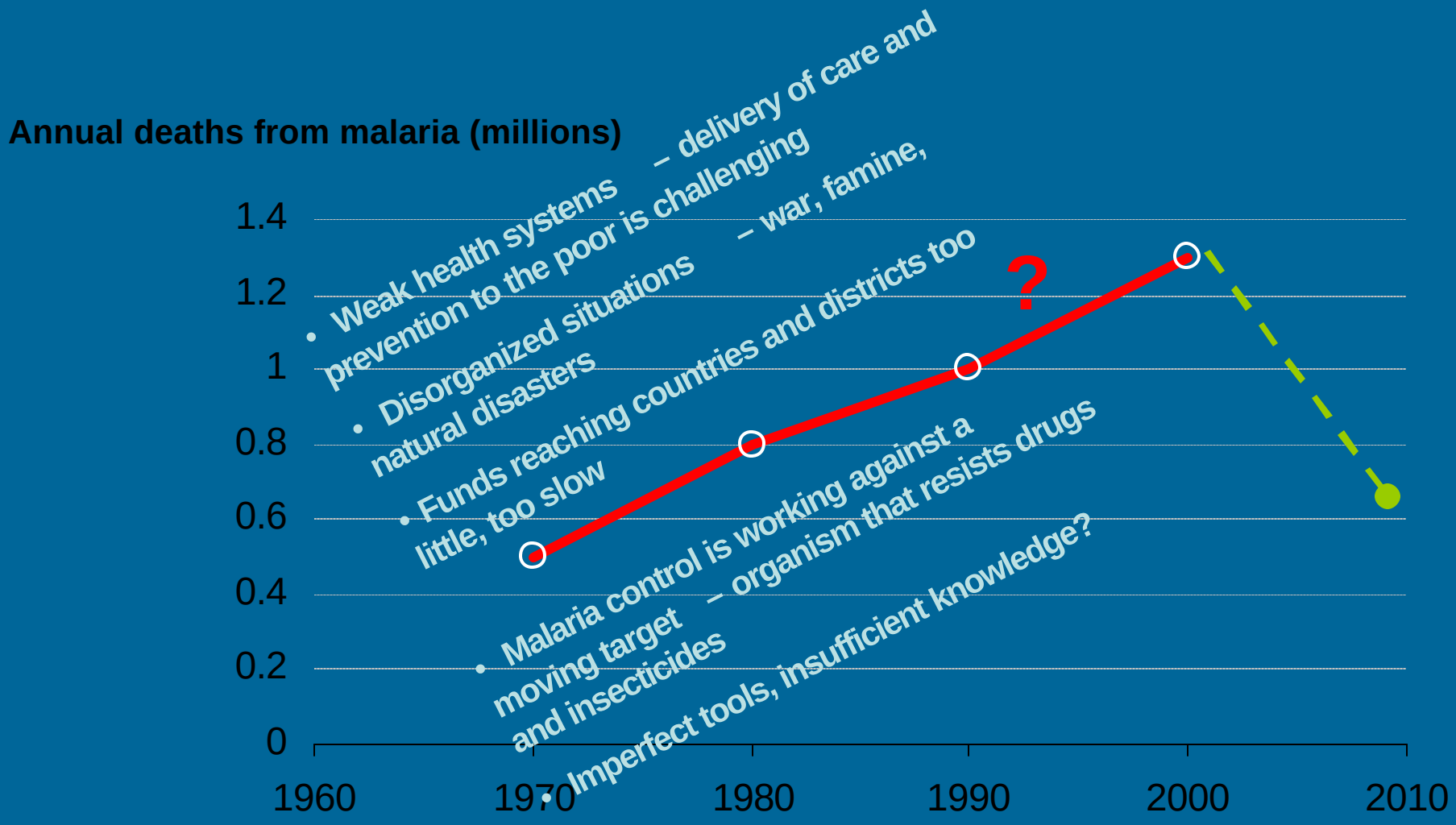
Millennium Development Goals

Target 8: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases **(expected to be: to reduce malaria morbidity and mortality by 75% by 2015 from the 2005 baseline level)**

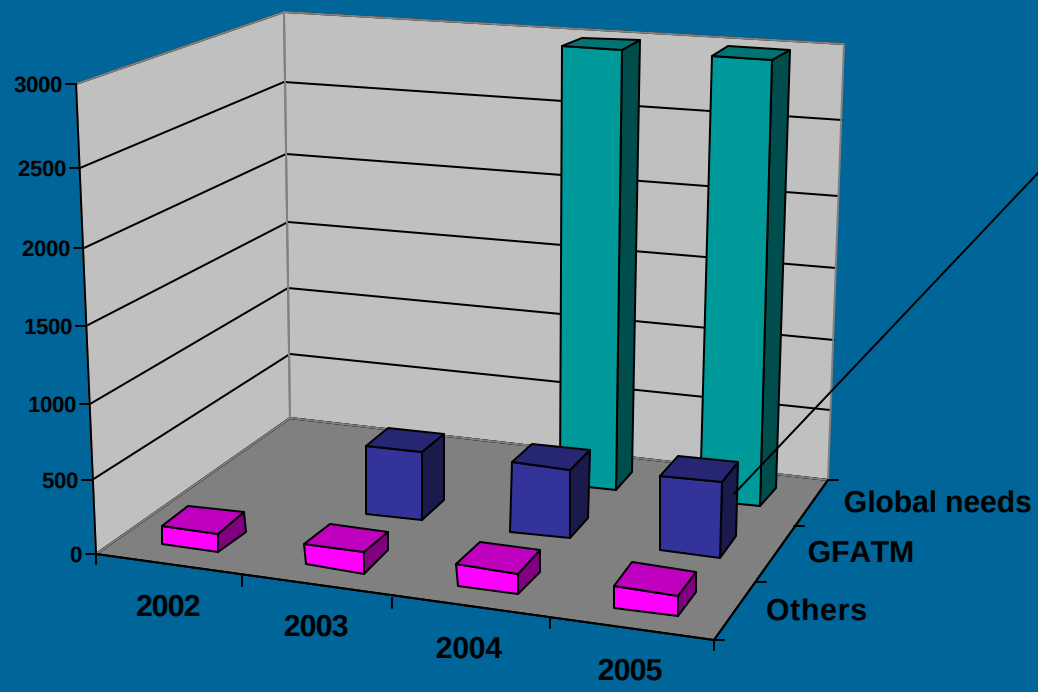
World Health Assembly 2005 (WHA resolution 58.2)

Ensure a reduction in the burden of malaria of at least 50% by 2010 and 75% by 2015

The RBM Goal…..


Annual deaths from malaria (millions)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1960
1970
1980
1990
2000
2010
?
Weak health systems – delivery of care and prevention to the poor is challenging
Disorganized situations – war, famine, natural disasters
Funds reaching countries and districts too little, too slow
Malaria control is working against a moving target – organism that resists drugs and insecticides
Imperfect tools, insufficient knowledge?

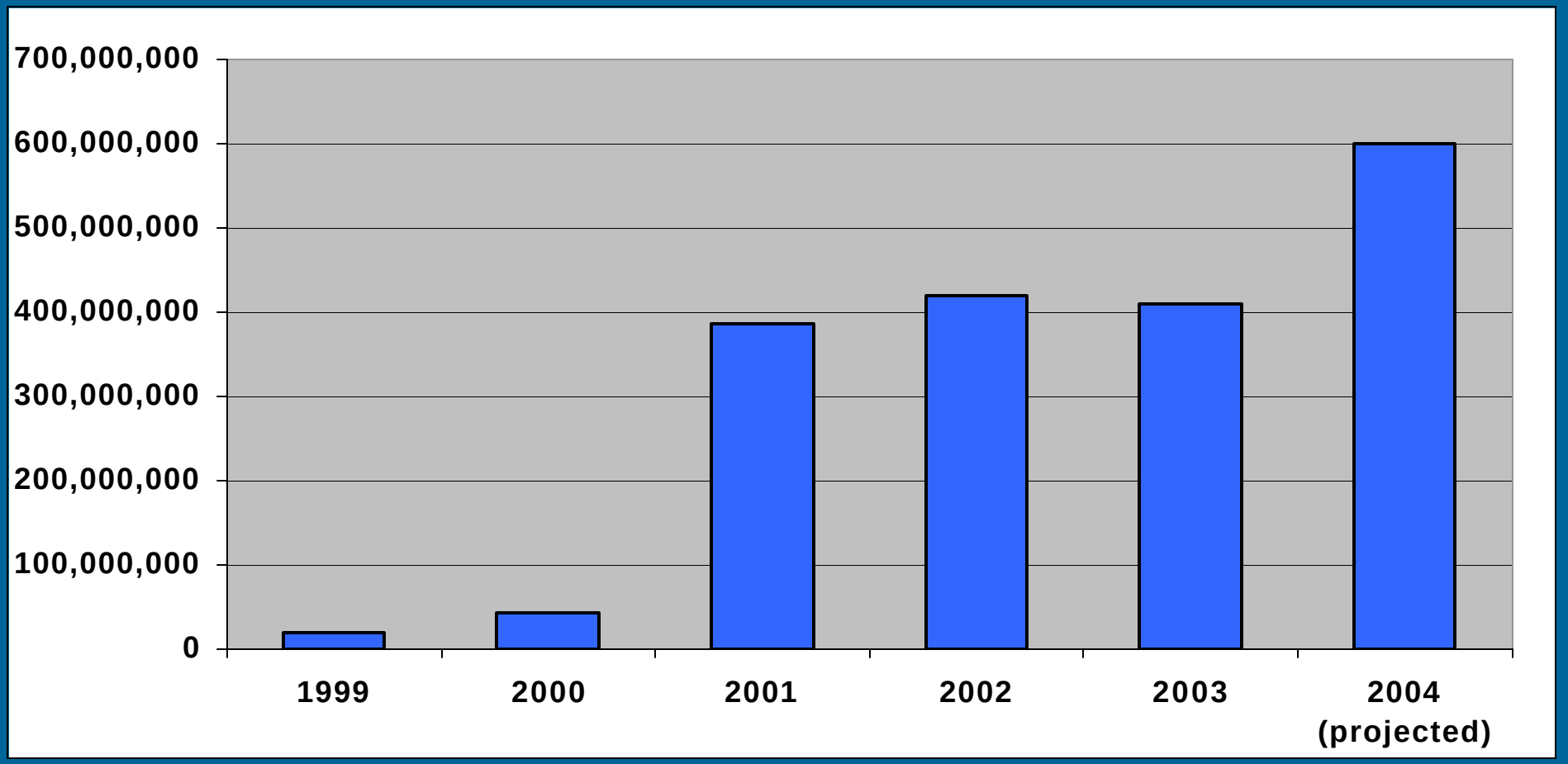
International investments in malaria control



GFATM awards:

- **940 million USD till end of 2004**
- **1.8 billion over 5 years**

Estimated contributions to malaria control activities by development agencies (US$)



7 years after the launch of RBM…

High level of political commitment in endemic countries and the world.

Global awareness and financial investments to malaria control have increased

Countries have sound strategic plans and have begun to roll out interventions…early indications of impact in some situations

New strategies and tools are in the pipeline of development

Gaps and challenges to achieving the goals remain, and needs to be addressed

….but is this enough? And has there been an impact on disease burden?

RBM Technical Strategies …..evidence-based actions

- Prompt treatment with effective drugs
- Insecticide-treated materials (ITM), IRS, and other vector-control methods
- Intermittent preventive treatment (IPT) during pregnancy
- Emergency and epidemic preparedness and response

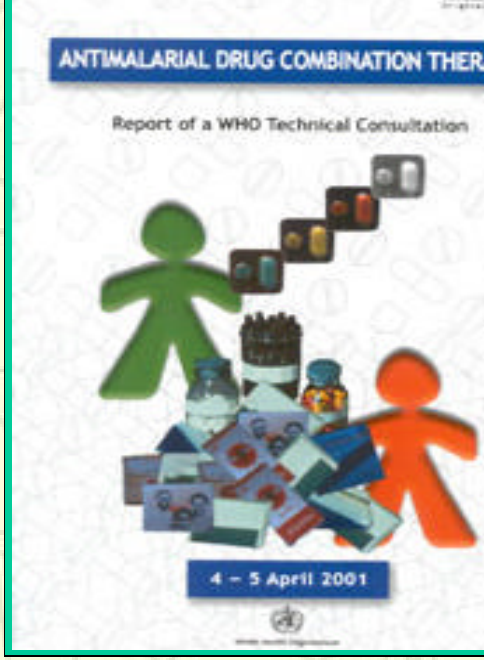
The most critical challenge is going to scale …..to achieve coverage targets

Global database on therapeutic efficacy of antimalarials:

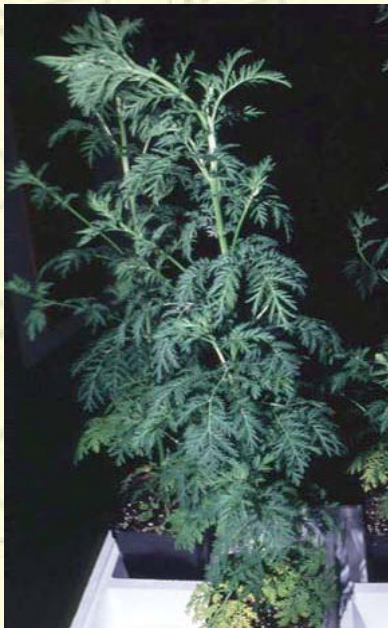
http://www.who.int/malaria/resistance.htm

Artemisinin-based Combination Therapies (ACTs) recommended by WHO

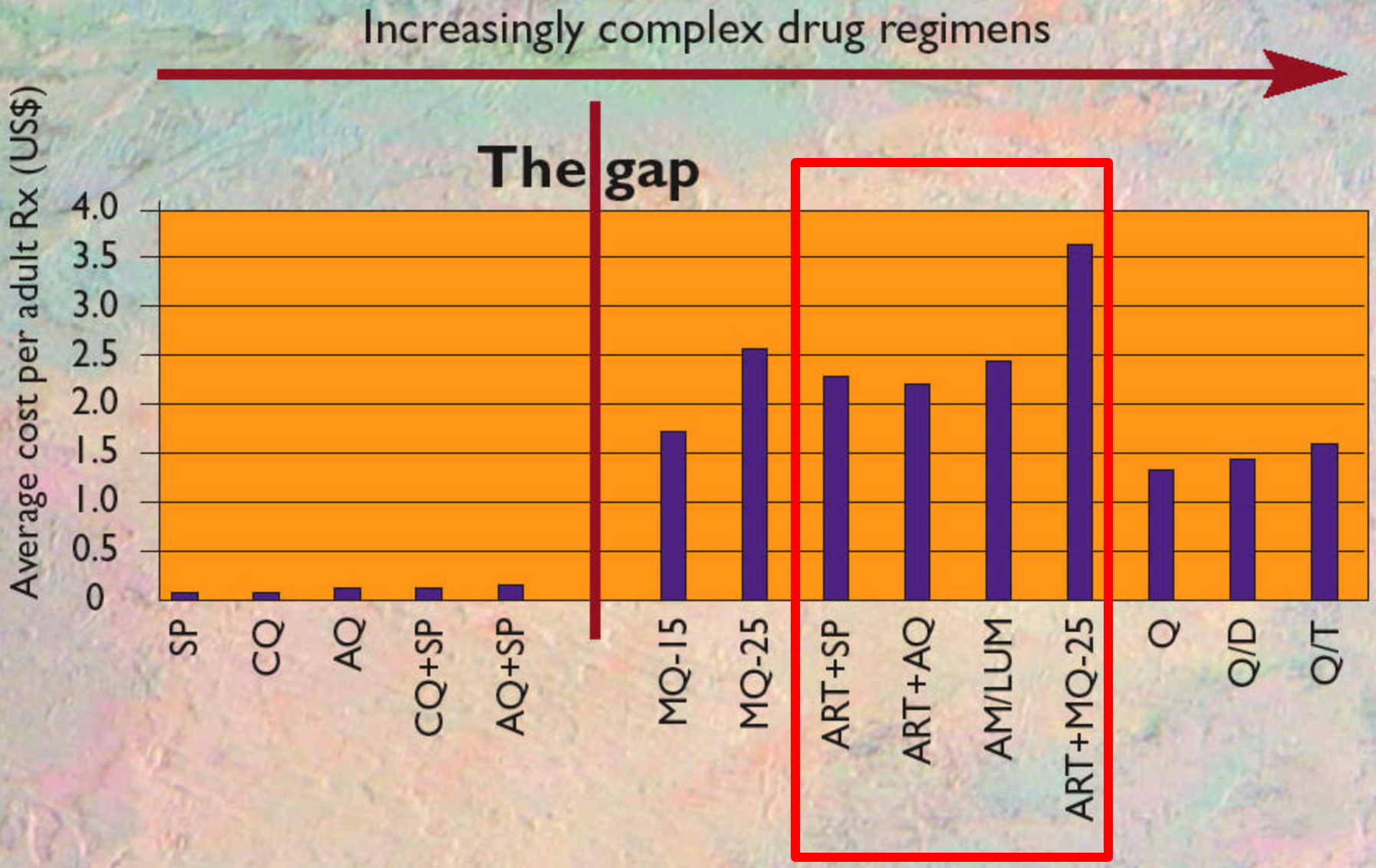
WHO Technical Consultation on
"Antimalarial Combination Therapy" – April 2001



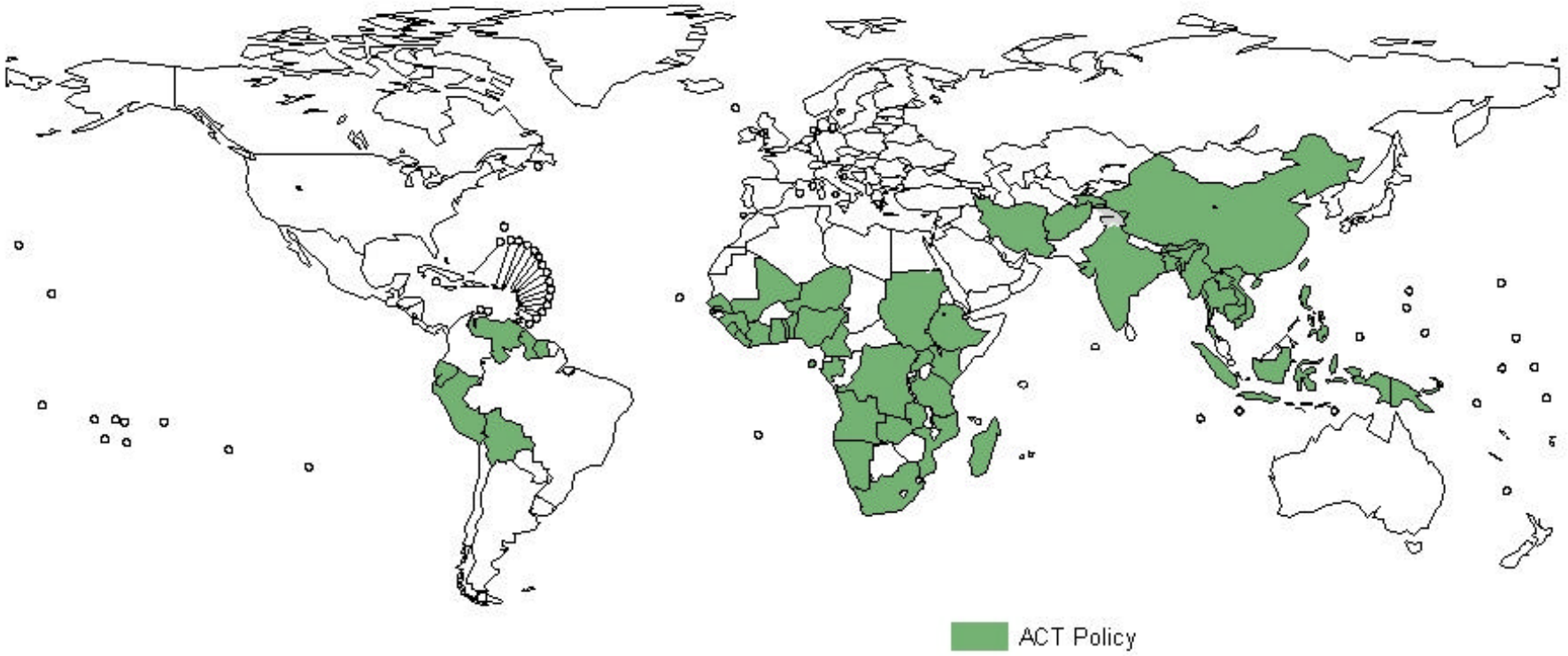
- Artemether/lumefantrine
- Artesunate + amodiaquine
- Artesunate + SP
- Artesunate + mefloquine



Alternative options to CQ, AQ and SP are at least 10 times more costly

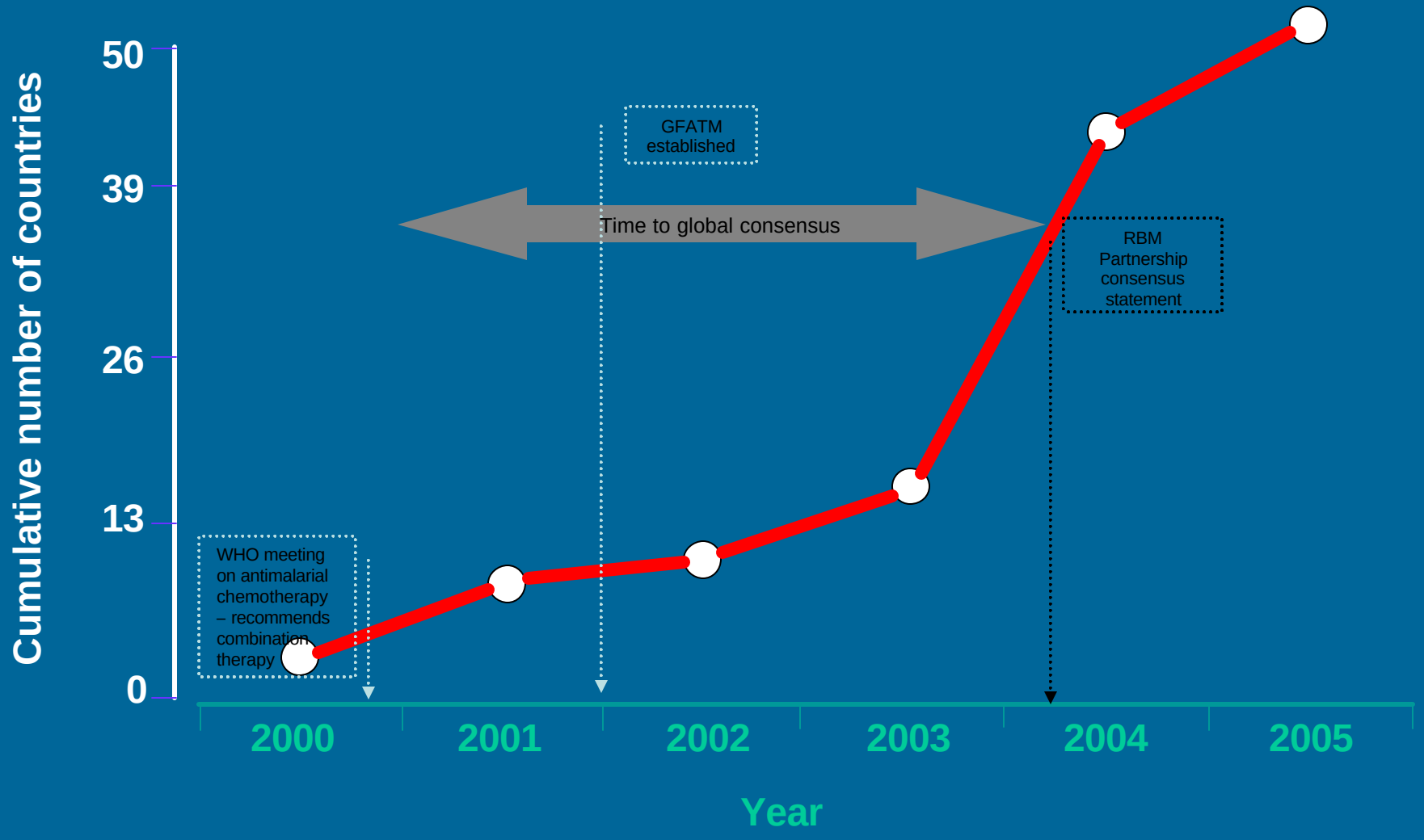


ACTs as Antimalarial Drug Policy, as of August 2005



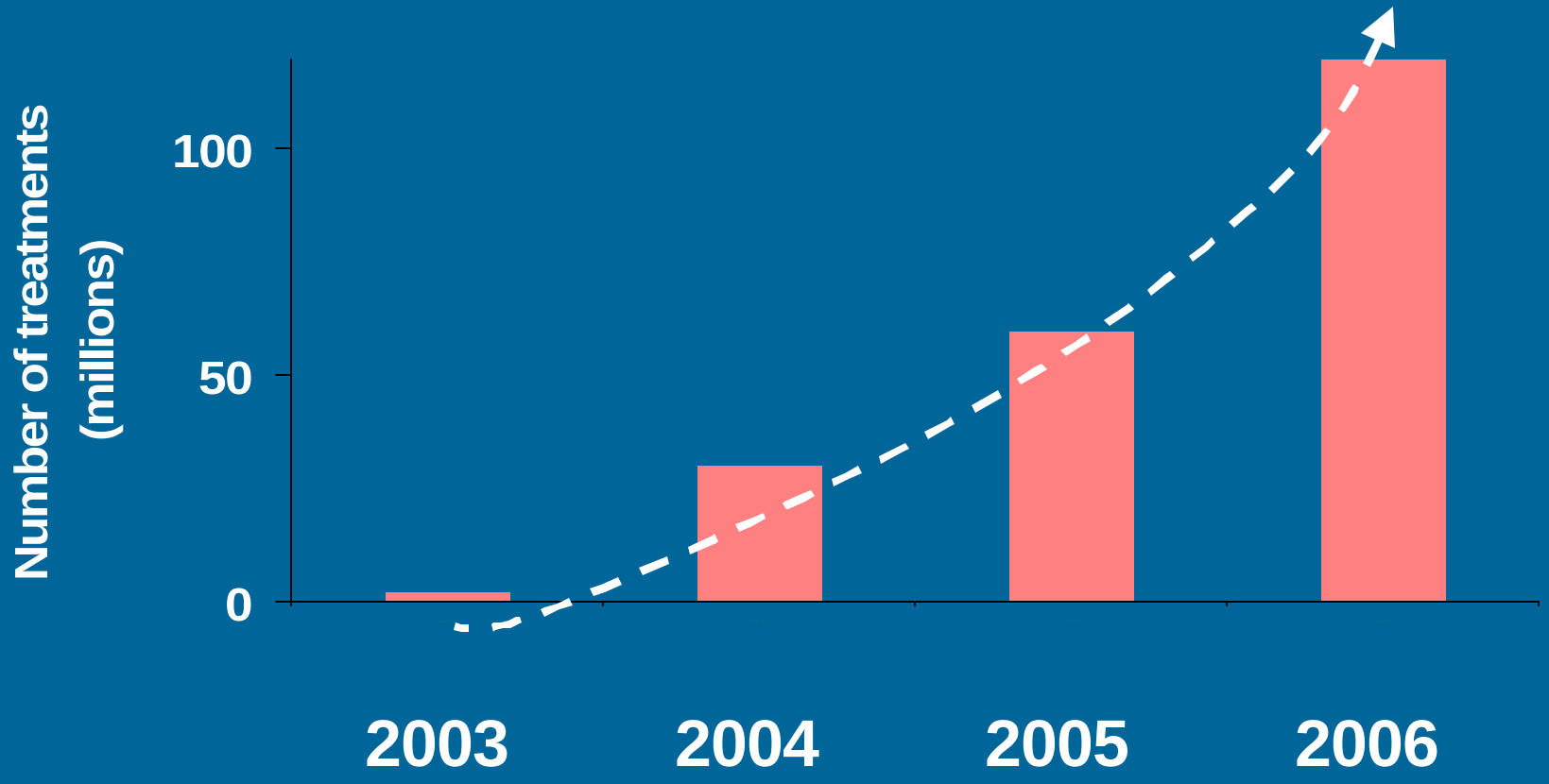
The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

Uptake of ACT-based treatment policies by countries



Global requirements of ACTs

The rapid shift to ACT-based treatment policies by countries in 2004 and 2005 and the resulting surge in demand — from 2 million treatment courses in 2003 to 60 million courses in 2005 — led to a shortfall of artemisinin and ACTs.

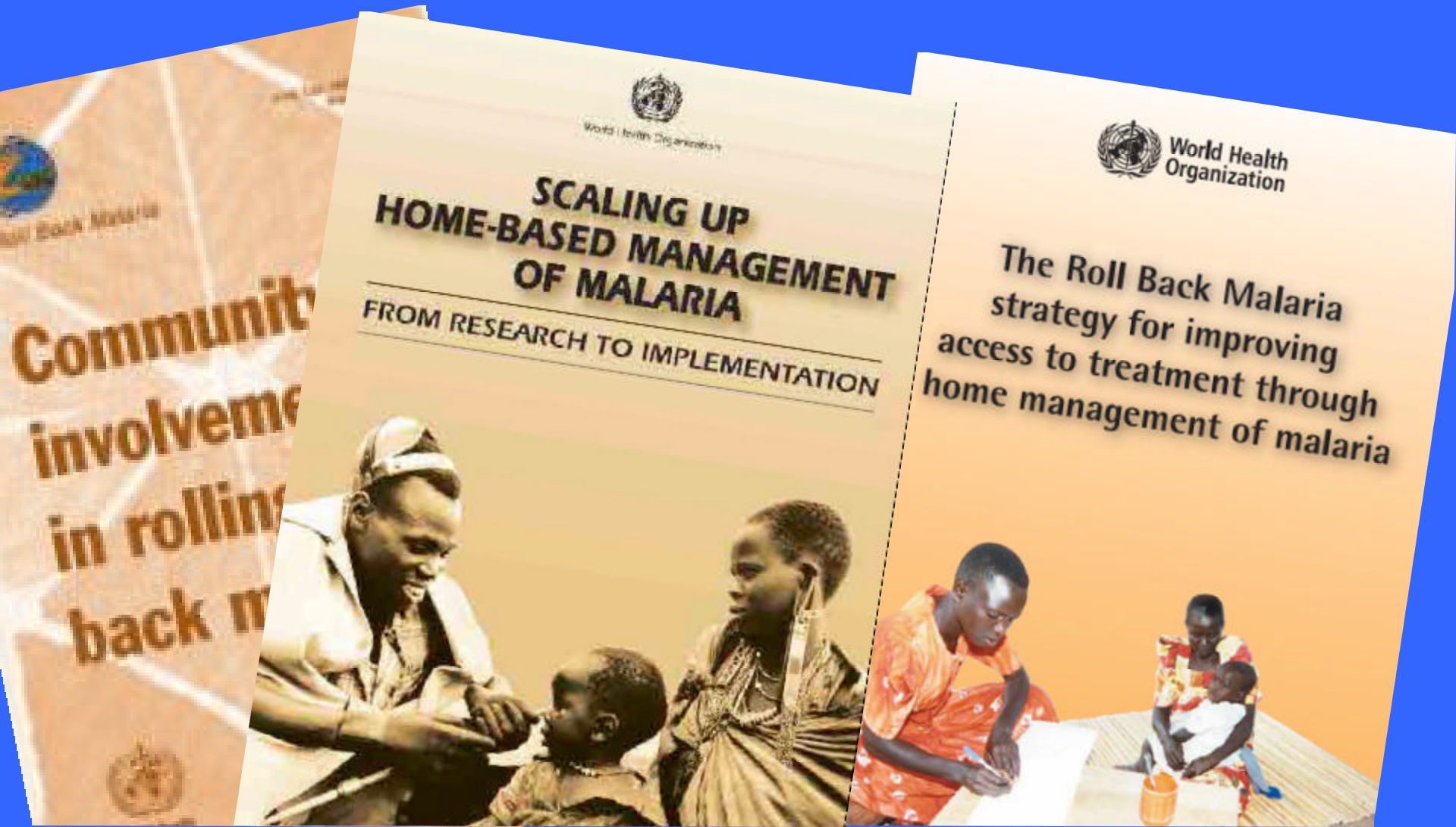


The role of parasitological diagnosis in malaria?

Microscopy & Rapid Diagnostic Tests

Home Management of Malaria

- Education of mothers
- Training of community health workers and shop-keepers
- Supply pre-packaged good quality medicines to community agents.

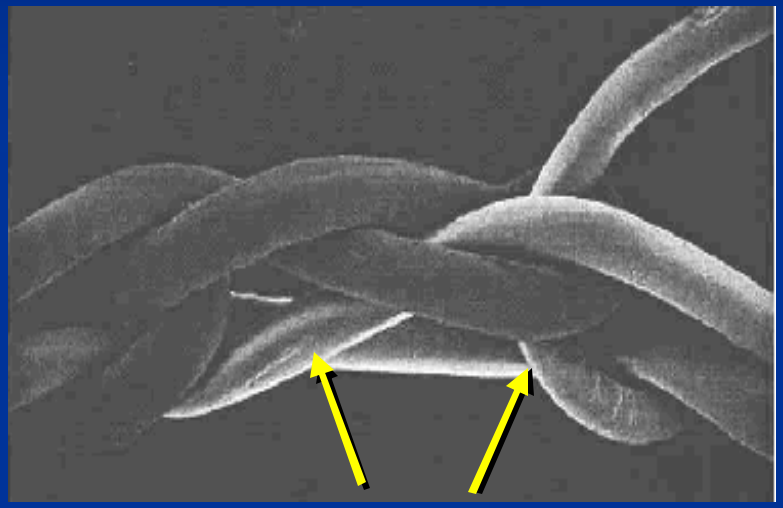


RBM Technical Strategies …..evidence-based actions

- Prompt treatment with effective drugs
- Insecticide-treated materials (ITM), IRS, and other vector-control methods (Integrated Vector Management)
- Intermittent preventive treatment (IPT) during pregnancy
- Emergency and epidemic preparedness and response

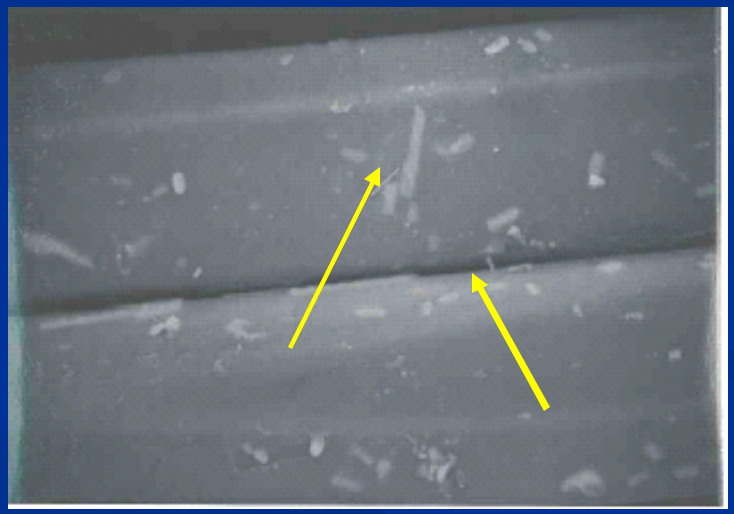
Olyset® LLIN

- Olyset® LLIN



A thin film of Un film mince de Permethrine is present at the surface of the fibwe and is continually ‘refilled’ by the internal reservoir.

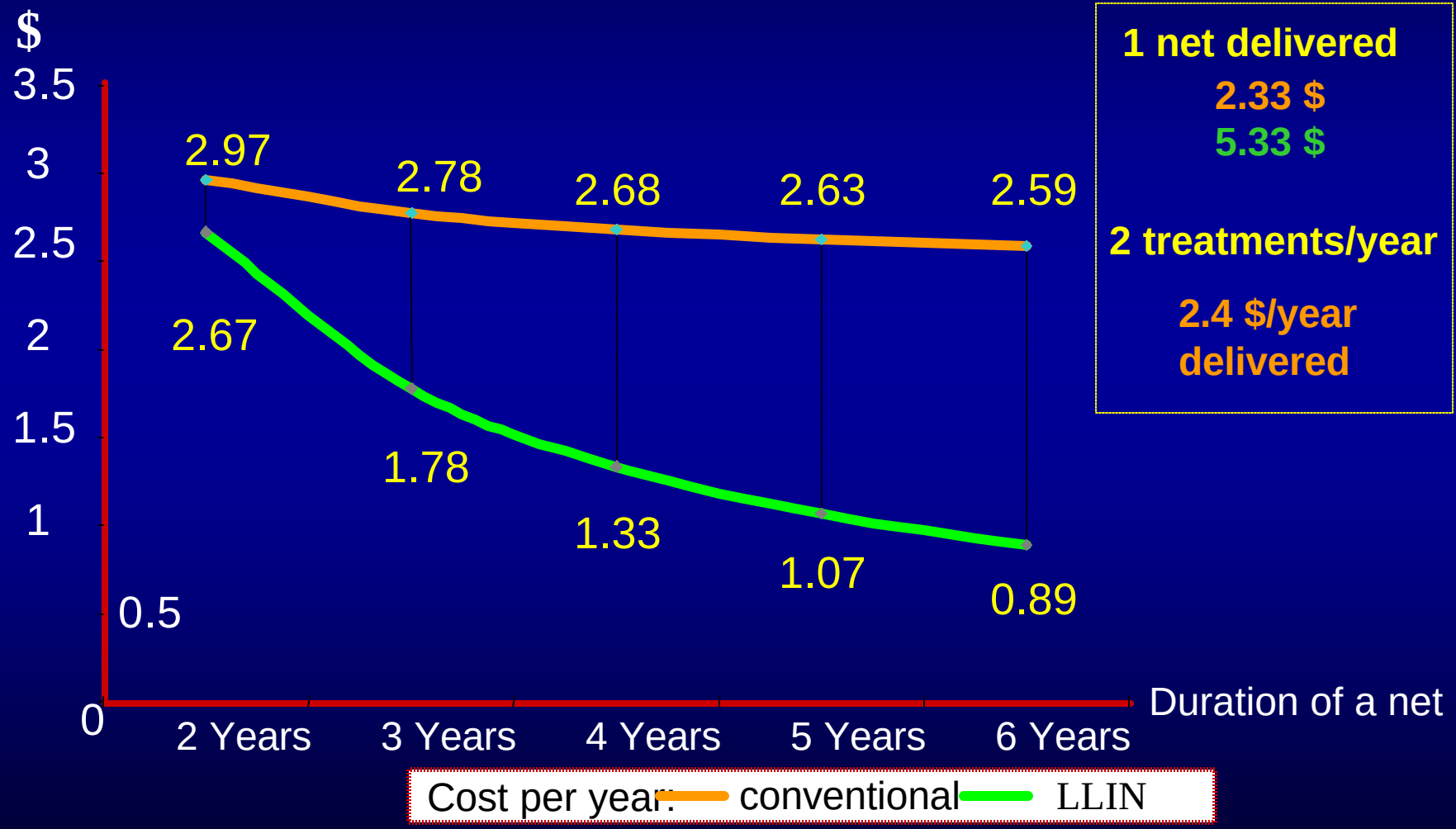
Conventional Mosquito Netting



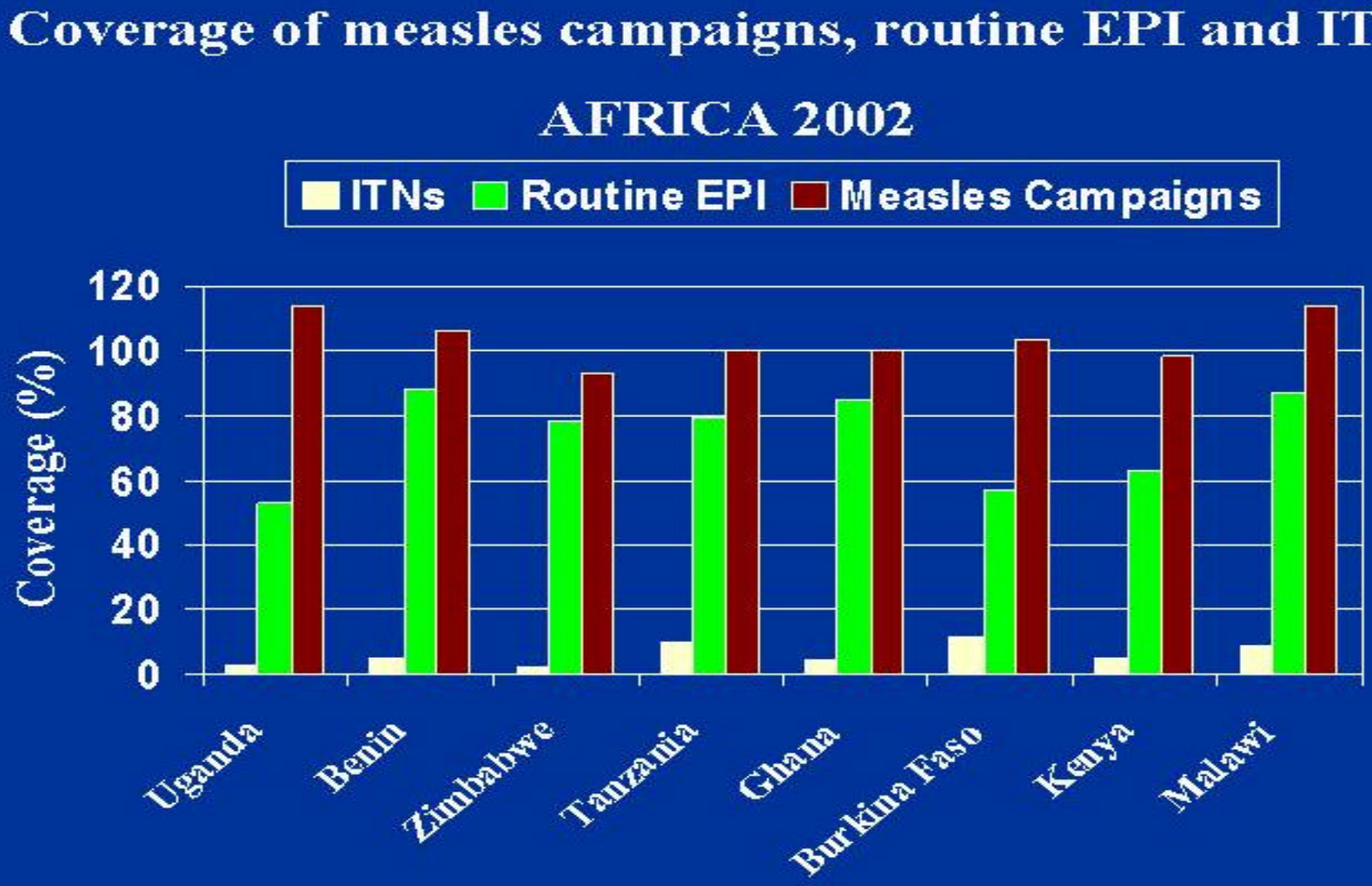
Particles of insecticide on the surface of the fiber.

Long Lasting Insecticidal Nets: cost-effectiveness

Comparison of conventional nets & retreatment with LLIN (MSH)



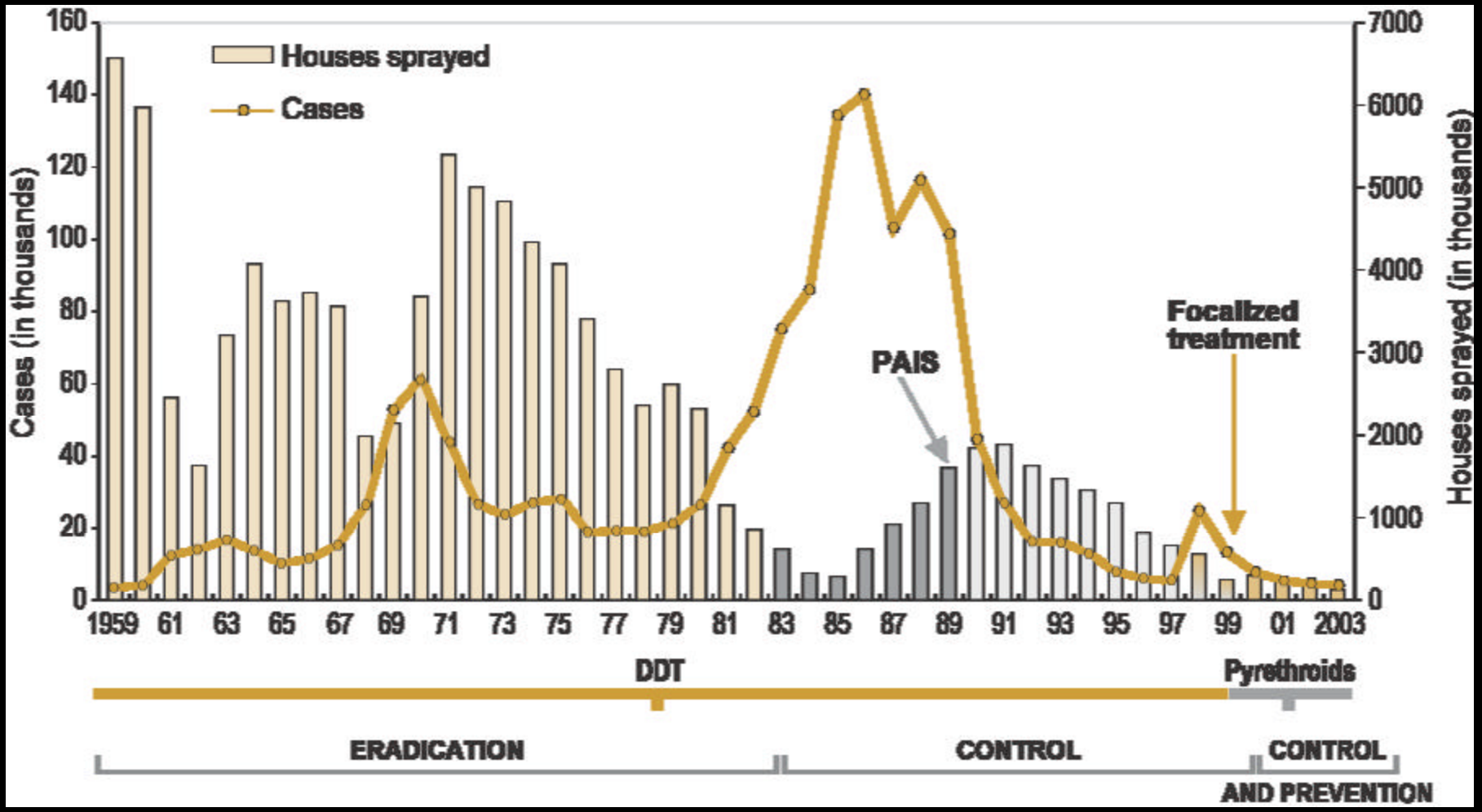
Towards the use of existing health system mechanisms to scale up delivery packages ...



Indoor Residual Spraying

An important component of the RBM strategy

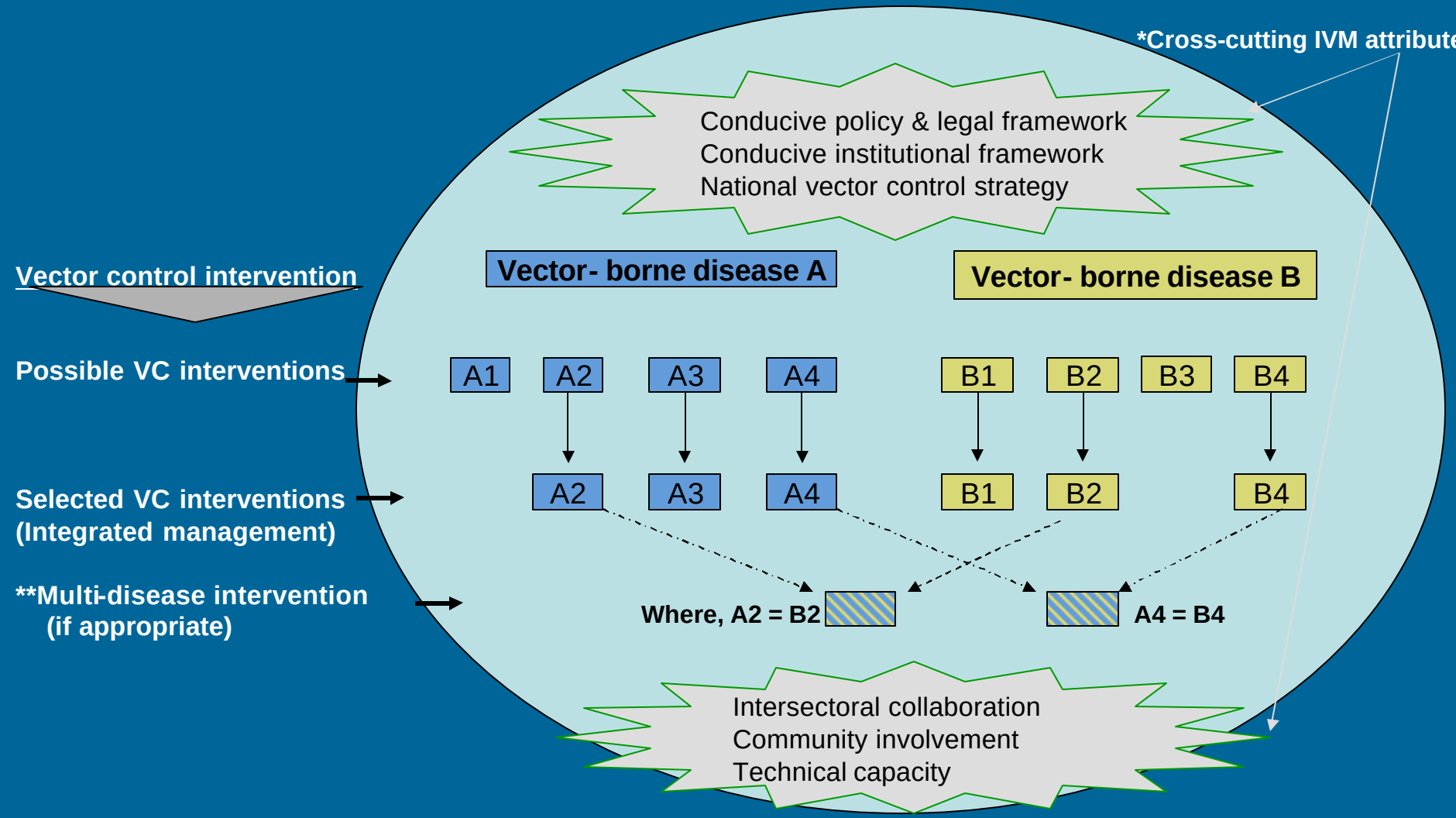
Malaria cases and insecticide sprayings in Mexico, 1959–2003



Insecticide resistance in malaria vectors is widespread

- Multiple resistance (DDT, dieldrin, OPs, carbamates, pyrethroids)
  - *An. sacharovi* in Turkey
  - *An. albimanus* in Central America
  - *An. gambiae* in West Africa
- Resistance already found at various levels in almost all major malaria vectors
- All main resistance mechanisms found in malaria vectors (target site mutations, detoxification)

Conceptual approach to IVM



* The cross-cutting attributes should be in place, irrespective of the type of vector-borne disease(s)

**Assuming that intervention A2 is the same as B2 (e.g. indoor residual spraying or ITN), then where the two diseases occur in the same local area, joint consideration of the deployment of the intervention is needed, to maximize the impact on both diseases and also ensure judicious use of available resource. It should be noted however such multi-disease approach may not be possible - different vector borne diseases requiring different set of non-overlapping interventions (e.g. Onchocerciasis and malaria) , and where single-disease IVM interventions is needed.

Intersectoral approach to integrated vector management

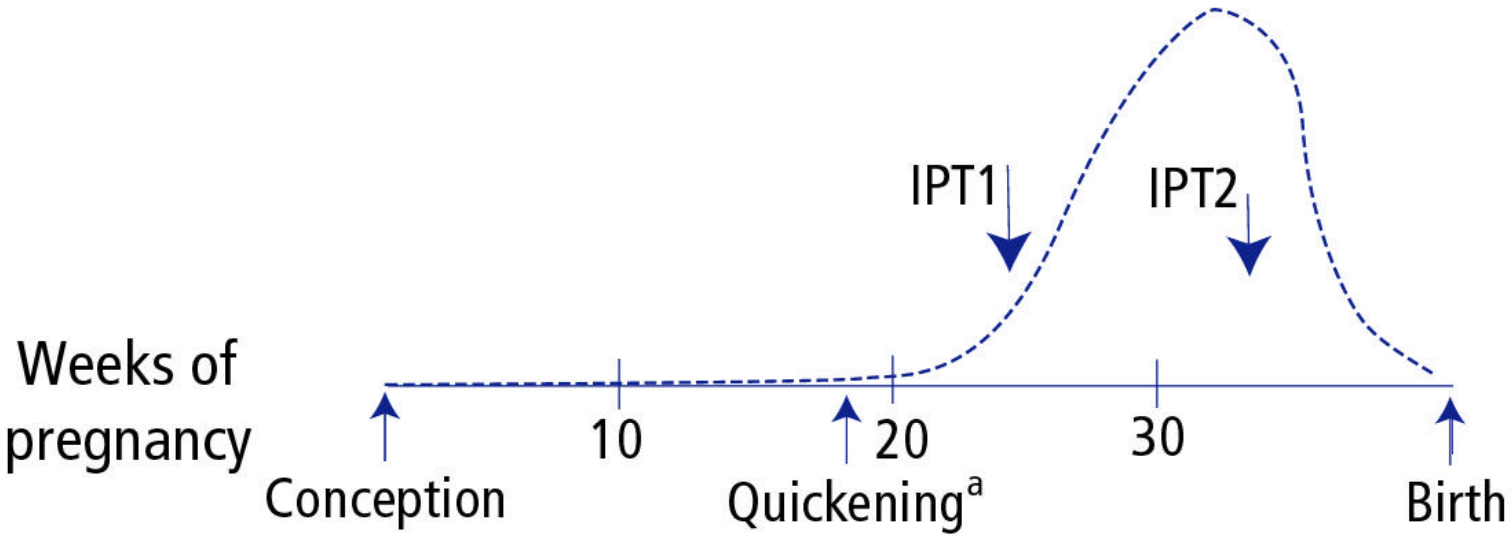
RBM Technical Strategies ...evidence-based actions

- Prompt treatment with effective drugs
- Insecticide-treated materials (ITM), IRS, and other vector-control methods
- Intermittent preventive treatment (IPT) during pregnancy
- Emergency and epidemic preparedness and response

Malaria in pregnancy

- Prompt access to the most effective and safe antimalarials,
- ITNs,
- IPT in moderate / high transmission areas

Timing of intermittent preventive treatment



a: Quickening is the first noted movement of the fetus

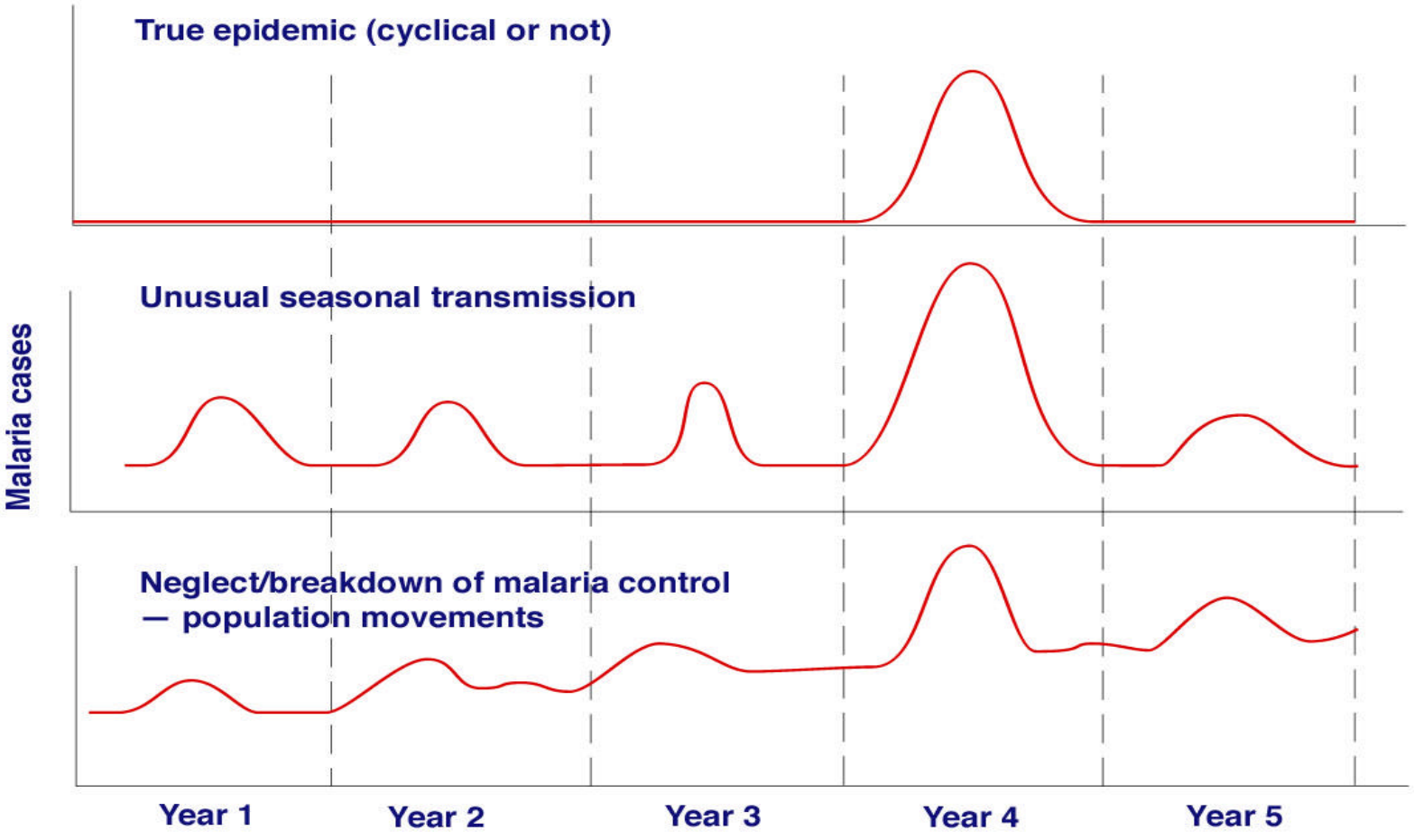
- Coverage with IPT is being scaled-up in the context of reproductive health services (antenatal care)
- Sulfadoxine-pyrimethamine is fast becoming ineffective in many countries
- No substitute medicine yet

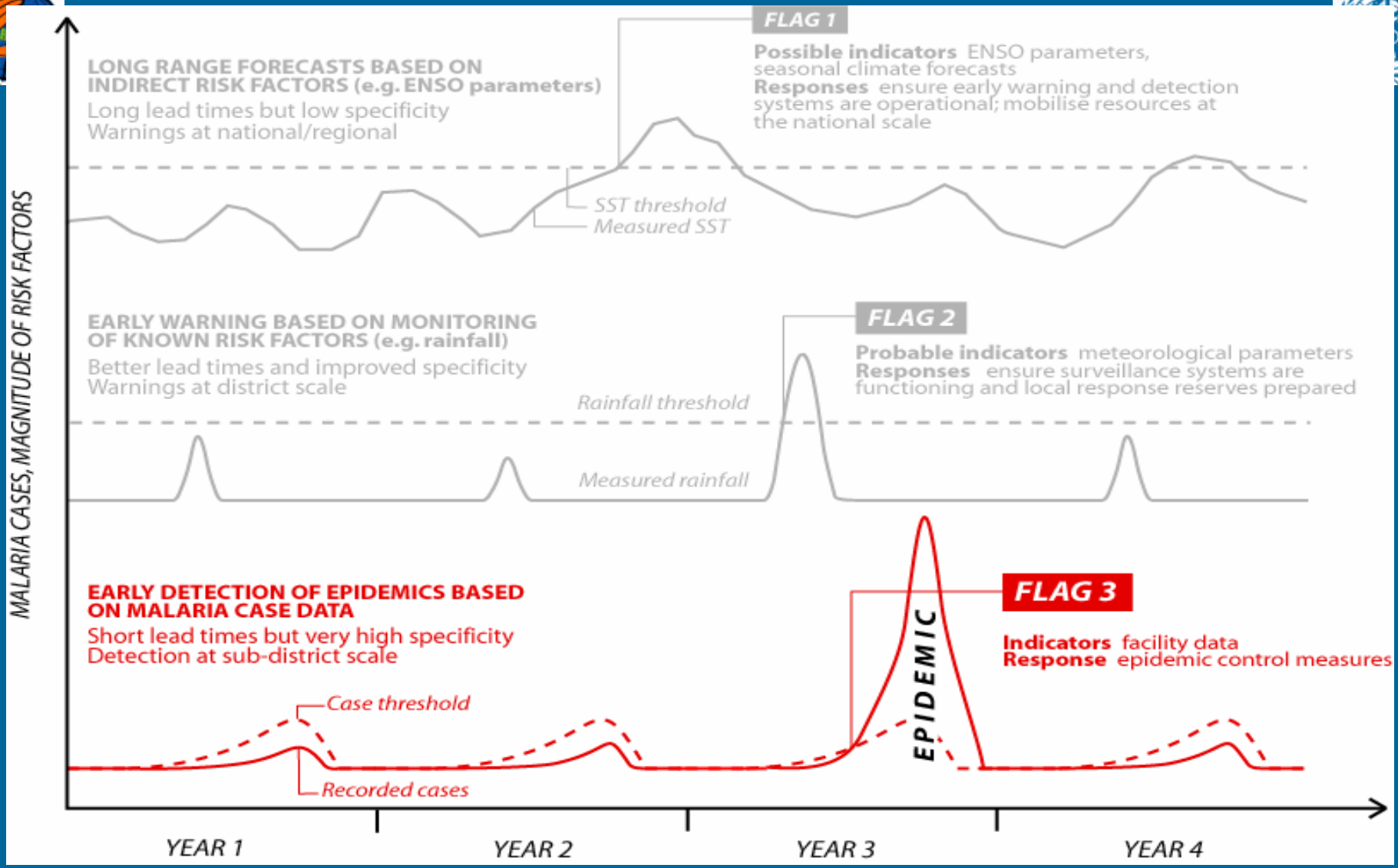
RBM Technical Strategies ... evidence-based actions

- Prompt treatment with effective drugs
- Insecticide-treated materials (ITM), IRS, and other vector-control methods
- Intermittent preventive treatment (IPT) during pregnancy
- Emergency and epidemic preparedness and response

The most critical challenge is going to scale .....to achieve coverage targets

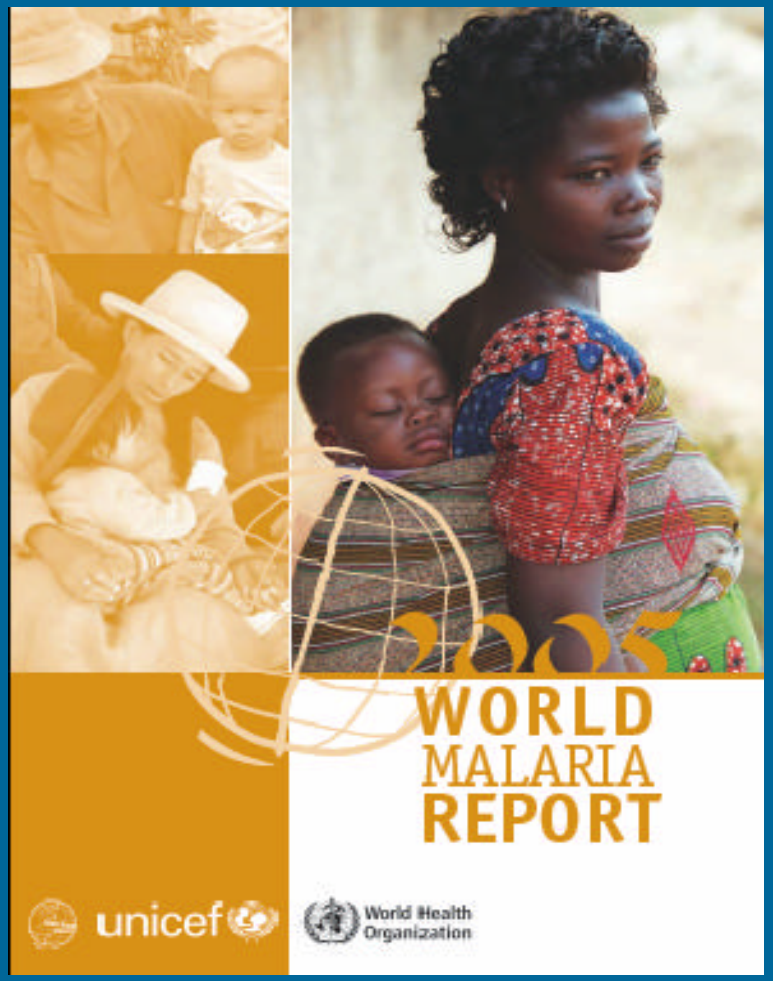
Classification of major malaria epidemic types





Flag 3 Early detection of epidemics through monitoring morbidity (confirmed malaria cases) in high risk areas. This approach offers no real lead time but provides specific information on epidemic timing and location

Recent Progress in Monitoring and Evaluation



- Global Malaria Report published
- Preparation of country profiles stimulated countries to improve and update reporting
- Profiles of 40 high-burden countries published; remaining profiles available on website

http://rbm.who.int/wmr2005/

Country Profiles

UGANDA

National malaria policy & strategy environment	
Malaria strategy overview for 2003	*Strategy*
• Treatment and diagnosis guidelines	Yes

Malaria situation

Malaria is the leading cause of morbidity and mortality in Uganda and is responsible for up to 40% of outpatient visits, 25% of hospital admissions and 14% of hospital deaths. The burden of malaria is greatest among children under 5 years of age and pregnant women.

National policy and planning

A national RBM strategic plan (2001/2002–2004/2005) guides malaria control activities in Uganda. The main strategies are: (i) prompt and effective treatment, including home management; (ii) vector control, including ITNs and IRS; (iii) IPT during pregnancy; and (iv) and epidemic preparedness.

Progress in malaria control activities

In the past 5 years, positive developments have included: (i) increasing the capacity of the NMCP; (ii) developing an ITN policy and strategy; (iii) enhancing monitoring of antimalarial drug efficacy; (iv) updating the antimalarial drug policy in 2002 and 2004; and (v) in April 2002, developing and implementing a strategy of home management of fever using pre-packaged CQ and SP. Remaining challenges for increasing ITN coverage include how to distribute appropriately to vulnerable groups and how to raise awareness of the importance of ITNs for these target populations. Challenges to implementing the new IPT policy include: (i) increasing the use of antenatal clinics by vulnerable women; (ii) reducing drug stock-outs; and (iii) countering erroneous beliefs about the harmful effects of SP through increased education among populations of pregnant women at risk of malaria.

UGANDA

EPIDEMIOLOGICAL DATA

Following WHO recommendations, malaria case reporting is carried out in most countries. The data presented below reflect aggregated malaria cases at the national level and are presented by gender, age and subnational level as submitted to WHO. Malaria reporting from national surveillance systems varies in quality and reporting completeness and may have limited value in understanding the actual malaria burden, but may be useful for understanding trends in the relative burden of malaria in the public health sector.

Reported malaria cases (annual)

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
		2 446 659	1 470 662	2 191 277	1 431 068		2 317 840	2 845 811	3 070 800

2000	2001	2002	2003
3 552 859	5 622 934	7 216 411	12 343 411

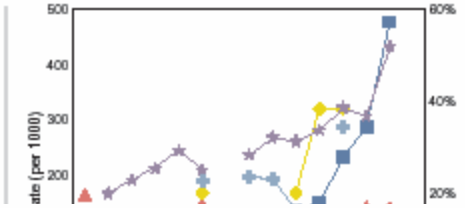
Date of last report: 30 November 2004

Reported malaria by type and quality

	For most recent year	2003
Reported malaria cases		12 343 411
Reported malaria deaths		8 450
Probable or clinically diagnosed		
Malaria cases		12 343 411
Severe (inpatient or hospitalized) cases		
Malaria deaths		8 450
Slides taken		
Rapid diagnostic tests (RDTs) taken		
Laboratory confirmed		
Malaria cases		
P. falciparum or mixed		
P. vivax		
Severe (inpatient or hospitalized) cases		
Malaria deaths		
Investigations		
Imported cases		
Estimated reporting completeness (%)		97

Reported malaria cases by age and gender

Group	Subgroup	2000	2001	2002	2003
	Total	3 552 859	5 622 934	7 216 411	12 343 411
Age	<5 years	1 628 314	2 234 275	2 791 753	3 748 520
	5> years	1 924 545	3 388 659	4 424 658	8 594 891

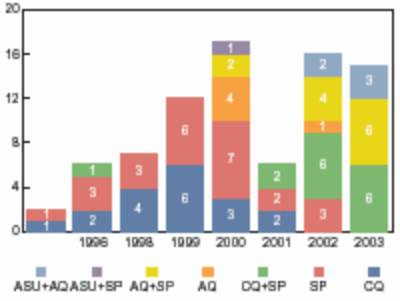


MONITORING ANTIMALARIAL DRUG EFFICACY

Monitoring antimalarial drug efficacy is important for understanding the impact of antimalarial treatment being delivered and the need for drug policy change, essential for ensuring prompt access to effective treatment. Median, range and quartiles are based on percentage clinical failure for uncomplicated *P. falciparum* malaria for countries in Africa south of the Sahara, and percentage total failure for all other areas. Included are studies that used WHO protocol among selected drugs.

Study years	Number of studies	Median	Range Low	Range High	Percentile 25th	Percentile 75th
CQ						
1996-2001	18	29.3	7.5	81.2	16.4	58.7
SP						
1996-2002	25	11.4	0.0	25.0	5.0	16.8
AQ						
1999-2002	5	8.8	0.0	14.5	1.6	12.3
CQ+SP						
1996-2003	15	12.0	0.0	37.0	7.0	19.0
AQ+SP						
1999-2003	12	1.6	0.0	13.0	0.5	3.5
ASU+AQ						
2002-2003	5	1.0	0.0	4.0	0.5	3.7
ASU+SP						
2000	1	0.5				

Number of drug efficacy studies available by year and drug type



Country impact indicators (examples)

Bolivia 1) To maintain API below 4.3 per 10002) To decrease mortality rate

Guatemala 1) To reduce *P. Vivax* malaria morbidity by 70% 2) To eliminate *P. falciparum* local transmission

Guyana 1) To reduce percentage of incidence of *P. falciparum* and *P. vivax* in target areas 2) To reduce the number of persons with severe malaria 3) To reduce the number of deaths due to malaria 4) To increase the percentage of cases treated with Artemisinin derivatives 5) To increase the percentage of cases treated with non-Artemisinin derivatives 6) To increase the number of children under 5 yrs sleeping under mosquito nets 7) To increase the number of HH treated by residual insecticide spray 8) To increase the number of cases detected and microscopically diagnosed less tha two weeks after onset of symptoms 9) To increase the number of mosquito nets treated with insecticid

Haiti 1) To reduce fatality rate related to malaria to null 2) To reduce morbidity rate

Honduras 1) Decrease annual parasitic incidence (IPA) by 50% 2) Decrease the positive slide rate by 50% 3) Decrease the *P. falciparum* rate by 80% 4) Increase the blood examination rate by 100% 5) Reduce the mortality due to *p. falciparum* by 50%

Nicaragua 1) To reduce percentage of malaria incidence in the 36 municipalities 2) To reduce the percentage of malaria incidence caused by *P. falciparum* in 20/36 3) To reduce mortality from *p. falciparum* recorded during the period of the proposal

Suriname 1) Reduce malaria specific morbidity

MC – Andean 1) Reduce malaria incidence (Annual parasitic index) by 50% 2) Reduce overall malaria mortality by 70% 3) Reduce the number of municipalities with annual parasitic index (API) >10 by 50%

Global investments in malaria R & D have increased greatly since the launch of RBM

Innovative Interventions

- Piloting the distribution of an additional treatment pack at the point of care-seeking, to be used at home for the next episode of fever.
- Research on IPT*i* to reduce severe malaria anaemia in children. *A promising strategy against childhood malarial anaemia*
- Research on the development of Artesunate rectal caps as emergency pre-referral treatment at home or in the community - *can be deployed at the peripheral levels of the health system*
- Research on new medicines and insecticides, & malaria vaccines

Towards better integration in other programs and health system mechanisms

Case management: IMCI (Children) – IMAI (Adults) – community IMCI to be better developed / packaged

Vector control: IVM to be strengthened – ITNs scaling up with EPI and ANC (Reproductive health – MPS)

Pregnancy: ITN – IPT – case management – package with RH programs including gender issues,

AIDS control – malaria interventions to be part of the "AIDS package"

M&E and surveillance: standardized definitions, inclusion of malaria in DHS, MICS etc. and efficient integrated reporting for quick action and consolidated documentation

Capacity development

- Strengthening national capacity: local institutions / academies / operational research to update strategies and policies / publications / carrier development / update of curriculum to improve pre-service training / etc.
- When needed, "ad hoc" or planned in-service training / special academic courses (regional exchanges)
- Operational research: use of standardized methodologies / research networks.

Malaria Elimination

- From control to elimination (absence of local transmission),
- Strengthening of surveillance systems an QA of laboratory services (check of imported cases and local transmission),
- Update of interventions and tools (methodologies) to certify elimination
- Interventions to maintain the free-malaria status,

The Future of Roll Back Malaria

- Increase and sustain the momentum in scaling-up interventions, to reach population coverage targets
- Strengthen health systems
- Pay attention to quality of commodities and services
- Continue to invest in R & D
- Monitor progress and evaluate outcomes and impact

¡ Gracias !