The Malaria situation in Myanmar and current policies in the treatment and control

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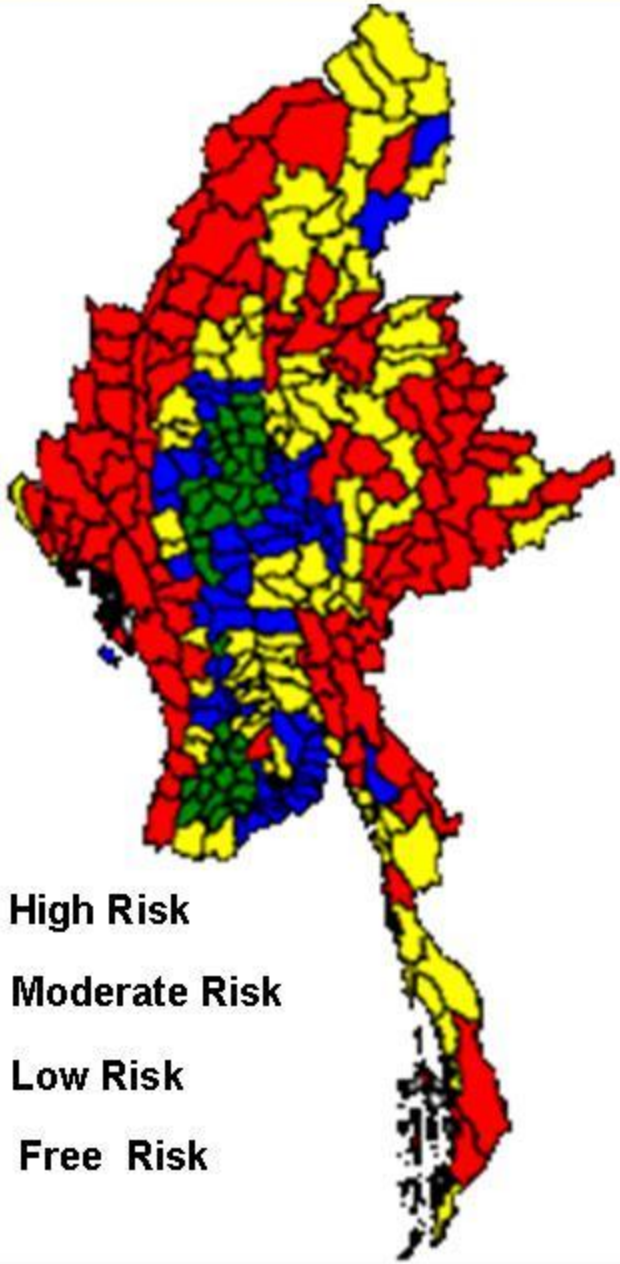
Key areas of presentation

- Malaria situation
- Treatment ,Prevention and control policy
- M A R C

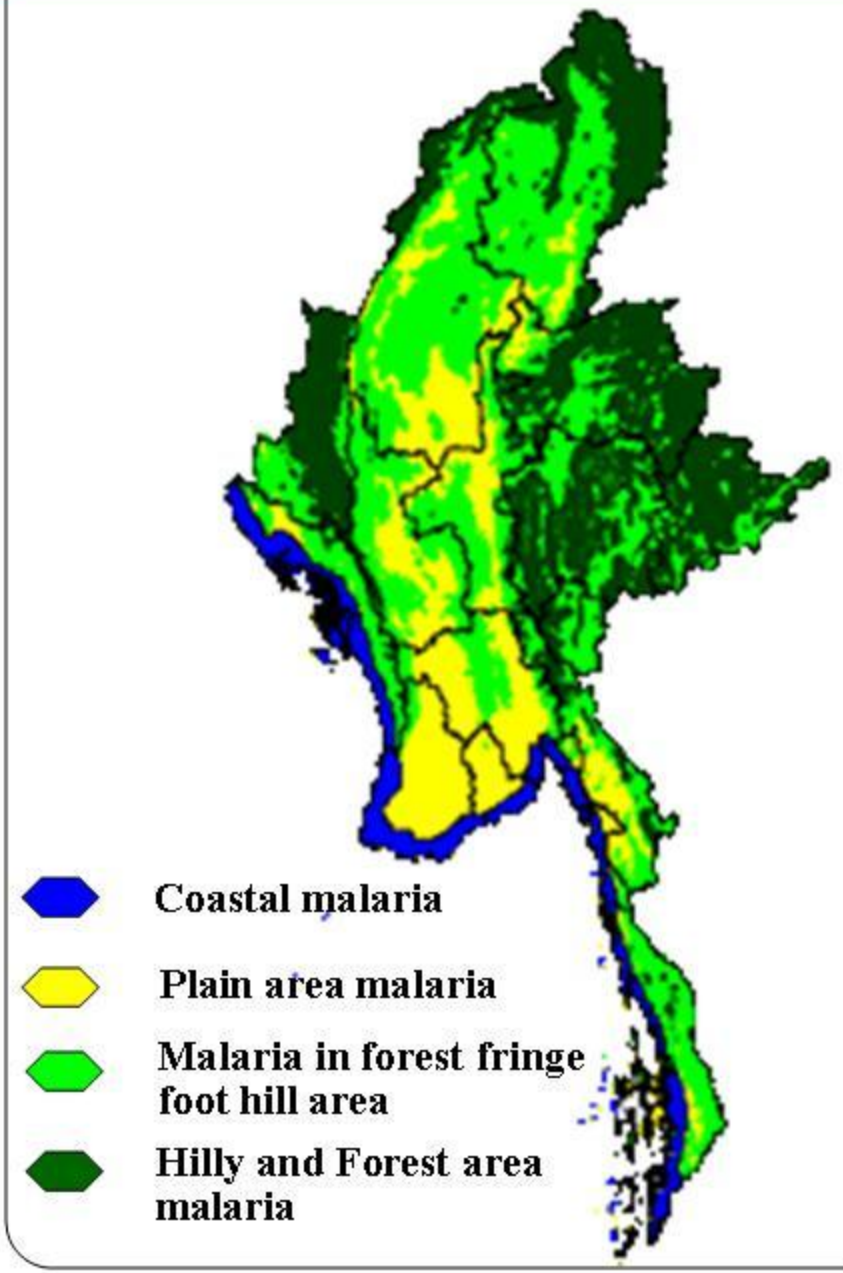
EXPECTED OUT PUT

- Information on Malaria situation at a glance
- Information on Policy environment
- Information on Drug resistance and Recommended ACTs
- Myanmar Artemisinin Resistance Containment(M A R C) Framework

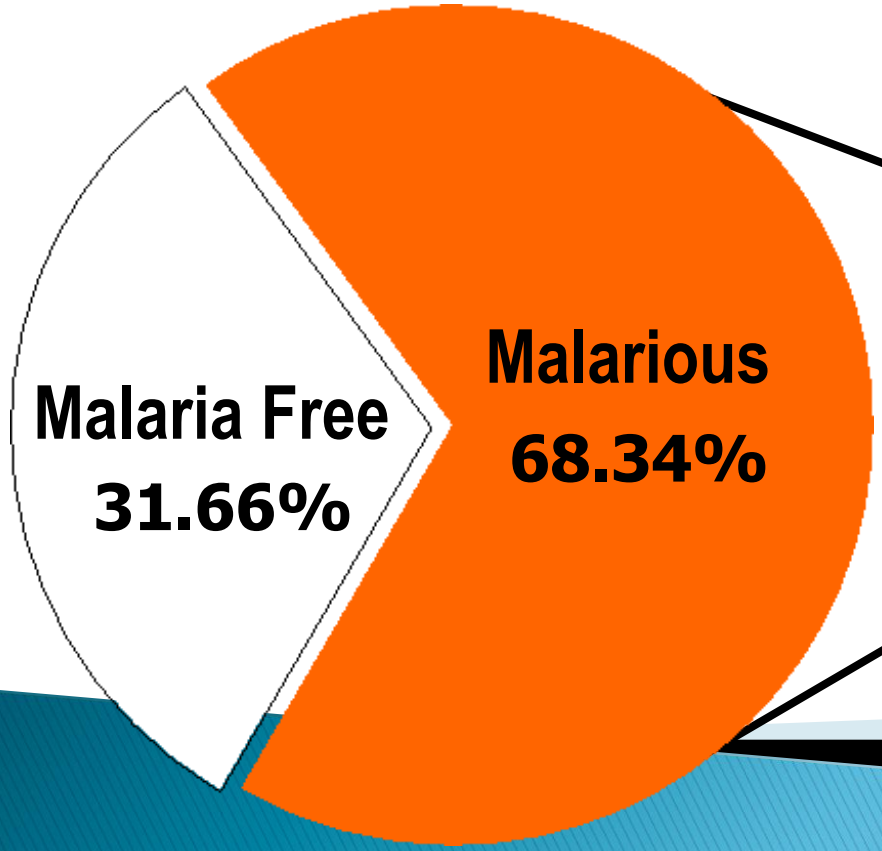
Malaria Risk Areas in Myanmar



Malarious area according to ecology



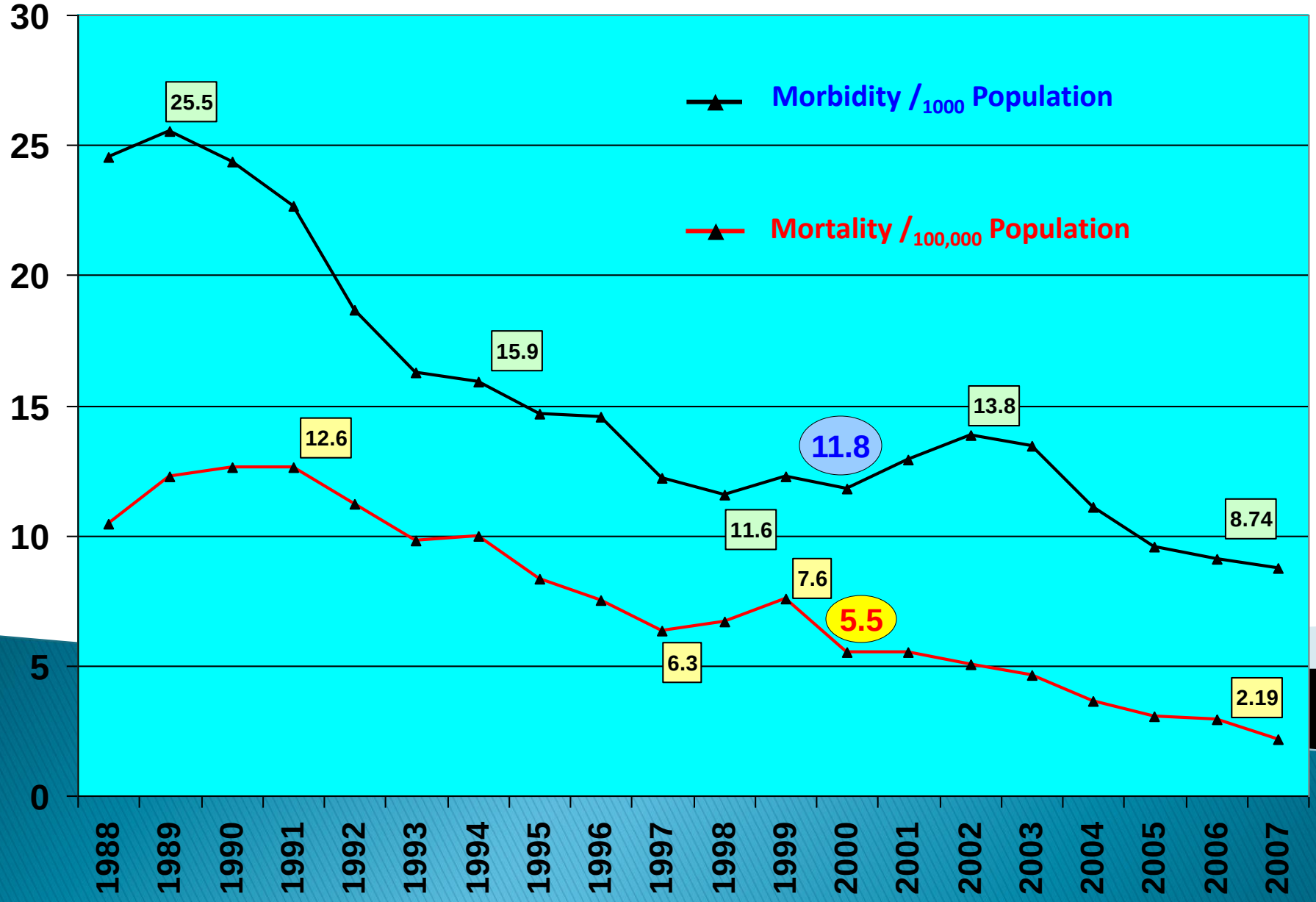
Population living under malarious and malaria free areas in Myanmar [2007]



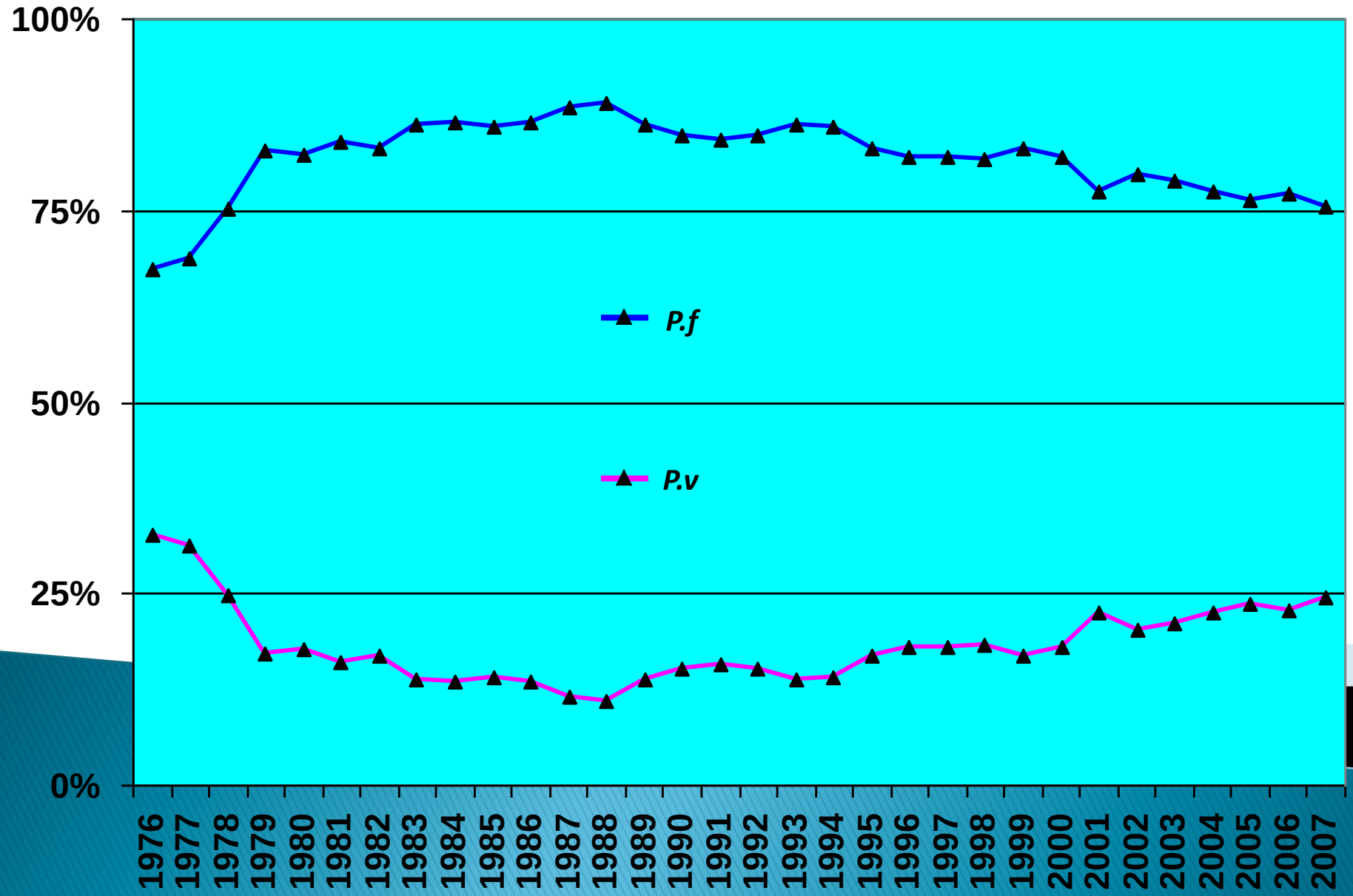
Year	1988	2007
High risk	38.9%	27.98%
Moderate risk	41.7%	23.55%
Low risk	13.8%	16.81%
Free risk	8.6%	31.66%

MALARIA MORBITY & MORTALITY RATE IN MYANMAR

TO REDUCE 50% OF MALARIA MORBIDITY AND MORTALITY YEAR 2000 -2010



P.falciparum & *P.vivax* ratio in Myanmar



Policy Framework

- Definition
- Purpose
- Process of policy development
- Influencing Factors
- Decision making and criteria
- Implementation of treatment policy

- Recommended Treatment Regimens

Purpose

- To prevent or delay the development of
- antimalarial drug resistance
- Promptly, effectively and safely treated.
- reducing transmission

- correct diagnosis

  rational drug use.

-
  - Affordable
  - accessible

DRUG RESISTANT STATUS OF *Plasmodium falciparum*

- Therapeutic efficacy of chloroquine – 62.5 – 76%
- Treatment failure with S-P 25 – 35%
- Resistance to Mefloquine & Quinine – low level
- Potential threat for emergence of AR

DRUG RESISTANT STATUS OF *P.vivax.*

- **CQ resistance in P.v has been documented but is not yet considered serious threat.**

Criteria for a Change

The primary indicators for changing antimalarial treatment policy are

- high level of treatment failure with the currently used antimalarial drug.

Condition that signal a need for reevaluation of the policy are:

- Evidence from Therapeutic Efficacy Studies (TES)
-

Criteria for a Change

- Evidence of increased malaria-associated mortality and morbidity,
- Consumer and provider dissatisfaction with the current policy,
- Evidence on new drug, strategies and approaches

NATIONAL MALARIA TREATMENT POLICY MYANMAR

2002---ADOPTED ACT

2008 -POLICY REVISION

- 2010 POLICY REVIEWED AND REVISED

ACT selection criteria

- Artemisinin based Combination Therapy
- At least 3 days for optimal effect
- Partial treatment not recommended even for semiimmune and suspected cases
- Artemisinin and partner medicine of ACTs should not be available as monotherapy
- Banned AS monotherapies (AMTs)
- A-L recommended with 6 dose regimen

Partner medicine

- 3 days regimen with slowly eliminated with longer half life antimalarials (mefloquine,lumifantrine,piperaquine)
- 7 days regimen with rapidly eliminated with shorter half life compounds (Tetracyclines,clindamycin,doxycycline)
- Follow up D28

Recommended ACTs

- **A-L (Artemether- Lumefantrine)**
- AS +MFQ (Artesunate + Mefloquine)
- DHA -PP Q (Dihydroartemisinin - Piperaquine)
- Coformulation/FDC
- Confirmed By RDT or Microscopy
- ACT (3days) + PQ (Single dose)

Treatment Failures

- TF 1-7% within 14 days
- TF usually after D14
- Recredescence?
- Reinfection?
- Monitor D3 Parasitaemia
- Investigate reasons for D3 parasitaemia
- TF after D14 ,to be confirmed by microscopy

Regimen for Treatment Failures

- Treat with Alternative ACT
- NOT TO REPEAT AS+MFQ within 28 days of 1st treatment with AS+MFQ
- OPTIONS
- **A S with TET/OR DOXY/OR CLINDA X 7 days**
- (AS 2 mg/kg BW once a day with

Tetra 1mg/kg BW 4 times per day or

Doxy 3.5 mg/kgBW once a day6 or Clinda 10mg?kgBWTwice a day)

Malaria in Pregnancy

T1

- QNN +CLINDA X7days

T2 &T3

- AS with CLINDA x 7 days
- QNN with CLINDA X7 days

Lactating Women and Children

- Standard treatment Except TETRA and Dapsone

- Children based on Body Weight
- Tetra/doxy not recommended among infants

SEVERE MALARIA

- Initial start with IV or IM AS or Artemether or QNN
- Till tolerable to oral regimen
- Switch on Oral ACT X 3 Days **at least after 48 hours of IV or IM Regimen**

- Follow up
- Pre referral treatment
- Referral

Non PF

P.VIVAX CQ 3Ds +PQ 14 Ds

MIXED INFECTION

- ACT + PQ 14 Ds

Stand by treatment

- ACT

Pre referral treatment

- IM ARTESUNATE or ARTEMETHER or QNN
- RECTAL Artesunate Suppositories for Young children and Infants

Vector control Policy

Indoor Residual Spray (IRS)

- Stop regular IRS in 1993;
- only selective spray

Indications – Epidemic/epidemic prone, development projects & new settlements in high endemic area.

Prevention &control policy

ITN/LLIN

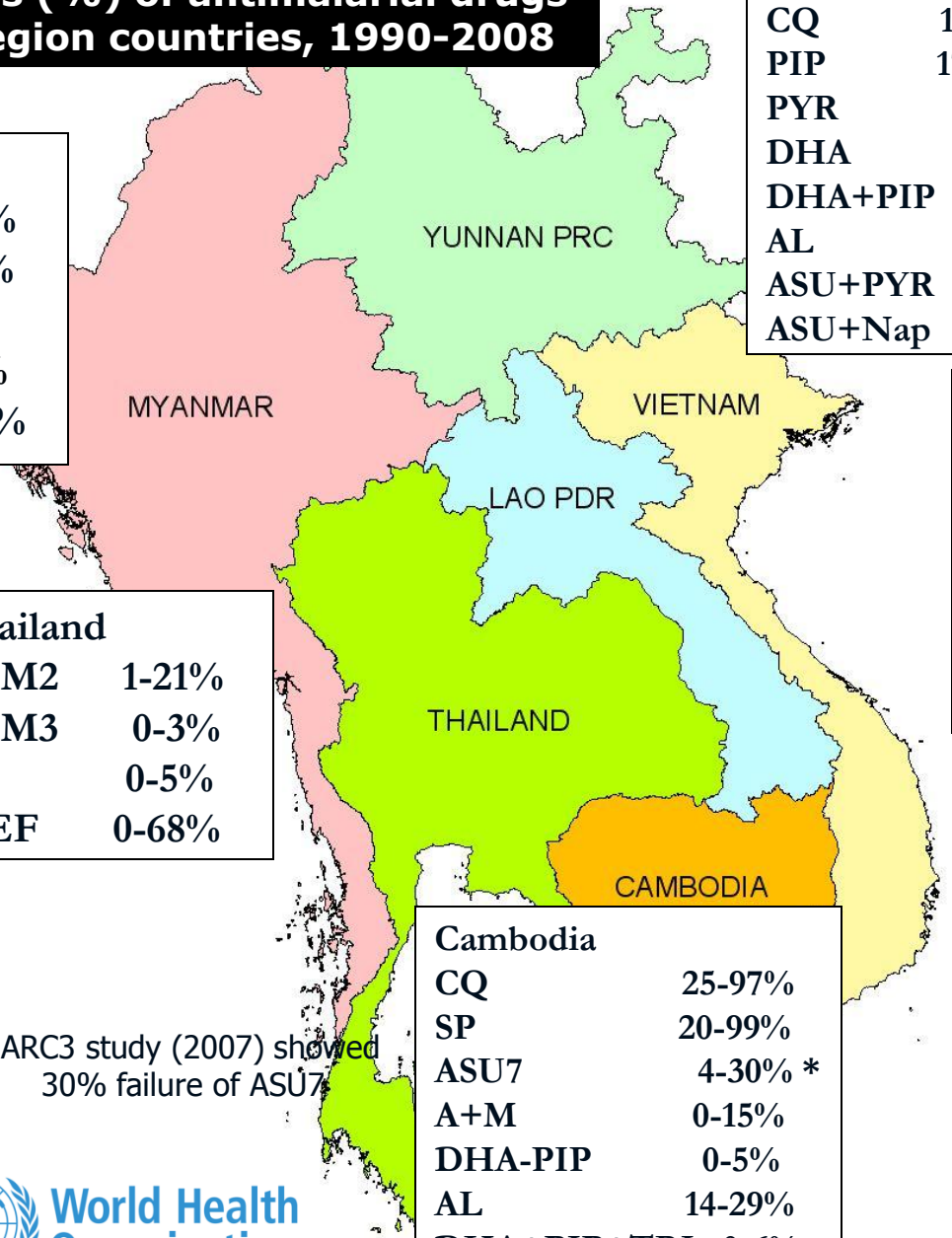
- High risk areas
- Vulnerable population

Integrated Vector Management (IVM)

Community based interventions


Antimalarial drug resistance

Treatment failure rates (%) of antimalarial drugs in the Mekong Sub region countries, 1990-2008



Myanmar

ASU+MEF	0-15%
ASU+AQ	0-19%
AL	0-8%
DHA-PIP	0-5%
MEF	0-20%

China

CQ	18-91%
PIP	17-50%
PYR	15%
DHA	3-4%
DHA+PIP	0-
AL	0-4%
ASU+PYR	0%
ASU+Nap	5%

Lao PDR

CQ	17-88%
SP	7-33%
CQ+SP	8-17%
A+M	0-3%
MEF	0%
AL	0-7%
DHA-PIP	1-5%

Thailand

A+M2	1-21%
A+M3	0-3%
AL	0-5%
MEF	0-68%

Abbreviations:
AL: Arthemeter-Lumefantrine
AQ: Amodiaquine
ART: Artemisinin
ASU: Artesunate
CQ: Chloroquine
DHA: Dihydroartemisinine
MEF: Mefloquine
Nap: Napthoquinone
PIP: Piperaquine
PYR: Pyronaridine
SP: Sulfadoxine-Pyrimethamine
TRI: Trimethoprime

- ARC3 study (2007) showed 30% failure of ASU7

Cambodia

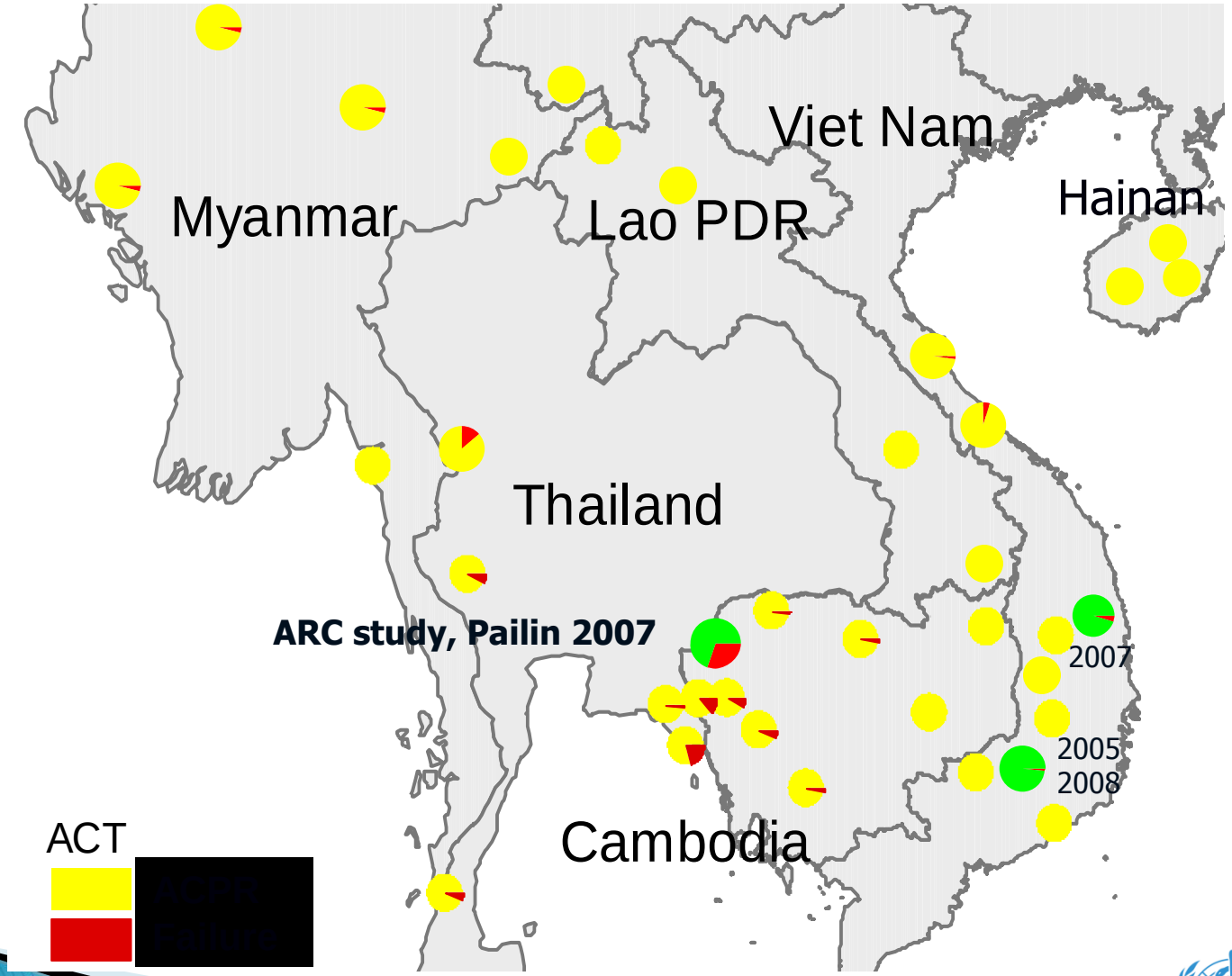
CQ	25-97%
SP	20-99%
ASU7	4-30% *
A+M	0-15%
DHA-PIP	0-5%
AL	14-29%
DHA+PIP+TRI	0-6%
MEF	0-27%

Viet Nam

CQ	10-100%
SP	12-90%
MEF	0-9%
ASU7	2-13%
ART	3-13%
DHA	27%
DHA+MEF	0-2%
ASU+MEF	0-16%
AL	0%
DHA-PIP	0-1%
CV8	0-6%

World Health Organization
Mekong Malaria Programme

Efficacy of the ACTs and artemisinin mono- in the Greater Mekong countries, 2002 - 2008



* Yunnan, China and Vietnam testing 7-day ASU monotherapy (2008-2009

World Health Organization
Mekong Malaria Programme

Summary of efficacy results in 2009

	Coartem		Duocotexin		Chloroquine	
	Shwe Kyin	Kawthaung	Shwe Kyin	Kawthaung	Shwe Kyin	Kawthaung
28days finished	86	80	72	80	67	61
Clinical & parasitological failure	2	6	0	4	0	12
% parasitaemia Day1	72 (83.7%)	52 (65.0%)	51 (70.8%)	76 (95.8%)	20 (29.8%)	35 (57.4%)
% parasitaemia Day2	30 (34.9%)	30 (37.5%)	15 (20.8%)	54 (67.5%)	2 (3.0%)	9 (14.1%)
% parasitaemia in Day3	8 (9.6%)	5 (6.25.%)	3 (4.2%)	15 (18.75%)	0	2 (3.3%)
Day 0: % gametocytemia	29 (33.7%)	28 (35.0%)	14 (19.4%)	11 (13.8%)	10 (14.9%)	0
Day 7: % gametocytemia	8 (9.3%)	1 (1.3%)	6 (8.3%)	3 (3.8%)	0	0
Treatment outcome						
ACPR	84 (97.7%)	74 (92.5%)	72(100%)	76(95.0%)	67(100%)	49 (80.3%)
ETF	1	0	0	0	0	0
LCF	0	5	0	2	0	8(13.1%)
LPF	1	1	0	2	0	4(6.6%)

MARC

- MYANMAR ARTEMISININ CONTAINMENT FRAMEWORK

Goals and objectives of containment

The goals of the MARC will be achieved through the following seven process objectives:

Objective 1: *To improve access to quality diagnosis and treatment*

by: Increasing coverage of community-based services offering RDTs and ACTs, and strengthening services offered through health facilities

- Objective 2: *To limit the availability and use of Artesunate Mono-therapies (AMTs) and sub-standard/fake drugs and thereby limit drug pressure for artemisinin tolerant malaria parasites*.
- by: Ensuring private vendors offers affordable, quality ACTs and good information, and banning Monotherapy with associated actions

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Goals and objectives of containment

Objective 3: *To limit the transmission of malaria by mosquito control, personal protection and faster gametocyte clearance*

by Covering population in high/moderate risk villages in targeted areas with LLINs/ITNs, and supplementing ACT treatment with primaquine

- Objective 4: *To limit the transmission of artemisinin tolerant malaria parasites by mobile/migrant populations*

By Mapping migrants and developing townships plans for targeting migrants, and targeted screening of migrants

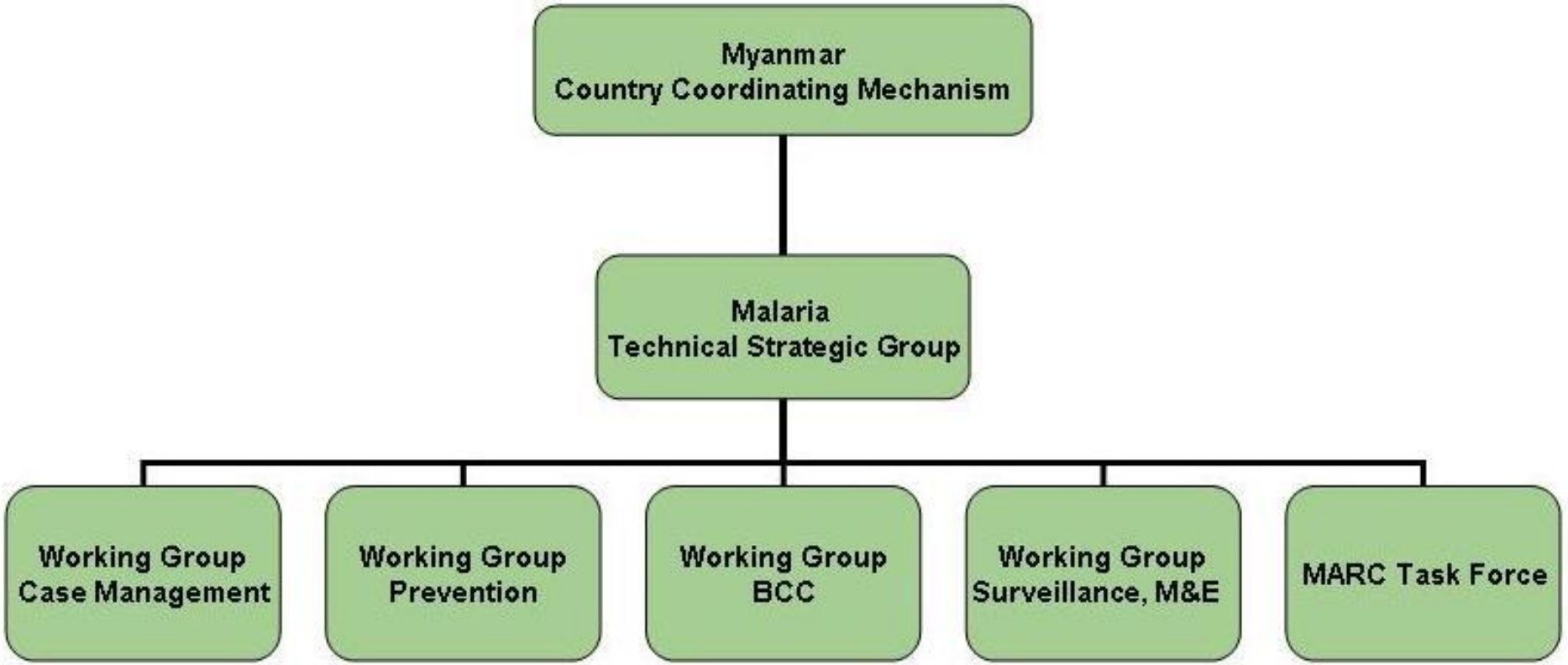
Goals and objectives of containment

Objective 5: *To strengthen surveillance and operational research for development of evidence-based policies and strategies and for decision-making.*

Objective 6: *Support to containment of artemisinin resistant parasites through BCC, community mobilization and advocacy*

Objective 7: *To provide effective coordination and management to support rapid and good quality implementation of MARC*

Myanmar Artemisinin Resistance Containment Coordination Structure




Antimalarial drug resistance

- THANK YOU FOR YOUR ATTENTION

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