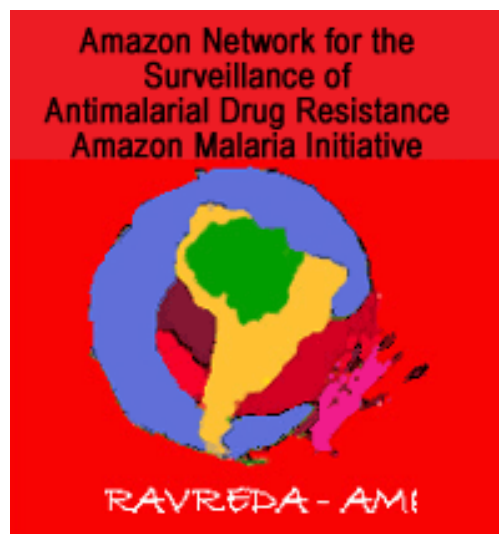


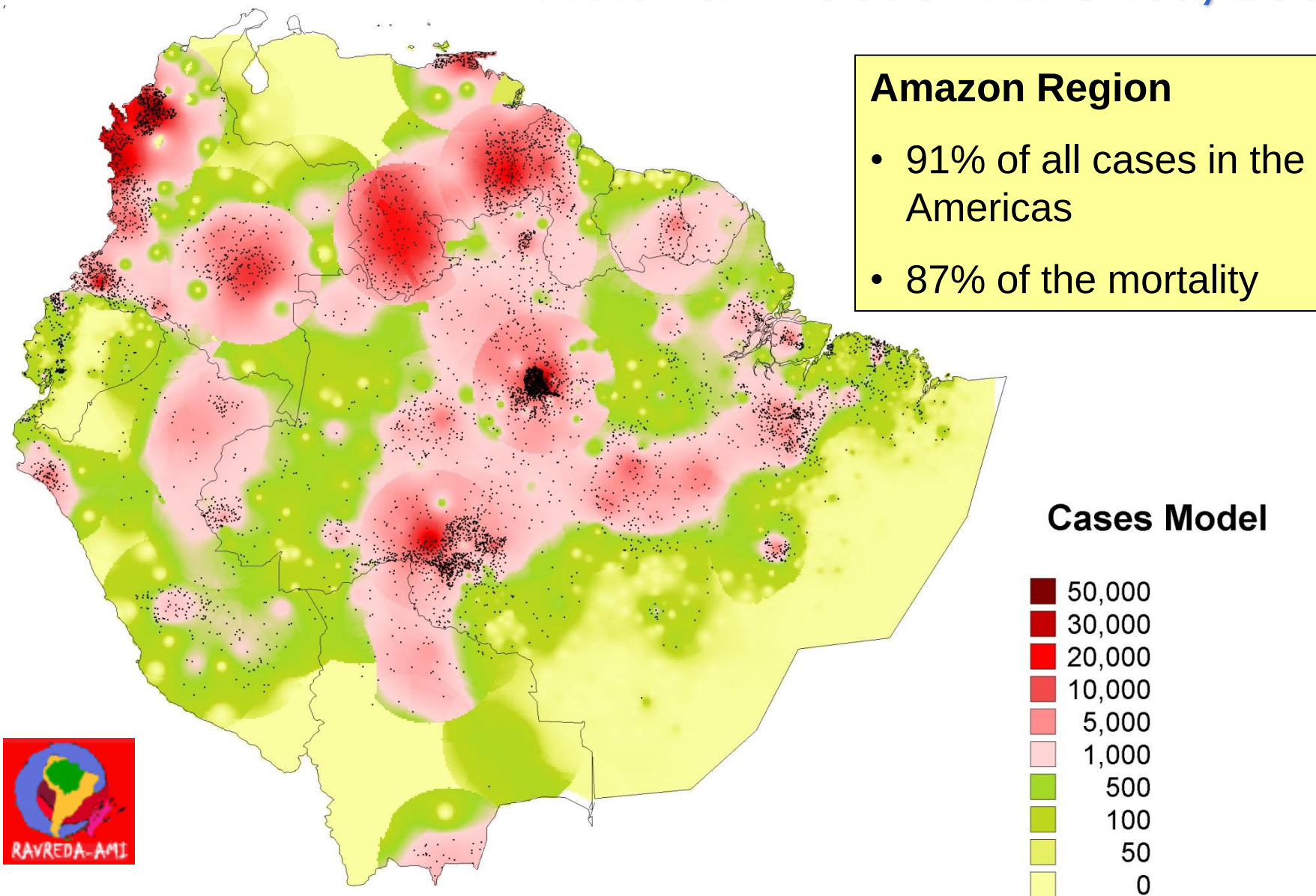
Red Amazónica de Vigilancia de la Resistencia a los Antimaláricos (RAVREDA)



Amazon Malaria Initiative (AMI)

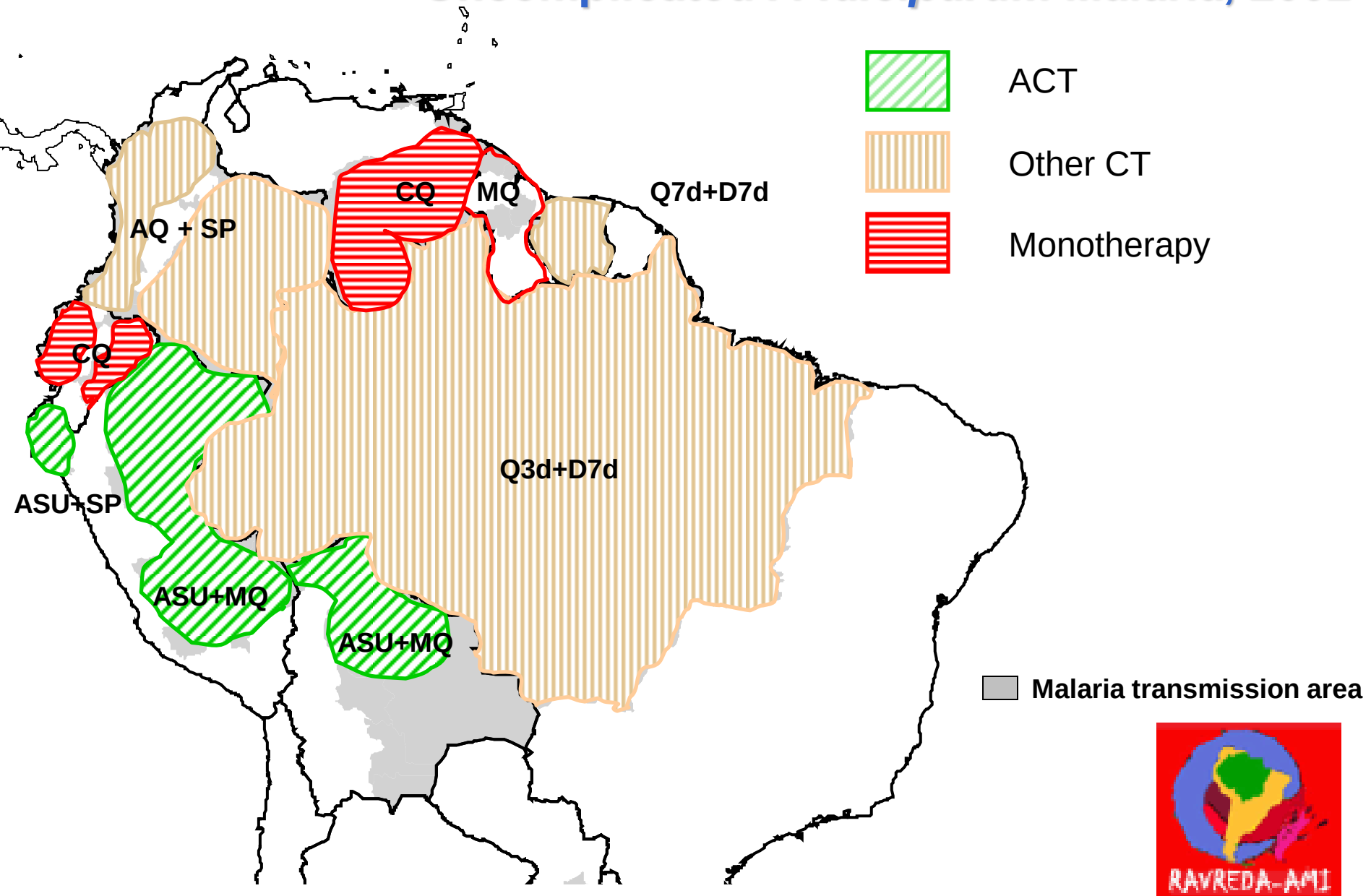


Malaria in South America, 2004

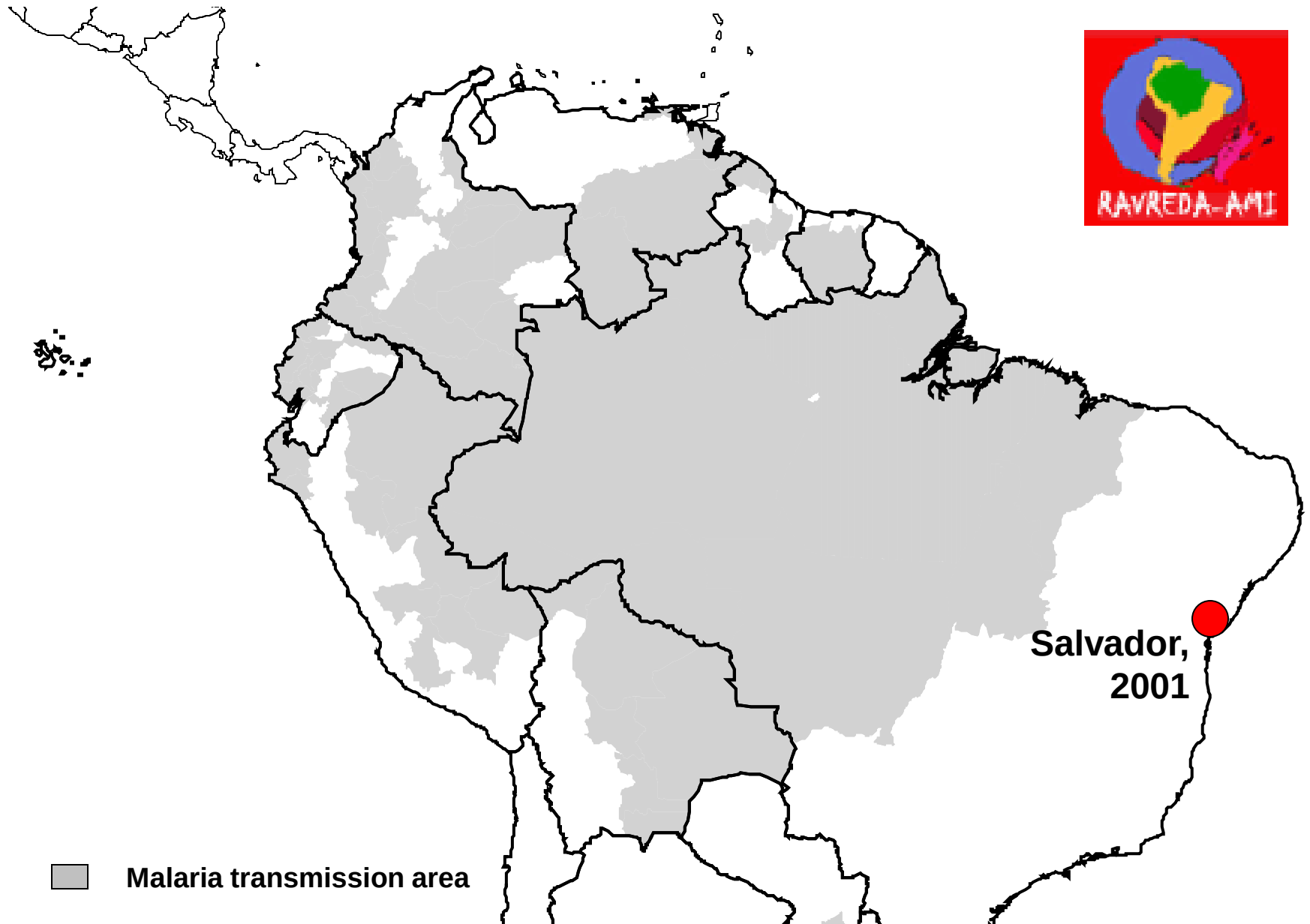


Data at provincial & municipal level, PAHO, 2004

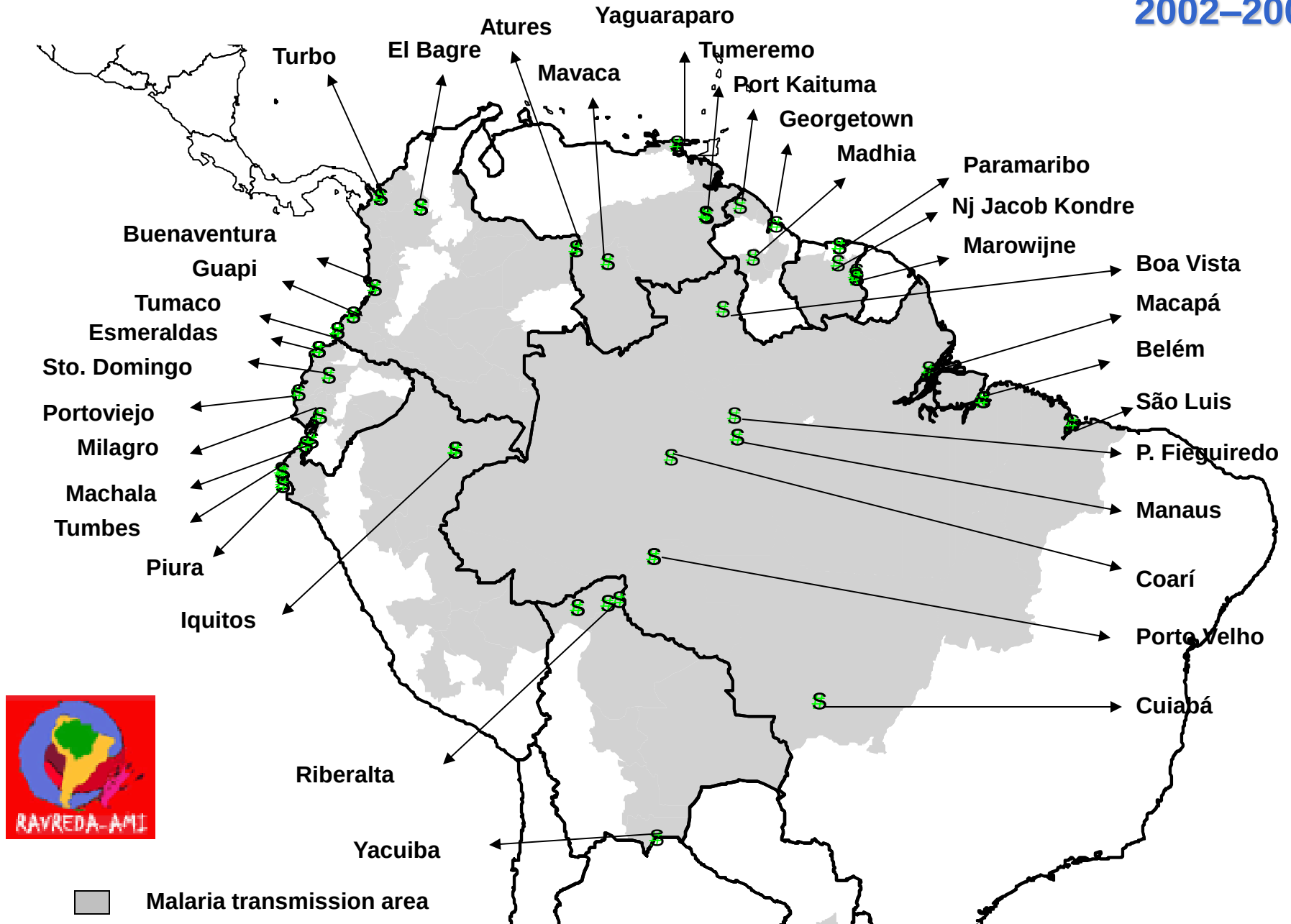
Official First-Line Treatment for Uncomplicated *P. falciparum* Malaria, 2002



RAVREDA/AMI: Founded at Meeting in Salvador, Bahia, 2001



RAVREDA/AMI: Sentinel Sites for Surveillance of Antimalarial Resistance, 2002–2004



AMI

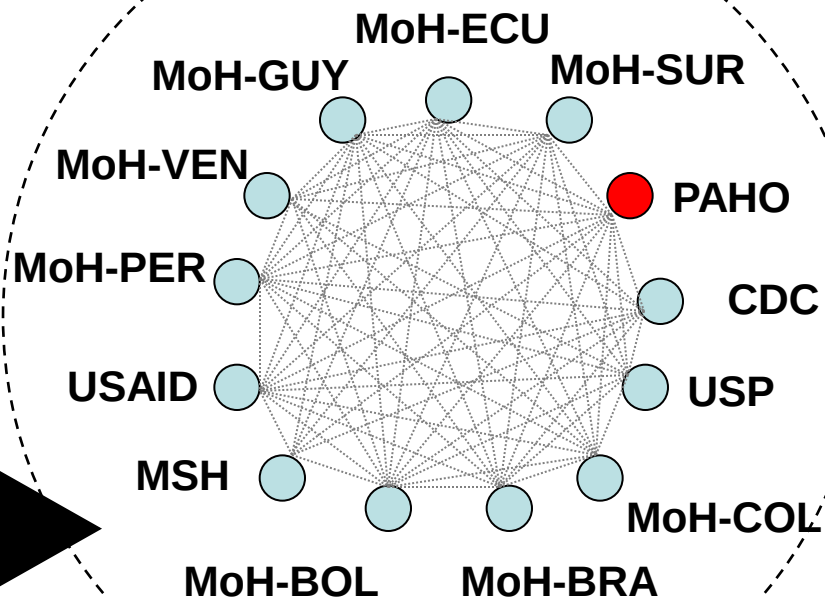


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MoH-GUY	CDC
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MoH-VEN	PAHO



RAVREDA



(Coordination)

**Surveillance of
Resistance to
Antimalarial Drugs**



**World Health
Organization**

PAHO/WHO

MoH = Ministry of Health

RAVREDA Team at the Sentinel Site in Yacuiba (Bolivia)



RAVREDA Sentinel Site in Machala (Ecuador)



RAVREDA/AMI: *P. falciparum* Therapeutic Efficacy Studies, 2003–2006

Country	Drug	Study year	Number of	Median	Range		Percentile	
					Low	High	25th	75th
BOLIVIA	AS+MQ	2001*	3	0	0	0	0	0
	MQ	2001*	3	0	0	0	0	0
BRASIL	AT+LM	2005	1	0				
	MQ	2005	4	6.5	1	9	4.7	7.5
	Q+DOX	2005	2	14.5	11	18	12.7	16.2
COLOMBIA	AQ	2002-2004	5	38	15	57	23	42
	AQ+SP	2002-2003	3	2.2	0	2.3	1.1	2.2
	AS+SP	2003 - 2004	2	2	1.9	2.1	1.9	2
	MQ	2002-2003	3	2.2	0	6.4	1.1	4.3
	MQ+SP	2003 - 2004	1	0				
	SP	2002-2003	1	0				
ECUADOR	AQ	2004	1	47				
	AQ+SP	2004	1	0				
	AS+SP	2003	1	0				
	AT+LM	2005	1	0				
	CQ	2002-2003	1	80				
	CQ+SP	2003	1	0				
	SP	2002-2003	1	0				
GUYANA	AS+MQ	2005	1	1.2				
	AT+LM	2004	1	0				
	MQ	2005	1	3.6				
PERU	AS+MQ	2000*	1	0				
	CQ	1998*-2002	4	87	81	90	83.6	89.5
	MQ	1999*-2000	2	0	0	0	0	0
	SP	1999*-2002	4	8.7	0	13.2	4	12.3
SURINAME	AS+DOX	2002-2003	1	18				
	AS+MQ	2002	2	2	2	6	3	5
	AT+LM	2003	2	1.9	1.9	2	1.9	2
	MQ	2002	1	7				
VENEZUELA	AS+MQ	2004	1	0				
	AT+LM	2004	1	0				
	CQ	2002	2	88	76	100	82	94
	Q+PQ	2003	2	9.6	9.6	22.2	9.6	9.6



Changes in Antimalarial Policies in the Amazon Countries, end of 1990s–2006

ART-LUM Coartem®								
MQ+AS								
SP+AS								
AQ+AS								
MQ								
Q+D/ Q+T								
Q								
AQ+SP								
CQ+SP								
CQ o SP								
Country	Bolivi a	Brazi l	Colombi a	Ecuad or	Guyan a	Per u	Surinam e	Venezue la



Current schemes



Schemes at end of 1990s

ART-LUM = Artemether-Lumefantrine
CQ = Chloroquine
S/P = Sulfadoxine/Pyrimethamine

AS = Artesunate
D = Doxycycline
Q = Quinine

AQ = Amodiaquine
MQ = Mefloquine
T = Tetracycline

RAVREDA/AMI: Objectives

- *Plasmodium falciparum* malaria resistance to antimalarials
- Amazon region has 90% of all malaria cases in the Americas.
- Importance of assessing resistance in the Amazon region.

Background

2001–2003

- Evaluate resistance to current treatments
- Guide policy changes (ACT schemes) →

2003– ...

- Improve access to & use of antimalarials
- Improve quality of antimalarials
- Improve diagnostic quality

Objectives

2004– ...

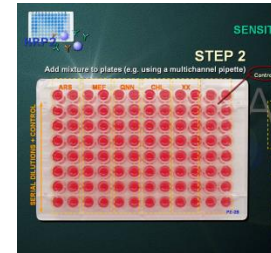
- Rational vector control
- Information analysis



RAVREDA/AMI: Areas of Action

Surveillance of resistance to antimalarials

- ✓ *In vivo*
- ✓ *In vitro*



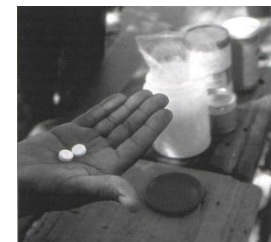
Access to & quality of diagnosis

- ✓ Competencies
- ✓ Performance



Access to & use of antimalarials

- ✓ Access & use
- ✓ Adherence
- ✓ Supervision



Drug quality

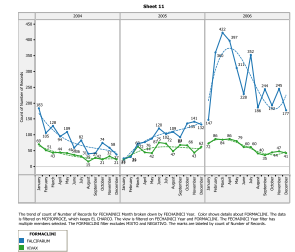
- ✓ Reference Labs
- ✓ Minilabs



RAVREDA/AMI: Areas of Action

Information stratification & analysis

- ✓ Individual data
- ✓ Routine analysis
- ✓ Stratification



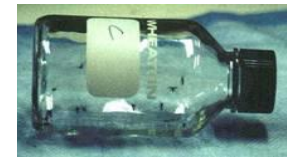
Entomological systematization

- ✓ Field procedures
- ✓ Data management



Surveillance of resistance to insecticides

- ✓ CDC bottle method



Implementation of impregnated mosquito nets

- ✓ Instruments



RAVREDA/AMI: Methodology for Work

1

- Development & standardization of guidelines, protocols, & instruments
- Technical meetings
- Training workshops



2

- Operational research
- Pilot testing



3

- Improvement in policies & processes
- Institutionalization



RAVREDA/AMI:

Planning, Evaluation & Communication Mechanisms

- **Annual Evaluation Meetings**

Santa Cruz (2002)

Belém (2003)

Paramaribo (2004)

Cartagena (2005)

Quito (2006)

Campos do Jordão (2007)

Lima (2008)

- **Meetings every semester of the AMI Steering Committee**

- **Workplans: “Master plans” (AMI Project)**

- **Newsletter every semester (9 issues so far)**

- **Web page (PAHO)**

- **Databases** (resistance to antimalarials, resistance to insecticides, entomological)





BOOKSTORE

DIRECTOR'S OFFICE

Disease Prevention and Control / Communicable Diseases / Malaria

Generic Protocols and Flow Diagram for *in vivo* Antimalarial Drug-Efficacy Studies in the Americas

- **Project Descriptions** (with links to protocols and flowchart)
- **Practical Guide** for *in vivo* Antimalarial Drug-Efficacy Studies in the Americas



Assessment and Monitoring of Antimalarial Drug Efficacy for the Treatment of Uncomplicated *falciparum* Malaria (WHO, 2003)
About RAVREDA/AMI

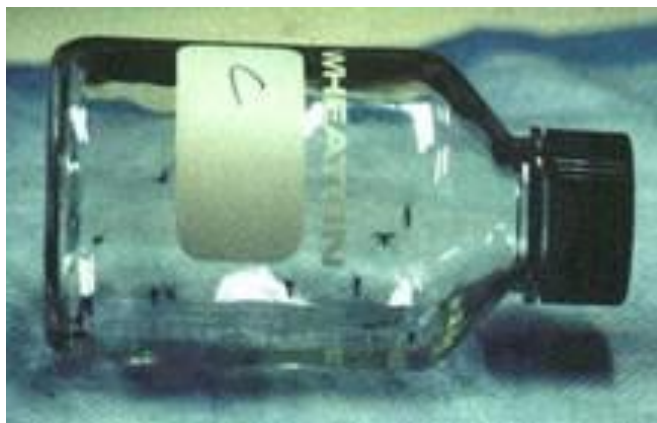
The Amazon Network for the Surveillance of Antimalarial Drug Resistance (RAVREDA) is a joint effort on the part of eight countries of the Amazon region with the Pan American Health Organization (PAHO) and the US Agency for International Development's (USAID's) *Amazon Malaria Initiative* (AMI), with technical support from the Centers for Disease Control and Prevention (CDC). The main area of work of RAVREDA/AMI is regional consolidation of a network of sentinel sites to evaluate the therapeutic efficacy of treatment schemes currently in use and of antimalarial drugs that could be introduced into the Region. The results of efficacy evaluations that have been carried out within the framework of RAVREDA since 2002 have already permitted countries to improve their policies on antimalarials. In September 2003—in a meeting held in Iquitos, Peru, involving eight countries of the region, PAHO, USAID, and CDC—an evaluation was carried out on the protocols used by RAVREDA to evaluate therapeutic effectiveness in treating uncomplicated *Plasmodium falciparum* and *Plasmodium vivax* malaria. Modifications were introduced based on the latest WHO recommendations on how to carry out this type of studies in areas of low transmission (WHO/CDS/CSR/EPH/2002.17).

SARS

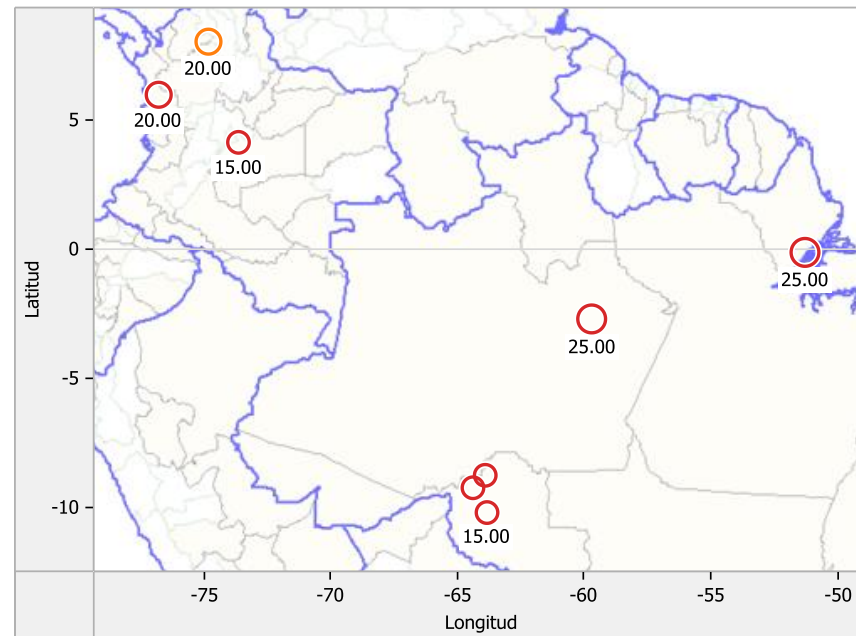
- Integrated Management of Childhood Illness

Spatial Variations in Susceptibility to Insecticides

(*A. darlingi*, deltametrna, 25 mg)



mapa



Longitud vs. Latitud. Color shows details about Lbase/_Monitoreo/_DD. Size shows details about Tiempo mortalidad 100%. Details are shown for various dimensions. The data is filtered on Insecticida, Dosis and Especie. The Insecticida filter keeps Deltametrina. The Dosis filter keeps 25. The Especie filter keeps *A. darlingi*. The view is filtered on Exclusions (Latitud,Longitud), which specifies a set. The marks are labeled by Tiempo mortalidad 100%.

Tiempo mortalidad 100%

- 15.00
- 16.00
- 18.00
- 20.00
- 22.00
- 24.00
- 25.00

Lbase/_Monitoreo/_DD

- Dosis diagnóstica
- LB



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http://www.mayeticvillage.com/RAVREDA



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RAVREDA AMI - POI



RAVREDA



This page is an entry point to the RAVREDA-AMI Portal for the network members. Official information about the portal is available at the [PAHO webpage](#)

- ◀ This is a page for authorized users.
- ◀ The page is experimental and is under construction.





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Health Surveillance and Disease Management / Communicable Diseases / Malaria

RAVREDA-AMI Newsletter



RAVREDA - AMI



The **Amazon Network for the Surveillance of Antimalarial Drug Resistance** (Red Amazónica de Vigilancia de la Resistencia a los Antimaláricos / RAVREDA) and the **Amazon Malaria Initiative** (AMI) are part of the joint efforts of the Amazon countries and institutions (PAHO/WHO, USAID, CDC, USP, MSH) for the **Roll Back Malaria** (RBM) Initiative in the Americas, within the framework of the WHO global strategy.

The *RAVREDA-AMI Newsletter* is a quarterly news and information publication in which the network reports and shares its latest activities and achievements. Its contents typically include **Regional News**, **Country News** (*Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela*), **Analysis**, **Other News of Interest**, and/or **Activities Schedule**. Links to each issue appear below, from the most recent, in PDF, ± 8 pp, ±75–100 Kb.

- [RAVREDA-AMI Newsletter](#), No. 5, October–December 2005.
- [RAVREDA-AMI Newsletter](#), No. 4.

- [About RAVREDA-AMI](#)
- [PAHO Malaria Page](#)
- [WHO Global Malaria Program](#)

The *Amazon Network for the Surveillance of Antimalarial Drug Resistance (RAVREDA)* and the *Amazon Malaria Initiative (AMI)* are part of the joint efforts of the Amazon countries and institutions (PAHO/WHO, USAID, CDC, USP, MSH) for *Roll Back Malaria* in the Americas (*Roll Back Malaria Initiative / RBM*).



RAVREDA-AMI Newsletter

No. 5, October-December 2005

Contents

- Regional News
- Country News
- Other News of Interest

The *RAVREDA-AMI Newsletter* is a quarterly news and information publication of RAVREDA-AMI where the latest activities and progress of the Amazon Network for the Surveillance of the Antimalarial Drug Resistance are reported and shared.

Regional News from RAVREDA

Regional Malaria Meeting

A meeting of malaria program coordinators and national chiefs of epidemiology from the 21 malaria-endemic countries in the Region of the Americas was held in San José, Costa Rica on 7-10 November. The meeting was

Meeting on Malaria in Pregnancy

Investigators and experts on malaria in pregnancy from seven countries of the Amazon region met on 25-28 October in the city of Santa Cruz, Bolivia to share experiences and propose an approach to this problem in the Amazon region. The "International Malaria and Pregnancy Colloquium in the Americas: Baselines and Prevention

AMI



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USP

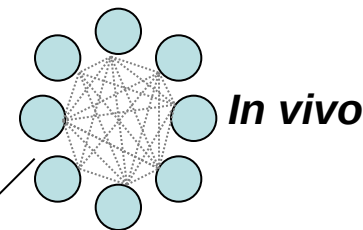
MSH

CDC

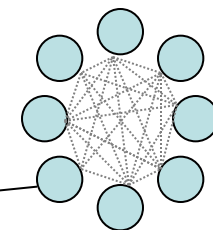
PAHO

(Project)

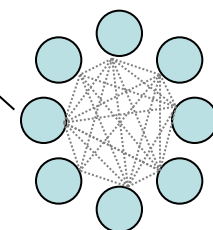
(Communities of practice)



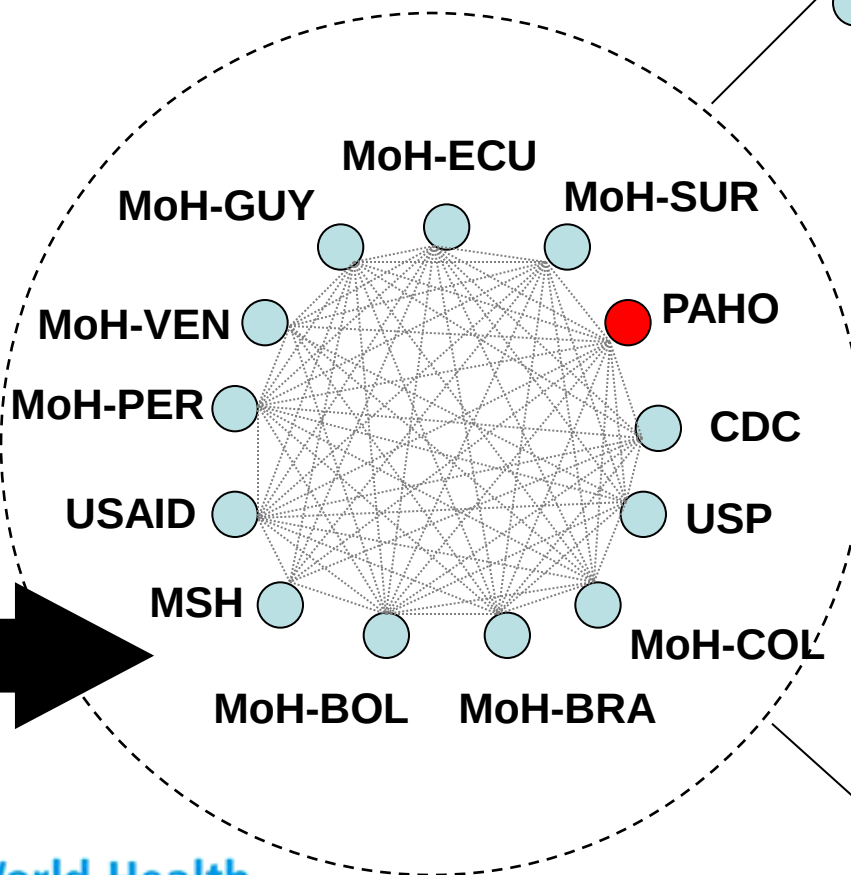
In vivo



In vitro



**Insecticide
resistance**



(Network)

MoH = Ministry of Health

- Case Management
- Vector Control
- Information Use



Regional Office of the
World Health Organization



World Health
Organization

GMCP/WHO/PAHO

(Program)