

## FOCUS ON

# Regional Artemisinin-resistance Initiative (RAI)



The Global Fund / Jonas Gratzner

## Eliminating Malaria in the Mekong

The story of malaria in the Greater Mekong today is one of opportunity and urgency. The number of cases has fallen by 71% since 2012, and deaths have plummeted by 91%. But drug resistance now threatens a devastating setback for the region and a major shock to health security if it goes global.

To date, resistance of malaria parasites to artemisinin – the core compound of the best available antimalarial medicines – has been detected in six countries of the Greater Mekong. Resistance represents both the greatest threat to ongoing malaria elimination efforts in the region, and the strongest rationale for undertaking these efforts in an accelerated manner.

## The Challenge

Though malaria has plagued humanity for all of history, this preventable disease does not have to be an inevitable fact of life. Once endemic across the planet, dozens of countries have been able to interrupt transmission and eliminate the disease, saving countless millions of lives.

The tools to prevent it are easy to use and inexpensive – a long-lasting insecticide-treated mosquito net costs less than US\$3. Deaths from malaria declined by 42% between 2000 and 2016 in countries where the Global Fund invests. The global progress against malaria to date proves that we have the tools to make elimination a reality.

Yet despite the knowledge and tools to prevent and cure malaria, it sickened 219 million people and killed 435,000 in 2017 – most of them children under 5. The malaria parasite has developed resistance to a variety of drugs, and some mosquitoes that transmit it have become impervious to insecticides.

Multidrug-resistant malaria first emerged in Cambodia and Thailand, and has now spread to China, Laos, Myanmar and Viet Nam. We need to redouble our efforts to make a malaria-free Mekong a reality. Localized setbacks prove the threat posed by complacency in the face of progress.

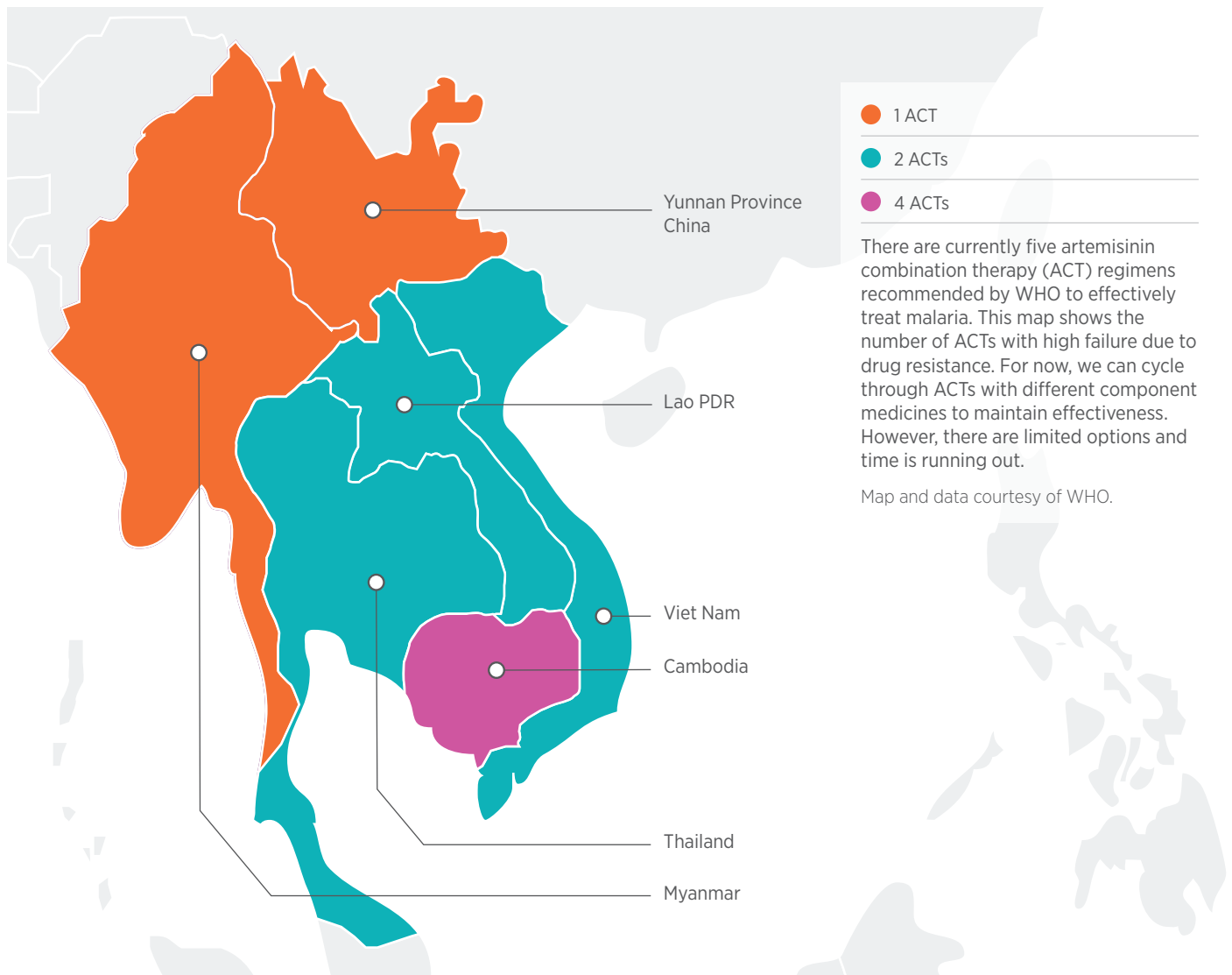
If the resistance seen in the Mekong were to spread to India or sub-Saharan Africa – where the malaria burden is highest – it would exact a huge toll in human lives and economic losses.



The Global Fund / Quinn Ryan Mattingly

Tai Sokhea is a mobile malaria worker in a rubber plantation. The nearest health center is about 30 kilometers away. He provides a suite of integrated health products, including mosquito nets, malaria tests and treatment, condoms, diarrhea treatment kits and de-worming pills.

### Multidrug-resistant malaria in the Greater Mekong



## The Global Fund Response: RAI

The Global Fund's Regional Artemisinin-resistance Initiative (RAI) was launched in 2013 in response to the emergence of drug-resistant malaria in the Greater Mekong region.

RAI has supported Cambodia, Laos, Myanmar, Thailand and Viet Nam to purchase and distribute commodities such as insecticide-treated nets, rapid diagnostic tests that don't require a laboratory or medical expertise, and quality-assured drugs, which together have resulted in a 91% reduction in malaria deaths from 2012 to 2017.

RAI's second phase became operational in 2018. Projected to total more than US\$242 million over three years, it's the Global Fund's largest regional grant, and the first with the defined goal of disease elimination from a specific geography.

The grant will support countries to invest in case management through health volunteers and surveillance systems, which often require intensive training, information technology and human resources. It also supports cross-border programs for migrant and mobile populations.

Even after malaria cases are reduced to zero, countries need resilient and sustainable systems for health to ensure the disease is not reintroduced. RAI includes a significant investment in health information systems, provision of integrated health services, support for national health strategies and efficient supply chains.



**14.9  
MILLION**

Countries plan to distribute nearly 15 million long-lasting insecticide-treated nets during RAI's second phase, aiming to maintain 100% coverage among the highest risk populations.

The Global Fund / Gretchen Lyons



Pharmacist U Zaw Moe of the Kayin State Food and Drug Administration in Myanmar tests a sample of antimalarial drugs to ensure quality and efficacy. The Global Fund supports these efforts to rid the market of counterfeit products or "monotherapies," which don't contain the recommended combination of medicine. Our partners work along the supply chain, from producers to wholesalers, retailers and consumers, to ensure a steady supply and uptake of approved drugs. They also organize informational sessions about the dangers of drug resistance. A survey of retailers in Kayin in 2014, when RAI funding started, revealed monotherapy available in nearly all outlets. In 2016, it was found in only two shops.

### WHAT CAUSES DRUG RESISTANCE?

Unwittingly, humans have helped the malaria parasite develop resistance. A combination of drugs – usually artemisinin and piperazine – when taken correctly are effective at curing malaria. However, in some places, people never make it to clinics for diagnosis and treatment, or take artemisinin on its own, incomplete courses or substandard, counterfeit drugs, all of which drive drug resistance.



**Getting to  
Zero**

Annual number of  
malaria deaths in  
Cambodia

2013 ▶ 12

2014 ▶ 18

2015 ▶ 10

2016 ▶ 3

2017 ▶ 1

**2018 ▶ 0**



## Strategic Approach

Reaching the goal of elimination requires finding and treating all cases, because any remaining “human reservoir” of the parasite could enable further transmission of the disease.

But in the Greater Mekong region, many people live in rural areas that may be dozens of kilometers from the nearest health center. People also migrate within a country or across borders, following economic opportunity where it leads. Some populations, particularly ethnic minorities, face discrimination and opt not to seek treatment through the formal health system. For all of these reasons, case detection is a major obstacle on the path to elimination.

RAI has several strategies to address the needs of remote, mobile and minority populations. One is the RAI Regional Steering Committee, which brings together funders, multilateral agencies, technical partners, scientific researchers, communities, the private sector and governments from the five countries to ensure coordination, cooperation and accountability in the implementation of the various programs supported by the grant. Community members and local organizations that serve them can use the Regional Steering Committee as a forum to raise issues and make sure their unique needs are being met.

Another strategy is to train and support a network of village and mobile malaria workers. These people are typically members of the community they serve – a neighbor or a coworker – who have been equipped with knowledge and resources to promote prevention activities, as well as test for and treat cases. They then report any cases to the government, so health

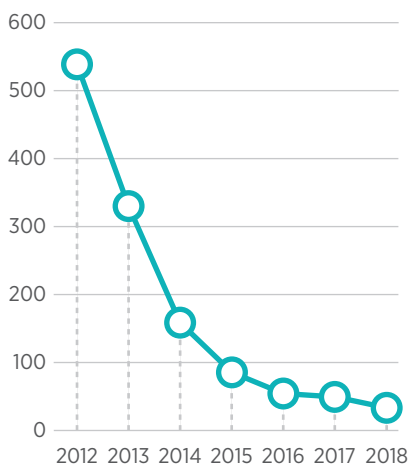
professionals can follow up and prevent a case from becoming an outbreak.

RAI partners support some 33,000 malaria volunteers across the five countries. Their proximity to risk hot spots means more cases found and treated, and more lives saved. They are truly the vanguard of the elimination effort.

We are approaching the last mile to stopping malaria for good in the Mekong region. This will require as much, if not more, financial commitment as current elimination efforts. Today, we have eliminated malaria in the more accessible, less complex populations; more investment, innovation and collaboration will be required to find and eliminate the remaining cases.

If we take our foot off the pedal, malaria will come back with a biting vengeance. We must ensure continued commitment and investment to stop this disease.

### Decline in Malaria Deaths 2012-2018



Reported malaria deaths: Cambodia, Laos, Myanmar, Thailand and Viet Nam  
Source: WHO World Malaria Report 2018



Rong Lis has been a village malaria worker for several years. Everyone in her community of 1,000 people knows to see her if they have a fever. “I talk about the dangers of the parasite. People trust my advice, and I encourage them to take precautions,” she said.

The Global Fund / Quim Ryan Mattingly

## About the Global Fund

The Global Fund is a 21st-century partnership designed to accelerate the end of AIDS, tuberculosis and malaria as epidemics. As a partnership between governments, civil society, the private sector and people affected by the diseases, the Global Fund mobilizes and invests nearly US\$4 billion a year to support programs run by local experts in more than 100 countries. By challenging barriers and embracing innovative approaches, we are working together to better serve people affected by the diseases.

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