new strategies are needed for accelerating the pathway to eradication and the best way to sustain the progress gained by high level control and to prevent resurgence. Investments leading to new insights and innovations in the science of eradication and flexible delivery models can help speed the trajectory to malaria eradication by detecting and eliminating the human reservoir of infection in asymptomatic persons combined with effective and complete transmission prevention. While sustaining current gains is imperative, a new emphasis on achieving the goal of eradication is vital today.

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Preventing the global spread of artemisinin resistance: Can we subvert evolution?

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In virtually all countries, Plasmodium falciparum malaria is treated with an ACT, a combination of artemisinin with a long acting partner drug. Antimalarial drug resistance, in particular artemisinin resistance is now confirmed in Cambodia, Thailand, Laos, Vietnam and Myanmar. If this resistance were to spread westward, and this trait becomes common in Africa, the result will be a global public health catastrophe. It would derail current control and elimination efforts and reverse achievements made in the last decade. Historically resistance has been identified only when it rose to levels that caused many treatment failures. The “standard” reaction was to shift to the next drug, from chloroquine to sulfadoxine-pyrimethamine, for example. While this tactic was possible in the past, development of a new antimalarial, registration, change of policies, and necessary training to support a new national treatment guideline will take years if not decades. Therefore all efforts must be made to prolong the therapeutic life of the ACTs.

A very aggressive strategy will be needed to eliminate resistant parasites in the Greater Mekong region with the current tools available. It should include innovative approaches such as mass drug administration, targeted strategies on specific populations, and improvement of drug quality. This targeted strategy must be guided by up to date intelligence on clinical response and on active mapping of the spread of resistance.

Many of the antimalarial regimens have been developed and recommended for “standard patients”, while in real life, a large fraction of the beneficiaries do not fit into this category. Outside the resistance zone, the underlying factors driving resistance, i.e. inadequate drug dosage, drug interaction, drug quality, pharmacological responses in particular sub-population like small infants, pregnant women, undernourished, co-infected patients must be studied and addressed now. If we want to have a chance of cheating evolution and preventing the inevitable, stakeholders must be ready to invest and rapidly adjust their strategy in the war against resistance and malaria.

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