Developing new malaria drugs before its too late

By Richard Kamwi and Havana Chikoto

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It has been more than a century since Ronald Ross discovered that the female Anopheles mosquitoes transmit malaria. In the interim, the world has made unbelievable strides in the fight against malaria. But both the mosquito and the malaria parasite are wily foes with the ability to develop resistance against the tools we use against them.

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A recent study, *Malaria Futures for Africa* (MalaFA), questioned malaria leaders in 14 African countries about their views on the fight against malaria. The report revealed that many of them are highly concerned about resistance to artemisinin combination therapies (ACTs) emerging. The early stages of resistance to ACTs, the current standard treatment recommended by the World Health Organisation (WHO) against malaria, have emerged in Southeast Asia and been observed in several countries there.

Strains resistant to earlier malaria medicines have spread to Africa from Southeast Asia, resulting in a big increase in malaria deaths as treatments like chloroquine became ineffective. Some of the experts questioned thought such resistance would spread faster because of today's vastly increased trade and travel links between Africa and Asia, but many of them thought that spontaneous emergence of ACT resistance in Africa is just as likely.

To stave off the threat of malaria becoming resistant to today's medicines, we need to ensure that new treatments will be available before they stop working. So scientists are working hard to develop them before the threat of resistant malaria becomes a reality in Africa. But the continent needs to maintain and strengthen its network of strong scientific leaders in malaria for the disease to be eradicated.

One of the biggest malaria clinical trials with a new treatment running at the moment is with a medicine called KAF156, which is currently being conducted across 15 trial sites in seven African and two Asian countries, including Mali and Uganda.

Running a large trial like this is a complex process, requiring specialised laboratory equipment, cold chains for samples sent off for analysis, and reliable internet connections. However, the greatest need is for trained scientists who must run the trials. In many established centres, there are many such scientists, but in more remote areas, there are often very few – or none. And we need to go to such remote areas, where the disease is most common, and the impact on people's lives the greatest.

The current trial, running across nine countries and enrolling more than 500 patients, is big. However, if it is successful, it will need to be followed by a further Phase 3 trial that may need to enrol perhaps 2,000 patients. This will involve setting up many more centres and training additional African scientists, many of whom will be in remote areas.

And this new generation of investigators we're training will not just be equipped to work on malaria trials – their training and experience will ensure they are ready to work in other diseases such as TB or HIV.

ABOUT THE AUTHOR

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